SCOPED ENVIRONMENTAL IMPACT STUDY

149 SIDE ROAD 18
FERGUS
TOWNSHIP OF CENTRE WELLINGTON
COUNTY OF WELLINGTON, ONTARIO

AUGUST 20, 2021



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INTRODUCTION

This Environmental Impact Statement (EIS) is in support of proposed severance applications for small residential development in the Township of Centre Wellington (Fergus), Ontario.

This document has been scoped to focus on the subject lands, where severances are proposed, at the request of the proponent.

The landowner, RSR inc. seeks to sever an existing lot in order to create the following:

- A 11.03 m lot suitable for the establishment of a new, single detached dwelling;
- A 12.2 m lot that would include the existing single detached dwelling; and
- A 15.4 m lot that would be suitable for a semi-detached residence or single detached dwelling.

FIGURES 1-A and 1-B are Severance Sketch diagrams that illustrate the subject land and the proposed lands to be severed.

SUBJECT LAND

The subject land is located at 149 Sideroad 18 (Registered Plan 87, Part of Lot 9 and 10) Former Township of Nichol, now Township of Centre Wellington (Fergus), County of Wellington.

The subject land is approximately 0.42 ha in size with frontage of +/- 36.6 m and a depth of +/- 115.0 m.

The subject land includes an existing brick bungalow that is used as a single detached dwelling. This is setback approximately 20 m from Sideroad 18.

DESCRIPTION OF SUBJECT LAND AND ADJACENT PROPERTIES

The subject land is dry, terrestrial and drains across neighboring lands to the west (into a largely natural cedar swamp and to the southeast into a partially forested residential lot. The subject land includes a coniferous hedgerow planted with 5 to 7 rows of White Pine, White Spruce and White Pine trees the length of the east side which is entirely forested. There are many non-native horticultural herbaceous species planted in the north end at Sideroad 18. The west edge of the site is partly vegetated with native Eastern White Cedar and Crack Willow. The rear yard is mainly turf grass with patches of old field species and planted horticultural herbaceous species.

To the east is a private residence at 135 Sideroad 18 on a separate lot which is also raised and dry. The coniferous hedgerow extends onto this property but consists mainly of Scots Pine and White Spruce. Much of the abutting lands to the easts consist of residential lawns and gardens. A small forested area extends to the southeast of the subject property.

To the west is a private residence which is under construction at 157 Sideroad 18. This lot is relatively large at 1.91 ha and consists primarily of Core Greenlands (PSW - wetland). This wetland portion is a densely forested Eastern Cedar swamp and biodiverse with many wetland species. A stream runs through this lot and can be seen at the intersection of the Beatty Line and Sideroad 18. There is a raised, terrestrial area located in the southeast portion of this lot (this is the construction site) which is grassed and currently disturbed by construction activities. An existing gravel driveway, located 2-3 meters east of the wetland, provides access to the rear of

the lot where the house and shed are located. Future underground services (water/sewer/natural gas/hydro) will be installed between the driveway and the subject property.

OFFICIAL PLAN DESIGNATION

The subject land are designated Residential. Core Greenlands are identified west of the property (PSW wetland located on 157 Sideroad 18) and Greenlands are mapped to the south. (see Official Plan Designation – Figure 2).

ZONING

The subject land is zoned R1A.70.1 with an Environmental Protection Overlay (see Zoning map – Figure 3). The overlay appears to relate to the TAGM1 Conifer Plantation which is located along the eastern property line. It is noted that this feature is not designated as Greenlands in the County Official Plan.

The Environmental Protection Overlay is described as follows:

"This By-law also provides for an "Environmental Protection Overlay". The Environmental Protection Overlay corresponds to the Greenlands designation according to the County Official Plan, as well as the GRCA regulated area limits (where mapping is available). This is not a separate zone but an overlay that will indicate to property owners and the zoning administrators that a physical feature is present that may require further review or permissions prior to development approvals or the issuance of a building permit. The identification of Greenlands features in a zoning by-law is optional according to the County Official Plan.

2.6.3.5 The Environmental Protection (EP) Zone and Environmental Protection Overlay boundaries identified on the schedules to this By-law are intended to generally identify the location of potentially hazardous environmental features, or natural environment features that must be protected from development. During review of development applications and building permit applications, if necessary, the boundaries of the EP zone or overlay shall be more precisely determined in consultation with the Conservation Authority or other agencies having jurisdiction in the area. Where detailed resource mapping and/or site inspection results in a reinterpretation of the limits of the EP zone or overlay boundary, a zoning amendment will not be required, and all requirements of this by-law shall be reviewed relative to the revised interpretation of the township of Centre Wellington Zoning By-law (February, 2018) Part 2 – Administration 2-5 EP Zone boundary, including any applicable setbacks. The uses and regulations of the adjacent on the same lot shall apply. Where a permit has been issued by the Conservation Authority, any provisions as set out in the permit shall also apply and shall supercede the zoning provisions where more restrictive.

ADJACENT DEVELOPMENT

There is active residential development on the west abutting lot (157 Sideroad18). This lot was recently created through severance and is now under construction for the purpose of creating a new single detached residence. The property also includes an existing shed. The house at 157 Sideroad 18 is to be fully serviced (municipal water/sewer) and an existing lane is being used to gain access to the building envelope at the rear of the property. The approval of this new lot was based in part by an EIS that supported the approval of the proposed consent. All activities relate

to the construction and servicing of the residence at 157 Sideroad 18 are located closer to the wetland to the west and local natural heritage features than the proposed undertaking of RSR Inc. Existing flagging of the wetland perimeter can be seen along the eastern limit of the wetland on 157 Sideroad 18.

To the north of the subject land is a recently developed, mixed residential subdivision that includes single detached dwellings, semi-detached dwellings and row houses. As part of the development of this subdivision a stormwater management facility was constructed and road/servicing improvements were completed. The overall impact of this development on the subject properties was that municipal services, including water, sewer, storm sewer, curb/gutter and sidewalks were installed directly in front of the site.

Further to the west at the intersection of the Beatty Line and Sideroad 18 more substantial development has been approved. The most recent of these developments is a 71-unit apartment building with 16 semi-detached dwellings.

To the south of the subject land a proposed multi-unit residential condominium project is in the process of being reviewed by the municipality. This infill development is located on the next municipal road south of the subject land (Sideroad 19) and is well-separated from the subject land.

PROPOSED DEVELOPMENT

As shown in Figures 1A and 1B the proposed application consists of the following:

- A) Severance to create a new residential lot west of the existing house;
- B) A lot line adjustment to add 2.1 meters of the northwesterly portion of 157 SR 18 to this proposed lot (this will result in the creation of a 11.3-meter-wide x 46.5 meter-deep new lot;
- C) A severance to create a 12.2-meter-wide x 46.5- meter-deep lot that will include the existing house;
- D) A rezoning application to rezone the properties to R2 or similar zone recognizing the smaller lot sizes than the R1A zone that is currently related to the subject land.

The total area of lands retained from the original lot will be 0.34 hectares. The intent of the retained lands is that these will support a side-by-side development for two residential rental units within 11.7 m feet of the Sideroad 18 road allowance,

The remaining portion of the original lot will be L-shaped, will extend to the back of the existing lot (35.0 m) and will be the full width of the existing lot (11.1 m) at the back. At the street front this remaining lot will be the widest (4.5m to 5.1m). The total area of these retained lands is 0.34 hectares.

All houses will be on full municipal services for water and sewer. The shallow well that currently supplies the house at 149 SR 18 and is located on 157 SR 18 will be closed according to requirements of the former landowner.

SERVICING

As shown in Figure 1B infrastructure servicing for hydro, water and sewerage will be to the north with the hook up at Sideroad 18. Both the watermain and sewerage are in place with a junction for attachment. Hydro will be available from existing lines at the street edge.

New servicing attachments will be necessary for the new most westerly single-family dwelling and the most easterly side by side multi-unit dwelling. Both of these dwellings will require all new hook ups for water, sewerage and hydro. Hydro for the westerly lot will be from an existing pole at the front of the lot which also provides electric power to the existing residence which is central to the two severances. The hydro for the existing house will be 0.75 meters inside the new lot line as the meter base is on the west side of the house; the hydro pole for the westerly lot will be abandoned. Hydro for the easterly lot will be will be from the closest pole to the east.

Water and sewerage for the existing house will remain with the existing hook up. Dwellings on the new lots will access water and sewerage with all new hook ups.

POLICY FRAMEWORK

REQUIREMENTS FOR AN ENVIRONMENTAL IMPACT STUDY

Township of Centre Wellington:

The township of Centre Wellington Zoning By-law indicates that the subject property is partially mapped as Environmental Protection Overlay.

Section 4.12.1-4.12.5 states the following:

"No building, structure, or private sewage treatment system shall be constructed closer than 30.0 meters from the limit of an EP zone without the prior written approval of the Grand River Conservation Authority."

"Interpretation of the limits of the EP zone boundaries is governed by regulations contained in Section 2.7 of this By-law. The location of the 30 m (98.4 feet) EP "setback" boundaries shall be adjusted accordingly in the event that the EP "zone" boundary is reinterpreted."

"No building, structure, or private sewage treatment system shall be constructed closer than 30 m (98.4 ft) from the edge of an opened municipal drain or 15 m (49.2 ft) from the edge of an enclosed municipal drain."

Section 9.2 states:

"Within an EP Zone, no land shall be used, and no building or structure shall be constructed, altered or used except in accordance with the following regulations.

- a) Agricultural uses excluding new buildings and structures and new hobby barns on a lot that also contains land zoned Agricultural (A)
- b) Conservation and resource management
- c) Forest management
- d) Fish and wildlife management
- e) Flood or erosion control facilities
- f) Passive recreation
- g) Uses, buildings and structures existing on the date of passing this by-law
- h) Uses, buildings and structures accessory to the foregoing with the prior written approval of the Grand River Conservation Authority where applicable."

Section 9.2.3.1 states:

"...The Environmental Protection overlay permits development of the lands within the EP Overlay, subject to satisfying the requirements of section 9.2.3.2.

Section 9.2.3.2 states:

"If the identified feature is a regulated area according to the GRCA, the erection of a building or structure will not be allowed unless the written approval of the Grand River Conservation Authority is obtained."

BACKGROUND STUDIES:

A variety of background studies and reports were reviewed as part of the EIS process. These included: wetland mapping, EIS reports for adjacent properties, government documents and aerial photography. Select references are included in the end of this report.

REVIEW OF RELEVANT BACKGROUND MAPPING

Mapping for the subject land from a variety of sources was reviewed in order to determine the relation of the property lot to both ongoing local development and planning designations. This is necessary for a proper opportunity/constraint analysis.

PROVINCIAL

Figure 2 and 3 are derived from the MNRF 'Make-a-Map" feature. This shows a portion of the large corner lot at the Beatty Line and Sideroad 18. The Irvine Creek PSW approaches the subject lands along Side Road 18 to within 15 meters of the proposed lot boundary.

The MNRF wetland mapping actually illustrates the wetland extending past the existing laneway for 157 Sideroad 18 and 149 Sideroad 18. This is not correct and the wetland limit that was staked for the severed lot to the west is clearly further west than the MNRF mapping shows.

The actual limits of the wetland in question are refined through the completion of this EIS and a prior EIS in support of the consent creating 157 Sideroad 18. The wetland limit is located 2-3 m west of the entrance road at 157 Sideroad 18 and does not include any of the proposed application. The wetland limit is approximately 15 m from the limits of the subject land.

Grand River Conservation Authority

Mapping from the GRCA (Figures 5 and 6) illustrate a similar delineation of the wetland in question as depicted by the MNRF.

In addition, the wetland mapping the GRCA illustrates that the subject land is located entirely within the regulated area of the GRCA. Therefore, any future construction of a structure and additional development activities will require a permit from the GRCA.

WELLINGTON COUNTY & TOWNSHIP OF CENTRE WELLINGTON

Figure 3 provides a Township overview of the subject land with municipal zoning. The area designated as EP (Environmental Protection) does not correspond exactly with the PSW boundaries shown on MNRF or GRCA mapping.

The subject land is zoned R1A.70.1. Note: the lot for proposed severances is labelled "149". The municipal EP overlay is not shown.

Figure 3 is Schedule "A" Urban map 70 from the Township of Centre Wellington Zoning By-law. The approximate location of the subject land is labelled 149 Sideroad 18 across from the intersection of Sideroad18 and Vincent Street.

The EP overlay associated with the PSW does not contact the subject lands and it is clear that although the subject lands is near to the PSW they do not infringe on it or approach close enough to impact the wetland. It is noted that there is an active residential construction project between the subject lands and the PSW.

Other areas of EP overlay lie along the east edge of the subject land and these are associated with a cultural plantation/hedgerow consisting of 30 – 40-year-old White Pine, Norway Spruce and White Spruce trees many of which are in poor health. (see Arborist Report from JL's Tree Service Inc., July 06, 2021). This plantation was recognized for problems that pose a safety hazard and some of the trees were culled to make this landscape feature safe for local people and neighboring residents.

DESCRIPTION OF ENVIRONMENT

The subject land comprises 0.34 hectares of mixed use with a 1970's brick bungalow residence. The eastern edge comprises a mixed conifer plantation (TAGM1) which is largely devoid of shrubs and herbaceous plants in the interior, probably due to dense shade or acidic soils. The rear of the yard for the existing residence and the proposed eastern lot, retained lands, is turf grass with a young cedar hedge along the rear lot line. There are various trees, shrubs and horticultural species as part of historic landscaping for the historic residence. At the front of the lot on the west perimeter near to Sideroad 18 where the lane to access 157 Sideroad 18 enters there is a grouping of Eastern White Cedar trees that proceeds into the rear of the lot; other trees include White Pine and Crack Willow. It is noted that no species of conservation concern were found in the subject lands.

NATURAL HERITAGE STUDIES

Natural heritage studies were undertaken with the first site visit in early June to develop a general understanding of the subject land and its relation to the local neighborhood and regional setting. A full set of surveys were undertaken for plants and fauna. It is noted that the TAGM1 pine/spruce plantation had very few birds present at both calling surveys. The majority of songbirds were detected and observed to the east and west of the plantation where there is greater habitat diversity. While there is some diversity of plants at the plantation perimeter there is little in the interior which is densely shaded.

The subject land is completely terrestrial and well-drained. Local drainage is to the west toward the wetland along a shallow gradient of about 2-5%. The wetland feature lies in a shallow depression which has an abrupt perimeter and is clearly defined to the west of the lot at 157 Sideroad 18. The rear of the subject land is a cultural landscape which is dominated by cultivated lawns and horticultural landscapes.

WILDLIFE HABITAT

Amphibians (Anuran Calling Surveys)

Anuran calling surveys to detect breeding calls of anurans (frog and toad) were undertaken in accordance with the Marsh Monitoring Program Participants Handbook for Surveying Amphibians (Bird Studies Canada 2008). Two surveys were completed within the subject land during the recommended windows for the spring and early summer. Surveys coincided with the optimum weather conditions for anuran calling. The surveys took place on the evenings of June 10 and June 28.

Breeding Birds

Breeding bird surveys were conducted to determine if Significant breeding bird habitat occurs within or adjacent to the subject land. Surveys were performed during the peak breeding season for the majority of species (last week of May to July 15th and were spaced at least 10 days apart in order to determine presumed seasonal territories of male songbirds.

Two surveys were conducted on the early mornings (6 AM) of June 10 and July 2. These were rambling transects that started at the north end of the plantation area and extended through the plantation to the rear of the lot at the west side. These were taken deliberately, stopping occasionally with care taken to not disturb wildlife. Surveys followed the Breeding Bird Atlas: Guide for Participants (Bird Studies Canada, 2001)

Incidental Wildlife Observations

Incidental observations of insects, mammals, birds, amphibians and reptiles during all field visits.

Soil Survey

Much of the surface soil type within the subject property is Listowel Loam (Hoffman et al, 1963). Listowel series soils are described as being imperfectly drained and occurring on gently undulating upland areas where surface run-off is slow and internal drainage is moderate. These soils are known to support mixed farming and livestock enterprises where cereal grains, hay and pasture are the main crops grown. (Hoffman et al, 1963).

Vegetation and ELC Studies

Ecological Land Classification studies were undertaken in accordance with the criteria of the Ecological Land Classification (ELC) system for Southern Ontario, 1st Approximation; community codes used generally follow the 2nd approximation (Lee et al, 1998; Lee, H. 2008). Boundaries of ELC polygons were mapped using aerial images and field observations (Figure 6). As part of this process soils were characterized and the subject lands were systematically searched in order to provide an inventory of plants to provide a 2-season botanical inventory.

Identified plant species were compared to provincial and federal SAR lists (COSARO, SARA) provincial ranks (NHIC 2021), global ranks, and Distribution and Status of the Vascular Plants of Southwestern Ontario (Oldham 1993) in order to assess federal, provincial, and regional and local conservation status of each species. English colloquial names and scientific binomials of plant species generally follow the Database of Vascular Plants of Canada (VASCAN 2016).

The identification of environmentally sensitive plant species was completed based on assignment of a coefficient of conservatism value (CC) for each native species (Oldham, et al 1995). The value of CC, ranging from 0 (low) to 10 (high) is based on a species tolerance of disturbance and fidelity to specific natural habitat parameters. Species with a CC value of 9 or 10 generally exhibit a high degree of fidelity to a narrow range of habitat parameters.

A list of all identified plant species is provided in Appendix 3. The list provides botanical names, common names, provincial rarity rank (S-rank), global rarity rank (G-rank), provincial Species at Risk status (SARO) and federal Species at Risk status (SARA), coefficient of conservatism (CC) and coefficient of wetness (CW). Plant species that could only be identified to genus were not assigned the above information.

Significant Wildlife Habitat

With guidance from the Significant Wildlife Habitat Technical Guide (2000) and the SWH Ecoregion Criterion Schedule 6E (2015), the subject land was considered for the presence of Significant Wildlife Habitat (e.g., specialized habitats for wildlife and habitat for species of conservation concern). An assessment of the study area for all SWH is provided for in Appendix 3.

Species At Risk Habitat

The subject land was reviewed for the presence of habitat that may be suitable for Species at Risk. A review of the site along with habitat requirements for each species was conducted. A variety of sources, including the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) documents were used to determine habitat suitability. The site was then evaluated for potential habitat using Ecological Land Classification, guidance from MNRF documents and on-site knowledge acquired through field surveys. An assessment of the subject lands for candidate habitat for SAR is provided in Appendix 4.

EXISTING CONDITIONS

Background Review:

- Natural Heritage Information Centre Species At Risk
 - Preliminary investigation through the Natural Heritage Information Centre (NHIC 2018) did not list any provincial Species at Risk records in the 1 km x 1km squares containing the subject lands.
- Ontario Breeding Bird Atlas
 - A list of birds determined to be breeding (possible, probable, or confirmed) in the 10 km x 10 km square (17NJ43) containing the subject lands during the time when the 2001-2005 Ontario Breeding Bird Atlas (Cadman et al, 2007) was compiled. This list includes 86 species; eight of which are considered Species at Risk under the ESA and SARA, respectively (Chimney Swift (Chaetura pelagical), (THR, THR), Red-headed Woodpecker (Melanerpes erythrocephalus) (SC, THR), Eastern Wood-pewee (Contopus virens) (SC, SC), Bank Swallow (Riparia riparia) (THR,THR), Barn Swallow (Hirundo rustica) (THR,THR), Wood Thrush (Hylocichla mustelina) (SC,SC), Bobolink (Dolichonyx oryzivorus) (THR,THR), and Eastern Meadowlark (Sturnella magna) (THR, THR). Forty-four species are considered

Conservation Priorities by the Grand River Conservation Authority (GRCA, 2016). Seventeen species are considered Partners in Flight Conservation Priorities in BCR-13 (PIF, 2008), and sixteen are identified as Area Sensitive by the MNRF (MNRF, 2000). It is noted that none of the above bird species were found in surveys at the subject lands.

Ontario Reptile and Amphibian Atlas

o Review of the Ontario Reptile and Amphibian Atlas (Ontario Nature 2018b) identified 17 species that are known to occur within the 10 km x 10 km square containing the study area (17NJ43. The list includes two species considered at risk under the ESA and SARA, respectively (Snapping turtle (Chelydra serpentina) (SC, SC) and Blanding's Turtle (Emydoidea blandingii) (THR, THR), with one additional federal Species at Risk (Milksnake (Lampropeltis Triangulum) ((SC).

Atlas of the Mammals of Ontario

A review of the Atlas of the Mammals of Ontario (Dobbyn 1994) identified twenty species that are known to occur within approximately 10 km of the subject lands. One species is considered a Species at Risk under the ESA and SARA, respectively (Little Brown Myotis (Myotis lucifugus) (END, END).

VEGETATION

Plant surveys were undertaken the same day as Breeding Bird surveys; June 10 and July 2. A rambling transect was followed that was sufficient to include all forms of habitat and traversed any and all areas of habitat. No particular area was focused on and every effort was taken to ensure that the surveys were thorough and inclusive.

It is noted that the majority of plants found in the subject land are relatively common or secure (S5, G5) and there are many common alien species that are not of concern since they are not aggressive or invasive. No plants of conservation concern were found in the subject lands.

Ecological Land Classification and Botanical Inventory

TAGM1 Coniferous Plantation

As noted earlier and shown in Figure 6 because of the urbanized nature of the subject land there was only one community polygon identified. This was the TAGM1 Coniferous Plantation which could only be identified to the Community Series due to the mixed species representation. The primary species for this polygon are White Pine (Pinus strobus), White spruce (Picea glauca) and Norway Spruce (Picea abies). This feature consists of 8 to 9 rows of trees which are spread across the eastern neighboring property, the proposed eastern severance and the area of the existing residence which is central to the existing lot.

Within the subject land there are 5 to 6 rows of conifers that occur the length of the property. Additional minor trees of varying sizes include Green Ash (Fraxinus pennsylvanica), Eastern White Cedar (Thuja occidentalis), Bitternut Hickory (Carya cordiformis) and Honey Locust (Gleditsia triacanthos). At the rear of the TAGM1 polygon, Balsam Poplar (Populus balsamifera) and Trembling Aspen (Populus tremuloides) are found in a shallow depression at the perimeter of the plantation where there is more light.

CVR_3 Single Family Residential

The majority of the existing lot including the area of the two proposed severances has been classified as Single Family Residential due to the existing residential dwelling and amenities. There is a wide variety of horticultural species including shrubs across these lands. The majority of this area is covered with turf grass. At the front of the property along the west boundary is a patch of Eastern White Cedar which appears to be an older component, now severed off by a laneway, of the swamp lands to the west on 147 Sideroad 18. This extends about 20 meters to the south and includes Green Ash and a large Crack Willow.

Shrubs in this area include Red Osier Dogwood and Alternate Leaved Dogwood.

SAR - REGIONAL AND LOCAL SIGNIFICANCE

Neither of the vegetation communities listed above are considered rare in the province.

Sixty-six species of vascular plants were identified within the subject land during the botanical inventory. Of those identified 50 species or 76% were native and 16 species or 24% were exotic. All of the native species are ranked S5 (secure in Ontario). No S1-S4 species were observed on the subject lands. No species had a Conservation Co-efficient of 9 or 10.

WILDLIFE:

- Amphibians (Anurans)
 - Within the subject land, calling surveys detected Gray Tree Frog and American Toad. Spring Peepers were detected off site from the PSW to the west.
 - Leopard Frogs were found in wet grasses in the subject lands following storm events.
 - o It is noted that the subject lands do not contain any significant amphibian habitat and are considered terrestrial habitat only.

Reptiles

One Eastern Garter Snake was observed hunting in a garden area in the rear yard.

Breeding Birds

- The results of the Breeding Bird Survey (BBS) are shown in Appendix 2. Two surveys were undertaken on June 10 and July 2. A total of 12 species were found and none of these are considered significant.
- o It is noted that few species were found within the conifer plantation and the majority of species were located on the property to the east and the rear of the conifer plantation where there are poplars and an area of shrubs.

Incidental Bird Sightings

o One incidental bird sighting was a Red-tailed Hawk in a fly over.

Incidental Wildlife Observations

o Incidental wildlife observations included: Red Squirrel (plantation), Wood Chuck (rear yard, plantation edge), Cottontail Rabbit (traversing yard).

- Significant Wildlife Habitat
 - o There is no significant wildlife habitat on the subject lands.
- Species At Risk Habitat
 - o There is no species at risk habitat on the subject lands.

IMPACT ASSESSMENT

The impact assessment of the proposed severances considers preparation of the subject lands for residential construction.

It is noted that full municipal servicing is available.

Because the subject land is largely urbanized it is expected that any environmental impacts will be limited to the building foot prints, 3-meter surround and driveways to the street; the western most site will use the driveway of the existing house for access. The existing house will have a new driveway as will the eastern lot. It is expected that since drainage to the west will remain unchanged that both recharge and overland flow to the area of the PSW will remain essentially unchanged.

East Lot

The east lot will require some clearing of trees in the area of the plantation. This is partly for safety since an arborist's report noted that there are diseased and dead trees here; some are leaning in the canopy and could fall during a storm event. The prior owner of this property cut 8-10 trees in the front yard. The removal of these trees in the front yard exposed interior portions of the plantation that were deemed unsafe or a potential hazard.

Since this lot is some distance from the PSW and drainage will remain unchanged it is expected that very little if any environmental impact will result from the proposed construction. Silt fencing will be employed to ensure no offsite impacts. This will be implemented through the completion of a Site Grading Plan which is a normal requirement set out by the Township of Centre Wellington.

It is noted that historic and recent tree cutting has occurred on this portion of the subject land. The landowner is advised to retain an Arborist to guide the tree cutting program with particular emphasis on removing non-native shrubs (common Buckthorn) and dead or dangerous tree species particularly in the rear of the lot. A balance must be achieved on the tree removal in order to conserve wildlife value for woodland species such as woodpeckers.

West Lot

Three to five trees (Larch and Eastern White Cedar) may need to be removed for house construction on the west lot. A small amount of clearing (3-meter perimeter) will be necessary for construction access. Since the size of the house will be small on this smaller lot and the existing driveway will be used for access, it is expected that there will be no environmental impact from the proposed construction.

Silt fencing will be employed to ensure no offsite impacts on the adjacent wetland system which is approximately 15 m from the subject lands. The silt fencing will be implemented through the

completion of a Site Grading Plan which is a normal requirement set out by the Township of Centre Wellington.

Additional tree planting by the landowner is planned for the westerly and southernly property boundaries. The landowner has been advised to use native trees and shrubs in these areas. Opportunities for transplanting existing trees and shrubs onsite will be considered.

CONCLUSIONS

- A) It is clear that the subject land is suitable for the proposed severances and residential development since this is in keeping with the local land use pattern for the area and most importantly natural areas will not be disturbed or negatively impacted.
- B) No significant natural heritage features were found in the subject land;
- C) No species of conservation concern were found in the subject land;
- D) The majority of the subject land in each proposed severance will remain largely unchanged.
- E) The retained lands are suitable for development since they contain no species of conservation concern and are largely under a low-quality cultural plantation; all other areas will be unaffected since they are not to be disturbed and are highly groomed turf with horticultural species.
- F) It is clear from the report figures that there is sufficient room to meet the Township requirements for residential development as described in this report.
- G) The intervening area between the wetland and the subject land includes existing approved development. These areas provide an adequate buffer between the proposed development and the wetland. The remaining portion of the subject land are terrestrial and well separated from the wetland feature. The post-development drainage from the subject land will remain essentially unchanged.
- H) Any potential for offsite environmental impacts will be mitigated through the use of standard construction practices such as silt fencing at the lot perimeter and/or around active construction areas and site access will be used to contain sediment. This will be implemented through a site grading plan which is a normal requirement of the Township of Centre Wellington.

Respectfully Submitted,

LINCOLN ENVIRONMENTAL CONSULTING CORP.

Chris Hart, M.Sc., M.L.A., OALA, CSLA

Director, Environmental Science, Planning and Design

SELECT REFERENCES

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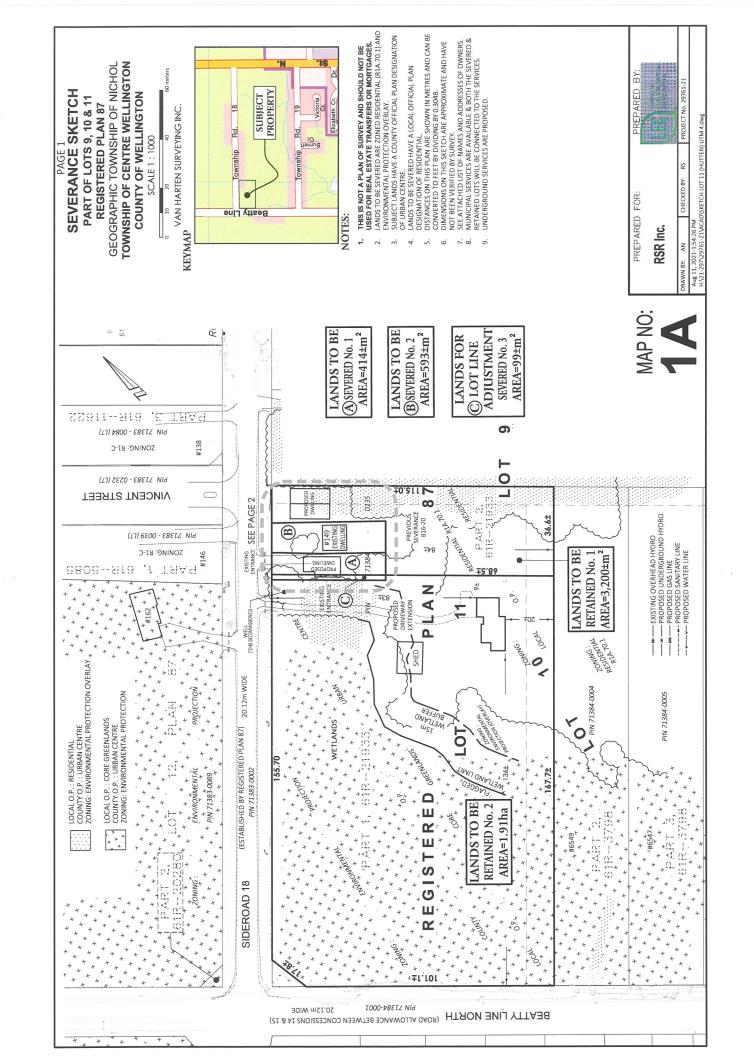
The following Select References were reviewed prior to writing this document:

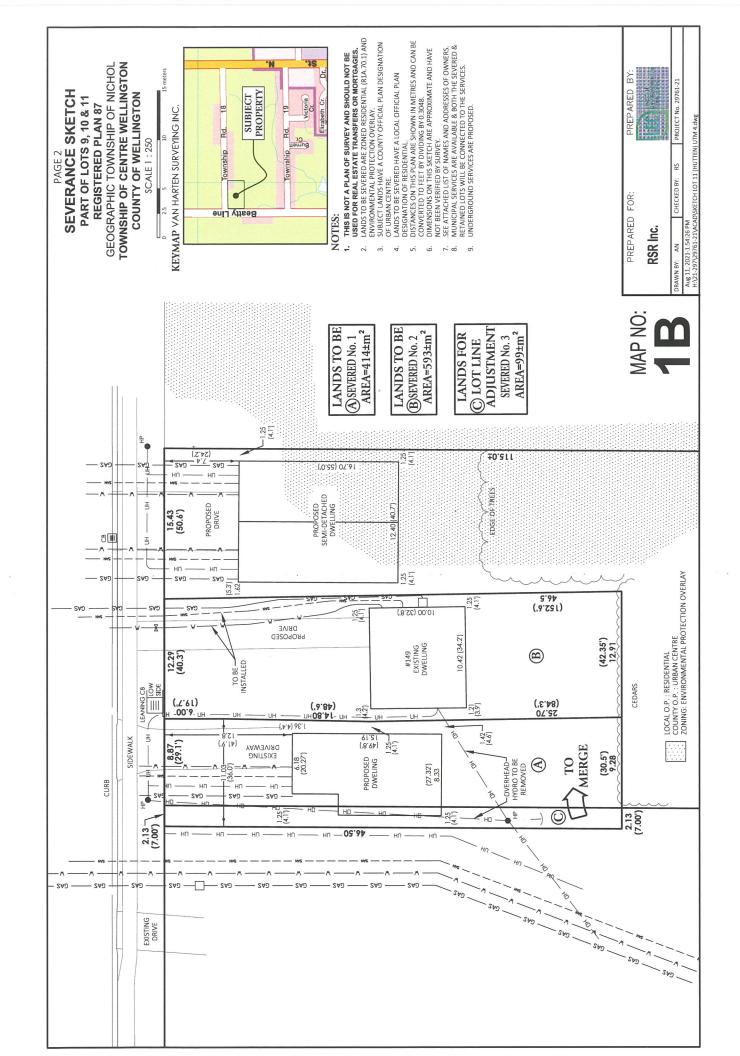
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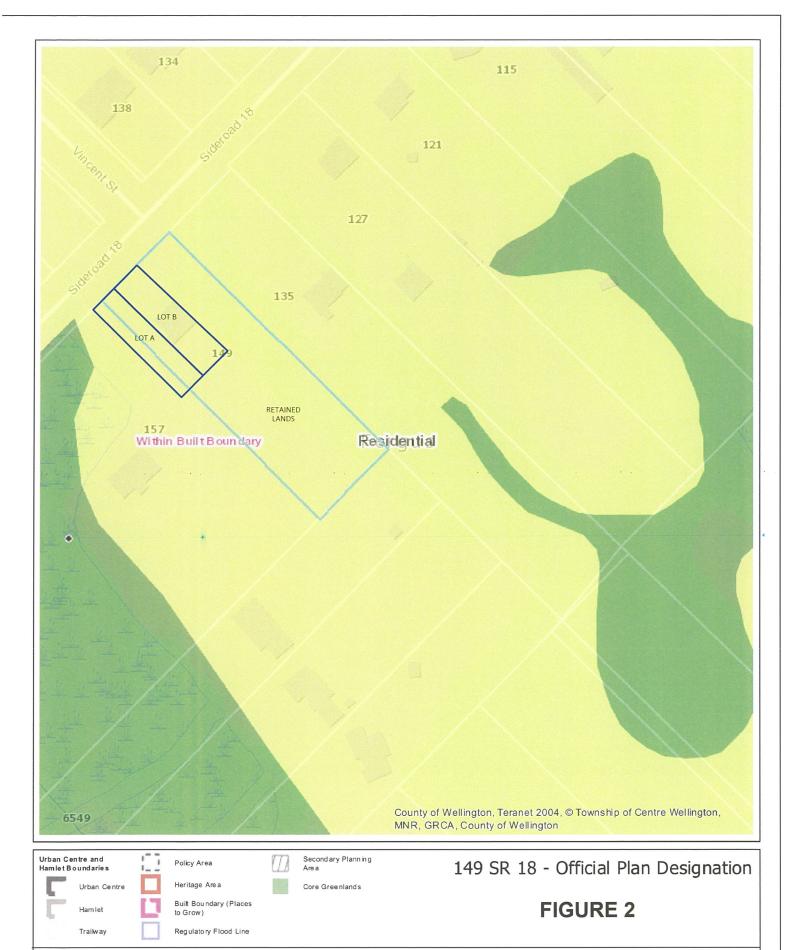
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FIGURES







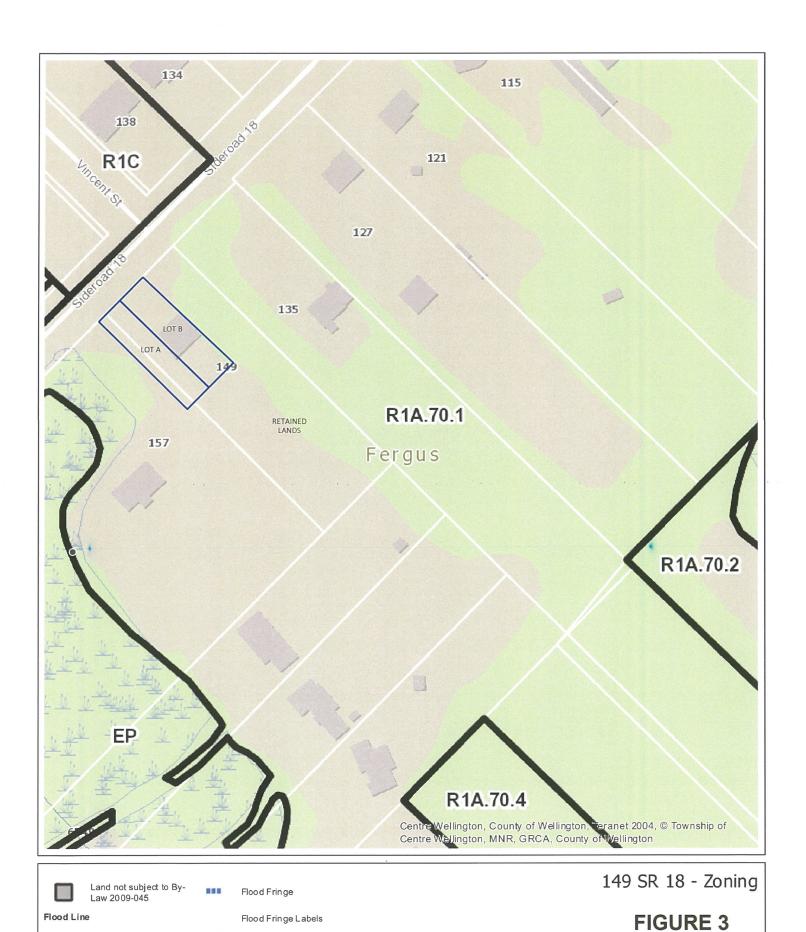




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Floo dplain

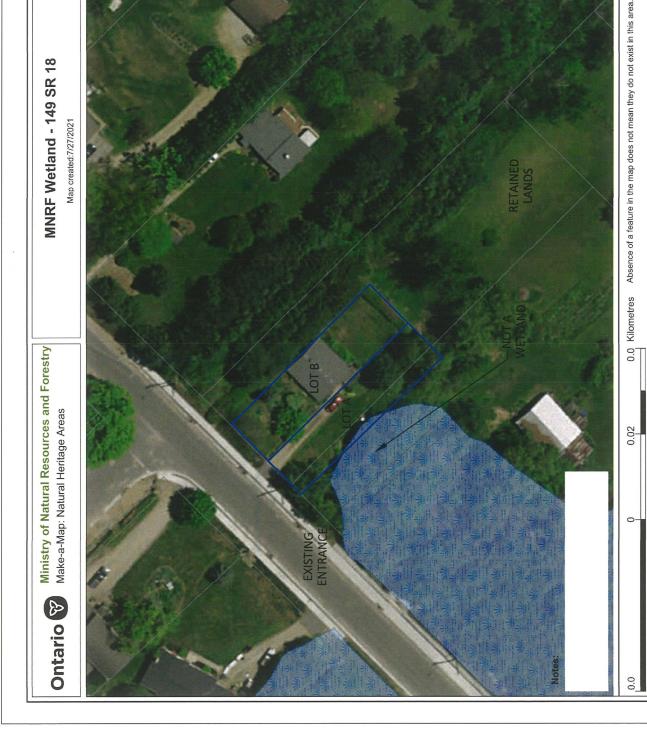
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Zon e Boundaries

Sources
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Legend

Assessment Parcel Evaluated Welland

Provincially Significant/considérée

Non-Provincially Significant/non considérée d'importance provinciale Unevaluated Wetland

11.7

Provincial Park

FIGURE 4





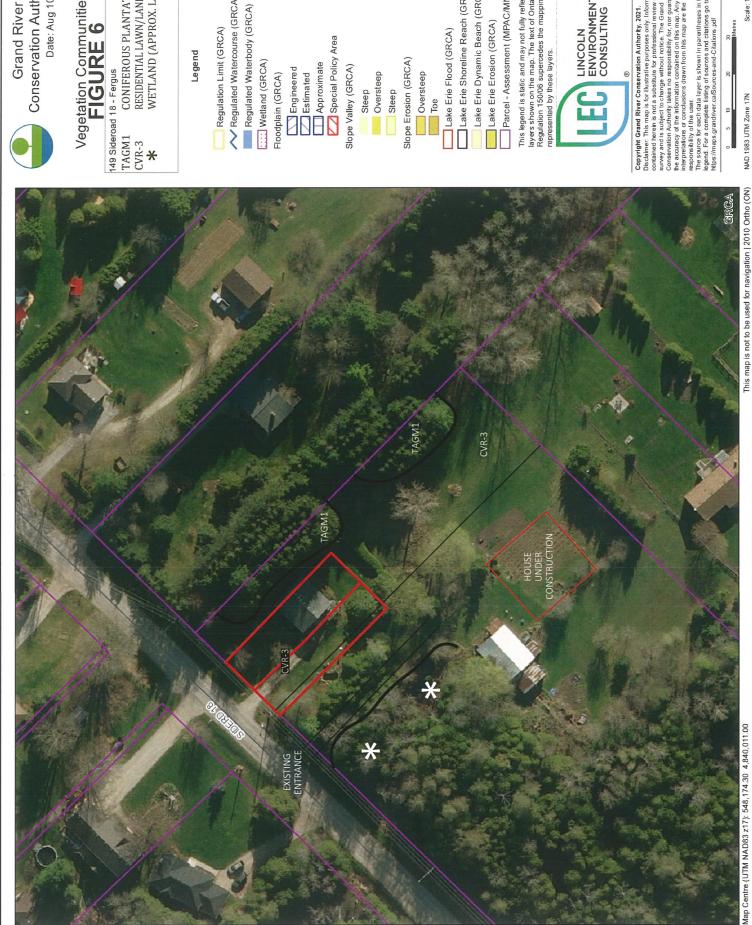
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Conservation Authority **Grand River**

Date: Aug 10, 2021

Vegetation Communities FIGURE 6

CONIFEROUS PLANTATION

RESIDENTIAL LAWN/LANDSCAPE WETLAND (APPROX. LIMIT)

Legend

Regulated Watercourse (GRCA) Regulation Limit (GRCA)

.... Wetland (GRCA)

Engineered Floodplain (GRCA)

Approximate Estimated

ZZ Special Policy Area

Slope Valley (GRCA)

Oversteep Steep

Slope Erosion (GRCA) Steep

Oversteep Toe

Lake Erie Flood (GRCA)

Lake Erie Shoreline Reach (GRCA) Lake Erie Dynamic Beach (GRCA)

Parcel - Assessment (MPAC/MNRF) Lake Erie Erosion (GRCA)

This legend is static and may not fully reflect the layers shown on the map. The text of Onlario Regulation 150/06 supercedes the mapping as represented by these layers.

LINCOLN ENVIRONMENTAL CONSULTING

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Scale: 1,014 NAD 1983 UTM Zone 17N

APPENDICES

APPENDIX 1 – FERGUS PLANT LIST

PLANTS	СС	WC	SARO	SARA Rank	Prov. Rank	Global Rank
TREES						
Balsam Poplar (Populus balsamifera)	4	-3	NL	NL	S5	G5
Bitternut Hickory (Carya cordiformis)	6	0	NL	NL	S5	G5
Black Walnut (Juglans nigra)	2	3	NL	NL	S 5	G5
Crack Willow (Salix fragilis)	0	-1	NL	NL	SE5	G5
Eastern White Cedar (Thuja occidentalis)	4	-3	NL	NL	S5	G5
Green Ash (Fraxinus pennsylvanica)	3	-3	NL	NL	S4	G5
Honey Locust (Gleditsia inermis)	3	0	NL	NL	S2	G5
Manitoba Maple (Acer nugundo)	0	0	NL	NL	S5	G5
Norway Spruce (Picea abies)	0	0	NL	NL	SE5	G5
Trembling Aspen (Populus tremuloides)	2	0	NL	NL	S5	G5
White Birch (Betula papyrifera)	2	3	NL	NL	S5	G5
White Pine (Pinus strobus)	2	3	NL	NL	S5	G5
White Spruce (Picea glauca)	6	3	NL	NL	S 5	G5
SHRUBS						
Alternate Leaved Dogwood (Cornus alternifolia)) 2	-3	NL	NL	S5	G5
American Highbush Cranberry (Viburnum trilobum)) 5	-3	NL	NL	S5	G5
American Mountain Ash (Sorbus americana)	8	3	NL	NL	S5	G5
Common Buckthorn (Rhamnus cathartica)	*	0	NL	NL	SNA	GNR
Hicks Yew (Taxus sp.)	7	3	NL	NL	S5	G5
Common Lilac (Syringa vulgaris)	-	-	NL	NL	SNA	GNR
Purple Privet (Ligustrum japonicum)	-	-	NL	NL	SNA	GNR
Red Currant (Ribes triste)	*	5	NL	NL	S5	G5
Red Osier Dogwood (Cornus stolonifera)	2	-3	NL	NL	S 5	G5
Serviceberry (Amelanchier laevis)	7	5	NL	NL	S5	G5
Smooth Gooseberry (Ribes hirtellum)	6	-3	NL	NL	S 5	G5

VINES						
Summer Grape (Vitis riparia)	0	0	NL	NL	S 5	G5
Boston Ivy (Parthenocissus quinquefolia)	6	3	NL	NL	S4?	G5
FORBS						
Bladder Campion (Silene latifolia)	*	5	NL	NL	S5	G5
Burdock (Arctium minus)	*	3	NL	NL	S5	G5
Buttercup (Ranunculus acris)	*	0	NL	NL	S5	G5
Cleavers (Galium trifflorum)	6	-5	NL	NL	S5	G5
Daisy Fleabane (Erigeron anuus)	2	-3	NL	NL	S 5	G5
Dames Rocket (Hesperis matronalis)	*	5	NL	NL	S 5	G5
Common Dandelion (Taraxacum officiale)	*	3	NL	NL	SNA	G5
Day Lilly (Hemerocalus fulva)	*	5	NL	NL	SNA	G5
Enchanter's Nightshade (Circaea lutetiana)	2	3	NL	NL	S 5	G5
Forget-me-not 9 (Myosotis laxa)	*	5	NL	NL	S5	G5
Canada Goldenrod (Solidago canadensis)	1	3	NL	NL	S5	G5
Common Milkweed (Asclepias syriaca)	0	5	NL	NL	S 5	G5
Common Strawberry (Fragaria virginiana)	2	3	NL	NL	S5	G5
Common Violet (Viola sororia)	7	5	NL	NL	S 5	G5
Garlic Mustard (Alliaria officinalis)	-	-	NL	NL	SE5	GNR
Common Goats Beard (Tragopogon officinale	*	5	NL	NL	SNA	GNR
Hairy Solomon's Seal (Pollygonatum pubescens)	8	3	NL	NL	S5	G5
Grey Goldenrod (Solidago nemoralis))	2	5	NL	NL	S5	G5T5
Orange Hawkweed (Pilosella aurantraca)	*	5	NL	NL	S5	G5
Heath Aster (Aster ericoides)	4	4	NL	NL	S5	G5
Common Helleborine (Epipactis helleborine)	*	5	NL	NL	SE5	G?
Herb Robert (Geranium robertianum)	*	5	NL	NL	SE5	G5
Honewort (Cryptotaemia canadensis)	5	0	NL	NL	S 5	G5

NL

NL

Hosta (Hosta spp.)

GNR

SNA

Lamium species (Lamium spp.)	_	-	NL	NL	SNA	GNR
Little White Aster (Aster simplex)	4	2	NL	NL	S 5	G5
New England Aster (Aster novae-angliae)	2	-3	NL	NL	S 5	G5
Ox-eye Daisy (Leucanthemum vulgare)	-	-	NL	NL	SE5	G?
False Solomon's Seal (Maithemum racemosum)	6	0	NL	NL	S5	G5
Sweet Cicely (Osmorhiza claytonii)	5	4	NL	NL	S5	G5
Vetch (Viola americana)	*	5	NL	NL	SNA	GNR
White Clover (Trifolium repens)	*	3	NL	NL	SNA	GNR
Wild Carrot (Daucus carota)	*	5	NL	NL	SNA	GNR
Wild Comfrey (Cynoglossum maculatum)	*	5	NL	NL	SNA	GNR
Wild Geranium (Geranium maculatum)	6	3	NL	NL -	S 5	G5
Wood Poppy (Styllophorum diphyllum)	9	5	NL	NL	S 5	G5
Yellow Avens (Geum aleppicum)	3	0	NL	NL	S5	G5
GRASSES						
Blue Grass (Poa pratensis)	0	2	NL	NL	SNA	GNR
Orchard Grass (Dactylis glomerata)	0	3	NL	NL	SNA	GNR
Smooth Brome (Bromus inermis)	0	5	NL	NL	SNA	GNR
FERNS						
Field Horsetail (Equisetum arvense)	8	0	NL	NL	S 5	G5
Lady Fern (Athyrium Filix-femina)	4	0	NL	NL	S 5	G5
Sensitive Fern (Onoclea sensibilis)	4	-3	NL	NL	S 5	G5

APPENDIX 2 – FERGUS WILDLIFE LIST

WILDLIFE	сс	WC	SARO	SARA	Prov. Rank	Global Rank
BIRDS						
American Flicker (Colaptes auratus)					S5B, SZN	G5
America Robin (Turdus migratorius)					S5	G5
Blue Jay (Cyanocitta cristata)					S 5	G5
Northern Cardinal (Cardinalis cardinal	is)				S5	G5
Catbird (Dumatella carolinensis)					S5B, SZN	G5
Black-capped Chickadee (Poecilla atric	apillus)				S 5	G5
American Crow (Corvus brachyrhynch	os)				S5B, SZN	G5
Red Tailed Hawk (Buteo jamaicensis)			NAR	NAR	S5B, SZN	G5
Yellow Warbler (Dendroica petechia)					S5B, SZN	G5
Downy Woodpecker (Picoides pubesco	ens)				S5	G5
Carolina Wren (Thryothorus Iodovicia	nus)				S3, S4	G5
House Wren (Troglodytes aedon)					S5B, SZN	G5
MAMMALS						
Red Squirrel (Tamiasciurus hudsonicus	5)				S5	G5
Wood Chuck (Marmota monax)					S5	G5
Cottontail Rabbit (Sylvilagus floridanus	s)				S5	G5
ANURANS						
Leopard Frog (Rana pipiens)					S5	G5
Spring Peeper (Pseudacris crucifer)					S5	G5
Tree Frog (Hyla versicolor)					S 5	G5
American Toad (Bufo americanus)					S5	G5
REPTILES						
Eastern Garter Snake (Thamnophis sirt	talis)				S 5	G5

APPENDIX 3 – ANALYSIS FOR SIGNIFICANT WILDLIFE HABITAT

SIGNIFICANT WETLANDS

The background information review and site investigations conducted as part of the EIS identified a Provincially Significant Wetland within 120 meters and west of the subject lands. The significant wetland is the Irvine Creek Wetland Complex. This landscape feature extends to the north and south of the subject lands. Other smaller pocket wetlands occur nearby but have not been complexed with the larger wetland.

The County of Wellington Official Plan recognizes the importance of the Irvine Creek Wetland Complex - PSW. This significant wetland is designated as Core Greenland in the land use schedule for the Township of Centre Wellington. Two smaller wetlands are mapped east of the PSW. These are shown as Core Greenland features in the County of Wellington Official Plan because they are regulated by the GRCA.

SIGNIFICANT WOODLANDS

The woodlands surrounding the development site are recognized as "Conservation Overlay" by MNRF primarily because of size and landscape contiguity over a large area. Portions of the woodland system south and west of the subject area are not mapped as wetland features. These upland forest communities contain species such as Sugar Maple, White and Green Ash, Black Cherry, Slippery Elm, White Pine, American Elm, Basswood and Eastern White Cedar. The County of Wellington has mapped these woodland areas.

The woodlands will be minimally affected by this development because of setbacks and planned vegetative buffers which will use native species that are bioregionally appropriate. Additional replacement plantings for trees removed from the CUP plantation will be made around the perimeter of the subject lands.

SIGNIFICANT VALLEYLANDS

According to the Natural Heritage Reference Manual 2010 (NHRM), section 8.1, "Valleylands means a natural area that occurs in a valley or other landform depression that has water flowing through or standing for some period of the year." In accordance with Section 8.3 of the NHRM there are no significant Valleylands on or within 120m of the proposed development lands. It is noted that a tributary of the Irvine Creek traverses lands to the west and south of the subject lands.

This is over 100 meters away from the proposed development and will not be impacted through development activities. The development intent is to optimize recharge potential and have the predevelopment hydrograph mirrored in the post development conditions.

AREAS OF NATURAL AND SCIENTIFIC INTEREST

A review of current background information sources searched as part of this EIS did not identify any candidate or designated Areas of Natural and Scientific Interest (ANSI) on or within 120 meters of the proposed development site.

SIGNIFICANT WILDLIFE HABITAT

A review of historical data from the Grand River Conservation Authority and the OMNRF was used along with site investigations at the study area to determine if this exists within or adjacent to the proposed development lands. Wildlife habitat was investigated in the study area to identify candidate Significant

Wildlife Habitat (SWH). The ELC community mapping completed for this EIS (FIGURE 6) was used as the basis for determining the presence (or absence) of candidate SWH.

The OMNR Significant Wildlife Habitat Technical Guide (OMNR 2000) and Significant Wildlife Ecoregion Criteria Schedules (OMNRF, January, 2015) were the primary documents used to identify and evaluate wildlife habitat. The Significant Wildlife Habitat Technical Guide describes five broad categories of wildlife habitat which includes: (1) seasonal concentration areas; (2) rare vegetation communities; (3) specialized habitat for wildlife; (4) habitat for species of conservation concern; and (5) animal movement corridors.

A review of these documents as well as technical monographs for individual species were used to determine if there is potential habitat for species of conservation concern.

SEASONAL CONCENTRATION OF ANIMALS

The Significant Wildlife Habitat Technical Guide (OMNR) 2000 has identified 14 potential types of seasonal concentration areas:

WINTER DEER YARDS

- The OMNRF has undertaken mapping for "Areas of Wintering Deer Yard Habitat". Deer wintering area has been mapped on lands south and west of the site. The deer wintering habitat is primarily related to extensive woodland.
- There was no evidence of deer at the subject lands.

MOOSE LATE WINTER HABITAT

Not applicable in Wellington County

COLONIAL BIRD NESTING SITES

 No observations of colonial nesting birds were made during the site field visits. Landscape use, terrain characteristics and habitat types are not conducive to colonial bird nesting within the study area.

WATERFOWL STOPOVER AND STAGING AREAS

 The Guelph District of OMNRF, Canadian Wildlife Service and Ducks Unlimited Canada have jointly undertaken historical land reviews for potential significant waterfowl stopover and staging areas in Wellington County. The subject lands have not been identified nor do they have suitable habitat to support this ecological function within the proposed licensed boundary or adjacent lands.

WATERFOWL NESTING HABITAT

• No suitable waterfowl nesting habitat occurs within the subject lands or the adjacent lands.

SHOREBIRD MIGRATORY STOPOVER SITES

No habitat is available within the subject lands.

LAND BIRD MIGRATORY STOP OVER AREAS

- There are no habitat opportunities within the agricultural lands which make up over 90% of the subject lands.
- Woodland and wetland areas provide opportunities for seasonal migrants and these areas will remain as they are and will not be impacted by the proposed development.

RAPTOR WINTERING AREAS

• There is potential for hawks such as Red-tailed hawk, Coopers Hawk and American Kestrel to find habitat at this site. All birds favor a landscape habitat mix of open fields, scrub land and woodlands. In this case with land use dominated by agriculture opportunities are limited and will be about the same in a developed state. It is noted that a Red-tailed Hawk was seen flying over the site on June 10th, 2021. Since the surrounding regional landscape is largely rural and natural it is expected that raptors are commonly sighted.

WILD TURKEY WINTERING AREAS

• There is no potential for Wild Turkey to winter in the subject lands.

TURKEY VULTURE SUMMER ROOSTING AREAS

 No suitable habitat or surrounding habitat features to support this ecological function were found within the subject lands or adjacent lands.

REPTILE HIBERNACULA

• No suitable habitat or surrounding habitat features to support this ecological function were found within the subject lands or adjacent lands.

BAT HIBERNACULA

• No suitable habitat or surrounding habitat features to support this ecological function were found within the subject lands or adjacent lands.

BULLFROG CONCENTRATION AREAS

• At the time of the spring field survey (June 10th and July 2nd) no bull frogs were seen or heard calling. It is noted that habitat conditions were not suitable for any sizeable amphibian concentrations and there is no open water within the subject lands or adjacent lands.

MIGRATORY BUTTERFLY STOPOVER AREAS

• The subject lands are under intensive agriculture with little old field character. Therefore, there is no suitable habitat or surrounding habitat features to support this ecological function within the proposed development lands or on adjacent lands.

WILDLIFE MOVEMENT CORRIDORS

No provincially or regionally significant corridors are designated for this area of Ontario. Locally the Mill Creek and associated woodlands provide cover for deer herds. There are game trails within the woodlands and along the edges of farm fields but these are small and incidental. Field investigations confirmed that no significant wildlife corridor functions occur within the subject lands or adjacent lands. It is noted that there are game trails at the woodland edges that lead into the adjacent woodlands and disperse thereafter.

RARE VEGETATION COMMUNITIES OR SPECIALIZED HABITAT

RARE VEGETATION COMMUNITIES

 No rare or unusual vegetation communities are found within the proposed development lands. Most of the land use is for agricultural purposes and the vegetation and ELC units within the subject lands and adjacent lands have been described as not significant in the foregoing.

SPECIALIZED HABITAT FOR WILDLIFE

- The Significant Wildlife Habitat Technical Guide (OMNR, 2000) identifies 12 categories for the evaluation of specialized habitat for wildlife:
- Sites supporting area sensitive species:
 - No suitable habitat or surrounding habitat features were observed to support this
 ecological function within the subject lands or the adjacent lands. The majority of
 current land use within the subject lands is predominantly agricultural.
- Forest stands providing a diversity of habitat:
 - The results of field studies indicate that the only forest stands of significance are on adjacent lands. The subject lands have only a very small fringe of woodland to the north and west.
- Old Growth or mature forest stands:
 - There were no old growth characteristics, as defined by the Province for Old Growth Forests. Mature forest stands were found within the woodlands on adjacent lands.
- Seeps and Springs:
 - There are no seeps or clear springs in or associated with the subject lands.
- Woodlands Supporting Amphibian Breeding Ponds:
 - As noted earlier no open water was found at the MAS 2-2 feature. Amphibian breeding habitat was not identified in the spring field season.
- Special Woodland Feeding Habitat:
 - No game trails of white-tailed deer are found within the subject lands and the adjacent woodland to the north and west. There is no special woodland feeding habitat found in the subject lands or adjacent lands. No mast trees were found here
 - It is not expected that the limited development proposed at the subject lands would negatively affect wildlife.
- Osprey and specialized raptor nesting habitat:
 - No suitable habitat was found within the subject lands.

- Turtle Nesting Habitat:
 - No suitable habitat or evidence of turtle nesting was found within the subject lands or adjacent lands.
- o Special Moose Habitats:
 - Not applicable in Wellington County.
- Mink and Otter Feeding/Denning Sites; Marten and Fisher Denning Sites:
 - No suitable habitat for Otter was found at the subject lands or adjacent lands.
 - No suitable habitat for Martens was found on the subject lands.
 - No suitable habitat for Fishers was found on the subject lands.
 - Mink feeding and denning habitat was not found at the subject lands or immediately adjacent lands.
- Areas of High Diversity:
 - No areas of high diversity or specialized microhabitat were found or recognized within the subject lands; there is high diversity in the Mill Creek Wetland Complex on adjacent lands.
- Cliffs and Caves:
 - No geological features of this nature were identified within the subject lands or the adjacent lands.

APPENDIX 4 – POTENTIAL FOR SAR FROM SIGNIFICANT WILDLIFE HABITAT CRITERIA SCHEDULES

HABITAT OF SPECIES OF CONSERVATION CONCERN

The Significant Wildlife Ecoregion Criteria Schedules for Ecoregion 6E (January, 2015) were reviewed in detail. It was determined that no significant wildlife habitat suitable for supporting species of conservation concern was found at the subject lands.

FLORA

Field investigations of the subject lands and adjacent lands included plant surveys which were used to complete Ecological Land Classification inventories and habitat descriptions. Plants are described in Appendix "A" – Plant Species List. It is noted that no plant species of Conservation Concern at any level of classification was found.

FAUNA

The results of the background information review, ELC mapping and field surveys showed that the subject lands do not contain significant wildlife habitat features.

During Breeding Bird surveys, no birds of conservation concern were identified.

FISHERIES HABITAT

Section 34 of the Fisheries Act notes that, "..." fish habitat" means spawning grounds and nursery, rearing, food supply and migration areas on which fish depend on directly or indirectly in order to carry out their life processes ...". There are no features supporting fish habitat within the subject lands or within any distance where this habitat would be affected in any way by the proposed development.

ARBORIST REPORT

JL's Tree Service Inc. 6149 Guelph St, Elora, ON NOB 1S0 519-242-5193 info@jlstree.com www.jlstree.com



06.07.2021

To whom it may concern,

As the Owner of JL's Tree Service Inc. and ISA Certified arborist I report the following on the property of: 149 Side Road 18,
Fergus, Ontario
N1M 2W3.

I walked this property with the current owner – Rob Stovel and previous owner Kevin Hutton in June 2021. This property consists of 6-7 rows of dense conifer plantation, consisting primarily of spruce with the occasional white pine and eastern white cedar. The trees are tall (60-70') and thin (8-12" dbh with several less than 6" dbh)

Due to the recent tree cutting at the front of the property, the inner rows have been exposed and may succumb to wind throw. There are 8-10 white pine trees removed by former landowner for his personal use.

The inner rows have numerous health issues, including several dead standing or leaning trees.

The current owner – Rob Stovel has asked me to remove these dead/dying trees and to remove 3-4 trees along the hedgerow next to the house to ensure the house remains safe.

The owner has a plan to replant native trees along the westerly side of the property this fall.

Joseph Legate
OWNER/OPERATOR

JL's Tree Service Inc. ISA Certified Arborist Cert ID:ON-2603A

Date July 6th 2021

PROFESSIONAL CREDENTIALS

CHRISTOPHER J. HART, M.Sc., M.L.A., OALA, CSLA

204-470 Wellington St Kitchener, Ontario N2H 5L5

Tel: 519-574-5357

Email: hart.c3j@gmail.com

BIOGRAPHICAL INFORMATION:

ENVIRONMENTAL SPECIALIST

Chris Hart is an Ecologist and an Environmental Planner who has worked as an Environmental Planner in southern Ontario with Conservation Authorities, Ministry of Natural Resources & Forestry and environmental consultants for many years. He undertakes environmental planning work and has recently re-designed the Greenlands system of the Township of Centre Wellington with a forward-looking GIS-based landscape analysis that provided justification for a new Natural Heritage System.

He has 26 years of experience with the Public Interest Advisory Committee of the Niagara Escarpment Commission and understands the unique planning issues of the Niagara Escarpment Plan area and the Ontario Greenbelt. Chris has experience with land development planning and design and N.E.C. Plan Amendment Applications as well as development peer reviews for conservation authorities and municipalities.

Chris has worked with E.A., E.I.S. and N.E.T.R. (aggregate license) projects as a proponent and reviewer for 25 years. His work has focused on site-specific needs as well as watershed planning and large regional planning issues of the Niagara Escarpment in Ontario. He has a keen interest in natural heritage systems and natural areas management. He has training in Environmental Restoration, Conservation Biology, Landscape Ecology, Ecological Land Classification (E.L.C.), Wetland Delineation (O.W.E.S.), erosion control including bioengineering, natural channel design and GIS analysis (ArcGIS).

Recent natural heritage system projects have provided knowledge of the Provincial Policy Statement, Environmental Assessment legislation and regulatory acts and regulations. Chris has undertaken many field studies of both aquatic and terrestrial environments for ecological characterization using recognized scientific protocols and MNRF protocols for Species At Risk. He is a specialist in the ecological management of natural areas.

Chris also is very capable in maintaining liaison with the public and professionals through public consultation and contract administration. He writes well and is recognized for his ability to make complex technical and policy issues more accessible for the general public.

Chris has been screened by the Ontario Professional Services Board and is fully eligible for membership in the O.P.P.I.

WORK EXPERIENCE:

Present) Lincoln Environmental Consulting - Director Environmental Science & Planning

(12_2020 Chris provides management support to the Environmental Science and Planning group at LEC. This group provides consulting services for natural heritage assessment / management and environmental planning. Chris undertakes landscape analysis, natural habitat assessment and planning policy analysis. Chris also works on consulting teams to provide technical support as an ecologist and environmental planner for EA. EIS and NETR (aggregate license) projects. He contributes design services for environmental restoration, habitat mitigation and enhancement.

12 2020) Chris Hart & Associates - Ecologist/Environmental Planner

(12_2015 Chris provided consulting services for natural heritage assessment / management and environmental planning. He undertook landscape analysis, natural habitat assessment and planning policy analysis. He works as a sub-consultant on consulting teams to provide technical support as an ecologist and environmental planner for EA. EIS and NETR (aggregate license) projects. He contributed design services for environmental restoration, habitat mitigation and enhancement.

2017 Professor at Fanshawe College, London - 2017)

Chris was a part-time Professor in the School of Design at Fanshawe College. He taught courses in Professional Practice and Presentation Skills oriented to Planning and Landscape Architecture.

12_2015) Senior Ecologist/Environmental Planner - Manager of Natural Science Services (AET (03_2011- Group Inc.

Provided consulting services for natural heritage assessment and management, recreational systems, parkland development, cultural heritage resources, sustainable communities and social marketing practices. Chris worked with green infrastructure projects that provided recreation opportunities through trail access and linear corridors that linked SWM facilities with ESAs, parkland and other public lands. Chris was involved in all phases of project management and contract administration. Other project work included renewable Energy, ARA License Natural Environment Studies, Land Development EIS and monitoring of environmental effects. Other responsibilities included report writing, junior staff supervision and business development. (NOTE: this position ended when the AET Group closed the Natural Science Services group in order to focus on energy and waste management.)

10_2010) Coordinator/Environmental Planner – Project Coordinator (Greenlands Centre Wellington) (08_2008- Development of a Landscape Analysis for the Township of Centre Wellington incorporating urban green infrastructure, cultural heritage features, trails and recreational greenways. This project involved the sourcing and analysis of all relevant policy with respect to municipal and environmental planning at local, watershed and provincial levels. This project included a study of all urban and near-urban natural heritage features in detail with recommendations for planting and other habitat enhancement including management of invasive species, retirement of cultural landscapes, enhancement and restoration of stream corridors and strategic reforestation. Also produced was a set of "Development Guidelines for Sustainable Rural Communities". Other work at this time included visual analysis of landscape corridors as well as the verification of regional trail routes and design for staging areas and trail heads.

06_2008) Area Biologist (Ontario Ministry of Natural Resources & Forestry)

(04_2007- Management and participation in a wide range of conservation programs involving fish and wildlife, species at risk, and land stewardship for rural lands. Coordinated the Canada Ontario Agreement program funding for environmental enhancement projects oriented to Great Lakes water quality enhancement. Undertook environmental restoration projects in rural and urban environments with private landowners and volunteers for municipal lands. Supervised and trained seasonal staff in field and administrative procedures. Represented MNR on technical and management committees involving regional municipalities and local conservation authorities. Field work included botanical studies, mapping and assessment of SAR habitat, radio-telemetry tracking of S.A.R. turtles and creation, maintenance and monitoring of turtle nesting habitat. Design projects included gravel pit restoration with S.A.R. turtle nesting habitat, pilot wetland creation and enhancement and stream corridor erosion control and reforestation.

03 2007) Resources Planner - Project Coordinator (Maitland Valley Conservation Authority)

(12_2006- Developed and delivered a program for the promotion and implementation of environmental conservation projects for rural municipalities involving parks natural areas and water courses. Encouraged the protection, conservation, enhancement and restoration of these features. Also provided a new focus to promote energy efficient and sustainable landscapes with private rural landowners. Sourced funding and managed a wide variety of community environmental enhancement / restoration projects.

09_2006) Resources Planner - Project Coordinator (Grand River Conservation Authority)

(01_2006- Coordinated a project involving the development of Grand River watershed regional trail systems. Responsibilities included renewing the administrative structure of the Grand Valley Trail Association, developing a feasible 5-year strategic plan, promoting new trails and trail linkages within the Grand Valley and to other external regional trail systems.

01 2006) Resources Planner – Project Coordinator (Maitland Valley Conservation Authority)

(02_2005- Developed and delivered educational materials and program workshops to teach the principles of environmental stewardship of natural areas and wildlife habitat enhancement on rural lands. Conducted farm tours and created environmental farm plans based on current best management practices and the principles of conservation biology and restoration ecology.

02 2005) Biologist/Environmental Planner (Ecoplans Ltd. (Contract)

(02_2004 As a Biologist and Environmental Planner provided project management on development related projects by providing landscape analysis, field studies and planning solutions.

- Project management, Environmental Assessment and Environmental Impact Studies
- Biological field studies (ELC, G.I.S.), sub-watershed analysis, wetland delineation
- Design for environmental restoration and mitigation of development impacts

01_2004) Ecologist/Environmental Planner/Landscape Architect (Conestoga-Rovers & Associates) (12_1999- Provided design and management solutions on a project basis for the environmental clean up of contaminated sites, design of mitigation and treatment wetlands at landfill sites and for agricultural runoff, stream channel bioengineering and erosion control.

- Project management, natural science field studies (ELC, G.I.S.), monitoring studies for conformance reports, Environmental Assessment, Environmental Impact Studies

12_1999) Independent Consulting Ecologist/Landscape Architect and Contractor

(06_1996- Independent consulting Ecologist and specialty landscape contractor for environmental restoration, site reclamation, stream geomorphic analysis for fisheries habitat and bioengineering design, stream channel and ravine stabilization with bioengineering design, and conservation lands master planning. Continued many ongoing projects for Cumming Cockburn Ltd.

06-1996) Senior Ecologist/Environmental Planner/Landscape Architect (Cumming Cockburn Ltd.) (11_1995- Provided project management for a wide variety of projects involving new residential development throughout Ontario, urban infrastructure, storm water management and erosion control.

- Project management, Environmental Assessment, Environmental Impact Studies
- Bioengineering designs, urban storm water naturalization design, tree saving plans
- Water quality monitoring net design, data analysis, report writing, public information centers

11_1995) Landscape Ecologist (Maitland Valley Conservation Authority)

(05_1991- Chris worked as an applied Ecologist with a focus on landscape restoration and rural community development for the creation of public greenways, naturalized parks, wetland/wildlife pilot projects in Huron and Perth Counties (swamp restoration, agricultural drain habitat enhancement, millpond habitat enhancement); sourced grant funding and managed community projects.

- Coordinated public planting programs for parks, greenway reforestation and Renaturalization
- Secured grant funding, scheduled projects, sourced and requisitioned plants and supplies
- Conservation lands master planning including design for reforestation and Renaturalization

EDUCATION

M.L.A. University of Guelph, S.E.D.R.D., (Landscape Architecture/Planning)

M.Sc. University of Waterloo, Ecology (Botany, Limnology),

B.E.S. University of Waterloo, Honours Geography with Biology

Courses: Low Impact Development – Design course by Credit Valley Conservation, 2015 Low Impact Development – Introductory Design course by Credit Valley Conservation, 2014

O.M.N.R. - Ecological Land Classification System for Ontario, 2002, (Certificate)

O.M.N.R. - Ontario Wetland Evaluation System Training, 2001, (Certificate)