
Keys Centre Property - Environmental Assessment

**Part Lots 5 & 6, Range B
Geographic Township of Rolphton
Town of Deep River
Renfrew County, Ontario**

Prepared for

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INTRODUCTION

The Keys Centre Property (Blocks U2 & U3, Registered Plan No. 321, Town of Deep River, County of Renfrew), hereafter referred to as “the property”, is owned by the Town of Deep River. Town Council intends to transfer the property to a private sector developer who can develop the land in manner that agrees with the Town’s vision for the Town Centre Area. At the request of Mr. Brian Whitehead of Jp2g Consultants Inc., on behalf of the Town of Deep River, Ontario Resource Management Group Inc. (ORMG) performed an Environmental Assessment (EA) on the property and the surrounding area. This report characterizes the study area and identifies key environmental features and functions in order to determine future possibilities for development on the property. This report will accompany a larger information package available for prospective developers as the Town Council solicits Expressions of Interest for the Keys Centre Property.

BACKGROUND

The Keys Centre Property lies near the Town Center are of the Town of Deep River and is bounded by Pier Road, River Road and the Ottawa River (Figure 1). The property is mostly undeveloped and forested (Figure 2), except for two single dwellings which are being rented as residential homes. The Keys Centre property occupies an approximate area of 2.4 ha.

Town Council wishes to transfer the property to a private developer who can help them achieve their vision for the Town Centre Area. The Town has provided general criteria to guide development plans, but otherwise it offers flexibility to the private sector to create their concept plan designs. Future development on the Keys Centre Property will make use of the Town’s existing sanitary sewer and water infrastructure. However, a sanitary pumping station will likely be required to transfer sewage into the existing sewer at River Road and Brockhouse Way. A storm sewer system is also required for the site. The suggested stormwater system design will discharge into the Ottawa River.

This Environmental Assessment (EA) was commissioned by Jp2g Consultants Inc., on behalf of the Town of Deep River to inform concept plan designs for the Keys Centre Property. Ground surveys were carried out on 21 June 2012, and an acoustic receiver was deployed on the property from 21 to 24 June to contribute to wildlife surveys.

The purposes of this Environmental Assessment are to:

- a) Describe the flora and fauna, topography and substrate in the study area;
- b) Identify natural features and ecological functions likely to be affected by future development activities;
- c) Identify general mitigation measures to protect key features and functions.

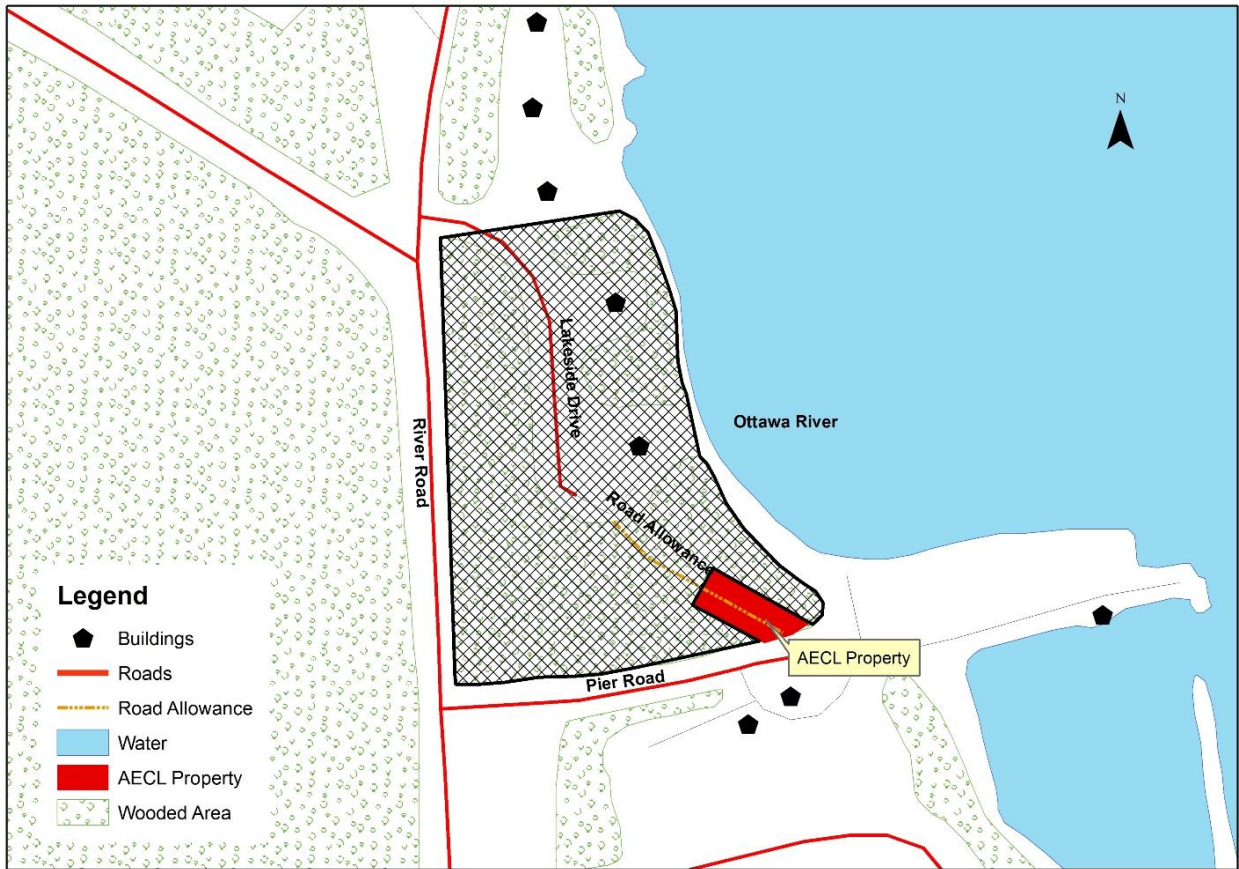


Figure 1: General location of the Keys Centre Property, Town of Deep River, Renfrew County, ON



**Figure 2: Aerial view of Keys Centre Property and surrounding area
(Source of aerial imagery: County of Renfrew., 2009)**

SITE DESCRIPTION

Project Name: Keys Centre Property
Location: Blocks U2 & U3, Registered Plan No. 321, Town of Deep River, Renfrew County, ON
Intersection: Pier Road and River Road
Project Area: +/- 2.4 hectares
Zoning of Proj. Area: Central Area- Exception Two- holding (C1-E2-h)

The Key Centre Property is located at the intersection of Pier Road and River Road within the Town of Deep River. The property is designated “Central Area – Exception” on Schedule “A” of the Town of Deep River Official Plan. This location along the Ottawa River is intended to be a commercial/residential focal point for new development that focuses on the waterfront while still supporting the uses and activities of the Town Centre.

The property is zoned Central Area- Exception Two- holding (C1-E2-h) in Schedule “A” of the *Town of Deep River Zoning By-law, 17-2007* (Figure 3). Land with this designation is intended for new development and redevelopment in a manner that supports and reinforces the function of the Town Centre Area as a place to work, shop, recreate and visit (Section 4.3.4 (3), *Town of Deep River Official Plan, 2012*). Permitted uses within the C1-E2 Zone include: Apartment Dwelling, Conference Centre, Hotel, Mixed Commercial-Residential Development, Open Space, Park, Recreation Facilities, or Row Dwelling (Section 7.7.5, *Town of Deep River Zoning By-law, 17-2007*). The holding symbol will be removed once Town Council approves a site plan and site plan amendment for the development of the property (Section 7.8.1 b), *Town of Deep River Zoning By-law, 17-2007*).

Currently the property is undeveloped except for two single detached buildings which are being rented as homes. The remainder of the property is Mixedwood Forest (Figure 2). Lakeside Drive enters the property from River Road and extends down the center of the property for approximately 180 m.

Figure 3 shows the zoning for lands located around the Keys Centre property. To the north of the property is land which is zoned residential land and contains a single detached dwelling. Pier Road abuts the property to the south, followed by land designated Waterfront Development (WD-h) which contains facilities for the Deep River Yacht and Tennis Club, a parking lot, and some wooded areas. River Road lies to the west of the Keys Centre Property, followed by undeveloped forested land which is zoned Residential Three (R3). The Ottawa River bounds the property along its eastern extent. The eastern section of the property coincides with the Ottawa River flood plain which is defined by elevation. Land at an elevation between 114.2 and 115.2 m is considered flood fringe. Development and alteration are permitted on flood fringe land, but adequate flood-proofing is required. Land below an elevation of 114.2 m is considered the floodway. No buildings or structures are permitted below the floodway elevation of the Ottawa River, with the exception of boat docking and launching facilities (Section 3.14, *Town of Deep River Zoning By-law 17-2007*).

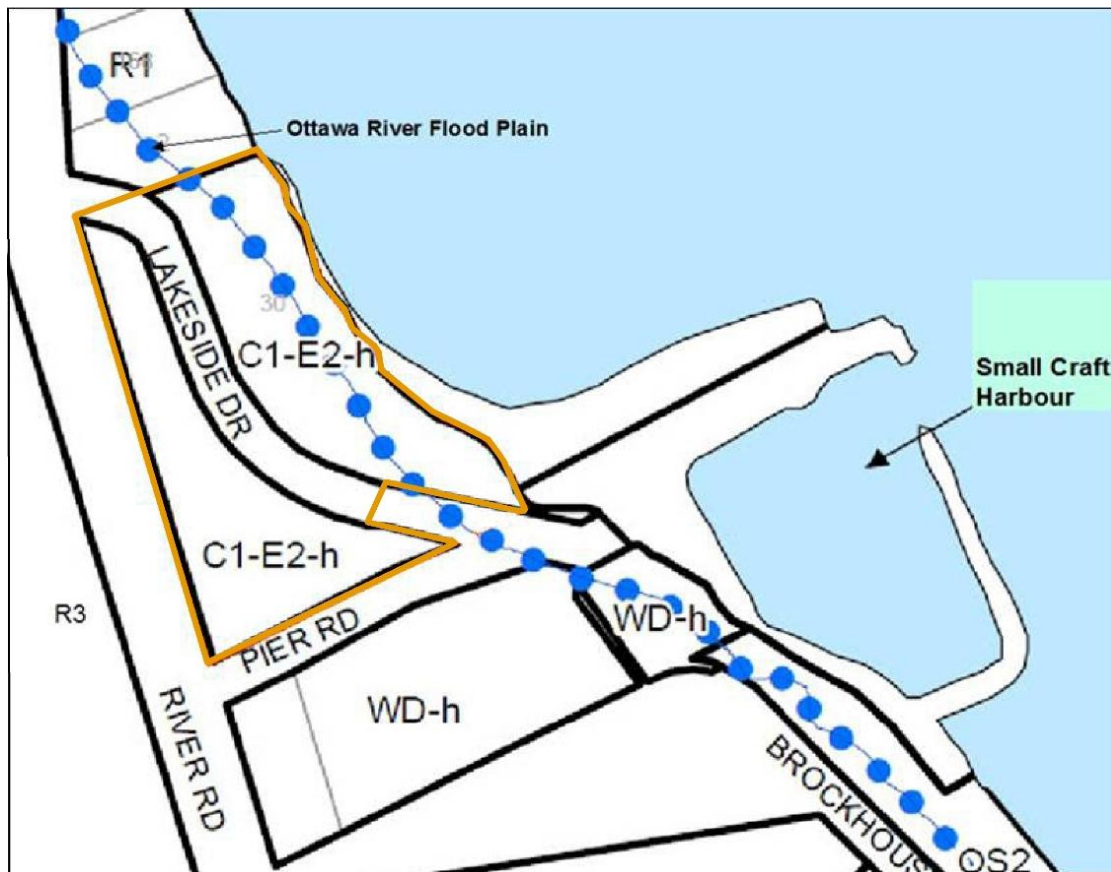


Figure 3: Zoning of Keys Centre Property and surrounding area
 (Source: Schedule "A", Town of Deep River Zoning By-law 17-2007)

SURVEY RESULTS

Survey Date: 21 June 2012, 0900-1200 hrs (6 person hours)

Assessors: Andrea Ellis Nsiah, Biologist
 Bob Labranche, Forestry Technician

Weather: Sunny and clear
 High: 35.0°C, Low: 19.5°C, Mean: 27.3°C
 Precipitation: 0.4 mm

Prev. 48hrs: Max. Temp: 35.5°C (20 June 2012)
 Min. Temp: 18.0°C (20 June 2012)
 Total Precip.: 0.0 mm

Due to the small size of the property, the majority of the site was surveyed on foot on 21 June 2012. A general assessment of flora, fauna, topography and substrate was performed. Additionally, an acoustic receiver was deployed on the property from 21 to 24 June 2012 to contribute to general wildlife surveys. Two streams were identified within and adjacent to the property during the course of ground surveys. For the purposes of the study, the property and surrounding area are divided into four main components:

- Mixedwood Forest
- Ottawa River Shoreline
- Stream 1

- Stream 2 and Associated Channels

Please note that the lawns surrounding the buildings on the property were not assessed during field surveys. **Figure 4** indicates the components of the study area. A map of survey efforts is also provided in Appendix A.

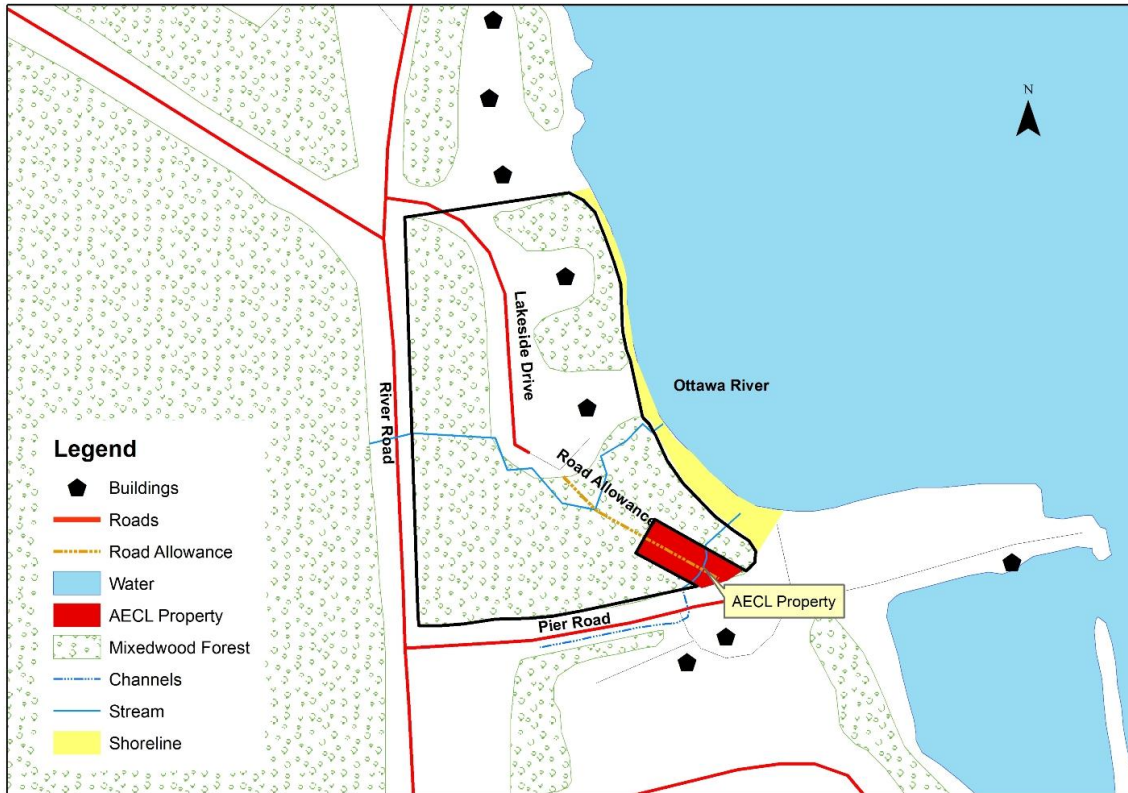


Figure 4: Components of the study area for Keys Centre Property Environmental Assessment (locations of stream features are approximate)

General Topography

Elevation of the Keys Centre Property and surrounding area is provided in **Figure 5**. Elevations lie between 110 and 120 metres above sea level (m), and the land slopes gradually in an easterly direction towards the Ottawa River. The altitude along the western boundary of the property averages 117 and 118 m, while the altitude along the eastern boundary is roughly 113 m (Adam Kasprzak Surveying Ltd., 2012). The high water mark of the Ottawa River occurs at approximately 112 m (Adam Kasprzak Surveying Ltd., 2012). As mentioned earlier, the eastern portion of the property coincides with the flood plain for the Ottawa River which is defined as land below 115.2 m (Figure 3) (Section 3.14, *Town of Deep River Zoning By-law 17-2007*). Detailed mapping of site elevation is included in the information package for the Keys Centre Property (see Adam Kasprzak Surveying Ltd., 2012).

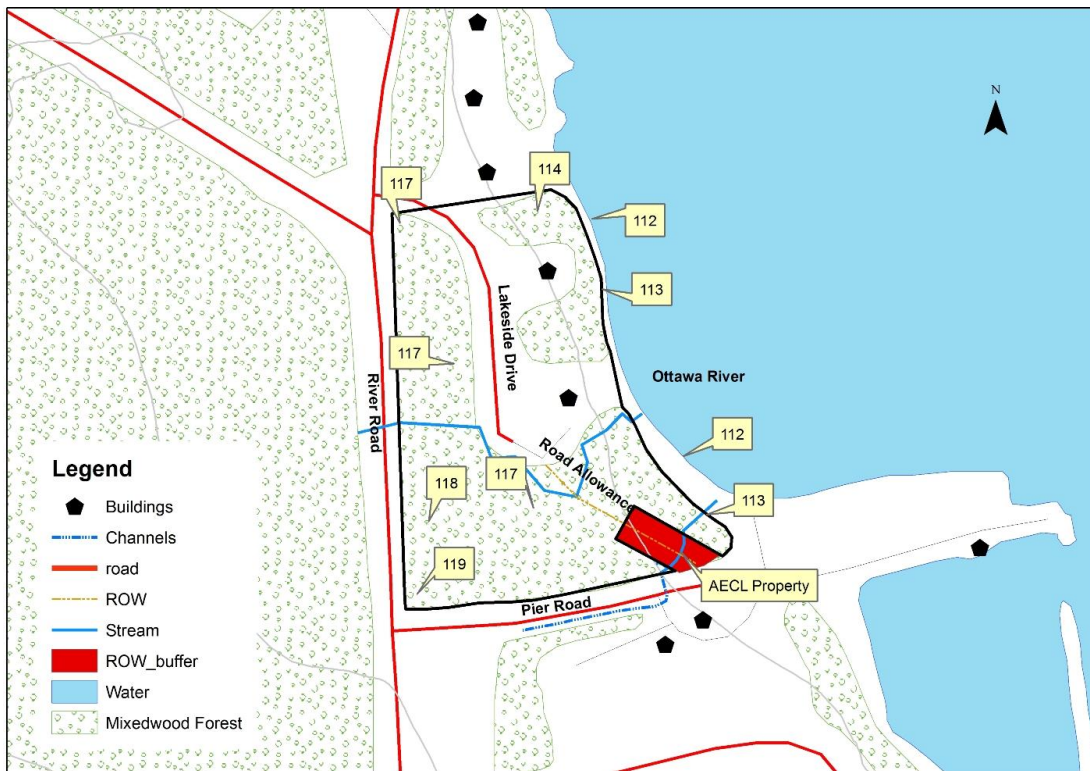


Figure 5: Approximate elevations for the Keys Centre Property and surrounding area. Measurements provided in metres above sea level (Source: Adam Kasprzak Surveying Ltd., 2012)

General Substrate

The dominant substrate texture across the property is sand. The Ontario Geological Survey (2010) identifies two substrate material types within the property boundaries (Figure 6). The substrate across the majority of the property is described as uniform fine-grained grey to yellow-buff sand which is mainly deltaic. Some gravel and silt deposits are present. This substrate type is highly permeable. A second small area along the north boundary has substrate described as sandy grey till comprising material ranging in size from silt to boulders in a heterogeneous mixture. Thick deposits of gravel or rubble are present. This substrate type has medium permeability. Although sand is the dominant substrate texture across the property, the upper layer of substrate in the Mixedwood Forest tends to be dark moist soil with high organic content.

Very little exposed substrate exists within the study area. Substrate is either overtopped with natural vegetation in the case of the Mixedwood Forest, or planted grass in the case of the lawns surrounding the buildings. Significant amounts of exposed substrate only exist along the shoreline of the Ottawa River, below the high water mark.



Figure 6: Substrate material types within the Keys Centre Property and surrounding area
 (Source: Ontario Geological Survey, 2010)

General Features

Mixedwood Area

The vegetation cover across most of the property can be described as low-lying Mixedwood Forest. A dense canopy of mature softwoods such as Eastern White Cedar (*Thuja occidentalis*), White Pine (*Pinus strobus*) and White Spruce (*Picea glauca*) tend to comprise the overstory (Figure 8). However, the canopy in the northwestern corner has a high proportion of Largetooth Aspen (*Populus grandidentata*) and Trembling Aspen (*Populus tremuloides*).

The sapling layer in the Mixedwood Forest tends to be moderately dense, and dominated by Balsam Fir and Red Maple (Figure 8). Meanwhile, the ground vegetation is sparse and contains many species adapted to moist environments such as Sensitive Fern (*Onoclea sensibilis*), Oak Fern (*Gymnocarpium dryopteris*), Spotted Touch-me-not (*Impatiens capensis*), and Naked Mitrewort (*Mitella nuda*) (Figure 14).



Figure 7: Typical appearance of overstory and sapling layer of the Mixedwood Forest



Figure 8: Typical appearance of ground cover in the Mixedwood Forest

All plant species that were identified within the Mixedwood Forest are provided below. A more complete list of potential floral species for this area is provided in Appendix B.

- Alternate-leaved Dogwood (*Cornus alternifolia*)
- American Basswood (*Tilia americana*)
- Balsam Fir (*Abies balsamea*)
- Balsam Poplar (*Populus balsamifera*)
- Baneberry (*Actaea* sp.)
- Beaked Hazel (*Corylus cornuta*)
- Black Ash (*Fraxinus nigra*)
- Bladder Sedge (*Carex intumescens*)
- Blue Bead Lily (*Clintonia borealis*)
- Bracken Fern (*Pteridium aquilinum*)
- Bunchberry (*Cornus canadensis*)
- Canada Mayflower (*Maianthemum canadense*)
- Canada Yew (*Taxus canadensis*)
- Cinnamon Fern (*Osmunda cinnamomea*)
- Drooping Wood Sedge (*Carex arctata*)
- Dwarf Raspberry (*Rubus pubescens*)
- Dwarf Scouring Rush (*Equisetum scirpoides*)
- Eastern White Cedar (*Thuja occidentalis*)
- European Mountain Ash (*Sorbus aucuparia*)
- Fly Honeysuckle (*Lonicera canadensis*)
- Freeman Maple (*Acer x freemanii*)
- Grasses (*Poa* sp. and *Poaceae* spp.)
- Hair Cap Moss (*Polytrichum* sp.)
- Helleborine (*Epipactis helleborine*)
- Ironwood (*Ostrya virginiana*)
- Large-leaved Aster (*Aster macrophyllus*)

- Largetooth Aspen (*Populus grandidentata*)
- Meadow Horsetail (*Equisetum pratense*)
- Naked Mitrewort (*Mitella nuda*)
- Northern Wild Raisin (*Viburnum cassinoides*)
- Oak Fern (*Gymnocarpium dryopteris*)
- Poison Ivy (*Toxicodendron radicans*)
- Rattlesnake-root (*Prenanthes* sp.)
- Red Maple (*Acer rubrum*)
- Red Trillium (*Trillium erectum*)
- Scouring Rush Horsetail (*Equisetum hyemale*)
- Sedges (*Carex* spp.)
- Sensitive Fern (*Onoclea sensibilis*)
- Smooth Serviceberry (*Amelanchier laevis*)
- Spinulose Wood Fern (*Dryopteris carthusiana*)
- Spotted Touch-me-not (*Impatiens capensis*)
- Staghorn Sumac (*Rhus typhina*)
- Starflower (*Trientalis borealis*)
- Tall Buttercup (*Ranunculus acris*)
- Tamarack (*Larix laricina*)
- Trembling Aspen (*Populus tremuloides*)
- Vermilion Hygrophorus (*Hygrophorus miniatus*)
- White Birch (*Betula papyrifera*)
- White Pine (*Pinus strobus*)
- White Spruce (*Picea glauca*)
- Wild Red Raspberry (*Rubus idaeus* ssp. *malanolasius*)
- Wild Sarsaparilla (*Aralia nudicaulis*)

Ottawa River Shoreline

On the survey date, the water level of the Ottawa River was below the high water mark. This allowed for the shoreline vegetation to be assessed. The Mixedwood Forest vegetation extends to the high water mark of the Ottawa River. The overstory near the high water mark is dominated by Black Ash (*Fraxinus nigra*) and Freeman's Maple (*Acer x freemanii*). Understory vegetation that is unique to this area includes Speckled Alder (*Alnus incana* ssp. *rugosa*), Round-leaved Dogwood (*Cornus rugosa*), and Forget-me-not (*Myosotis scorpioides*). The vegetation on the beach below the high water mark was sparse and dominated by low shrubs such as Sweet Gale (*Myrica gale*) and Willow (*Salix* sp.), and graminoides like Torrey's Bulrush (*Schoenoplectus torreyi*) and sedges (*Carex* spp.). A photograph of general shoreline vegetation is provided in Figure 9. No emergent or submergent aquatic vegetation was observed in the Ottawa River.



Figure 9: Shoreline vegetation along Ottawa River

All plant species noted along the Ottawa River Shoreline were:

- Black Ash (*Fraxinus nigra*)
- Bracken Fern (*Pteridium aquilinum*)
- Dwarf Raspberry (*Rubus pubescens*)
- Dwarf Scouring Rush (*Equisetum scirpoides*)
- Fall Meadow-rue (*Thalictrum pubescens*)
- Forget-me-not (*Myosotis scorpioides*)
- Freeman Maple (*Acer x freemanii*)
- Grass (Poaceae sp.)
- Mint (*Mentha* sp.)
- Orange Hawkweed (*Hieracium aurantiacum*)
- Rough Bedstraw (*Galium asprellum*)
- Round-leaved Dogwood (*Cornus rugosa*)
- Royal Fern (*Osmunda regalis*)
- Scouring Rush Horsetail (*Equisetum hyemale*)
- Sedge (*Carex* spp.)
- Speckled Alder (*Alnus incana* ssp. *rugosa*)
- Sweet Gale (*Myrica gale*)
- Tall Buttercup (*Ranunculus acris*)
- Torrey's Bulrush (*Schoenoplectus torreyi*)
- Willow (*Salix* sp.)

Stream 1

Stream 1 traverses the property from west to east for an approximate length of 200 m. The stream enters the property via a culvert beneath River Road and eventually flows into the Ottawa River (Figure 10 & Figure 11). Along its course, the stream passes beneath the road allowance. At this point there is a perched culvert, and most of the water passes below the culvert.

The water in the stream is clear and cool. The stream is believed to originate in the forested property on the west side of River Road. The source of the stream appears to be a combination of groundwater and surface run-off. On 21 June 2012, the temperature of the stream averaged 12°C (Range: 9.7-14.3°C). This cool temperature suggests the stream is partially fed by groundwater. However, it is evident from channels on the forest floor that surface water also drains into the stream during times of high run-off.

On the survey date, the water in the stream was approximately 1 m wide and 6 cm deep. The average depth of the evident stream channel itself is ~75 cm. This suggests the stream carries greater volumes of flow during times of high run-off. The dominant substrate of the stream channel is sand. This substrate is often overtopped with leaf litter and woody debris. Near the western property boundary, the stream substrate is sand overtopped with gravel. Larger stones are scattered along the stream bank at this location. Similarly, near the high water mark of the Ottawa River, the sandy substrate of the stream is overtopped with gravels, cobbles, stones and boulders. The stream has no distinct riparian vegetation. The plants immediately surrounding the stream are characteristics of the Mixedwood Forest or the Ottawa River Shoreline where the stream flows.



Figure 10: Stream 1 near western property boundary



Figure 11: Stream 1 flowing into Ottawa River

Stream 2 and Associated Channels

Stream 2 is a smaller feature that traverses the southeast corner of the surveyed area. It originates near the boundary with Pier Road and flows in a northeast direction for an approximate length of 50 m. The stream passes beneath a former road allowance via a culvert (Figure 12). The majority of the lands which the stream passes through are owned by Atomic Energy Canada Ltd., Chalk River Laboratories (AECL). The entire former road allowance was historically transferred to AECL and closed. Only a small portion of the stream, between the road allowance and the Ottawa River, occurs on the subject property.

Although the culvert at the old road allowance is breached, most of the water volume is still able to pass through it. The stream dissipates shortly after the high water mark of the Ottawa River. During periods of high water, Stream 2 would drain directly into the river.

Stream #2 originates from the confluence of two other channels off the property. One branch is a manmade drainage channel which flows along the south side of Pier Road and enters the property via a culvert. The second channel appears to be a headwater stream. Surface run-off from the surrounding Mixedwood Forest drains into this stream. On the survey date the water in this headwater stream was 50 cm wide and 2 cm deep. This stream becomes ill-defined approximately 10 m upstream from its confluence with the initial drainage channel. Leaf litter covers the substrate of the headwater stream channel. On the survey date, the water was stagnant and overtopped by algae, its temperature was 18.8°C.

On 21 June 2012, the water in Stream#2 was approximately 50 cm wide and 2 cm deep. The stream channel is shallow and averages 10 cm deep. The water in the stream is mostly clear and somewhat cool. On the survey date, some algae growth was observed along the stream edges. The temperature of the stream was 15°C. The cool water temperature suggests the stream is fed, in part, by ground water. The dominant substrate of the stream channel is sand. This substrate is often overtopped with leaf litter and woody debris. Between the road allowance and the high water mark of the river, gravel is present over the sandy substrate of the stream channel. The

stream has no distinct riparian vegetation; the plant species immediately surrounding the stream are characteristics of the Mixedwood Forest (Figure 13).



Figure 12: Stream 2 flowing through breached culvert beneath road allowance



Figure 13: General appearance of Stream 2 between road allowance and high water mark of the Ottawa River

SIGNIFICANT NATURAL FEATURES

Significant Wetlands

No wetlands exist on the subject property. The Natural Heritage Information Centre (NHIC) also reports no provincially significant wetlands (PSW) near the study area. According to the NHIC's Biodiversity Explorer, no PSW's have been identified within the 1-km square (18US00_78) or the 10-km square (18US00) that encompass the Keys Centre Property (NHIC, 2010).

Significant Wildlife Habitat

All evidence of wildlife was noted during the course of field surveys. Species were identified by sight, sound and sign (e.g. tracks and scat). Additional species were identified during the review of audio recordings taken with a handheld recorder and an acoustic receiver.

An acoustic receiver was used to survey for species that may have been missed during daytime ground surveys, such as nocturnal birds and amphibians. The acoustic receiver used in this study was an SM2 model manufactured by Wildlife Acoustics, Inc. (<http://www.wildlifeacoustics.com/products>). ORMG performed basic tests on this unit and determined that, while variables are too numerous and complex to accurately provide conclusive

results regarding its acoustic range, a reasonable maximum distance for medium – high pitched avian calls under “ideal” circumstances is about 150-200 m. “Ideal” conditions include low wind speeds, minimal background noise, and minimal spatial interference from surrounding objects. These known parameters are used to estimate the distance of recorded calls from the unit.

For the purpose of this study, the SM2 acoustic receiver was deployed in the Mixedwood Forest over a period of four days (Figure 14). Recording times included twilight, night and dawn hours (Table 1). The audio recordings produced by the SM2 unit were manually scanned, and all wildlife detections were noted. A total of 60 minutes of audio footage was manually reviewed, with particular attention given to twilight and night recordings.

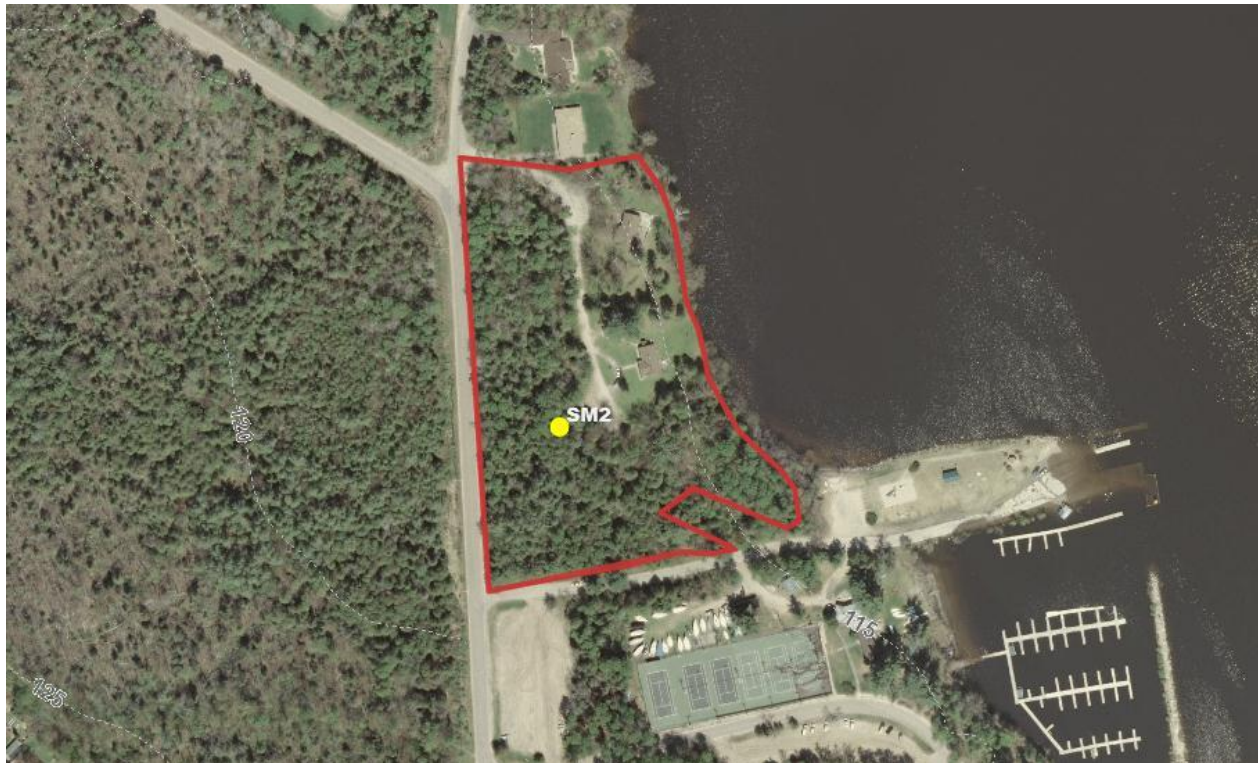


Figure 14: Location of SM2 acoustic receiver deployment within the study area
(Source of aerial imagery: Google Inc., 2012)

Table 1: Details of SM2 Acoustic Receiver Deployment for Keys Centre Property Environmental Assessment

Location (UTM)	Date (2012)	Recording Time
Mixedwood Forest (18T 307483 5109032)	21 June	1900- 0300
	22 June	0400- 0900 1900- 0300
	23 June	0400- 0900 1900- 0300
	24 June	0400- 0900

Below is the list of all fauna identified within the study area during field surveys and audio review. A complete list of confirmed and potential species is available in Appendix B.

- American Black Ducks (*Anas rubripes*), family of six or more ducks observed walking in Mixedwood Forest and through Stream 1 (21 June 2012).
- American Crows (*Corvus brachyrhynchos*), individual observed in a tree in Mixedwood Forest (21 June 2012), calls recorded on a handheld recording device (21 June 2012) and on SM2 acoustic receiver (22, 23 & 24 June 2012).
- American Robin (*Turdus migratorius*), calls recorded on a handheld recording device (21 June 2012) and on SM2 acoustic receiver (22, 23 & 24 June 2012).
- Black-and-White Warbler (*Mniotilta varia*), call recorded with SM2 acoustic receiver (22 June 2012).
- Black-capped Chickadee (*Poecile atricapillus*), calls recorded on a handheld recording device (21 June 2012) and on SM2 acoustic receiver (23 June 2012).
- Pileated Woodpecker (*Dryocopus pileatus*) calls recorded on a handheld recording device (21 June 2012).
- Raccoon (*Procyon lotor*), tracks observed at edge of Stream 1 (21 June 2012).
- Red-backed Salamanders (*Plethodon cinereus*), two individuals found under logs in Mixedwood Forest (21 June 2012).
- Savannah Sparrow (*Passerculus sandwichensis*), call recorded on a handheld recording device (21 June 2012).
- Slugs (*Arion* spp.), two species observed in Mixedwood Forest (21 June 2012).
- Song Sparrow (*Melospiza melodia*), calls recorded with SM2 acoustic receiver (22 June 2012).
- White Admirals (*Limenitis arthemis*), two individuals observed flying in Mixedwood Forest (21 June 2012).

The study area is not considered critical habitat for any of these wildlife species as they are common and widespread. However, many avian species identified in the study area are migratory birds protected under the *Migratory Birds Convention Act, 1994* (Environment Canada, 2012), namely American Black Duck, American Robin, Black-and-White Warbler, Black-capped Chickadee, Pileated Woodpecker, Savannah Sparrow, and Song Sparrow. The Act affords protection to the populations, individuals, and nests of these species.

Significant Habitat of Endangered and Threatened Species

The Natural Heritage Information Centre indicates no habitat for Endangered or Threatened species within 120 m of the subject property; the NHIC's Biodiversity Explorer reports no habitat for Species at Risk within the 1-km square (18US00_78) that encompasses the Keys Centre Property (NHIC, 2010).

It is important to note that the Ottawa River is known habitat for Species at Risk such as Lake Sturgeon (*Acipenser fulvescens*) and American Eel (*Anguilla rostrata*) (COSEWIC, 2006a; COSEWIC, 2006b; Haxton & Chubbuck, 2002). The section of river immediately adjacent to the property may not represent confirmed habitat for these species. Nonetheless, negative impacts

incurred in one location along the Ottawa River can have deleterious effects on critical habitat elsewhere.

During field surveys, it was observed that conditions within the study area may be favourable for terrestrial Species at Risk such as Whip-poor-will (*Caprimulgus vociferous*) and Milksnake (*Lampropeltis triangulum*). Whip-poor-will is designated Threatened and Milksnake is designated Special Concern by the provincial and federal governments (Table 2).

Preferred breeding and nesting habitat for Whip-poor-will tends to be semi-open forest with little ground cover (COSEWIC, 2009). Milksnakes utilize a wide variety of habitats but are often associated with areas of dense forest cover (COSEWIC, 2002).

Endangered or Threatened species and their habitat are protected under Ontario’s *Endangered Species Act (ESA), 2007*, and Canada’s *Species at Risk Act (SARA), 2002*. Prohibitions do not apply to species of Special Concern under either legislation. The Town of Deep River does not permit development and site alteration in significant habitat for Endangered or Threatened species, and development and site alteration are restricted on lands adjacent to such habitat (Section 3.14, *Town of Deep River Official Plan, 2012*).

Table 2: Potential Species at Risk for the Keys Centre Property

Common Name	Scientific Name	Ontario Status (SARO, 2012)	National Status (Govt. Canada, 2012)
Whip-poor-will	<i>Caprimulgus vociferus</i>	Threatened (THR)	Threatened (THR)
Milksnake	<i>Lampropeltis triangulum</i>	Special Concern (SC)	Special Concern (SC)

* Prohibitions do not apply to species of Special Concern status under ESA or SARA.

Targeted/specialized surveys for most Species at Risk were beyond the scope of this study, although general presence/ absence surveys were carried out during the course of wildlife surveys. One exception was a targeted survey for Whip-Poor-Will. Recordings from a Wildlife Acoustics SM2 receiver set up on site were analyzed for Whip-Poor-Will calls.

Whip-poor-wills are difficult to survey for during daytime hours. This species is well camouflaged and is most active during twilight and night hours. For these reasons, the audio recordings produced by the SM2 acoustic receiver were scanned for Whip-poor-will using automatic call-recognition software (Song Scope) provided by Wildlife Acoustics, Inc. This software compares field recordings to recognizers specifically developed for species of interest. Analysis of field recordings provided no evidence of Whip-poor-will on the site.

General surveys for Milksnakes were performed during the course of foot surveys. This species is often found beneath cover, even when it is basking (COSEWIC 2002). Care was taken to overturn logs, boards, rocks and other suitable cover materials that the snake could be using for shelter. No individuals were found.

No other Species at Risk were detected in the study area. However, once development plans for the Keys Centre property are known, targeted Species at Risk surveys may be required for the site. Such targeted surveys should be performed in consultation with the Ministry of Natural Resources to address any newly listed species at risk, or to confirm the continued absence of currently listed species, at the time of acceptance of a development proposal. The current survey and report are intended to offer a general overview of the site, highlighting potential areas of

concern from an ecological perspective. In the absence of a confirmed plan of development, further study and recommendations are difficult to make.

Habitat for S-rated Species of Conservation Concern (S1-S3)

Species of Conservation Concern (S-ranked species) are not regulated by any current legislation, but are monitored and tracked by the Natural Heritage Information Centre in collaboration with the Ministry of Natural Resources.

The NHIC reports potential habitat for a Species of Conservation Concern within the study area. Ram's-head Lady's-slipper (*Cypripedium arietinum*) may occur within the 1-km square (18US00_78) that encompasses the property (NHIC, 2010). This orchid species is ranked S3, or Vulnerable, in Ontario. The last element occurrence of Ram's-head Lady's-slipper in the general area was reported in 1961 (NHIC, 2010).

This species is known to occur in a variety of coniferous forest habitats, but it is always biologically rare (Minnesota Department of Natural Resources, 2012). The lady's-slipper is commonly associated with lowland forests where Cedar, Tamarack and Balsam Fir comprise the overstory (Minnesota Department of Natural Resources, 2012). This forest type is characteristic of the Mixedwood Forest found on the Keys Centre property.

While numerous plant species were noted during the course of field surveys (Appendix B), Ram's-head Lady's-slipper was not observed. The distinctive appearance of the flower would have allowed for identification had this species been encountered.

Significant Fish Habitat

The subject property is adjacent to the Ottawa River, a natural feature that represents significant fish habitat. Haxton and Chubbuck (2002) identified 54 species of fish in the Allumette Lake extent of the Ottawa River, the section of river adjacent to the study area (see species list in Appendix B). Among the species identified are commercial and sport fishery species, as well as Species at Risk.

Stream 1 and Stream 2 and its associated channels should also be regarded as potential fish habitat. According to the Natural Heritage Reference Manual (OMNR, 2010), all water features including permanent or intermittent streams, headwaters, and municipal surface drains should initially be considered fish habitat unless it can be demonstrated to the satisfaction of the planning authority that the feature does not constitute fish habitat as defined by the Fisheries Act. Furthermore, these streams flow directly into the Ottawa River, which is confirmed fish habitat for numerous species. Protecting or improving the integrity of these streams will help protect the Ottawa River and its fish habitat.

The federal *Fisheries Act, 1985* prohibits alteration, disruption or destruction of fish habitat (Section 35.1 and 35.2). Development and site alteration are not permitted on adjacent lands to the fish habitat 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 their ecological functions (Section 2.1.6, *Provincial Policy Statement, 2005*).

Significant Areas of Natural and Scientific Interest (ANSI's)

The Natural Heritage Information Centre reports no provincially significant Areas of Natural and Scientific Interest (ANSI's) on or near the subject property. According to the NHIC's Biodiversity Explorer, no ANSI's have been identified within the 1-km square (18US00_78) or the 10-km square (18US00) that encompasses the study property (NHIC, 2010).

POTENTIAL IMPACTS AND RECOMMENDED MITIGATION

This study characterized the environmental features and identified potential environmental functions within the study area for the Keys Centre Property Environmental Assessment. Since specific details regarding future development are unknown, only general impacts and mitigation are provided below. Further mitigation measures will likely be required once development plans are proposed. It is the opinion of the authors that development on the Keys Centre Property could have negligible impacts on the environment as long as appropriate precautions are taken and buffers maintained.

Water Bodies and Fish Habitat

The greatest environmental impacts posed by a future development of the Keys Centre Property are physical or chemical harm to the Ottawa River or Streams 1 and 2. Alterations to these water bodies could compromise their functions as fish habitat. Furthermore, deterioration in the water quality of the streams could transfer to the Ottawa River and compromise its ecological function as fish habitat for numerous species including Species at Risk.

Development activities can increase the risk of erosion, suspended sediments, nutrients and other contaminants entering nearby water bodies (OMNR, 2010). The sandy substrate of the property is susceptible to erosion once vegetation is removed. Vegetation removal can also decrease shade and organic inputs into water bodies, as well as raise water temperatures. During construction phases, water could become polluted with chemicals used onsite such as heavy metals, oils, grease, and paint (OMNR, 2010). The completed future development will have an unnatural drainage regime due to more impervious surfaces like roads and buildings (OMNR, 2010). This implies decreased infiltration rates and increased surface run-off. There will also be opportunities for water pollution from such things as roads (heavy metals, oils and grease from vehicles; salt from road de-icing) and lawn care (nutrients and contaminants such as fertilizers and pesticides) (OMNR, 2010). Lastly, the placement of the sanitary pumping station that is required for the site has implications for a risk of sewage contamination of nearby water bodies.

An important strategy for protecting environmental features and their functions is applying development setbacks. The Town of Deep River encourages landowners to retain vegetation along shorelines and streams for the purpose of limiting erosion and the transport of nutrients to these water bodies (Section 4.7.3(6)(c), *Town of Deep River Official Plan, 2012*). A minimum 30 m naturally vegetated setback is recommended from the high water mark of the Ottawa River. This agrees with recommendations provided in the Natural Heritage Reference Manual for the protection of significant natural features (OMNR, 2010).

The Natural Heritage Reference Manual also recommends a 30 m setback for coolwater streams such as Stream 1 and 2. However, a 20 m setback may be acceptable if it can be demonstrated to planning authorities that this buffer will sufficiently protect the water quality of the streams (OMNR, 2010). Setbacks should be applied to the high water mark of the stream channels. In the case of Stream 2, the setbacks must also be applied to the two headwater channels within the property boundaries. Where the channel edges are poorly defined, the setback can be applied to the centre line of the channel, or the depression that concentrates flow (OMNR, 2010).

Applying setbacks to the river and the streams will help to preserve the physical and chemical characteristics of these water bodies. Vegetated buffers are known to slow down surface run-off and absorb nutrients and chemicals, thus reducing impacts on natural features (OMNR, 2010). Buffers protect water quality by preventing erosion, slowing down surface run-off, and filtering sediments and pollutants; vegetation around water bodies will also allow for shading, organic inputs and temperature moderation (OMNR, 2010). Maintaining water quality is important for ensuring the integrity of fish habitat.

Below are further recommendations to prevent impacts on the Ottawa River, and Streams 1 and 2.

- It is recommended that an erosion and sediment control plan which incorporates approved best practices be created for the construction phases and final design of any development on this site.
- During all phases of site preparation and construction, a suitable sedimentation barrier should be installed and maintained along the lengths of the setbacks for the river and streams to prevent erosion and run-off from entering these features.
- In order to prevent erosion of the sandy substrate on this site, efforts should be made to minimize the amount and duration of exposed substrate during construction phases. Vegetation should be re-established as soon as possible. Construction phases requiring long periods of substrate exposure should be scheduled to avoid times of high run-off volumes, such as the spring and fall. Furthermore, construction phases within the flood fringe area should be scheduled to avoid times of high water levels in the Ottawa River.
- A good stormwater management system, which includes extensive filtration techniques, should be incorporated into the design of the future development. Proper stormwater management can mitigate the impacts of run-off by controlling the quantity and quality of discharge from the property (OMNR, 2010). If the proposed stormwater management system will outlet into the Ottawa River, rigorous quality control measures must be put into place.
- During construction phases, water contamination should be prevented by storing equipment and chemicals in a designated location, and using good housekeeping practices.
- The existing water crossing for Stream 1 beneath the Lakeside Drive road allowance must be improved. The breached culvert obstructs potential fish habitat upstream, and may contribute to erosion and sedimentation within the streams.. The Stream 2 culvert and crossing are entirely located within AECL lands on the closed road allowance, and are not part of the current survey recommendations.
- Should it become evident that sediments or contaminants are escaping the property at any stage of development, or into the future, the landowner must seek remediation and mitigation options as soon as possible. Immediate action will be critical for minimizing impacts to the Ottawa River and the streams.

Terrestrial Habitat

Future development on the subject property will require the removal of vegetation. The clearing of vegetation is not anticipated to result in any significant loss of biodiversity because the flora and fauna species observed within the study area are common and widespread. The vegetated setbacks that will be applied to the water bodies will also conserve some terrestrial habitat.

Additional consideration must be given to the breeding bird species that were confirmed on site. Most of the avian species identified during the study are migratory species whose populations, individuals, and nests are protected under the *Migratory Birds Convention Act, 1994*. The habitat within the study area is not considered critical for the survival of their populations because their habitat requirements are not rare on the broader landscape. However, it is an offense to harm individuals and nests of species protected under the Act. For this reason, the removal of vegetation on the subject property should be scheduled to avoid the breeding bird season, which falls between April and August (OMNR, 2011).

Species at Risk and Species of Conservation Concern

While no Species at Risk or Species of Conservation Concern were observed in the study area at the time of surveying, this does not confirm their absence into the future. The landowner must be vigilant of the potential presence of Whip-poor-will, Milksnake, Ram's-head Lady's-slipper, or other Species at Risk or Species of Conservation Concern. If any such species are observed on the site, the landowner should immediately contact the Species at Risk Biologist at the Pembroke District Ministry of Natural Resources. Note that all Threatened and Endangered species are protected under provincial and/or federal legislation and disturbing or harming these species or their habitat is considered an offense.

It is recommended that targeted Species at Risk surveys be performed on the subject property once development plans are known. These surveys should be completed after consultation with the Ministry of Natural Resources.

CONCLUSIONS

The Town of Deep River wishes to determine the potential for development on the Keys Centre Property, in terms of environmental features and functions. This information will be provided to prospective developers as the Town Council solicits Expressions of Interest for the Keys Centre Property.

This Environmental Assessment determined that the only significant natural feature associated with the property is the Ottawa River which runs adjacent to the eastern boundary of the site. The Ottawa River is confirmed habitat for numerous fish species. Two coolwater streams were also found within the property boundaries, and these water bodies drain into the Ottawa River. Any proposed development for the Keys Centre Property must ensure the protection of the river and both streams. Several mitigation measures were recommended in this report. A key mitigation strategy will be the maintenance of vegetated setbacks around these water bodies.

The remainder of the study area had few notable features. The majority of the terrestrial habitat was characterized as Mixedwood Forest, and contains flora and fauna species that are common and widespread. No significant loss of biodiversity is anticipated from future development on the site, as long as setbacks are maintained around water bodies. It is, however, recommended that any clearing of vegetation be scheduled to avoid the breeding bird season, since many of the avian species utilizing the study area are protected under the *Migratory Birds Convention Act, 1994*.

No evidence of Species at Risk or Species of Conservation Concern was observed during field surveys. Targeted surveys for Species at Risk are recommended once development plans are known.

Based on the results of this study, the subject property could support development without creating significant adverse environmental impacts. However, the general mitigation measures provided in this report should be adopted, and further mitigation measures may be required depending on the nature of development plans.



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QUALIFICATIONS OF AUTHORS

Kristi Beatty, B.Sc (Hons) Biology – Project Manager/Biologist

Ms. Beatty has over 12 years practising as a professional Biologist, working with such companies as Ducks Unlimited and the Ontario Federation of Anglers and Hunters prior to taking her current position as Biologist and Project Manager for Ontario Resource Management Group Inc. (ORMG) in 2007.

Ms. Beatty's diverse experience includes numerous Environmental Assessments for private, business, municipal, provincial and federal government clients. Completed projects include Species at Risk inventories and reports for federal (Canadian Forces Base (CFB) Petawawa) and provincial clients (OMNR, municipal, private); Forest Ecosystem Classification (FEC) analysis for CFB Petawawa; ongoing surveys under the Canadian Environmental Assessment Act (CEAA) for hydro-electric and bridge construction projects; thirty (30) environmental assessments for private and corporate landowners; Beaver, Coyote and Bald Eagle surveys for Land Force Central Area Training Centre Meaford; Beaver Pond Management assessments; deer yard surveys and report; and over fifteen (15) Natural Environment Level I and II surveys and reports under the *Aggregate Resources Act (A.R.A.), 1990*.

Skilled at utilizing Global Information Systems (GIS) programs such as ESRI ArcMap, as well as GPS technology, Ms. Beatty is also able to accurately map and illustrate her findings, incorporating aerial imagery, GPS files, Google Earth images and Land Inventory Ontario (LIO) layers to produce accurate, detailed schematics, comprehensive mapping of survey sites, and Class A and Class B Site Plans under the A.R.A.

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Ms. Ellis Nsiah's credentials include an M.Sc in Planning and a B.Sc in Ecology from the University of Guelph. She also has formal training in ESRI ArcMap and GPS technology, and is skilled at using a range of GIS programs to produce comprehensive and accurate maps.

She has extensive work experience relating to Forest Ecology, Agroforestry, and Species at Risk from employment with the Canadian Forest Service, University of Guelph, and Canadian Institute of Forestry (CIF). Ms. Ellis Nsiah remains a proud member of the CIF. The Institute's mission is to provide national leadership in forestry, promote competence among forestry professionals, and foster public awareness of Canadian and international forestry issues.

Since accepting her current position at ORMG in 2012, Ms. Ellis Nsiah has conducted field surveys for Natural Environment reports under the *Aggregate Resources Act (A.R.A.), 1990*, as well as Environmental Assessments, including Class Environmental Assessments for hydroelectric projects. She has also authored or edited several reports related to such surveys.

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APPLICABLE POLICY

Excerpts from the *Town of Deep River Official Plan, 2012*

3.14 HABITAT OF ENDANGERED AND THREATENED SPECIES

Development and site alteration shall not be permitted in the significant habitat of endangered species and threatened species. Development and site alteration may be permitted in adjacent area (within 120 metres) provided an Environmental Impact Study shows that the proposed development or site alteration will have no negative impact on the species or habitat.

(Official Plan Amendment No. 5)

***4.3.4 Town Centre Area –Exception**

4.3.4 (1) Intent

The lands designated “Town Centre Area – Exception” primarily lie adjacent to or in close proximity to the Town Centre Area designated area. Some of the lands designated as “Town Centre Area – Exception” comprise parcels of land with existing buildings on them such as the former A&P store site; the former Keys Public School and the A.E.C.L garage site. The intent of the designation is to allow all the land uses currently permitted in the “Town Centre Area” designation, but also an additional wider range of uses of a technical, residential and light industrial nature.

(2) Permitted Uses

The following uses may be permitted, subject to the relevant policies of this Plan:

- All the uses permitted within the Town Centre Area designation;
- High tech research facilities;
- Light manufacturing/assembly within a wholly contained building with no outside storage;
- Places of entertainment, cultural tourism, health/fitness facilities and education including theatres, cultural centres, museums, archives, tourist facilities, daycare facilities and schools; parks and open space;
- Restaurants;
- Commercial lodging;
- Seniors housing;
- Medium and high density residential uses

(3) Policies

- Council will encourage new development and redevelopment of the lands located within the Town Centre – Exception area that supports and reinforces the function of the Town Centre Area as a place to work, shop, recreate and visit;
- The Town Centre Area – Exception area provides a significant opportunity to create a much broader range of housing types and tenure in the community, which could be attractive to a large age cohort that is aging and downsizing;

- All new development and redevelopment within this designation shall meet the Design Criteria of Section 3.5(2)(a) and be architecturally compatible with the Town Hall;
- Compatibility between adjacent uses within the designation and abutting designations shall be considered in the design of any new uses. Consideration of landscaping, buffering, location of parking areas in interior side and rear yards, tree preservation need to be taken into account in the Site Plan approval process;
- Maintaining and improving pedestrian, wheelchair and bicycle linkages between this designation and the Town Centre Area shall be an important consideration in the approval of projects;
- Projects designed to be energy efficient and oriented to provide maximum solar gain, shall be encouraged;
- Projects which generate large truck traffic, heavy traffic volumes, emit noise, dust and/or odour shall not be permitted.

4.3.5 Town Centre Area-Exception One

4.3.5 (1) Intent

The lands designated “Town Centre Area-Exception One” comprise the lands known as the “Keys Conference Centre”, situated on the shores of the Ottawa River, proximate to the Town Centre. This prime location is intended to become a commercial/residential focal point for new development that focuses on the waterfront and at the same time supports the uses and activities of the Town Centre.

(2) Permitted Uses

- Conference centres
- Recreation facilities
- Commercial accommodations
- Parks and open space
- Medium and high density residential

(3) Policies

The policies of Section 4.3.4 (3) “Town Centre Area – Exception” shall apply.*

Excerpts from the *Provincial Policy Statement, 2005*

Section 2.1 Natural Heritage

2.1.1 Natural features and areas shall be protected for the long term.

2.1.2 The diversity and connectivity of natural features in an area, and the long-term *ecological function* and biodiversity of *natural heritage systems*, should be maintained, restored or, where possible, improved, recognizing the linkages between and among *natural heritage features and areas, surface water features and ground water features*.

2.1.3 *Development and site alteration* shall not be permitted in:

- a) *significant habitat of endangered species and threatened species;*

- b) *significant wetlands* in Ecoregions 5E, 6E and 7E; and
- c) *significant coastal wetlands*.

2.1.4 *Development and site alteration* shall not be permitted in:

- a) *significant wetlands* in the Canadian Shield north of Ecoregions 5E, 6E and 7E;
- b) *significant woodlands* south and east of the Canadian Shield;
- c) *significant valleylands* south and east of the Canadian Shield;
- d) *significant wildlife habitat*; and
- 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*.

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

2.1.6 *Development and site alteration* shall not be permitted on *adjacent lands* to the *natural heritage features and areas* identified in policies 2.1.3, 2.1.4 and 2.1.5 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*.

2.1.7 Nothing in policy 2.1 is intended to limit the ability of existing agricultural uses to continue.

Excerpts from the *Endangered Species Act, 2007*

PROTECTION AND RECOVERY OF SPECIES

Prohibition on killing ect.

9.(1) No person shall,

- a) kill, harm, harass, capture or take a living member of a species that is listed on the Species at Risk in Ontario List as an extirpated, endangered or threatened species;
- b) possess, transport, collect, buy, sell, lease, trade or offer to buy, sell, lease or trade,
 - i) a living or dead member of a species that is listed on the Species at Risk in Ontario List as an extirpated, endangered or threatened species,
 - ii) any part of a living or dead member of a species referred to in subclause (i),
 - iii) anything derived from a living or dead member of a species referred to in subclause (i); or
- c) sell, lease, trade or offer to sell, lease or trade anything that the person represents to be a thing described in subclause (b) (i), (ii) or (iii). 2007, c. 6, s. 9 (1).

Prohibition on damage to habitat, etc.

10.(1) No person shall damage or destroy the habitat of,

- a) a species that is listed on the Species at Risk in Ontario List as an endangered or threatened species; or
- b) a species that is listed on the Species at Risk in Ontario List as an extirpated species, if the species is prescribed by the regulations for the purpose of this clause. 2007, c. 6, s. 10 (1).

Excerpts from the *Species at Risk Act (SARA), 2003*

MEASURES TO PROTECT LISTED WILDLIFE SPECIES

Prohibition on killing, harming, ect.

32.(1) No person shall kill, harm, harass, capture or take an individual of a wildlife species that is listed as an extirpated species, an endangered species or a threatened species.

Prohibition on possession, collection, ect.

32. (2) No person shall possess, collect, buy, sell or trade an individual of a wildlife species that is listed as an extirpated species, an endangered species or a threatened species, or any part or derivative of such an individual.

Prohibition on damage or destruction of residence

33. No person shall damage or destroy the residence of one or more individuals of a wildlife species that is listed as an endangered species or a threatened species, or that is listed as an extirpated species if a recovery strategy has recommended the reintroduction of the species into the wild in Canada.

Excerpts from the *Fisheries Act, 1985*

Section 34.(1)

“fish habitat” means spawning grounds and nursery, rearing, food supply and migration areas on which fish depend directly or indirectly in order to carry out their life processes;

Section 35. Harmful alteration, etc., of fish habitat

(1) No person shall carry on any work or undertaking that results in the harmful alteration, disruption or destruction of fish habitat.

Alteration, etc., authorized

(2) No person contravenes subsection (1) by causing the alteration, disruption or destruction of fish habitat by any means or under any conditions authorized by the Minister or under regulations made by the Governor in Council under this Act.

R.S., c. F-14, s. 31; R.S., c. 17(1st Supp.), s. 2; 1976-77, c. 35, s. 5

Excerpts from the *Migratory Birds Convention Act, 1994*

PURPOSE

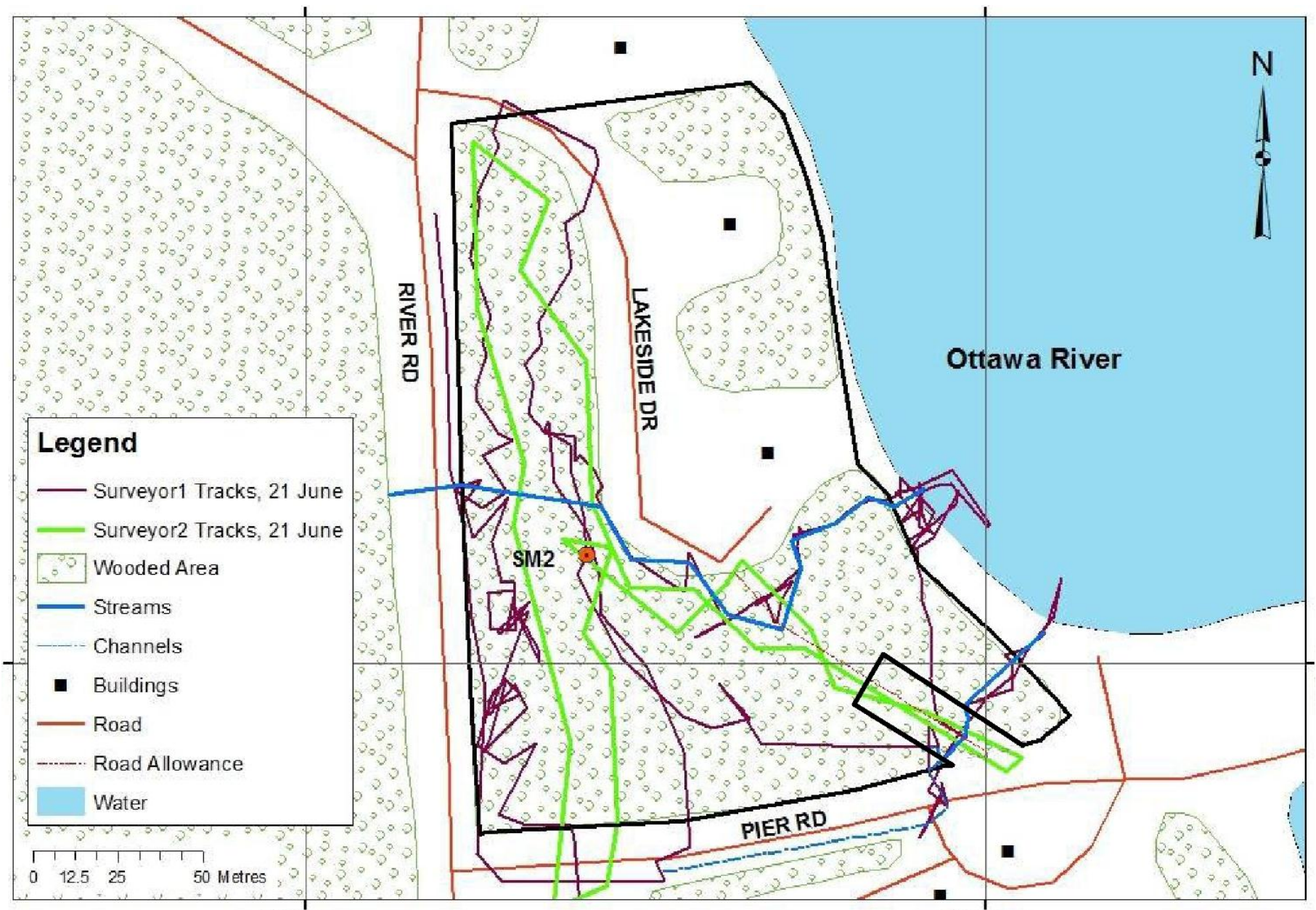
4. The purpose of this Act is to implement the Convention by protecting and conserving migratory birds — as populations and individual birds — and their nests.

REGULATIONS

12.1.h) The Governor in Council may make any regulations that the Governor in Council considers necessary to carry out the purposes and provisions of this Act and the Convention,

including regulations for prohibiting the killing, capturing, injuring, taking or disturbing of migratory birds or the damaging, destroying, removing or disturbing of nests

APPENDIX A: Map of Survey Efforts for Keys Centre Property EA



APPENDIX B: List of Confirmed and Potential Species for Keys Centre Property EA Study Area including Ottawa River

Confirmed Species					
Group	Common Name	Scientific Name	Group	Common Name	Scientific Name
Trees	Ash, Black	<i>Fraxinus nigra</i>	Birds	Bittern, American	<i>Botaurus lentiginosus</i>
	Ash, Red	<i>Fraxinus pensylvanica</i>		Bittern, Least	<i>Ixobrychus exilis</i>
	Ash, White	<i>Fraxinus americana</i>		Blackbird, Red-winged	<i>Agelaius phoeniceus</i>
	Aspen, Largetooth	<i>Populus grandidentata</i>		Bluebird, Eastern	<i>Sialia sialis</i>
	Aspen, Trembling	<i>Populus tremuloides</i>		Cardinal, Northern	<i>Cardinalis cardinalis</i>
	Basswood, American	<i>Tilia americana</i>		Catbird, Gray	<i>Dumetella carolinensis</i>
	Beech, American	<i>Fagus grandifolia</i>		Chickadee, Black-capped	<i>Poecile atricapillus</i>
	Birch, White	<i>Betula papyrifera</i>		Crow, American	<i>Corvus brachyrhynchos</i>
	Birch, Yellow	<i>Betula alleghaniensis</i>		Dove, Mourning	<i>Zenaida macroura</i>
	Butternut	<i>Juglans cinerea</i>		Duck, American Black	<i>Anas rubripes</i>
	Cedar, Eastern White	<i>Thuja occidentalis</i>		Duck, Wood	<i>Aix sponsa</i>
	Cherry, Black	<i>Prunus serotina</i>		Eagle, Bald	<i>Haliaeetus leucocephalus</i>
	Elm, White	<i>Ulmus americana</i>		Eagle, Golden	<i>Aquila chrysaetos</i>
	Fir, Balsam	<i>Abies balsamea</i>		Finch, Purple	<i>Carpodacus purpureus</i>
	Hemlock, Eastern	<i>Tsuga canadensis</i>		Flicker, Northern	<i>Colaptes auratus</i>
	Ironwood	<i>Ostrya virginiana</i>		Goldeneye, Common	<i>Bucephala clangula</i>
	Maple, Freeman	<i>Acer x freemanii</i>		Goldfinch, American	<i>Spinus tristis</i>
	Maple, Red	<i>Acer rubrum</i>		Goose, Canada	<i>Branta canadensis</i>
	Maple, Silver	<i>Acer saccharinum</i>		Goshawk, Northern	<i>Accipiter gentilis</i>
	Maple, Sugar	<i>Acer saccharum</i>		Grackle, Common	<i>Quiscalus quiscula</i>
	Oak, Bur	<i>Quercus macrocarpa</i>		Grosbeak, Evening	<i>Coccothraustes vespertinus</i>
	Oak, Red	<i>Quercus rubra</i>		Grosbeak, Pine	<i>Pinicola enucleator</i>
	Pine, Jack	<i>Pinus banksiana</i>		Grosbeak, Rose-breasted	<i>Pheucticus ludovicianus</i>
	Pine, Red	<i>Pinus resinosa</i>		Grouse, Ruffed	<i>Bonasa umbellus</i>
	Pine, White	<i>Pinus strobus</i>		Gull, Ring-billed	<i>Larus delawarensis</i>
	Poplar, Balsam	<i>Populus balsamifera</i>		Hawk, Broad-winged	<i>Buteo platypterus</i>
	Spruce, Black	<i>Picea mariana</i>		Hawk, Red-shouldered	<i>Buteo lineatus</i>
	Spruce, White	<i>Picea glauca</i>		Hawk, Red-tailed	<i>Buteo jamaicensis</i>
Tamarack	<i>Larix laricina</i>	Hawk, Sharp-shinned	<i>Accipiter striatus</i>		

APPENDIX B: List of Confirmed and Potential Species for Keys Centre Property EA Study Area including Ottawa River

Other Flora	Alder, Speckled	<i>Alnus incana ssp. rugosa</i>	Birds (cont'd)	Heron, Black-crowned Night-	<i>Nycticorax nycticorax</i>
	Anemone, Canada	<i>Anemone canadensis</i>		Heron, Great Blue	<i>Ardea herodias</i>
	Arbutus, Trailing	<i>Epigaea repens</i>		Hummingbird, Ruby-throated	<i>Archilochus colubris</i>
	Arrow-wood, Downy	<i>Viburnum rafinesquianum</i>		Jay, Blue	<i>Cyanocitta cristata</i>
	Aster var.	<i>Aster spp.</i>		Jay, Gray	<i>Perisoreus canadensis</i>
	Aster, Bog	<i>Aster nemoralis</i>		Junco, Dark-eyed	<i>Junco hyemalis</i>
	Aster, Ciliolate	<i>Aster ciliolatus</i>		Kestrel, American	<i>Falco sparverius</i>
	Aster, Large-leaved	<i>Aster macrophyllus</i>		Killdeer	<i>Charadrius vociferus</i>
	Aster, Panicked	<i>Symphotrichum lanceolatum</i>		Kingbird, Eastern	<i>Tyrannus tyrannus</i>
	Aster, Purple-stemmed	<i>Aster puniceus</i>		Kingfisher, Belted	<i>Ceryle alcyon</i>
	Aster, Tall Flat-topped	<i>Aster umbellatus</i>		Loon, Common	<i>Gavia immer</i>
	Avens, Large-leaved	<i>Geum macrophyllum</i>		Mallard	<i>Anas platyrhynchos</i>
	Avens, Yellow	<i>Geum aleppicum</i>		Merganser, Common	<i>Mergus merganser</i>
	Baneberry var.	<i>Actaea spp.</i>		Merganser, Hooded	<i>Lophodytes cucullatus</i>
	Bedstraw, Fragrant	<i>Galium triflorum</i>		Nighthawk, Common	<i>Chordeiles minor</i>
	Bedstraw, Rough	<i>Galium asprellum</i>		Nuthatch, Red-breasted	<i>Sitta canadensis</i>
	Beggar-ticks, Nodding	<i>Bidens cernuus</i>		Nuthatch, White-breasted	<i>Sitta carolinensis</i>
	Bellflower, Large-flowered	<i>Uvularia grandiflora</i>		Oriole, Baltimore	<i>Icterus galbula</i>
	Betony, Canada Wood	<i>Pedicularis canadensis</i>		Ovenbird	<i>Seiurus aurocapilla</i>
	Bindweed, Black-fringed	<i>Polygonum cilinode</i>		Owl, Barn	<i>Tyto alba</i>
	Binweed, Low	<i>Calystegia spithamea</i>		Owl, Barred	<i>Strix varia</i>
	Bishop's Cap	<i>Mitella diphylla</i>		Owl, Great Horned	<i>Bubo virginianus</i>
	Blackberry, Common	<i>Rubus allegheniensis</i>		Owl, Northern Saw-whet	<i>Aegolius acadicus</i>
	Blite, Strawberry	<i>Chenopodium capitatum</i>		Phoebe, Eastern	<i>Sayornis phoebe</i>
	Blue Joint, Canada	<i>Calamagrostis canadensis</i>		Raven, Common	<i>Corvus corax</i>
	Blueberry, Low Sweet	<i>Vaccinium angustifolium</i>		Redstart, American	<i>Setophaga ruticilla</i>
	Blueberry, Velvet-leaf	<i>Vaccinium myrtilloides</i>		Robin, American	<i>Turdus migratorius</i>
	Boneset	<i>Eupatorium perfoliatum</i>		Sandpiper, Spotted	<i>Actitis macularia</i>
	British Soldiera	<i>Cladonia cristatella</i>		Sapsucker, Yellow-bellied	<i>Sphyrapicus varius</i>
	Bugleweed, Northern	<i>Lycopus uniflorus</i>		Shrike, Loggerhead	<i>Lanius ludovicianus</i>
		Siskin, Pine	<i>Cardeulis pinus</i>		

APPENDIX B: List of Confirmed and Potential Species for Keys Centre Property EA Study Area including Ottawa River

Other Flora (cont'd)	Bunchberry	<i>Cornus canadensis</i>	Birds (cont'd)	Sparrow, Savannah	<i>Passerculus sandwichensis</i>
	Burdock, Common	<i>Arctium minus</i>		Sparrow, Song	<i>Melospiza melodia</i>
	Butter-and-eggs	<i>Linaria vulgaris</i>		Sparrow, Swamp	<i>Melospiza georgiana</i>
	Bulrush, Torrey's	<i>Schoenoplectus torreyi</i>		Sparrow, White-throated	<i>Zonotrichia albicollis</i>
	Buttercup, Tall	<i>Ranunculus acris</i>		Starling, European	<i>Sturnus vulgaris</i>
	Campion, Bladder	<i>Silene vulgaris</i>		Swallow, Barn	<i>Hirundo rustica</i>
	Cardinal Flower	<i>Lobelia cardinalis</i>		Swallow, Northern Rough-winged	<i>Stelgidopteryx serripennis</i>
	Chamomile, Scentless	<i>Matricaria perforata</i>		Tanager, Scarlet	<i>Piranga olivacea</i>
	Cherry, Choke	<i>Prunus virginiana</i>		Teal, Blue-winged	<i>Anas discors</i>
	Cherry, Pin	<i>Prunus pensylvanica</i>		Teal, Green-winged	<i>Anas crecca</i>
	Chickweed, Mouse-ear	<i>Cerastium fontanum</i>		Thrasher, Brown	<i>Toxostoma rufum</i>
	Chicory	<i>Cichorium intybus</i>		Thrush, Hermit	<i>Catharus guttatus</i>
	Chokeberry, Black	<i>Aronia melanocarpa</i>		Turkey, Wild	<i>Meleagris gallopavo</i>
	Cinquefoil var.	<i>Potentilla spp.</i>		Veery	<i>Catharus fuscescens</i>
	Clover, Red	<i>Trifolium pratense</i>		Vireo, Red-eyed	<i>Vireo olivaceus</i>
	Clover, White	<i>Trifolium repens</i>		Vulture, Turkey	<i>Cathartes aura</i>
	Club-Moss var.	<i>Lycopodium spp.</i>		Warbler, Black-and-White	<i>Mniotilta varia</i>
	Club-moss, Interrupted	<i>Lycopodium annotinum</i>		Warbler, Blackburnian	<i>Setophaga fusca</i>
	Club-moss, Shining	<i>Huperzia lucidula</i>		Warbler, Black-Throated Blue	<i>Setophaga caerulescens</i>
	Columbine, Wild	<i>Aquilegia canadensis</i>		Warbler, Black-Throated Green	<i>Setophaga virens</i>
	Corydalis, Pale	<i>Corydalis sempervirens</i>		Warbler, Chestnut-sided	<i>Setophaga pensylvanica</i>
	Cranberry, Large	<i>Vaccinium macrocarpon</i>		Warbler, Golden-winged	<i>Vermivora chrysoptera</i>
	Cranesbill, Bicknell's	<i>Geranium bicknellii</i>		Warbler, Mourning	<i>Geothlypis philadelphia</i>
	Creeper, Virginia	<i>Parthenocissus vitacea</i>		Warbler, Nashville	<i>Oreothlypis ruficapilla</i>
	Cucumber-root, Indian	<i>Medeola virginiana</i>		Warbler, Orange-crowned	<i>Oreothlypis celata</i>
	Currant var.	<i>Ribes spp.</i>		Warbler, Palm	<i>Setophaga palmarum</i>
	Daisy, Ox-Eye	<i>Leucanthemum vulgare</i>		Warbler, Pine	<i>Setophaga pinus</i>
	Dame's Rocket	<i>Hesperis matronalis</i>		Warbler, Wilson's	<i>Cardellina pusilla</i>
	Dandelion, Common	<i>Taraxacum officinale</i>		Warbler, Yellow	<i>Setophaga petechia</i>
	Day-lily, Orange	<i>Hemerocallis fulva</i>		Warbler, Yellow-rumped	<i>Setophaga coronata</i>
Dewdrop	<i>Dalibarda repens</i>	Waxwing, Cedar	<i>Bombycilla cedrorum</i>		

APPENDIX B: List of Confirmed and Potential Species for Keys Centre Property EA Study Area including Ottawa River

Other Flora (cont'd)	Dogbane, Spreading	<i>Apocynum androsaemifolium</i>	Birds (cont'd)	Whip-poor-will	<i>Caprimulgus vociferus</i>
	Dogwood, Alternate-leaved	<i>Cornus alternifolia</i>		Woodcock, American	<i>Scolopax minor</i>
	Dogwood, Red Osier	<i>Cornus stolonifera</i>		Woodpecker, Black-backed	<i>Picoides arcticus</i>
	Dogwood, Round-leaved	<i>Cornus rugosa</i>		Woodpecker, Downy	<i>Picoides pubescens</i>
	Elder, Red-berried	<i>Sambucus racemosa ssp. pubens</i>		Woodpecker, Hairy	<i>Picoides villosus</i>
	Evening-primrose, Common	<i>Oenothera biennis</i>		Woodpecker, Pileated	<i>Dryocopus pileatus</i>
	Fern, Bracken	<i>Pteridium aquilinum</i>		Woodpecker, Red-headed	<i>Melanerpes erythrocephalus</i>
	Fern, Bulblet	<i>Cystopteris bulbifera</i>		Wood-pewee, Eastern	<i>Contopus virens</i>
	Fern, Cinnamon	<i>Osmunda cinnamomea</i>		Wren, Winter	<i>Troglodytes troglodytes</i>
	Fern, Crested Wood	<i>Dryopteris cristata</i>		Yellowthroat, Common	<i>Geothlypis trichas</i>
	Fern, Interrupted	<i>Osmunda claytoniana</i>			
	Fern, Maidenhair	<i>Adiantum pedatum</i>	Invertebrates	Alderflies	<i>Sialidae spp.</i>
	Fern, Marginal Wood	<i>Dryopteris marginalis</i>		Ants	<i>Formicidae spp.</i>
	Fern, New York	<i>Thelypteris noveboracensis</i>		Aphids/ Plant Lice	<i>Aphididae spp.</i>
	Fern, Northern Beech	<i>Phegopteris connectilis</i>		Bees, Bumble	<i>Bombus spp.</i>
	Fern, Oak	<i>Gymnocarpium dryopteris</i>		Bee, Honey	<i>Apis mellifera</i>
	Fern, Ostrich	<i>Matteuccia struthiopteris</i>		Beetles, Bark/Snout	<i>Curculionidae spp.</i>
	Fern, Royal	<i>Osmunda regalis</i>		Beetles, Carrion	<i>Silphidae spp.</i>
	Fern, Sensitive	<i>Onoclea sensibilis</i>		Beetles, Click	<i>Elateridae sp</i>
	Fern, Spinulose Wood	<i>Dryopteris carthusiana</i>		Beetles, Crawling Water	<i>Halipilus spp.</i>
	Fireweed	<i>Epilobium angustifolium</i>		Beetles, Darkling	<i>Tenebrionidae spp.</i>
	Fleabane, Eastern Daisy	<i>Erigeron annuus</i>		Beetles, Ground	<i>Carabidae spp.</i>
	Fleabane, Philadelphia	<i>Erigeron philadelphicus</i>		Beetles, Lady	<i>Coccinellidae spp.</i>
	Foamflower	<i>Tiarella cordifolia</i>		Beetles, Leaf	<i>Chrysomelidae spp.</i>
	Forget-me-not	<i>Myosotis scorpioides</i>		Beetles, Long-horned	<i>Cerambycidae spp.</i>
	Gale, Sweet	<i>Myrica gale</i>		Beetles, Net-winged	<i>Lycidae spp.</i>
	Ginger, Wild	<i>Asarum canadense</i>		Beetles, Rove	<i>Staphylinidae spp.</i>
	Goat's-beard	<i>Tragopogon dubius</i>		Beetles, Scarab	<i>Scarabaeidae spp.</i>
	Goldenrod var.	<i>Solidago spp.</i>		Beetles, Soldier	<i>Cantharidae spp.</i>
	Goldthread	<i>Coptis trifolia</i>		Beetles, Tiger	<i>Cicindelinae spp.</i>
	Grape-woodbine	<i>Parthenocissus inserta</i>		Beetles, Whirligig	<i>Gyrinus spp.</i>

APPENDIX B: List of Confirmed and Potential Species for Keys Centre Property EA Study Area including Ottawa River

Other Flora (cont'd)	Grass var.	<i>Poaceae spp.</i>	Invertebrates (cont'd)	Boatmen, Water	<i>Corixidae spp.</i>
	Grass, Agrostis	<i>Agrostis spp.</i>		Bugs, Assassin	<i>Reduviinae spp.</i>
	Grass, Brome	<i>Bromus spp.</i>		Bugs, Cattail	<i>Chilacis typhae</i>
	Grass, Glyceria	<i>Glyceria spp.</i>		Bugs, Giant Water	<i>Belostomatidae spp.</i>
	Grass, Panicum	<i>Panicum spp.</i>		Bugs, Leafhopper	<i>Cicadellinae spp.</i>
	Grass, Poa	<i>Poa spp.</i>		Bugs, Plant	<i>Miridae spp.</i>
	Grass, Poverty	<i>Danthonia spicata</i>		Bugs, Shield-backed	<i>Scutelleridae spp.</i>
	Grass, Rice-cut	<i>Leersia oryzoides</i>		Bugs, Spittlebugs	<i>Cercopidae spp.</i>
	Grasspink	<i>Calopogon tuberosus</i>		Bugs, Stink	<i>Pentatomidae spp.</i>
	Ground Cedar, Southern	<i>Diphasiastrum digitatum</i>		Bugs, Treehopper	<i>Membracinae spp.</i>
	Ground Pine	<i>Lycopodium dendroideum</i>		Butterflies, Blues/Coppers/Hairstreaks	<i>Lycaenidae spp.</i>
	Hawkweed, Orange	<i>Hieracium aurantiacum</i>		Butterflies, Brush-footed	<i>Nymphalidae spp.</i>
	Hawkweed, Yellow	<i>Hieracium caespitosum</i>		Butterflies, Metalmarks	<i>Rioinidae spp.</i>
	Hawthorn var.	<i>Crataegus spp.</i>		Butterflies, Parnassians/Swallowtails	<i>Papilionidae spp.</i>
	Hazel, Beaked	<i>Corylus cornuta</i>		Butterflies, Sulphurs/Whites/Yellows	<i>Pieridae spp.</i>
	Heal-all	<i>Prunella vulgaris</i>		Caddisflies	<i>Trichoptera spp.</i>
	Helleborine	<i>Epipactus helleborine</i>		Centipede, Soil	<i>Geophilomorpha spp.</i>
	Hepatica, Round-lobed	<i>Hepatica americana</i>		Cicadas	<i>Cicadidae spp.</i>
	Hobblebush, Common	<i>Viburnum alnifolium</i>		Cockroaches, Wood	<i>Parcoblatta spp.</i>
	Hog-peanut	<i>Amphicarpaea bracteata</i>		Crayfish	<i>Cambaridae spp.</i>
	Honeysuckle, Bush	<i>Diervilla lonicera</i>		Crickets, Field/House	<i>Gryllinae spp.</i>
	Honeysuckle, Fly	<i>Lonicera canadensis</i>		Damselflies, Bluets	<i>Enallagma spp.</i>
	Honeysuckle, Glaucus	<i>Lonicera dioica</i>		Damselflies, Jewelwings	<i>Calopteryx spp.</i>
	Honeysuckle, Hairy	<i>Lonicera hirsuta</i>		Damselflies, Narrow-winged	<i>Coenagrionidae spp.</i>
	Horsetail var.	<i>Equisetum spp.</i>		Damselflies, Spreadwings	<i>Lestidae spp.</i>
	Hygrophorus, Vermilion	<i>Hygrophorus miniatus</i>		Dragonflies, Clubtails	<i>Gomphidae spp.</i>
	Iris, Multicolored Blue Flag	<i>Iris versicolor</i>		Dragonflies, Cruisers	<i>Macromiidae spp.</i>
	Ivy, Poison	<i>Toxicodendron radicans</i>		Dragonflies, Darners	<i>Aeshnidae spp.</i>
	Jack-in-the-pulpit, Small	<i>Arisaema triphyllum</i>		Drongflies, Emeralds	<i>Corduliidae spp.</i>
	Joe-Pye Weed, Spotted	<i>Eupatorium maculatum</i>		Dragonflies, Skimmers	<i>Libellulidae spp.</i>
	Juniper, Common	<i>Juniperus communis</i>		Dragonflies, Spiketails	<i>Cordulegastridae spp.</i>

APPENDIX B: List of Confirmed and Potential Species for Keys Centre Property EA Study Area including Ottawa River

Other Flora (cont'd)	Knapweed, Spotted	<i>Centaurea maculosa</i>	Invertebrates (cont'd)	Fireflies	<i>Lampyridae spp.</i>
	Labrador Tea	<i>Ledum groenlandicum</i>		Flies, Black	<i>Simulium spp.</i>
	Lady's-slipper, Pink	<i>Cypripedium acaule</i>		Flies, Blow	<i>Calliphoridae spp.</i>
	Lady's-slipper, Ram's-head	<i>Cypripedium arietinum</i>		Flies, Deer	<i>Chrysops spp.</i>
	Laurel, Bog	<i>Kalmia polifolia</i>		Flies, Horse	<i>Tabanus spp.</i>
	Laurel, Sheep	<i>Kalmia angustifolia</i>		Flies, Phantom Crane	<i>Ptychopteridae spp.</i>
	Leatherleaf	<i>Chamaedaphne calyculata</i>		Flies, Syrphid	<i>Syrphidae spp.</i>
	Leatherwood	<i>Dirca palustris</i>		Grasshoppers, Band-winged	<i>Oedipodinae spp.</i>
	Lettuce, Wild	<i>Lactuca spp.</i>		Grasshoppers, Slant-faced	<i>Acridinae spp.</i>
	Lichen, Cladonia	<i>Cladonia spp.</i>		Grasshoppers, Spur-throated	<i>Melanoplinae spp.</i>
	Lichen, Diplotomma	<i>Diplotomma epipolium</i>		Hornets/Yellowjackets	<i>Vespinae spp.</i>
	Lichen, Lecidella	<i>Lecidella spp.</i>		Mayflies	<i>Ephemeroptera spp.</i>
	Lichen, Leptogium	<i>Leptogium spp.</i>		Millipedes	<i>Diplopoda spp.</i>
	Lichen, Monk's Hood	<i>Hypogymnia physodes</i>		Mollusc, Ambleminae	<i>Ambleminae spp.</i>
	Lichen, Parmelia	<i>Parmelia spp.</i>		Mollusc, Anodontinae	<i>Anodontinae spp.</i>
	Lichen, Peltigera	<i>Peltigera spp.</i>		Mollusc, Lampsilinae	<i>Lampsilinae spp.</i>
	Lichen, Powder Horn	<i>Cladonia multiformis</i>		Mosquitoes	<i>Culicid spp.</i>
	Lichen, Powdered Funnel	<i>Cladonia coniocraea</i>		Moths, Bomolocha	<i>Hypeninae spp.</i>
	Lichen, Reindeer	<i>Cladina rangiferina</i>		Moths, Crambid Snout	<i>Crambidae spp.</i>
	Lichen, Woolly-foam	<i>Stereocaulon tomentosum</i>		Moths, Cutworm/ Darts	<i>Noctuidae spp.</i>
	Lichen, Xanthoparmelia	<i>Xanthoparmelia sp.</i>		Moths, Erebiniae	<i>Erebinae spp.</i>
	Lily, Blue Bead	<i>Clintonia borealis</i>		Moths, False Owlet/Hooktip	<i>Drepanidae spp.</i>
	Lily, Red	<i>Lilium philadelphicum</i>		Moths, Flower	<i>Schinia spp.</i>
	Lily, Trout	<i>Erythronium americanum</i>		Moths, Geometrid	<i>Geometridae spp.</i>
	Liverwort, Snake	<i>Conocephalum conicum</i>		Moths, Ghost	<i>Hepialidae spp.</i>
	Liverwort, Three-lobed	<i>Bazzania trilobata</i>		Moths, Lappet/ Tents	<i>Lasiocampidae spp.</i>
	Loosestrife, Fringed	<i>Lysimachia ciliata</i>		Moths, Leaf-skeletonizer	<i>Zygaenidae spp.</i>
	Loosestrife, Purple	<i>Lythrum salicaria</i>		Moths, Lichen	<i>Lithosiini spp.</i>
	Maple, Mountain	<i>Acer spicatum</i>		Moths, Litter	<i>Herminiinae spp.</i>
	Maple, Striped	<i>Acer pensylvanicum</i>		Moths, Prominent	<i>Notodontidae spp.</i>
	Mayflower, Canada	<i>Maianthemum canadense</i>		Moths, Pyralid	<i>Pyralidae spp.</i>

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Other Flora (cont'd)	Meadow-rue	<i>Thalictrum sp.</i>	Invertebrates (cont'd)	Moths, Silkworm	<i>Bombycidae spp.</i>
	Meadow-sweet, Broad-leaved	<i>Spiraea latifolia</i>		Moths, Sphinx	<i>Sphingidae spp.</i>
	Meadow-sweet, Narrow-leaved	<i>Spiraea alba</i>		Moths, Swallowtail	<i>Uraniidae spp.</i>
	Milkweed, Common	<i>Asclepias syriaca</i>		Moths, Tiger	<i>Arctiini spp.</i>
	Mint var.	<i>Mentha spp.</i>		Moths, Tortricid	<i>Tortricidae spp.</i>
	Mint, Wild	<i>Mentha arvensis</i>		Moths, Underwing	<i>Catocala spp.</i>
	Mitrewort, Naked	<i>Mitella nuda</i>		Sawflies	<i>Symphyta spp.</i>
	Mniums	<i>Mnium spp.</i>		Skippers	<i>Hesperiidae spp.</i>
	Moss, Creeping	<i>Pleurocraous spp.</i>		Slugs, Arion	<i>Arion spp.</i>
	Moss, Hair Cap	<i>Polytrichum spp.</i>		Slugs, Phylomycid	<i>Phylomicidae spp.</i>
	Moss, Peat	<i>Sphagnum spp.</i>		Snails, Banded	<i>Cepaea spp.</i>
	Moss, Upright	<i>Acrocarpous spp.</i>		Snails, Mystery	<i>Viviparidae spp.</i>
	Mountain Ash, Showy	<i>Sorbus decora</i>		Snails, Pond	<i>Lymnaeidae spp.</i>
	Mountain Ash, American	<i>Sorbus americana</i>		Snails, Tadpole	<i>Physidae spp.</i>
	Mountain Ash, European	<i>Sorbus aucuparia</i>		Spiders, Crab	<i>Thomisidae spp.</i>
	Mountain-holly	<i>Nemopanthus mucronatus</i>		Spiders, Cobweb	<i>Theridiidae spp.</i>
	Mullein, Common	<i>Verbascum thapsus</i>		Spiders, Fishing/Nursery Web	<i>Pisauridae spp.</i>
	Mushrooms, Chantrelle	<i>Cantharellus spp.</i>		Spiders, Funnel-web	<i>Agelenidae spp.</i>
	Mushrooms, Inocybe	<i>Inocybe sp.</i>		Spiders, Jumping	<i>Salticidae spp.</i>
	Mushrooms, Russula	<i>Russula spp.</i>		Spiders, Orb-weavers	<i>Araneidae spp.</i>
	Nannyberry	<i>Viburnum lentago</i>	Spiders, Wolf	<i>Lycosidae spp.</i>	
	Nightshade, Bittersweet	<i>Solanum dulcamara</i>	Stoneflies	<i>Plecoptera spp.</i>	
	Nightshade, Enchanter's	<i>Circaea lutetiana</i>	Water Striders	<i>Gerridae spp.</i>	
	Nightshade, Small Enchanter's	<i>Circaea alpina</i>	Woodlice	<i>Oniscidea spp.</i>	
	Old Man's Beard	<i>Usnea spp.</i>			
	Orchis, Northern Green	<i>Platanthera hyperborea</i>	Amphibians	Bullfrog, American	<i>Rana catesbeiana</i>
	Partridgeberry	<i>Mitchella repens</i>		Frog, Gray Tree	<i>Hyla versicolor</i>
	Pinedrops, Woodland	<i>Pterospora andromedea</i>		Frog, Green	<i>Rana clamitans</i>
	Pipe, Indian	<i>Monotropa uniflora</i>		Frog, Mink	<i>Rana septentrionalis</i>
	Pixie Cup, False	<i>Cladonia chlorophaea</i>		Frog, Northern Leopard	<i>Rana pipiens</i>
	Plantain, Common	<i>Plantago major</i>		Frog, Pickerel	<i>Lithobates palustris</i>

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Other Flora (cont'd)	Polygala, Fringed	<i>Polygala paucifolia</i>	Amphibians (cont'd)	Frog, Wood	<i>Rana sylvatica</i>
	Polypody, Common	<i>Polypodium virginianum</i>		Newt, Eastern	<i>Notophthalmus viridescens</i>
	Prince's Pine	<i>Chimaphila umbellata ssp.cisatlantica</i>		Peeper, Spring	<i>Pseudacris crucifer</i>
	Pussytoes, Field	<i>Antennaria neglecta</i>		Salamander, Red-backed	<i>Plethodon cinereus</i>
	Pyrola var.	<i>Pyrola spp.</i>		Toad, American	<i>Bufo americanus</i>
	Ragweed, Common	<i>Ambrosia artemisiifolia</i>			
	Raisin, Northern Wild	<i>Viburnum cassinoides</i>	Mammals	Bat, Big Brown	<i>Eptesicus fuscus</i>
	Raspberry, Dwarf	<i>Rubus pubescens</i>		Bat, Little Brown	<i>Myotis lucifugus</i>
	Raspberry, Flowering	<i>Rubus odoratus</i>		Bat, Northern Long-eared	<i>Myotis septentrionalis</i>
	Raspberry, Wild Red	<i>Rubus idaeus spp. malanolasius</i>		Bat, Small-footed	<i>Myotis leibii</i>
	Rattlesnake-root var.	<i>Prenanthes spp.</i>		Bear, Black	<i>Ursus americanus</i>
	Redtop	<i>Agrostis gigantea</i>		Beaver	<i>Castor canadensis</i>
	Rice, Wild	<i>Zizania palustris</i>		Chipmunk, Eastern	<i>Tamias striatus</i>
	Rocket, Yellow	<i>Barbarea vulgaris</i>		Coyote	<i>Canis latrans</i>
	Rose, Prickly Wild	<i>Rosa acicularis ssp. sayi</i>		Deer, White-tailed	<i>Odocoileus virginianus</i>
	Rose, Smooth Wild	<i>Rosa blanda</i>		Fisher	<i>Martes pennanti</i>
	Rye	<i>Secale cereale</i>		Fox, Red	<i>Vulpes vulpes</i>
	Sarsaparilla, Bristly	<i>Aralia hispida</i>		Groundhog	<i>Marmota monax</i>
	Sarsaparilla, Wild	<i>Aralia nudicaulis</i>		Hare, Snowshoe	<i>Lepus americanus</i>
	Scirpus var.	<i>Scirpus spp.</i>		Moose	<i>Alces alces</i>
Scouring Rush, Dwarf	<i>Equisetum scirpoides</i>	Mouse, Deer		<i>Peromyscus maniculatus</i>	
Sedges var.	<i>Cyperacaea spp.</i>	Mouse, Meadow Jumping	<i>Zapus hudsonius</i>		
Sedges, Carex	<i>Carex spp.</i>	Muskrat	<i>Ondatra zibethicus</i>		
Serviceberry	<i>Amelanchier sp.</i>	Mammals (cont'd)	Otter, River	<i>Lontra canadensis</i>	
Shepherd's-purse	<i>Capsella bursa-pastoris</i>		Pipistrelle, Eastern	<i>Pipistrellus subflavus</i>	
Snakeroot, Black	<i>Sanicula marilandica</i>		Porcupine	<i>Erethizon dorsatum</i>	
Snowberry	<i>Symphoricarpos alba</i>		Raccoon	<i>Procyon lotor</i>	
Solomon's Seal, False	<i>Maianthemum racemosum</i>		Skunk, Striped	<i>Mephitis mephitis</i>	
Solomon's Seal, Hairy	<i>Polygonatum pubescens</i>		Squirrel, Eastern Grey	<i>Sciurus carolinensis</i>	
Sow-thistle, Common	<i>Sonchus oleraceus</i>		Squirrel, Red	<i>Tamiasciurus hudsonicus</i>	
Spikenard	<i>Aralia racemosa</i>		Vole, Meadow	<i>Microtus pennsylvanicus</i>	

APPENDIX B: List of Confirmed and Potential Species for Keys Centre Property EA Study Area including Ottawa River

Other Flora (cont'd)	Spleenwort, Silvery	<i>Athyrium thelypteroides</i>		Wolf, Eastern	<i>Canis lupus lycaon</i>
	Spurge, Cypress	<i>Euphorbia cyparissias</i>			
	Spurge, Wood	<i>Euphorbia commutata</i>	Reptiles	Gartersnake, Eastern	<i>Thamnophis sirtalis</i>
	St. John's Wort, Common	<i>Hypericum perforatum</i>		Milksnake	<i>Lampropeltis triangulum</i>
	Starflower	<i>Trientalis borealis</i>		Snake, Northern Water	<i>Nerodia sipedon sipedon</i>
	Strawberry, Barren-ground	<i>Waldsteinia fragarioides</i>		Snake, Red-bellied	<i>Storeria occipitomaculata</i>
	Strawberry, Common	<i>Fragaria virginiana</i>		Snake, Northern Ring-necked	<i>Diadophis punctatus</i>
	Strawberry, Woodland	<i>Fragaria vesca ssp. americana</i>		Turtle, Painted	<i>Chrysemys picta</i>
	Sumac, Staghorn	<i>Rhus typhina</i>			
	Swamp Candles	<i>Lysimachia terrestris</i>	Fish	Bass, Largemouth	<i>Micropterus salmoides</i>
	Sweet-fern	<i>Comptonia peregrina</i>		Bass, Rock	<i>Ambloplites rupestris</i>
	Thistle, Bull	<i>Cirsium vulgare</i>		Bass, Smallmouth	<i>Micropterus dolomieu</i>
	Thistle, Canada	<i>Cirsium arvense</i>		Bullhead, Yellow	<i>Ictalurus natalis</i>
	Thistle, Swamp	<i>Cirsium muticum</i>		Burbot	<i>Lota lota</i>
	Tick-trefoil, Showy	<i>Desmodium canadense</i>		Carp, Common	<i>Cyprinus carpio</i>
	Timothy	<i>Phleum pratense</i>		Catfish, Channel	<i>Ictalurus punctatus</i>
	Toadflax, Batard	<i>Comandra umbellata</i>		Chub, Creek	<i>Semotilus atromaculatus</i>
	Touch-me-not, Spotted	<i>Impatiens capensis</i>		Dace, Longnose	<i>Rhinichthys cataractae</i>
	Trillium, Red	<i>Trillium erectum</i>		Dace, Northern Redbelly	<i>Phoxinus eos</i>
	Trillium, White	<i>Trillium grandiflorum</i>		Dace, Pearl	<i>Semotilus margarita</i>
	Twinflower	<i>Linnaea borealis</i>		Darter, Iowa	<i>Etheostoma exile</i>
	Twisted-stalk, Rose	<i>Streptopus roseus</i>		Darter, Johnny	<i>Etheostoma nigrum</i>
	Vervain, Blue	<i>Verbena hastata</i>		Darter, Tessellated	<i>Etheostoma olmstedii</i>
	Vetch, Cow	<i>Vicia cracca</i>		Drum, Freshwater	<i>Aplodinotus grunniens</i>
	Viburnum, Maple-leaved	<i>Viburnum acerifolium</i>		Eel, American	<i>Anguilla rostrata</i>
	Violet var.	<i>Viola spp.</i>		Fallfish	<i>Semotilus corporalis</i>
	Viper's-bugloss	<i>Echium vulgare</i>		Gar, Longnose	<i>Lepisosteus osseus</i>
	Virgin's-bower, Purple	<i>Cleamatis verticillaris</i>		Herring, Lake	<i>Coregonus artedii</i>
	Willow var.	<i>Salix spp.</i>		Killfish, Banded	<i>Fundulus diaphanous</i>
	Winterberry-holly	<i>Illex verticala</i>		Lamprey, Silver	<i>Ichthyomyzon unicuspis</i>
Wintergreen	<i>Gaultheria procumbens</i>	Logperch		<i>Percina caprodes</i>	

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Other Flora (cont'd)	Wintergreen, One-sided	<i>Orthilia secunda</i>	Fish (cont'd)	Minnow, Brassy	<i>Hybognathus hankinsoni</i>
	Wood-sorrel, Upright	<i>Oxalis acetosella ssp. montana</i>		Minnow, Fathead	<i>Pimephales promelas</i>
	Yew, Canada	<i>Taxus canadensis</i>		Mooneye	<i>Hiodon tergisus</i>
	Yarrow	<i>Achillea millefolium</i>		Muskellunge	<i>Esox masquinongy</i>
Aquatics	Arrowhead, Broad-leaved	<i>Sagittaria latifolia</i>	Perch, Yellow	<i>Perca falvescens</i>	
	Arrowhead, Grass-leaved	<i>Sagittaria graminea</i>	Pike, Northern	<i>Esox lucius</i>	
	Arrowhead, Stiff	<i>Sagittaria rigida</i>	Pumpkinseed	<i>Lepomis gibbosus</i>	
	Bulrush, River	<i>Scirpus fluviatilis</i>	Redhorse, River	<i>Moxostoma carinatum</i>	
	Bur-reed, Floating	<i>Sparganium fluctuans</i>	Redhorse, Shorthead	<i>Moxostoma macrolepidotum</i>	
	Calla, Wild	<i>Calla palustris</i>	Redhorse, Silver	<i>Moxostoma anisurum</i>	
	Cattail, Common	<i>Typha latifolia</i>	Sauger	<i>Stizostedion canadense</i>	
	Dock, Great Water	<i>Rumex orbiculatus</i>	Sculpin var.	<i>Cottus spp.</i>	
	Duckweed var.	<i>Lemna spp.</i>	Shiner, Blackchin	<i>Notropis heterodon</i>	
	Lobelia, Water	<i>Lobelia dortmanna</i>	Shiner, Bluntnose	<i>Pimephales notatus</i>	
	Pipewort, Common	<i>Eriocaulon aquaticum</i>	Shiner, Emerald	<i>Notropis atherinoides</i>	
	Plantain, Shore	<i>Littorella americana</i>	Shiner, Golden	<i>Notemigonus crysoleucas</i>	
	Plantain, Water	<i>Alisma plantago-aquatica</i>	Shiner, Mimic	<i>Notropis volucellus</i>	
	Pond-lily, Yellow	<i>Nuphar variegatum</i>	Shiner, Rosyface	<i>Notropis rubellus</i>	
	Pondweed var.	<i>Potamogeton sp.</i>	Shiner, Sand	<i>Notropis stramineus</i>	
	Reed, Common	<i>Phragmites australis</i>	Shiner, Spottail	<i>Notropis hudsonius</i>	
	Rush, Soft	<i>Juncus effusus</i>	Smelt, Rainbow	<i>Osmerus mordax</i>	
	Spikerush, Marsh	<i>Eleocharis palustris</i>	Stickleback, Brook	<i>Culea inconstans</i>	
	Spikerush, Needle	<i>Eleocharis acicularis</i>	Stickleback, Ninespice	<i>Pungitius pungitius</i>	
	St. Johnswort, Fraser's Marsh	<i>Triadenum fraseri</i>	Stickleback, Threespine	<i>Gasterosteus aculeatus</i>	
	Starwort, Submerged Water	<i>Callitriche hermaphroditica</i>	Sturgeon, Lake	<i>Acipenser fulvescens</i>	
	Tape Grass	<i>Vallisneria americana</i>	Sucker, Longnose	<i>Catostomus catostomus</i>	
	Water-lily, White	<i>Nymphaea odorata</i>	Sucker, White	<i>Catostomus commersoni</i>	
	Water-shield	<i>Brasenia schreberi</i>	Trout, Lake	<i>Salvelinus namaycush</i>	
		Trout, Rainbow	<i>Salmo gairdneri</i>		
		Walleye	<i>Stizostedion vitreum</i>		
		Whitefish, Lake	<i>Coregonus clupeaformis</i>		