



Environmental Impact Study

**Draft Plan of Subdivision, Village of
Wellington**

Sterling Homes Inc.

15 December 2022

→ **The Power of Commitment**



GHD Ltd.





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Executive summary

GHD Limited was retained to complete an Environmental Impact Study for a proposed draft plan of subdivision (which includes townhouses, mixed use residential, single detached homes, parking and amenity areas) on two properties located to the north of County Road 33, in the Village of Wellington, Prince Edward County “the study area”. The study area included potential habitat for species at risk, woodland, unevaluated wetland, a creek and significant wildlife habitat. As a result, Prince Edward County requires an EIS as part of the supporting documentation for a development proposal.

The proposal is for the development of a subdivision on two parcels of land, one on the west side of Cleminson Street, with the other being located immediately to the east. The proposal for the western portion involves a site area of 7.56ha, in which 191 townhouses (of three styles), two mixed use (residential) buildings, three parkettes, parking for visitors, several new roads and other associated infrastructure would be created. For the eastern portion, the Concept Plan indicates that within the 2.22ha parcel, 14 townhomes and 34 single detached (36ft) buildings would be built adjacent to a crescent as well as a proposed underground parkette/storage facility (Appendix A).

GHD conducted vegetation surveys on the western property and a preliminary survey on the eastern property. The ELC communities delineated in the study area are depicted on Figure 1 and are described in Section 3.2. Among the features in the study area GHD staff identified an unevaluated wetland, a creek, fencerows that may provide habitat for wildlife and old field meadows with habitat that appeared to be suitable for eastern meadowlark (*Sturnella magna*).

The background literature review suggested there was the potential for several natural features and/or species to occur in the study area. GHD’s field studies confirmed the presence of species at risk habitat, unevaluated wetland, an intermittent drainage feature and several candidate SWH in the study area.

Construction within the proposed development envelope will result in no negative impacts to the functions of identified natural features, provided the recommendations outlined in Sections 5 and 7 are implemented. GHD’s recommendations have been made to address potential impacts to natural features and/or their functions during the site preparation, construction and post-construction periods. Additional discussions with the Prince Edward County, MECP and Quinte Conservation need to occur so that appropriate permitting processes are followed

In Section 5, GHD has identified mitigation measures aimed at protecting natural heritage features and functions as well as sensitive species in the study area. Additional surveys have been identified that are required to confirm presence/absence information, including targeted surveys for certain species at risk, species at risk habitat and significant wildlife habitat.

In Section 7, GHD has made recommendations to address potential impacts to natural heritage features and/or their functions during the site preparation, construction and post-construction period. Additional discussions with Prince Edward County, Quinte Conservation and the Ministry of the Environment, Conservation and Parks are required to ensure that all appropriate permitting processes are followed.

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1. Introduction

1.1 Background

GHD Limited was retained to complete an Environmental Impact Study for a proposed draft plan of subdivision (which includes townhouses, mixed use residential, single detached homes, parking and amenity areas) on two properties located to the north of County Road 33, on both the east and west sides of Cleminson Street, in the village of Wellington, Prince Edward County “the study area”. The study area included potential habitat for species at risk, woodland, unevaluated wetland, an intermittent drainage feature and significant wildlife habitat. As a result, Prince Edward County requires an EIS as part of the supporting documentation for a development proposal.

1.2 Location and Study Area

The study area is located to the north side of County Road 33 (Loyalist Parkway) and is centred on Cleminson St. in the village of Wellington. Also known as Part of Lot 5, Concession 1, Lakeside and Part of Lot 4, Concession 1, Lakeside in the Geographic Township of Ameliasburgh, the study area is bounded to the north by the Millennium Recreation Trail, to the east by residential homes that have frontage on Consecon Street, to the south by residences with frontage on Main Street (County Road 33) and to the west by other existing residential properties.

1.3 Scope and limitations

This report: has been prepared by GHD for Sterling Homes Inc. and may only be used and relied on by Sterling Homes Inc. for the purpose agreed between GHD and Sterling Homes Inc. as set out in section 1 of this report.

GHD otherwise disclaims responsibility to any person other than Sterling Homes Inc. arising in connection with this report. GHD also excludes implied warranties and conditions, to the extent legally permissible.

The services undertaken by GHD in connection with preparing this report were limited to those specifically detailed in the report and are subject to the scope limitations set out in the report.

The opinions, conclusions and any recommendations in this report are based on conditions encountered and information reviewed at the date of preparation of the report. GHD has no responsibility or obligation to update this report to account for events or changes occurring subsequent to the date that the report was prepared.

The opinions, conclusions and any recommendations in this report are based on assumptions made by GHD described in this report (refer section(s) 1 of this report). GHD disclaims liability arising from any of the assumptions being incorrect.

1.4 Study Rationale

This section identifies federal, provincial and other regulatory legislation, policies, official plans (OPs) and official plan amendments that are applicable and relevant to the study area and the immediate vicinity. This includes policies that triggered the study. These documents may identify Species at risk, natural features and habitats or other features relevant to this study.

1.4.1 Federal Legislation

1.4.1.1 Migratory Birds Convention Act

The Migratory Birds Convention Act (MBCA 1994) and Migratory Birds Regulations (MBR – Government of Canada 2022) protect most species of migratory birds and their nests and eggs. Under the MBR 2022 it is now prohibited to damage, destroy, disturb or remove migratory bird nests when they contain a live bird or viable egg and prohibit the

deposit of harmful substances in waters and areas frequented by them. For 18 species of migratory birds identified on Schedule 1, the MBR 2022 provides year-round nest protection until they can be deemed abandoned. The Schedule includes certain migratory birds who either re-use their own nests from one year to the next (colonial species), or whose nests are commonly re-used by other species of migratory bird species, like Pileated Woodpeckers. If the nest of a Schedule 1 species has not been occupied by a migratory bird for the entirety of the waiting time indicated in the MBR 2022, it is considered to be abandoned, and to no longer have high conservation value for migratory birds.

Environment and Climate Change Canada (ECCC) implements policies and guidelines to protect migratory birds, providing guidance on the Environment Canada website to help to minimize the risk of detrimental effects to migratory birds and to achieve compliance with the law (Government of Canada 2022b). Compliance with the MBCA and MBR is best achieved through a due diligence approach based on a site-specific analysis in consideration of the avoidance guidelines on the ECCC website, such as the implementation of timing restrictions to ensure migratory birds and their young have left an area before it is disturbed due to construction or prior to vegetation removal.

The Study Area has been identified to be within Zone C2 (ECCC 2019) and as such this area of southern Ontario typically has migratory birds nesting between the time period of April 1st to August 31st of every year.

1.4.1.2 Fisheries Act

The purpose of the Fisheries Act (FA) is to maintain healthy, sustainable and productive Canadian fisheries through the prevention of pollution, and the protection of fish and their habitat. The FA defines fish habitat as “spawning grounds and other areas, including nursery, rearing, food supply and migration areas, on which fish depend directly or indirectly in order to carry out their life processes” [subsection (2)1]. The FA prohibits the death of fish by means other than fishing [subsection 34.4 (1)] and the harmful alteration, disruption or destruction of fish habitat [HADD; subsection 35. (1)]. A HADD is defined as “any temporary or permanent change to fish habitat that directly or indirectly impairs the habitat’s capacity to support one or more life processes” (DFO 2019). Protection provisions for fish and fish habitat are also provided in the form of standards, codes of practice, and guidelines for projects in and near water. These provide guidance on how to avoid and mitigate impacts to fish and fish habitat and comply with the FA to avoid causing the death of a fish or HADD of fish habitat from your work, undertaking or activity.

Projects affecting waterbodies that support fish and fish habitat must comply with the provisions of the FA. The proponent is responsible for determining if the project is likely to cause impacts to fish and fish habitat and if these impacts can be avoided or mitigated.

A Request For Review should be submitted to Fisheries and Oceans Canada (DFO) if impacts cannot fully be avoided or mitigated. Following DFO review, if it is determined that the impacts cannot be avoided or mitigated and will result in death of fish or a HADD of fish habitat, an authorization under Subsection 35 (2) of the FA must be obtained from the DFO.

Section 34 and 36, the key pollution prevention provisions, prohibits the deposit (i.e., discharging, spraying, leaking, dumping, etc.) of deleterious substances into waters frequented by fish, unless authorized by regulations under the FA or other federal legislation

1.4.2 Provincial Legislation

1.4.2.1 Endangered Species Act, 2007

The purposes of the Ontario Endangered Species Act (ESA 2007) are to:

1. identify species at risk based on the best available scientific information, including information obtained from community knowledge and aboriginal traditional knowledge;
2. protect species that are at risk and their habitats, and to promote the recovery of species that are at risk;
3. promote stewardship activities to assist in the protection and recovery of species that are at risk. 2007, c. 6, s. 1. (Government of Ontario 2021)

The ESA clearly defines the five classifications of species status as extinct, extirpated, endangered, threatened, or special concern, and provides guidelines on the process of species status determination.

Regulations made under this Act include: Ontario Regulation 230/08 and 242/08. Ontario Regulation 230/08 provides the list of Species at Risk (SAR) in Ontario, which is updated regularly. This list was most recently consolidated on January 26, 2022 (Government of Ontario 2022). Species status provided in the list is assessed by an independent body, the Committee on the Status of Species at Risk in Ontario (COSSARO), based on the best-available science and Aboriginal Traditional Knowledge.

General habitat protection is afforded to all species listed as endangered or threatened. General habitat descriptions are technical, science-based documents that have been developed for some of the species that are most likely to be affected by human activity (Government of Ontario 2021). Further information including a Recovery Strategy or Management Plan is required for each listed species, on a timeline dictated by the species status.

Ontario Regulation 242/08 explains possible exemptions to the ESA and details on how the purpose of the ESA is to be carried out (Government of Ontario 2021b).

1.4.2.2 Provincial Policy Statement, 2020

The Provincial Policy Statement, 2020 (PPS) is the statement of the Ontario government's policies on land use planning. It applies province-wide (in the province of Ontario) and provides provincial policy direction on land use planning. It came into effect May 1, 2020 replacing the Provincial Policy Statement issued in April 2014. Municipalities use the PPS to develop their official plans and to guide and inform decisions on other planning matters. The PPS is issued under Section 3 of the Planning Act and all decisions affecting land use planning matters 'shall be consistent with' the Provincial Policy Statement (Government of Ontario 2020).

Portions of Sections 2.1.4-2.1.8 of the Provincial Policy Statement (PPS 2020) apply to this project.

2.1.4 Development and site alteration shall not be permitted in:

- a. significant wetlands in Ecoregions 5E, 6E and 7E1; and*
- b. significant coastal wetlands.*

2.1.5 Development and site alteration shall not be permitted in:

- a. significant wetlands in the Canadian Shield north of Ecoregions 5E, 6E and 7E;*
- b. significant woodlands in Ecoregions 6E and 7E (excluding islands in Lake Huron and the St. Marys River);*
- c. significant valleylands in Ecoregions 6E and 7E (excluding islands in Lake Huron and the St. Marys River);*
- d. significant wildlife habitat;*
- e. significant areas of natural and scientific interest; and*
- f. coastal wetlands in Ecoregions 5E, 6E and 7E1 that are not subject to policy unless it has been demonstrated that there will be no negative impacts on the natural features or their ecological functions.*

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

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

2.1.8 Development and site alteration shall not be permitted on adjacent lands to the natural heritage features and areas identified in policies 2.1.4, 2.1.5 and 2.1.6 unless the ecological function of the adjacent lands has been evaluated and it has been demonstrated that there will be no negative impacts on the natural features or their ecological functions.

1.4.3 Local and Other Regulatory Bodies

1.4.3.1 County of Prince Edward Official Plan (2021)

Schedule A-3: Land Use Designations of the Prince Edward County Official Plan (2021) indicates the study area falls within an Urban Centre and is adjacent to the Millennium Trail, which is designated as Open Space. New residential development is encouraged to be located in such areas. Policy direction associated with the Urban Centre Designation is found in Section 4.1.2 of the Official Plan (OP), with additional policy direction provided in areas of the OP that reference this designation. Feature-specific policies relating to Environmental Protection and Enhancement (including wetlands, woodlands, valleylands) and unmapped Natural Heritage Features (such as watercourses, species at risk and significant wildlife habitat) are described in Sections 3.1.4 and 3.1.5. Schedule B of the OP shows the study area falls within a Secondary Plan Boundary (associated with OP Amendment No. 62 – the Wellington Secondary Plan). According to the OP, “*Secondary Plans shall be read in conjunction with [the OP]” and “where there is a conflict between a policy of [the OP] and a policy in an applicable Secondary Plan, the policy of [the OP] shall prevail, until such time as the Secondary Plan is brought into accordance with the Official Plan.”*

1.4.3.2 Wellington Urban Centre Secondary Plan (May 2015)

Schedule A: Secondary Plan Land Use Map (May 2015) indicates the study area includes a Village Residential Area, a Park and an Open Space Area (i.e., the Millennium Trail). The Village Residential Area designation, “*includes existing neighbourhoods where minor infilling and intensification is encouraged. It also includes undeveloped areas surrounding the existing neighbourhoods where new development will occur as an extension of the building fabric.*” Information regarding the policies of this designation can be found in Section 2.4.1 of the Secondary Plan. Policies associated with the Park and Open Space designation are found in Section 2.6. Other relevant sections include 4.7: Environmental Management and Section 4.7.3: Environmental Impacts and Analysis.

1.4.3.3 Quinte Conservation

The Conservation Authority whose jurisdiction the study area falls under is the Quinte Conservation Authority. Under the Conservation Authorities Act, Ontario Regulation 319/09, Regulation of Development, Interference with Wetlands and Alterations to Shorelines and Watercourses is applicable (Government of Ontario 2013). A permit is required from Quinte Conservation for regulated areas to complete any works that are within 30 metres of unevaluated wetlands, watercourses or waterbodies.

There are three ways through which Conservation Authorities address wetlands within the regulations.

They regulate:

- activities within wetlands to ensure that they do not interfere with its natural features and hydrologic and ecological functions;
- development within wetlands to ensure that it does not impact the control of flooding, erosion, dynamic beaches, pollution or the conservation of land; and
- development adjacent to a wetland to ensure that the hydrologic function of the adjacent wetland is not affected.

1.5 Other Resources Referenced

Prior to field surveys, background information for the study area and surrounding lands from a variety of sources was reviewed to provide context for the setting and sensitivity of the site. Background information sources included:

1.5.1 Data Sources

- Aerial imagery
- MNRF Land Information Ontario (LIO) database mapping and Natural Heritage Information Centre (NHIC) Make-a-map tool (2022)

- Ontario Breeding Bird Atlas data (Bird Studies Canada, (BSC) 2001-2005 field data)
- Ontario Reptile and Amphibian Atlas data (Ontario Nature 2019)
- I-naturalist and e-bird on-line databases

1.5.2 Literature and Resources

- Natural Heritage Reference Manual (OMNRF 2010)
- Significant Wildlife Habitat Criteria Schedules for Ecoregion 6E. Peterborough, 38pp. (OMNRF 2015)

1.6 Description of Development

The proposal relates to a draft plan of subdivision on two parcels of land, one on the west side of Cleminson Street, with the other being located immediately to the east. From here on, the report when the report discusses the area west of Cleminson Street, it will refer to two parcels. The proposal for the western portion involves a site area of 7.56ha, in which 191 townhouses (of three styles), two mixed use (residential) buildings, three parkettes, parking for visitors, several new roads and other associated infrastructure would be created. For the eastern portion, the Concept Plan indicates that within the 2.22ha parcel, 14 townhomes and 34 single detached (36ft) buildings would be built adjacent to a crescent as well as a proposed underground parkette/storage facility (**Appendix A**).

1.6.1 Scope of Report

The scope of work for the project includes the following:

- description of current and proposed land uses (all properties);
- Ecological Land Classification (ELC) of all vegetation communities (all properties);
- assessment of woodland significance (westernmost property only);
- assessment of potential Significant Wildlife Habitat (SWH) (all properties - preliminary);
- Species At Risk (SAR) presence and habitat assessment, including habitat of endangered and threatened species (all properties – preliminary);
- analysis of possible impacts of development on the natural features and ecological functions of all significant features identified (all properties);
- mitigation recommendations (all properties);
- figure illustrating lot layout that respects all significant natural features and buffers/setbacks per EIS recommendations (all properties)

This report will only deal with the suitability of the study area from a biological perspective and the constraints due to the presence of the key natural heritage features. Any other approvals or constraints due to zoning, flood and fill regulations, health regulations, archaeology, slope stability studies, minimum distance separation or other approvals for the municipality and other agencies are the responsibility of the owner.

2. Study Methods

2.1 General Approach

Our approach to preparation of the EIS consisted of several phases.

In the first phase, GHD staff collected available information about the most western property in the study area including recent aerial photography, key natural features GIS mapping, wetland mapping, Prince Edward County Official plan schedules and other correspondence.

The second phase consisted of a site visit by our terrestrial/wetland biologists in the summer of 2021 to confirm the data collected in the literature review and collect additional information about the Site. As well as an additional late season survey. Surveys included Ecological Land Classification (ELC) mapping, vegetation community boundaries, an assessment of wildlife corridors and linkages and determining the presence of significant species including Species at Risk.

The third phase involved GHD staff collecting additional background information about the eastern portion of the study area. A site visit was then conducted by GHD's Senior Biologist to identify environmental constraints in that portion of the study area. Subsequently, a constraints map was produced.

The fourth phase has involved the preparation of this EIS report with specific mitigation measures for protecting sensitive species and significant natural features identified on or adjacent to the study area. Recommendations regarding the trees, including the rationale for the width of any proposed buffers/setbacks, or alternately, the rationale for removing portions of woodlands and fencerows, has been included. This report also includes a figure that show the location of all key natural features. It includes mitigation measures for the site preparation and construction phases of the project such as erosion control measures, restricted timing windows, fencing, as well as plantings or enhancement measures if appropriate.

The report follows the requirements of the official plan with regard to compliance with natural heritage policies. We worked with study team on the layout of the lots, to ensure that natural features were protected and that the final plans meet the recommendations of our EIS report, municipal requirements and County policies (e.g., Official Plan 2021).

2.2 Study Site Methodology

2.2.1 Physical Site Characteristics

The characteristics of the study area were assessed during field visits. Assessments included general documentation of existing disturbances, current use(s), age of vegetation cover, topography and natural features.

2.2.2 Biophysical Inventory

2.2.2.1 Vegetation

ELC Survey Method

All vegetation encountered in the most western portion of the study area was inventoried during the first site visit. GHD staff delineated and classified all vegetation community types in the study area based on the Ecological Land Classification for Southern Ontario (Lee et al., 1998). GHD staff made general notes throughout the study area regarding disturbance, topography, soil types, soil moisture and state of each community.

Rare, significant or uncommon species were searched for. When identification of a particular species required further study for confirmation, samples and/or photographic records were taken. GHD staff determined species rarity on a

national, provincial and regional level based on published literature and standard status lists. These included SARA (2022), COSEWIC (2021), SARO (2022) and Cuddy et al. (1998).

GHD staff subsequently delineated and classified the vegetation community types in the eastern part of the study area based on the Ecological Land Classification for Southern Ontario (Lee et al., 1998). Once again, GHD staff made general notes throughout the study area regarding disturbance, topography, soil types, soil moisture and state of each community.

2.2.2.2 Wildlife

Area searches were conducted while GHD biologists were completing vegetation surveys. All birds, amphibians, mammals and reptiles detected during field surveys were recorded along with a breeding evidence code if known. Documentation included notes about which species was detected, its location and the type of encounter (i.e., direct sightings and indirect evidence such as calls, tracks, scat, burrows, dens, trails and browse). Monarch host plants and larvae were also searched for. The search area for these surveys included all of the vegetation communities in the eastern and westernmost portions of the study area.

Rare, significant or uncommon species were searched for. When identification of a particular species required further study for confirmation, samples and/or photographic records were taken. GHD staff determined species rarity on a national, provincial and regional level based on published literature and standard status lists. These included SARA (2022), COSEWIC (2021) and SARO (2022).

2.2.2.3 Wetlands

The presence of wetlands in the study area were confirmed in the field by GHD staff familiar with the methodologies described in the Ontario Wetland Evaluation System Southern Manual, Third Edition (OMNRF 2014 and updates, version 3.3). Subsequently the boundaries of these wetlands were delineated using a high-accuracy hand-held GPS unit.

2.2.2.4 Woodlands

The treed communities in the study area were evaluated according to the Significant Woodland Evaluation Criteria and Standards in Table 7-2 of OMNR's Natural Heritage Reference Manual. The boundaries of these woodlands and associated woodland characteristics were confirmed by GHD biologists in the field.

2.2.2.5 Significant Wildlife Habitat (SWH)

Prior to site visits, a candidate list of SWH features was created based on the Significant Wildlife Habitat Criteria Schedules for Ecoregion 6E, 2015. During site visits, GHD biologists looked for evidence of those candidate significant wildlife habitat features (i.e., to determine presence/absence). Upon compiling field data, further consideration was given to which candidate SWHs could be confirmed as present in the study area. Among the features GHD biologists looked for were tree cavities or other evidence of bat maternity colonies, rock piles, stone fences and other evidence of reptile hibernacula, large stick nests and other evidence of woodland raptors, seeps and springs and vernal pools, ponds and other evidence that amphibian habitat may be present.

3. Survey Results

The following section presents GHD site-specific survey data only. Supporting information, the background review and other sources of information will be presented and discussed in Section 4.0 – Discussion and Analysis.

3.1 Physical Site Characteristics

The study area is located in the village of Wellington to the north of County Road 33, including an area on either side of Cleminson St. The study area was relatively flat, with a slight increase in elevation towards the north. A recreational rail trail served as the northern boundary of the study area with residential areas being located to the east, south and west. The study area included abandoned fields that were formerly used for agriculture in addition to fencerows, a small wetland and a creek.

3.2 Biological Inventories

3.2.1 Vegetation

3.2.1.1 Level of Effort

The vegetation communities were delineated within the study area by GHD biologists according to methodologies outlined in Section 2.2.2.1. A summary of the level of effort and environmental conditions have been provided in **Table 3.1**.

Table 3.1 Vegetation Surveys - Level of Effort

Survey Date	Survey Type	Weather	Start Time	Effort (person hours)
July 30, 2021	Ecological Land Classification (ELC) – most western property	17°C, cloud cover 40%, Beaufort Wind Scale 2, no precipitation	8:45	3.5
January 30, 2022	Ecological Land Classification – eastern portion	4°C, cloud cover 20%, snow cover depth 10-20 cm	13:00	2.0

3.2.1.2 ELC Code Descriptions

Four (4) vegetation communities were identified within the portion of the study area that was farthest to the west. Each of these communities are described below and illustrated on **Figure 1**. Five (5) vegetation communities were subsequently delineated in the eastern portion of the study area. General descriptions of these communities are also provided below. The remaining (2) vegetation communities (located on the property immediately west of Cleminson Street) were delineated based on aerial photography and photographs taken from the other two properties. These are also depicted on **Figure 1**.

A total of 48 plant species were identified during field surveys in the portion of the study area that was farthest west. The dominant species in each community are described below and a complete plant list is found in **Appendix B**.

Community 1 Maintained Lawn (No applicable ELC code)

A small portion of the study area that fronted onto CR 33 (Wellington Main Street) had been maintained as manicured lawn. Kentucky blue grass (*Poa pratensis*), common dandelion (*Taraxacum officinale*) and narrow-leaved plantain (*Plantago lanceolata*) were the only species noted to occur here.



Photo 1: Community 1 – Maintained Lawn (July 30, 2021)

Community 2 Overgrown Lawn (No applicable ELC code)

Located to the north of Community 1, this vegetation community consisted of a small area of neglected lawn and was in the process of becoming a “weedy” meadow. Many alien weed species were identified here, including European stinging nettle (*Urtica dioica* L. ssp. *dioica*), curled dock (*Rumex crispus*), rough cinquefoil (*Potentilla norvegica*), and common ragweed (*Ambrosia artemisiifolia* L.).



Photo 2: Community 2 – Overgrown Lawn (July 30, 2021)

Community 3 Mineral Cultural Meadow Ecosite (ELC Code: CUM1)

Community 3 comprised the majority of the western part of the study area. It was an abandoned agricultural field dominated primarily by herbaceous species. Shallow stony soils were noted to occur. Weed species typical of this part of Ontario were detected, included Queen-Anne's lace (*Daucus carota*), catnip (*Nepeta cataria*), spiny-leaved sow thistle (*Sonchus asper*) and common barnyard grass (*Echinochloa crusgalli*). Based on air photo interpretation and the 2022 site visit, the majority of the study area on either side of Cleminson Street was also cultural field meadows, though a higher proportion of grasses occurred in those areas.



Photo 3: Community 3 – Mineral Cultural Meadow Ecosite – western property (July 30, 2021)



Photo 4: Community 3 – Mineral Cultural Meadow Ecosite – eastern property (January 30, 2022)

Community 4 Fencerow (No Applicable ELC Code)

Located along the periphery of the western most property (i.e., running along the Millennium Trail in the north and separating the study area from adjacent properties to the east, south and west) were fencerows. The dominant canopy tree species in this portion of the study area was Manitoba maple (*Acer negundo*), though GHD also found other species including eastern red cedar (*Juniperus virginiana*), eastern white cedar (*Thuja occidentalis*), black walnut (*Juglans nigra*) and Norway maple (*Acer platanoides*). European buckthorn was the most abundant shrub in this location. Herbaceous species found growing beneath the trees included common strawberry (*Fragaria virginiana*), yellow avens (*Geum aleppicum*), garden phlox (*Phlox paniculata*) and New England aster (*Symphotrichum novae-angliae*). In 2022, fencerow communities were also noted as occurring to the immediate east of where detailed field surveys had been completed in 2021 (i.e., in the middle of the study area) as well as along the northern extent of the study area adjacent to the Millennium Trail. Staghorn sumac (*Rhus typhina*) was observed along the trail's edge.



Photo 5: Community 4 – Fencerow – western property (July 30, 2021)



Photo 6: Community 4 – Fencerow – eastern property January 30, 2022)

Community 5 Mineral Cultural Thicket Ecosite (ELC Code: CUT1)

In the eastern portion of the study area (i.e., to the east of Cleminson Street) there was an area in the northwest where the early successional vegetation included a shrub component. The dominant shrub was noted as European buckthorn. Scattered Manitoba maple and green ash (*Fraxinus pensylvanica*) were also observed.



Photo 7: Community 5 – Mineral Cultural Thicket (January 30, 2022)

Community 6 Mineral Swamp Thicket Ecosite (ELC Code: SWT1)

In the eastern portion of the study area within the mineral cultural meadow, was a small (~500 m²) wetland that contained dogwoods (*Cornus species*), willows (*Salix species*), wetland grasses and cattails (*Typha species*).



Photo 8: Community 6 – Mineral Thicket Swamp (January 30, 2022)

Community 7 Riparian (No applicable ELC Code)

In the northeastern portion of the study area, there was a one-metre box culvert which passed under the Millennium Trail (old rail line). In that location, there was a drainage feature that was flowing (lightly) during the 2022 visit to the study area. This intermittent drainage feature transitioned into a poorly defined channel as one travelled south. The presence of large willows and dogwoods indicates that this area, located between the houses with frontage on Consecon Street and the mineral cultural meadow, contained wetland characteristics.



Photo 9: Box culvert in northeastern portion of study area (January 30, 2022)

3.2.2 Birds and Other Wildlife

Eleven (11) bird species were identified on or near the western portion of the study area on July 30, 2021. A complete list of the birds observed during the site visit is found in **Appendix C**. One eastern gartersnake (*Thamnophis sirtalis sirtalis*) snake was observed foraging along the edge of Community 4. No other wildlife species were noted in the study area. No additional birds were recorded during the second visit to the study area.

3.2.3 Wetlands

One wetland ELC vegetation type was identified in the eastern portion of the study area. This community is identified as Community 6 (SWT1) and is described in Section 3.1.2 of this EIS report. There was also a riparian area adjacent to the creek, which may include wetland habitat.

3.2.4 Woodlands

No woodlands were identified on or adjacent to the property.

3.2.5 Significant Wildlife Habitat

During our review of candidate Significant Wildlife Habitat, the following were identified as potentially present on site: Bat Maternity Colonies, Reptile Hibernaculum, Migratory Butterfly Stopover Areas and habitat for Special Concern and Rare Wildlife species. Upon discovering wetland and riparian habitat in the eastern portion of the study area in 2022, amphibian habitat (wetland) was included in the list of the candidate SWH.

None of these habitats were confirmed in the study area. There was no evidence of large cavities trees or snags that would be appropriate for bat maternity use.

No rock piles, cracks/crevices or other structures appropriate for reptiles to use as hibernacula were seen.

Flowering plants that would support migrating butterflies appeared to be absent, though additional surveys would need to be conducted in the growing season to confirm the habitat was/was not present.

Similarly, neither amphibian habitat, nor habitat for Special Concern or Rare Wildlife species were found by GHD staff, but additional in-season surveys would be required to determine that this SWH was not present.

4. Discussion and Analysis

4.1 Physical Site Characteristics

According to Chapman and Putnam (1984), the study area falls within the Limestone Plains, with the County being almost entirely occupied by farmers early on. The Paleozoic Geology of Ontario indicates the area is underlain by the Lindsay Unit, Simcoe Group, which is composed mainly of limestone and shale, with the Bedrock Geology of Ontario indicating the rock types include limestone, dolostone, shale, arkose and sandstone (Armstrong and Dodge). Soils in the area consist of clay loams, which originated as a result of weathering of the underlying bedrock along with deposits originating from moraines, marine environments and outwash materials. Such soils are known to drain well and are conducive to general farming.

4.2 Species and Communities

4.2.1 Vegetation

GHD biologists found one species that is classified as federally and/or provincially rare in the study area (SARA 2022; COSEWIC 2021; SARO 2022). Ten of these medium-sized trees, butternut, were located in the eastern portion of the study area in 2022. Butternut is listed as endangered and is afforded protection under Ontario's Endangered Species Act. Further discussion regarding ESA-related protection(s) can be found in Sections 5, 6 and 7.

Three regionally rare plant species (Cuddy 1998) were detected on the property farthest west in 2021 (**Appendix D**). These species were: black walnut (*Juglans nigra*) Norway maple (*Acer platanoides*) and garden phlox (*Phlox paniculata*). Black walnut and Norway maple have been planted throughout southern Ontario and have naturalized in this region. Garden phlox is native to the eastern and central United States and has been widely planted in gardens outside of its native range. Escapees from gardens have established themselves throughout southern Ontario. Today, these regionally rare plants are frequently encountered in Prince Edward County and within Cuddy's study area. GHD is not recommending any mitigation measures or protection for these species.

Ontario Ministry of Natural Resources (OMNRF)'s Natural Heritage Information Centre (NHIC) collects information about rare species in the province of Ontario. The public is able to access presence/absence data for rare and/or tracked species through an online application 'Make-a-Map.' This information is presented according to the 1km x 1km square in which observations of the species were made. Two such squares overlap the study area: 18UP1069 and 18UP1169. Both squares include records of butternut (NHIC 2022).

None of the ecological communities (i.e., ELC ecosites or vegetation communities) found in the study are considered provincially rare (NHIC 2021).

4.2.2 Birds

One listed bird species, the eastern meadowlark (*Sturnella magna*), was detected during GHD's visits to the study area in 2021. This species is considered to be threatened at the national and/or provincial levels (SARA 2022; COSEWIC 2021; SARO 2022). This species was observed perching on the northern fencerow on the westernmost property. This observation was made after breeding season and was most likely a bird from neighboring fields. The habitat in this portion of the study area would be considered poor nesting habitat for this species. However, suitable habitat (i.e., old field meadows with an abundance of grasses) appeared to be present in both the middle and eastern portions of the Study Area.

There were no records of species at risk (or tracked) birds in the two 1km x 1km squares that overlapped the study area, which were 18UP1069 and 18UP1169 (NHIC 2022).

The Ontario Breeding Bird Atlas (OBBA) is a volunteer-driven project with the aim of collecting information about the abundance and distribution of Ontario's birds. The OBBA has had two previous data collection periods (1981-1985 and 2001-2005), with the third period (2021-2025) currently in progress. The public can access presence/absence information from the OBBA on-line by searching for records according to 10 km x 10 km square in which a species was found. For the 2nd OBBA, the 10km² square that overlaps the property (18UP16) includes records of 13 bird species that are considered nationally and/or provincially rare (SARA 2022; COSEWIC 2021; SARO 2022). These records are for: least bittern (*Ixobrychus exilis* - Threatened), black tern (*Childonia niger* - Special Concern provincially), common nighthawk (*Chordeiles minor* - Special Concern), eastern whip-poor-will (*Antrostomus vociferous* - Threatened), chimney swift (*Chaetura pelagica* - Threatened), red-headed woodpecker (*Melanerpes erythrocephalus* - Special Concern), eastern wood-pewee (*Contopus virens* - Special Concern), bank swallow (*Riparia riparia* - Threatened), barn swallow (*Hirundo rustica* - Threatened), wood thrush (*Hylocichla mustelina* - Special Concern provincially, Threatened nationally), grasshopper sparrow (*Ammodramus savannarum pratensis* - Special Concern), bobolink (*Dolichonyx oryzivorus* - Threatened) and eastern meadowlark (*Sturnella magna* - Threatened).

With the exception of species associated with early successional grassland habitats (i.e., grasshopper sparrow, bobolink, eastern meadowlark), it is unlikely any of these other species would find suitable breeding/nesting habitat in the study area, but rather are associated with larger forests and wetlands in the Atlas Squares inside and outside of the Village of Wellington.

4.2.3 Other Wildlife

No other federal or provincial species at risk were recorded in the study area during GHD site visits (SARA 2022; COSEWIC 2021; SARO 2022). It was thought that aerial foraging bats might inhabit the study area, but GHD did not identify any candidate maternity roost trees during their field visits.

OMNRF-NHIC's has records of Blanding's turtle (*Emydoidea blandingii*) in both 1km x 1km squares that overlap the study area (18UP1069 and 18UP1169). This species, whose Great Lakes/St. Lawrence population is considered to be nationally endangered and provincially threatened, uses a range of aquatic habitats, but favours those with shallow, standing or slow-moving water, rich nutrient levels, organic substrates and abundant aquatic vegetation. They will use rivers, but prefer slow-moving currents and are likely only transients in this type of habitat. This species is known to travel great distances over land in the spring in order to reach nesting sites, which can include dry conifer or mixed forests, partially vegetated fields, and roadsides. Suitable nesting substrates include organic soils, sands, gravel and cobble. They hibernate underwater and infrequently under debris close to water bodies (COSEWIC 2005). Suitable habitat for nesting and/or overwintering was not found in the study area.

The Ontario Reptile and Amphibian Atlas (ORAA) was a volunteer driven project that was coordinated by Ontario Nature. The goal of the ORAA was to collecting information about the abundance and distribution of Ontario's reptiles and amphibians. ORAA's data collection phase ended in 2019, but the public can access presence/absence information from that period thorough an on-line web application that allows someone to search for species records according to 10 km x 10 km square in which it was found. For the 10km² square that overlaps the property (18UP16) there are records of six (6) species: Blanding's turtle, eastern musk turtle (*Sternotherus odoratus* – Special Concern),

midland painted turtle (*Chrysemys picta marginata* – Special Concern nationally), northern map turtle (*Graptemys geographica* – Special Concern), snapping turtle (*Chelydra serpentina* – Special Concern) and western chorus frog (*Pseudacris triseriata* – Great Lakes St. Lawrence/Canadian Shield population – Threatened nationally).

The lack of aquatic habitat in the study area makes it unlikely to be suitable for many of these species, though it is possible western chorus frogs are making use of wetlands.

4.3 Natural Features

4.3.1 Wetland

The wetland identified in the study area is not currently mapped by the agencies as it is unevaluated. The approximately 500m² wetland was noted to contain dogwoods, willow shrubs, wetland grasses and cattails. Under the Ontario Wetland Evaluation System, these species would be referred to as the following vegetation forms: tall shrubs (ts), low shrubs (ls), narrow-leaved emergents (ne) and robust emergent (re). This unevaluated wetland is not located within 750 metres of any provincially significant wetlands. The closest mapped unevaluated wetland is 900 m to the northwest of the study area, with other unmapped coastal wetlands being located approximately 1.4 km to the east of the study area. This isolated wetland would not be considered to be a coastal wetland.

4.3.2 Significant Wildlife Habitat

Significant Wildlife Habitat often occurs within other natural heritage features and areas covered by Policy 2.1 of the Provincial Policy Statement (e.g., significant wetlands). Therefore, it has been suggested that identification and evaluation of significant wildlife habitat is best undertaken after other natural heritage features have been identified (Natural Heritage Reference Manual 2010).

GHD biologists analyzed the information collected from the ecological communities on the subject property using the criteria for Significant Wildlife Habitat in Ecoregion 6E (2015). Although GHD staff originally identified four (4) candidate SWH prior to visiting the study area, they added a fifth upon the initiation of fieldwork (amphibian breeding habitat). None of these candidate SWHs were confirmed in the study area. The lack of suitable structures/attributes in the study area suggested the Site does not provide habitat for reptile hibernacula, bat maternity/roosting, or migratory butterflies. Given that targeted amphibian surveys were not conducted, it is possible that SWH type is present in the study area. Similarly, in-season breeding bird surveys and/or additional effort searching for mammals, amphibians or reptiles could result in additional habitats being confirmed.

4.3.3 Other Natural Features

There are no provincially significant Areas of Natural and Scientific Interest (ANSI) located within 120m of the study area. The nearest ANSI to the study area (i.e., the provincially significant Sandbanks Coastal Sand Bar Dunes Life Science ANSI) is located more than 1.3km to the east of the study area. No provincially significant valleylands have been identified.

5. Impact Assessment and Recommendations

The following section provides a description of the predicted impacts that may result from the proposed development (Table 5.1). It also identifies mitigation measures to be implemented to avoid and/or minimize adverse effects to the natural environment features within or near the project. A full list of mitigation measures has been provided in Section 7 of this report.

5.1 Natural Features

5.1.1 Vegetation and Wildlife

The proposed development would require the removal of most of the vegetation on site including some of the fencerows in all three portions of the study area (i.e., both to the east and west of Cleminson Street). GHD did not find evidence that removal of these fencerows would have significantly negative impacts on any of the rare species or sensitive habitats found. However, the butternut trees that were located on the eastern property will need to be assessed by a butternut health expert prior to removal. Depending on the results of these assessments, mitigation measures will be developed to ensure consistency with the Endangered Species Act. In addition, GHD should conduct a further search for cavity trees and/or snags to ensure that potential bat habitat is appropriately addressed.

Regardless of the results of additional surveys, no tree cutting or vegetation removal should take place during of the peak breeding bird period (April 15th- August 15th) in keeping with Environment and Climate Change Canada guidelines. GHD recommends that a tree preservation plan is developed and also encourages that removal of trees and other vegetation in the fencerows be minimized to the extent possible.

5.1.2 Wetland and drainage

An intermittent drainage feature was located along the eastern edge of the study area, mostly off property. The feature collects runoff from a portion of this property and adjacent lots to east, The feature contained several larger trees but wetland was not present. GHD has reviewed the grading plans, swale design drawings and the functional servicing report.

The development plan includes a corridor block behind the proposed easternmost residential lots. The maintenance of drainage from the culvert located to the northeast through this site to the underground pipe that conveys the drainage directly to Lake Ontario is recommended. This includes reinstating vegetation along the shallow (0.4 m depth) swale to be constructed. Vegetation along the bottom and slopes of that feature should include native shrubs and a native seed mix.

An unevaluated wetland was identified in the southeastern portion of the study area. This community (SWT1) was very small (500 m²/~0.05 ha) and did not have any ecological features that made it particularly significant (e.g., provision of SAR habitat or confirmed amphibian breeding habitat). It was not connected to a drainage feature or any obvious outlet. GHD is recommending that discussions with Quinte Conservation be conducted to address their policies regarding interference with wetlands and unevaluated wetlands less than 0.5 ha in size..

Appropriate permitting/authorizations would need to be obtained prior to making any changes to the study area that would cause negative impacts to this feature or its functions.

5.1.3 Significant Wildlife Habitat

Although five candidate SWHs were identified in the study area, none were confirmed. However, three of these candidate SWH types would require additional surveys in order to confirm their presence or absence in the study area. The best mitigation measure to reduce the potential impacts of the proposed development on all types of significant

wildlife habitat is to avoid having the development encroach into identified features. Where avoidance was not possible, additional measures have been described below.

5.1.3.1 Bat Maternity Colonies

GHD is recommending additional surveys be conducted during the leaf-off period to ensure that no trees suitable for bat maternity use or roosting occur in the study area. Surveys would be conducted using the latest protocols developed by OMNRF. Results of those surveys may result in submission of findings to the Ministry of Environment, Conservation and Parks and compliance with the Endangered Species Act and relevant regulations.

5.1.3.2 Migratory Butterflies

Although the study area was located within 5km of Lake Ontario, fields were dominated by grasses rather than flowering plants that were suitable for nectaring. In addition, the fields were regularly mowed. For these reasons, GHD would not consider the study area to be a significant migratory butterfly stopover area and are not making any specific recommendations regarding this SWH type.

5.1.3.3 Amphibian Habitat (Wetland)

GHD is recommending that additional surveys be conducting during the spring to confirm the presence or absence of this SWH type in the study area. Assuming the small wetland on the eastern property does not provide this function, compensation plans for the area could be designed including attributes that amphibians make use of.

5.1.3.4 Habitat for Special Concern or Rare Wildlife Species

GHD biologists did not locate any special concern or rare wildlife species (not including endangered or threatened species) in the study area. However, GHD is recommending that additional in-season surveys are conducted including those for breeding bird surveys.

5.1.4 Species at Risk

5.1.4.1 Butternut

Ten butternut trees were located in the study area in 2022. These trees will need to have Butternut Health Assessor expert's report completed by a qualified biologist in order to determine the condition of these trees (and associated category) and whether or not a conditional exemption for any/all of these trees would apply (i.e., under O. Reg 830/21). It is possible that an authorization or other permit/agreement will be required under the Endangered Species Act. Such surveys should be completed when leaves are on the trees (e.g., between May 15 and August 31).

In the Prince Edward County area, hybrid trees are very common but can be mixed in with pure butternut. If an arborist report is required, conducting DNA sampling of the tissues is recommended to confirm the hybridity. Hybrid butternut are not protected under the ESA.

5.1.4.2 Eastern meadowlark

An eastern meadowlark was observed perching on one of the trees in the northern fencerow in the study area in late July 2021. GHD biologists noted that suitable nesting habitat for this species appeared to be present in the central and eastern portions of the study area in old field meadow habitats that were not regularly cut. Additional species-specific surveys for this bird would be required in the spring to determine whether or not there is habitat that would receive protection under Ontario's Endangered Species Act and if a permit/compensation is required. Mapping of the habitat using the MNRF General Habitat Description for eastern meadowlark would determine if Category 1, 2 or 3 habitat is present in the fields on site.

5.1.4.3 Bats

Bat cavity trees were identified in the northwest corner of the site near the creek with other potential trees in the fencerows. The identification of maternity/roosting trees should be determined through additional leaf off surveys. If habitat trees are found, discussion with MECP and mitigation would be required.

Table 5.1 Impact Assessment and Recommendation Summary

Feature or Function	Impact to Feature or Function	Mitigation	Residual Effect
Unevaluated wetland	<p>Potential loss of wetland area</p> <p>Potential changes to moisture regime due to vegetation clearing and building of infrastructure</p> <p>Potential release of contaminants via surface runoff</p>	<p>A minimum 15-metre buffer to be established from the riparian area located in the eastern part of the study area.</p> <p>Compensation to be discussed with Quinte Conservation and possible preparation of a wetland compensation plan for the small wetland in the eastern part of the study area.</p> <p>Heavy-duty silt fencing to be installed around the active development area to prevent sediment and/or silt from flowing into wetlands and/or riparian areas outside of the development envelope</p> <p>LID approaches to be incorporated into the development plan</p>	No net loss of wetland area or wetland function.
Significant Wildlife Habitat	<p>Potential loss of habitat</p> <p>Potentially negative impacts to functions of the habitat</p>	<p>GHD is recommending that additional surveys be conducted to confirm which SWH are present in the study area.</p> <p>Development of a tree preservation plan.</p> <p>Minimize removal of vegetation along fencerows to the extent possible.</p> <p>Additional mitigation measures and recommendations to be determined depending on which SWH are confirmed.</p>	
Species at Risk: butternut	<p>Potential loss of individual trees and/or negative impact to the habitat of these trees.</p>	<p>Additional survey/assessment to be conducted by Butternut Expert (BHE)</p> <p>Consultation with MECP required to ensure permitting/authorization requirements are met.</p>	None
Species at Risk: eastern meadowlark	<p>Potential loss of breeding and/or feeding habitat for eastern meadowlark</p>	<p>Additional study/survey to be conducted during the breeding season</p> <p>Consultation with MECP required to ensure permitting/authorization requirements are met.</p>	None

6. Policies and Legislative Compliance

The following section describes how the proposed development will be in conformance with the relevant federal, provincial and other regulatory legislation, policies, official plans and OP amendments that are applicable and relevant to the study area and the immediate vicinity.

6.1 Federal Legislation

6.1.1 Migratory Birds Convention Act

The core breeding period in Ontario for migratory birds under the MBCA for Bird Conservation Region 13 (i.e., the one the subject property lies within) extends from April 15th to August 15th (Environment and Climate Change Canada, 2014). As such clearing of the trees and other vegetation for the development cannot occur during this timing window. If cutting of some patches of trees is required, a nest search by a qualified bird biologist is required to determine if active nests are present. If no nests are found, clearing of trees should occur within 48 hours. If a nest is found, a buffer around that nest would be established and subsequent site visits required until the birds have fledged.

6.2 Provincial Legislation

6.2.1 Endangered Species Act, 2007

One provincially endangered species was detected in the study area, butternut. A butternut health assessment should be conducted by a qualified butternut health expert to evaluate the trees in the study area. Depending on the results of this assessment, different options could be available to ensure compliance with the Act. These could include project registration, agreements and/or permits. Collaboration/consultation with MECP is required.

One provincially threatened species was detected in the study area, eastern meadowlark. Further survey efforts are recommended to determine whether suitable habitat for this species is present, and if so the amount and type (i.e., Category 1, 2 or 3) of habitat present. Depending on the results of these surveys, a number of steps could be required to ensure compliance with the Act including, preparation of a development plan (in accordance with subsection 23.2(3) of the Act), registration of the activity and/or submission of a plan to MECP, avoiding development activities that are likely to destroy eastern meadowlark habitat between May 1 and July 31 of any given year, creating habitat for the species or compensating for the activity through the Species at Risk Conservation Fund.

6.2.2 Provincial Policy Statement, 2020

No significant wetlands, significant coastal wetlands, significant woodlands, significant valleylands or significant ANSIs were found in the study area. As a result, Sections 2.1.4, 2.1.5 a), b), c), e) and f) of the PPS are not applicable to the proposed development. Mitigation measures and recommendations are made in Sections 5.1, Table 5.1 and Section 7 of this EIS report that would permit the proposed development to proceed in a manner consistent with section 2.1.7 of the Provincial Policy Statement (PPS). Further study is required to ensure the habitats associated with 2.1.5 d), 2.1.6 and 2.1.8 are appropriately identified and addressed.

6.3 Local and Other Regulatory Bodies

6.3.1 County of Prince Edward County Official Plan, 2021

This report has been prepared generally following the direction contained in Section 5.1.9 and Appendix B of the County's Official Plan. The study included assessments of/determination of location of wetlands, woodlands, watercourses and wildlife habitat as are described in Sections 3.1.4 and 3.1.5 of the Plan.

6.3.2 Wellington Urban Centre Secondary Plan (May 2015)

This EIS has been prepared by a qualified professional in accordance with the requirements of Section 4.7.3 of the Wellington Urban Centre Secondary Plan. It follows the guiding policies for such studies as provided in Sections 2.7 and 4.6 of the Plan. The direction contained in Appendix A of the Secondary Plan was also incorporated into the study. So long as mitigation measures and recommendations included in Sections 5 and 7 of this report are implemented, there will be no negative impacts on natural heritage features or functions in accordance with the Secondary Plan.

6.3.3 Quinte Conservation (Ontario Regulation 319/09)

In this EIS report, Section 5.1.1 (wetlands), Section 5.1.3 (Significant Wildlife Habitat), Section 5.1.4 (Species at Risk) and Table 5.1 of this EIS report describe mitigation measures that would permit the proposed development to proceed while maintaining compliance with Quinte Conservation's wetland policies and Ontario Regulation 319/09. Additional consultation/cooperation with Quinte Conservation will be required to ensure that appropriate permits/authorizations are received, particularly if there are alterations to the unevaluated wetland or drainage feature on the Site and/or potentially negative impacts on any of features that the CA regulates. Further recommendations have been included in Section 7.0 to prevent negative impacts to natural features or their functions before, during and after construction.

7. Summary of Recommendations

The following section is a comprehensive list of all project mitigation measures, recommendations, best management practices, and or compensation measures (if required). Many recommendations have been discussed or referenced in the body of the text and others may be newly presented standard best management practices. This list is intended to assist project reviews, contractors and clients to understand all environmental recommendations and to ensure all parties have full understanding of the project. The final conclusions of this report are based on the implementation of the following.

7.1 General

1. The construction envelope must be clearly defined and delineated, and a line staked and clearly marked in the field prior to any development activities occurring in the study area.
2. Prior to any site preparation activities (e.g., grading, placement of fill) erosion and sediment control measures should be installed along all sides of construction envelope to ensure sediment laden runoff does not interfere with adjacent natural features. The silt fence should be inspected and maintained throughout the construction phase and remain in place until the soils are stabilized and re-vegetated.
3. Client to obtain relevant permits from the County of Prince Edward, Quinte Conservation and MECP.
4. Any vegetation clearing required for site access prior to construction shall be completed outside the Breeding Bird timing window of April 15th to August 15th.
5. The Project Manager and Contractor are obligated to ensure that all mitigation measures are strictly observed.
6. Construction should be undertaken during normal weather conditions, to the extent possible, and the project shall be designed to appropriate specifications to withstand variable weather conditions.
7. A tree preservation plan is recommended to determine if any trees can be retained within the fencerows in the study area depending on final grades and excavation works. This would allow for the retention of mature trees.

7.2 Wetland

1. Wetlands that would be negatively affected by the proposed development will be discussed with Quinte Conservation and the County.
2. Low Impact Development (LID) practices will be incorporated into the proposed development so as to maintain infiltration on site.

7.3 Wildlife Habitat

1. Tree cutting and vegetation removal shall be minimized to the extent possible to continue to permit wildlife movement along the perimeter of the site.

7.4 Species at Risk

1. MECP must be consulted to obtain the required permits/authorizations for eastern meadowlark, butternut and bats as per the Endangered Species Act.
2. Should any Species at Risk be encountered during work-related activities, or if there is potential to negatively impact SAR, or wildlife more generally, MECP must be contacted immediately for guidelines on how to proceed.

7.5 Sediment and Erosion Control

1. All sediment and erosion control products will be selected for the study area based on the manufacturer's product specifications. Product installation and maintenance will follow the manufactures guidelines.
2. Sediment control measures shall be installed prior to the commencement of work and shall be maintained throughout the project to prevent the entry/outward flow of sediment into the drainage feature and proposed constructed swale.
3. All sediment and erosion control measures shall be inspected regularly during the construction phase and periodically thereafter to ensure they are functioning properly, maintained, and upgraded as required.
4. Sediment fence to be checked regularly to ensure they are maintained and working properly. Accumulated silt and debris will be removed from the fence and site after every precipitation event.
5. Where feasible, sediment and erosion control measures shall include bio-degradable materials.
6. Construction will be undertaken during normal weather conditions, to the extent possible, and will avoid large precipitation events to minimize the risk of sedimentation outside of the development envelope/
7. In the event that sediment and erosion control measures are not functioning, the construction supervisor shall order the work to be stopped. No further work shall be carried out until the construction methods and/or the sediment control plan is adjusted to address the sediment/erosion problem(s). Such occurrences should be document by the site inspector and provided to a qualified biologist.
8. Should work conditions change such that it is possible that fish or fish habitat may potentially be impacted, all works shall cease until the problem has been corrected or authorization has been obtained from the appropriate authorities.

8. Conclusion

GHD Limited has prepared this Environmental Impact Study report to address potential environmental issues associated with a proposed subdivision located to the north of Country Road 33, on both the east and west sides of Cleminson Street in the Village of Wellington, Prince Edward County. The location of the proposed development is also known as Part of Lot 4 and 5, Concession 1, Lakeside in the Geographic Township of Ameliasburgh.

The background literature review suggested there was the potential for several natural features and/or species to occur in the study area. GHD's field studies confirmed the presence of species at risk habitat, unevaluated wetland, a drainage feature and several candidate SWH in the study area.

Construction within the proposed development envelope will result in no negative impacts to the functions of identified natural features, provided the recommendations outlined in Sections 5 and 7 are implemented. GHD's recommendations have been made to address potential impacts to natural features and/or their functions during the site preparation, construction and post-construction periods. Additional discussions with the Prince Edward County, MECP and Quinte Conservation need to occur so that appropriate permitting processes are followed.

9. References

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Appendices

Appendix A

Concept Plan

Appendix B

Plant Species by Community

APPENDIX B Plant Species by Community

Families and genera for the plant species found in this appendix are listed in taxonomic order. The species are listed alphabetically by scientific name within each genus.

Three standard reference works were used for the botanical nomenclature and taxonomy (Newmaster et al., 1998; Gleason and Cronquist 1991; Voss 1980; 1985). Other published works for botanical names included; ferns (Cody and Britton 1989); grasses (Dore and McNeill 1980); orchids (Whiting and Catling 1986); shrubs (Soper and Heimburger 1982) and trees (Farrar 1995).

Total: Number of communities where plant species was recorded
X : Plant species recorded

Common Name	Scientific Name	Total	COMMUNITY NUMBER			
			1	2	3	4
CYPRESS FAMILY	CUPRESSACEAE					
eastern red cedar	<i>Juniperus virginiana</i>	1				X
eastern white cedar	<i>Thuja occidentalis</i>	1				X
BUTTERCUP FAMILY	RANUNCULACEAE					
virgin's bower	<i>Clematis virginiana</i>	1		X		
NETTLE FAMILY	URTICACEAE					
European stinging nettle	<i>Urtica dioica L. ssp. dioica</i>	1		X		
WALNUT FAMILY	JUGLANDACEAE					
black walnut	<i>Juglans nigra</i>	1				X
GOOSEFOOT FAMILY	CHENOPODIACEAE					
lamb's-quarters	<i>Chenopodium album</i>	1			X	
AMARANTH FAMILY	AMARANTHACEAE					
redroot pigweed	<i>Amaranthus retroflexus</i>	1			X	
BUCKWHEAT FAMILY	POLYGONACEAE					
black bindweed	<i>Polygonum convolvulus</i>	1			X	
rhubarb	<i>Rheum rhabarbarum</i>	1				X
curled dock	<i>Rumex crispus</i>	1		X		
MALLOW FAMILY	MALVACEAE					
velvet-leaf	<i>Abutilon theophrasti</i>	1			X	
MUSTARD FAMILY	BRASSICACEAE					
dame's rocket	<i>Hesperis matronalis</i>	1				X
Virginia pepper-grass	<i>Lepidium virginicum</i>	1		X		

Common Name	Scientific Name	Total	COMMUNITY NUMBER			
			1	2	3	4
ROSE FAMILY	ROSACEAE					
common strawberry	<i>Fragaria virginiana</i>	1				X
yellow avens	<i>Geum aleppicum</i>	1				X
apple	<i>Malus domestica</i>	1				X
rough cinquefoil	<i>Potentilla norvegica</i>	1		X		
wild red raspberry	<i>Rubus idaeus</i>	1				X
PEA FAMILY	FABACEAE					
black medick	<i>Medicago lupulina</i>	1			X	
EVENING PRIMROSE FAMILY	ONAGRACEAE					
common evening primrose	<i>Oenothera biennis</i>	1				X
BUCKTHORN FAMILY	RHAMNACEAE					
European buckthorn	<i>Rhamnus cathartica</i>	2		X		X
GRAPE FAMILY	VITACEAE					
wild grape	<i>Vitis riparia</i>	2		X		X
MAPLE FAMILY	ACERACEAE					
Manitoba maple	<i>Acer negundo</i>	2		X		X
Norway maple	<i>Acer platanoides</i>	1				X
CASHEW FAMILY	ANACARDIACEAE					
staghorn sumac	<i>Rhus typhina</i>	1				X
CARROT FAMILY	APIACEAE					
Queen-Anne's lace	<i>Daucus carota</i>	1		X		
MILKWEED FAMILY	ASCLEPIADACEAE					
common milkweed	<i>Asclepias syriaca</i>	1			X	
NIGHTSHADE FAMILY	SOLANACEAE					
clammy ground-cherry	<i>Physalis heterophylla</i>	1			X	
bitter nightshade	<i>Solanum dulcamara</i>	1		X		
MORNING-GLORY FAMILY	CONVOLVULACEAE					
field bindweed	<i>Convolvulus arvensis</i>	1		X		
PHLOX FAMILY	POLEMONIACEAE					
garden phlox	<i>Phlox paniculata</i>	1				X
MINT FAMILY	LAMIACEAE					
wild mint	<i>Mentha arvensis</i>	1		X		
catnip	<i>Nepeta cataria</i>	1			X	
PLANTAIN FAMILY	PLANTAGINACEAE					
narrow-leaved plantain	<i>Plantago lanceolata</i>	1	X			
HONEYSUCKLE FAMILY	CAPRIFOLIACEAE					
tartarian honeysuckle	<i>Lonicera tatarica</i>	1				X

Common Name	Scientific Name	Total	COMMUNITY NUMBER			
			1	2	3	4
ASTER FAMILY	ASTERACEAE					
common ragweed	<i>Ambrosia artemisiifolia</i> L.	2		X	X	
common burdock	<i>Arctium minus</i>	2			X	X
chicory	<i>Cichorium intybus</i>	1			X	
bull thistle	<i>Cirsium vulgare</i>	1			X	
Canada goldenrod	<i>Solidago canadensis</i>	2		X		X
spiny-leaved sow thistle	<i>Sonchus asper</i>	1		X		
New England aster	<i>Symphotrichum novae-angliae</i>	1				X
common dandelion	<i>Taraxacum officinale</i>	2	X	X		
goat's-beard	<i>Tragopogon dubius</i>	1			X	
GRASS FAMILY	POACEAE					
orchard grass	<i>Dactylis glomerata</i>	1			X	
common barnyard grass	<i>Echinochloa crusgalli</i>	1			X	
Kentucky blue grass	<i>Poa pratensis</i>	2	X	X		
LILY FAMILY	LILIACEAE					
tiger lily	<i>Lilium lancifolium</i>	1				X

Total Number of Plant Species 48

3 17 15 21

**Number of Plant
Species Per Community**

Appendix C

Bird Status Report - Comprehensive

APPENDIX C

Bird Status Report - Comprehensive

Bird species observed by GHD are listed in the order followed the American Ornithologists' Union (AOU) Check-list of North American birds (7th edition, 1999, 47th Supplement). Common and scientific nomenclature are based on those used by AOU. Breeding status and breeding evidence code are listed when observed. Any significant status for a species on national and provincial lists is displayed as well as those from relevant regional lists.

List Status :	END - endangered	A wildlife species facing imminent extirpation or extinction.
	END-R -endangered regulated	A wildlife species facing imminent extirpation or extinction in Ontario which has been regulated under Ontario's Endangered Species Act (ESA).
	THR - threatened	A wildlife species likely to become endangered if limiting factors are not reversed.
	SC - special concern	A wildlife species that may become threatened or an endangered species because of a combination of biological characteristics and identified threats.
	YES - Area Sensitive	A wildlife species that requires large areas of suitable habitat in order to sustain their population numbers.

*** Other status levels are not displayed**

List Sources:	COSEWIC	The Committee on the Status of Endangered Wildlife in Canada, October 2021
	COSSARO	The Committee on the Status of Species at Risk in Ontario, January 2022.
	SARA	Species At Risk Act, Schedule 1, Government of Canada, February 2022.
	Area Sensitive	Significant Wildlife Technical Guide, Appendix C, OMNR, Oct. 2000
	Region 6	Southern Ontario Wetland Evaluation Appendix 11B, Version 3.3, 2014

Breeding Status:	B - species observed in breeding season in suitable habitat with some evidence of breeding (confirmed, probable or possible as per Ontario Breeding Bird Atlas, 2002).
(Observed By NEA)	F - species observed in breeding season but no evidence of breeding or suitable nest sites available on the study site (includes flyovers, migrants and foraging colonial breeders).
	M - species observed outside of breeding season for that species and in area outside of the known breeding range for that species.

**Breeding Evidence
Code: (Observed By
GHD)**

OBSERVED

X -species observed in its breeding season (no evidence of breeding).

POSSIBLE BREEDING

H -species observed in its breeding season in suitable nesting habitat

S -singing male present, or breeding calls heard, in its breeding season in suitable nesting habitat

PROBABLE BREEDING

P -pair observed in their breeding season in suitable nesting habitat

T -permanent territory presumed through registration of territorial song on at least 2days,
a week or more apart, at the same place

D -courtship or display between a male and a female or 2 males, including courtship feeding or copulation

V -visiting probable nest site

A -agitated behaviour or anxiety calls of an adult

B -brood patch on adult female or cloacal protuberance on adult male

N -nest-building or excavation of nest hole

CONFIRMED BREEDING

DD -distraction display or injury feigning

NU -used nest or egg shell found (occupied or laid within the period of study)

FY -recently fledged young or downy young, including young incapable of sustained flight

AE -adults leaving or entering nest site in circumstances indicating occupied nest

FS -adult carrying fecal sac

CF -adult carrying food for young

NE -nest containing eggs

NY -nest with young seen or heard

SOURCE: Ontario Breeding Bird Atlas March 2001

AOU Code	Common Name	Scientific Name	Observed Breeding Status	Breed Evidence Code	COSEWIC	COSSARO	SARA	Area Sensitive	Region 6				
TUVU	Turkey Vulture	<i>Cathartes aura</i>	B	None				No					
MODO	Mourning Dove	<i>Zenaida macroura</i>	B	None				No					
BLJA	Blue Jay	<i>Cyanocitta cristata</i>	B	None				No					
CORA	Common Raven	<i>Corvus corax</i>	B	None				No					
TRES	Tree Swallow	<i>Tachycineta bicolor</i>	B	None				No					
AMRO	American Robin	<i>Turdus migratorius</i>	B	None				No					
EUST	European Starling	<i>Sturnus vulgaris</i>	B	None				No					
CEWX	Cedar Waxwing	<i>Bombycilla cedrorum</i>	B	None				No					
EAME	Eastern Meadowlark	<i>Sturnella magna</i>	B	None	THR	THR	THR	No					
COGR	Common Grackle	<i>Quiscalus quiscula</i>	B	None				No					
HOFI	House Finch	<i>Carpodacus mexicanus</i>	B	None				No					
TOTAL SPECIES OBSERVED:	11	BREEDING SPECIES OBSERVED:	11		1	1	1	0	0	0	0	0	0

Appendix D

List of Significant Plants

APPENDIX D

List of Significant Plant Species

Plant species observed by NEA with significant status on national, provincial and relevant regional lists are listed with status codes and where applicable the most current year of publication. Three standard reference works were used for the botanical nomenclature and taxonomy (Newmaster et. al., 1998; Gleason and Cronquist 1991; Voss 1980; 1985). Other published works for botanical names included; ferns (Cody and Britton 1989); grasses (Dore and McNeill 1980); orchids (Whiting and Catling 1986); shrubs (Soper and Heimburger 1982) and trees (Farrar 1995).

- NATIONAL RANKING** **Committee on the Status of Endangered Wildlife in Canada (COSEWIC), Government of Canada
Species at Risk Act (SARA), SCHEDULE 1 (Subsections 2(1), 42(2) and 68(2)), Government of Canada**
- PROVINCIAL RANKING** **Species at Risk in Ontario (COSSARO), Government of Ontario
Provincial Rank (SRANK), Natural Heritage Information Center, Government of Ontario**
- REGIONAL RANKING** **Cuddy, Eastern 2 Region 2 (West), D.G.Cuddy, 1991**

- STATUS CODES**
- COSEWIC** **END *** - Endangered Species ***Year of Status Publication included in Code**
 - COSSARO** **THR *** - Threatened Species
 - SARA** **SC *** - Species of Concern
 - SRANK** **S1** - Extremely Rare **Other national or provincial codes not listed**
 - S2** - Very Rare
 - S3** - Rare to Uncommon
 - Regional Lists** **R** - Rare native species **Other Regional codes not listed**
 - RS** -Regional significant
 - EXP** - Extirpated native species

Common Name	Scientific Name	NATIONAL RANKINGS		PROVINCIAL RANKINGS		REGIONAL RANKINGS					
		COSEWIC	SARA	COSSARO	SRank	Cuddy, Eastern					
black walnut	Juglans nigra					R					
Norway maple	Acer platanoides					R					
garden phlox	Phlox paniculata					R					
Plants with Ranking	Total: 3	Status List Totals	0	0	0		3	0	0	0	0

Appendix E

Curriculum Vitae of GHD field staff



J. Christopher Ellingwood

Sr. Terrestrial/Wetland Biologist



Qualified: Terrain & Water Resources Technologist Fleming College, Lindsay, 1996 Dean's List & President's Honour Roll and Bachelor of Environmental Studies (B.E.S.) University of Waterloo, 1985

Professional Summary: Chris possesses skills that give clients confidence that any biological and natural environment issues or requirements can be addressed. With over 25 years of experience in consulting he can provide expert advice and technical expertise with the wetland, Species At Risk, Natural Heritage Systems, Environmental Impact Assessments, birds, plants and restoration ecology aspects of any project. A thorough understanding of current federal and provincial legislation and policies, conservation authority regulations and municipal natural heritage policies and ESA permitting process are key skills. Currently in the Peterborough office of GHD.

Work History

2020-Present	GHD, Senior Terrestrial and Wetland Biologist
2009-2020	Niblett Environmental Associates, President
1996-2020	Niblett Environmental Associates, Sr. Terrestrial & Wetland Biologist
1996-2009	Fleming College, Instructor Part-time, ecology, environmental assessment
1997-2000	Acres & Associates Environmental Ltd., part time, Biologist
1988-93	Canadian Wildlife Service, Conservation & Protection, Ontario & Atlantic Regions, Biologist and biological technician
1983	Ontario Ministry of Natural Resources, Biologist

Natural Heritage Systems

NEA has conducted numerous studies where NHS policies, NHS mapping and identification of NHS features and functions is a key component. As most municipalities have completed comprehensive NHS studies as per the PPS, and added NHS policies to their Official Plans, we work across Ontario on different policies. Identification of Significant Woodlands, Significant Wildlife Habitat and headwater features are typical features that require analysis, delineation and assessment for most projects.

Natural Resource Planning

Municipal Planning – Mr. Ellingwood has completed the natural environment component of Functional Planning Studies, Secondary Plans, expansion areas and annexation lands in a number of municipalities including Peterborough, Kanata, Orleans, and Craighurst. Studies included assessment of existing natural heritage features, constraints and recommendations. He has worked on the natural heritage policies for municipal official plan updates

in the County of Haliburton. He has completed numerous peer reviews of EIS reports for municipalities.

Housing and Recreational Developments

Mr. Ellingwood has completed numerous (2000 +) Environmental Impact Studies (EIS) for plans of subdivision, severances, golf courses, institutional, industrial and commercial developments across Ontario. Locations of projects include most of Eastern and Central Ontario. In most cases the EIS was requested by the Municipality or Township due to the proximity of the development to a provincially significant wetland (adjacent lands). Impact studies included detailed biological inventories of vegetation, birds, mammals, reptiles and amphibians and fish. Assessments included determining compliance with Provincial Policy Statement guidelines for significant features such as wetlands, ANSI's, woodlands, valleylands and wildlife habitat. Numerous wetland boundary delineations and wetland re-evaluations have also been conducted for developments (300 +) using the Ontario Wetland Evaluation System Southern Manual (Third Edition). He has also conducted tree preservation/conservation plans to meet municipal requirements.

Renewable Energy

Hydroelectric - Mr. Ellingwood has conducted baseline wetland inventories for proposed increases in headpond elevations for upgrades to existing hydroelectric facilities in High Falls, Michipicoten River. He has completed work on a 2.5 MW run-of-the-river facility in Peterborough that involved extensive field inventories, CEAA screening and design, permitting, construction and monitoring of a compensatory wetland and amphibian pond. Currently working on two run-of-the-river facilities in Elliot Lake and Norland where Species at Risk, wildlife habitat, wetlands and aquatic habitat are key issues.

Dams and other Water Control Structures - He has conducted baseline wetland evaluations for proposed removal and repairs to two dams on the Big East River under a Class EA for MNR Projects. The impact



assessment of the design options included detailed plant, bird, mammal and herpetile surveys and wetland community delineation.

Wind Power Generation - He has completed bird surveys for proposed wind power projects on Wolfe Island (Kingston), for Stelco (Port Dover) and the Huron-Kinloss Windpower Project (Kincardine). Mr. Ellingwood was involved in detailed spring and fall migration surveys of waterfowl and passerines, as well as overwintering raptors surveys. He also conducted detailed breeding bird surveys using Point Count methodologies and area searches for all optioned properties, hydro connections and turbine locations.

Solar Power- He is currently working on 3 sites in south-central Ontario for proposed solar facilities. He has MNR training (Jan. 2011 and 2013) in preparation of the Natural Heritage Assessment reporting and is familiar with the Renewable Energy Act and project types. Work includes multi-season inventories for birds, plants, woodlands, rare species, amphibians, fish and wildlife as per established protocols; as well as preparation of the impact study and other documentation (Records Review, Site Investigation, Evaluation of Significance, EIS, Oak Ridges Moraine compliance, Monitoring plan, watercourse evaluation and Species at Risk permitting). He acts as the project manager for the NHA.

Municipal Infrastructure Projects

Bridges and Culverts- He has conducted numerous projects involving municipal infrastructure such as bridges and culverts on rural roads, highways, entrances and side roads. Our role includes checking culvert for Species At Risk (barn swallows) and other bird species, fish habitat, mussels, bats and other wildlife. Reporting includes Environmental Study Reports, technical reports and engineering assessments. We have completed this type of survey for MTO, City of Ottawa (Bytown Bridges, Minto Bridges), York Region, County of Peterborough, City of Kawartha Lakes and contractors for crossing replacements, repairs and removal. We complete Species at Risk compensation plans (barn swallow kiosks), fish salvage and Fisheries Act authorizations, as well as construction and post-construction monitoring, plantings and shoreline restoration measures.

Water Supply - Mr. Ellingwood has conducted the natural heritage component of Class EA's for Municipal Water Projects for water mains, water treatment facilities, pumping stations and reservoirs/water towers and water intake structures in Whitby, Pickering, Ingleside, Port Perry, Kagawong, Peterborough, North Glengarry and Elizabethtown, Ontario. He was responsible for screening of potential sites, alternatives analysis/weighting and impact assessment of the preferred alternative. Our role includes identification of natural features and buffers, screening alternatives, collection of field data and determination of impact of alternatives on flora and fauna,

natural features such as wetlands and conformity with Species At Risk legislation. Current projects include the Orleans Watermain Link, Glengarry Water Main in Eastern Ontario, North Kanata water main and the Otonabee Water Main in Peterborough.

Sewage/Wastewater - Mr. Ellingwood has conducted the natural heritage component of Class EA for Municipal Wastewater Projects for sewage effluent discharge pipes in Lancaster and Lindsay, as well as trunk sewers and pollution control plant and STP upgrades and expansions. He was responsible for determination of impact of alternative routings on flora and fauna and significant features. He has completed benthic data collection (biomonitoring) using the BioMap protocols for the Lindsay STP under their C of A since 2004.

Transportation - He has conducted natural environment studies including examination of significant features and plants and animals and impact assessment for new roads and improvements to existing roads. Numerous provincial highway construction projects (Schedule B and C) for the Ministry of Transportation Ontario have been completed under the Class EA for Provincial Transportation Facilities. Municipal road projects include intersection and road widening as well as extensions of road in new urban areas. Projects include Salem Road extension, Ajax; Rossland Road extension, Oshawa; Rideau River Collector, Ottawa; Bensfort Road upgrades and the Nassau Mills Road bridge, in Peterborough; and Bytown Bridge reconstruction in Ottawa. Our role includes identifying constraints, recommending mitigation measures and designing rehabilitation and compensation, as well as obtaining environmental clearances from MTO, MNR and DFO. He has also conducted an evaluation of environmental impacts of a proposed runway expansion to the Peterborough airport under CEAA. He worked on the east-west Ottawa Light Rapid Transit (LRT) EA for a new transit link and public transportation system.

Stormwater Management - He has assessed the impact of stormwater management facilities on the natural environment during review of numerous plans of subdivision and commercial buildings.

Aquatic Surveys and Sampling

Mr. Ellingwood has assisted with aquatic and fisheries surveys since 1996. He has completed numerous fish sampling projects in streams, rivers and lakes in Ontario. This include the use of beach seines, backpack electroshocker, fyke nets, traps nets and gill nets. He has also conducted specific surveys for walleye at several hydroelectric projects in the Kawartha Lakes, including Locks 22, 23; Fenelon Falls, Norland and Burleigh Falls. Additional walleye and netting surveys for the High Falls hydroelectric facility on the Michipicoten River near Wawa. All these surveys included spotlight surveys and use of walleye egg traps.



He has also assisted with spawning surveys for white sucker, northern pike, muskellunge and bass. The muskellunge surveys included the placement of numerous NEA designed and constructed egg traps for use on several projects in Ottawa and on Oak Lake near Stirling.

Alvars

Living and working in the Kawartha Lakes for 25 years and in close proximity to the Carden Plain, I am extremely familiar with these globally rare natural features. The Napanee Plain is similar in many ways to the Carden Plain. My experience includes extensive work with Loggerhead Shrikes, Endangered Species Act permits, alvar ecosystems, monitoring, Species at Risk surveys and habitat enhancements, restoration plans, local NGO's, protection of rare plant species and impact assessments. I have conducted several Natural Environment Level 1 and 2 reports for quarries and constraint mapping for potential quarries or developments on the Carden Plain.

Wetland Restoration and Design

NEA has completed a number of projects involving restoration of wetlands and creation of new compensation wetlands. This includes biological inventories and ecological function analysis, design, site plant lists, habitat structure design, construction supervision, wildlife salvages and long term post-construction monitoring. Projects completed to date include 0.3-1.7 acre wetlands in Peterborough, Bowmanville, Courtice, Ottawa, Buckhorn, Lindsay, and Fenelon Falls. Wetlands are designed specifically for replacement of unevaluated wetlands and include spring breeding frog habitat. In all cases we work closely with the landscape architects, engineers, contractors and planners on the approval process and the site design. He is currently constructing a wetland compensation project, in cooperation with Fleming College.

Biological Inventories

NEA has a full time staff of professional fisheries and aquatic biologists, terrestrial/wetland biologists and GIS expert with extensive experience as consultants and previous work at government agencies.

As such we are very familiar with most government protocols and have training to complete a wide range of biological inventories.

Examples include Marsh Monitoring Program, Forest Bird Monitoring Program, Breeding Bird Survey, Grassland Bird Surveys, Species at Risk surveys (bobolink, meadowlark, loggerhead shrike, whip-poor-will, Benthic Monitoring Program, BioMap benthic sampling, Ontario Stream Assessment Protocol, MTO/DFO fish sampling, Ontario Wetland Evaluation System, Ecological Land Classification, Butternut Health Assessments.

Botanical inventories

Botanical inventories are conducted for all projects to describe the vegetation communities using ELC, as well as for identification of all species and to determine if regional, provincial or federal significant species are present. Specialized/targeted inventories are conducted for wetlands (fens, bogs), Great Lakes coastal marshes/pannes, alvars, rock barrens and limestone ridges. Targeted surveys are also conducted for rare plants such as American ginseng, as well as long term monitoring and health assessments under ESA permits.

Plant salvages, restoration and monitoring

What you did on the project, what outcomes you helped the client achieve with this project, what other benefits you provided for the client.

Wetland Studies - Mr. Ellingwood has conducted Environmental Impact Studies (EIS) according to the Wetlands Policy Statement and Provincial Policy Statement for plans of subdivision, utilities and commercial developments adjacent to or within provincially significant wetlands throughout southern and northern Ontario. Studies include delineating wetland boundaries and biological inventories of wetlands (plants, birds, reptiles, amphibians, fish); performing impact assessment of aggregate pit water discharge on wetland ecosystems (Kemptonville, ON); littoral zone and wetland mapping and inventory for High Falls Redevelopment Project Public Information Package (Wawa, ON); completing full wetland re-evaluation for Fernbank wetland, Stittsville using third edition manual, Southern Ontario; and completing two wetland evaluations on Michipicoten River, using Northern Manual. He is a certified wetland evaluator (MNR supported course through Sir Sandford Fleming College), summer 1996. He was an instructor for wetland evaluation courses, Sir Sandford Fleming College, Lindsay annually 1996-2009.

Species At Risk - He has conducted baseline inventories for Species At Risk for numerous properties and projects in Ontario. He developed and completed mitigation plans and long term monitoring projects where Species At Risk or sensitive species were involved. Projects include annual heronry monitoring program for a decorative limestone quarry as part of their license conditions and loggerhead shrike habitat monitoring in the Carden Plain for a quarry. He is also a certified MNR butternut health assessor (trained Aug. 2009 and recertified 2015). He is currently working for several developers in Ottawa completing impact studies on the effects of high rise construction on a nesting pair of Peregrine Falcons.

ESA permits, mitigation plans and monitoring programs have been designed for various species including eastern hog-nose snake, American ginseng, Blanding's turtles, snapping turtles, loggerhead shrike, five-lined skink, milk snake, least bittern, bobolink, eastern meadowlark, barn swallow, gray ratsnake, map turtles and whip-poor-will.



He has extensive experience with the Endangered Species Act and regulations including the documentation necessary for Species At Risk permits using the transition policies, Overall Benefit Permit, Notice of Activity and Registration. He has obtained authorizations from MNRF for several projects after submitting Information Gathering Forms, Avoidance Alternatives, impact studies and mitigation plans/planting plans.

Blanding's turtle: He is currently working on several projects where Blanding's turtle are key issues. His role includes basking surveys, identification of overwintering sites, nest searches, habitat classification, use of trail cameras to monitor crossings and foraging ponds and preparation of General Habitat Description mapping using MNRF protocols (Category 1, 2 and 3). There are a number of quarries, residential/cottage developments and other projects where Blanding's turtle mitigation measures, protection measures, education and wildlife crossing structures are part of the ESA negotiation and approvals. Use of restrictive fencing and other measures are part of those project approvals.

Avifaunal Studies - He has undertaken baseline studies of seabird movement through the Northumberland Strait, New Brunswick. He has conducted long term monitoring of waterfowl brood production in a constructed wetland, Sackville, N.B. as well as long term monitoring of bird movement through Innis Point Bird Observatory, Kanata, ON. He was co-ordinator of the 1988 Ottawa Peregrine Falcon Reintroduction Program and worked on the Toronto Peregrine Falcon Reintroduction Program (1983).

Expert Testimony

Mr. Ellingwood has testified as an expert witness at numerous Ontario Municipal Board Hearings, specifically: a proposed Commercial and Demolition (C& D) waste disposal site in Peterborough County; Ferma Quarry in Kirkfield; Quarry Forest subdivision in Orleans; Westwood subdivision in Stittsville; Campitelli subdivision in Ajax; Miller severances at Stony Lake; Lang severances in Peterborough county; OPA in Glengarry for a wetland designation; Gilson Point subdivision in City of Kawartha Lakes; recent Joint hearing for expropriation and rezoning to district park for the Municipality of Clarington; Dewdney quarry in Harvey Township, Stonescape II Quarry in Buckhorn and OPA 76-Ottawa. Experience includes pre-hearing meetings, negotiations for settlements, testimony at hearing, site visits and expert advice on provincially significant wetlands, ANSI's, wildlife habitat, alvars, Significant woodlands, Significant Wildlife Habitat and Species at Risk (e.g. Loggerhead shrike, Blanding's turtles, hognose snake, whip-poor-will, least bittern and bobolink/meadowlark).

Other activities

Teaching Experience

Mr. Ellingwood was a part-time instructor at Sir Sandford Fleming College, Frost Campus, Lindsay Ontario in the Terrain and Water Resources and Fish and Wildlife Programs from 1996-2009. Courses taught included Applied Ecology, Environmental Applications, Bioengineering, Environmental Principles, Wetland Evaluation Course, Environmental Planning and Impact Assessment and Bird Studies.

Volunteer Activities

Mr. Ellingwood is involved annually in various volunteer projects including the Ontario Breeding Bird Survey, Forest Bird Monitoring Survey, Breeding Bird Census, Ontario Breeding Bird Atlas, Maritime Breeding Bird Atlas, Ontario Marsh Monitoring Program (amphibian and bird surveys), Spring Red-shouldered Hawk and Woodpecker Survey, Nocturnal Owl Survey, Ontario Nest Record Scheme, Christmas Bird Counts, Ontario Rare Breeding Bird Program, Project Feederwatch, Canadian Lakes Loon Survey, Loggerhead Shrike Survey (1987), Couchiching Conservancy volunteer monitoring Shrike Survey, Ontario Grassland Bird Survey, Central Ontario Whip-poor-will survey and the Peregrine Falcon Reintroduction Program.

He acted as Regional Coordinator (Region 14) for the second Ontario Breeding Bird Atlas project (2001-2005) and is currently the regional coordinator for the 3rd Atlas. He also acts as the volunteer regional coordinator for Bird Studies Canada's Marsh Monitoring Program in the Kawartha Lakes area. He is also the coordinator for the Lindsay Christmas Bird Count and regional reviewer for E-bird for the Kawartha Lakes.

He regularly conducts workshops for birding by ear, leads nature tours and has participated in the Carden Challenge (a 24 hr birding event) in the Carden Plain and the Taverner Cup.



Jon Boxall B.Ed., B.E.S.

Terrestrial and Wetland Technician/Herpetologist

Location

Peterborough, ON, Canada

Experience

26 years

Qualifications/Accreditations

- B.Ed., Queen's University, 1990
- B.E.S. University of Waterloo, 1988
- Outdoor Rec. Technician, 1983
- Forest Technician, Fleming College, 1982

Relevant experience summary

Jon is a terrestrial and wetland technician and herpetologist with 26 years of experience conducting hundreds of wetland evaluations and delineations and several years worth of Species at Risk (SAR) surveys, Ecological Land Classification (ELC), botanical inventories, and wildlife habitat assessments for commercial, residential, and industrial projects. Jon has contributed to a wide variety of different types of reports including Natural Heritage Assessments, Environmental Reports, Environmental Impact Studies, Natural Heritage Evaluations (NHE) and Environmental Impact Assessments (EIA) and demonstrates knowledge of applicable policies and regulations.

Jon is highly knowledgeable on reptile Species-at-Risk, with experience with identifying reptile species, reptile habitat, safe reptile handling and is a contributor to the Ontario Reptile and Amphibian Atlas. In addition, Jon has assisted Parks Canada staff in habitat identification, capture, and pit-tagging of Massasauga rattlesnakes.

Selected Experience

St. Clair Slope Stability Study

Role: Biologist
Client: Ministry of Northern Development and Mines
Location: Sarnia, ON, Canada
Date(s): 2022

Jon conducted snake surveys and habitat assessments for SAR reptiles along a section of the St. Clair River parkway near Sarnia, Ontario. The project also involved checking previously placed snake coverboards in appropriate snake habitat as per survey protocol for Butlers Gartersnake. All incidental wildlife sightings and any road mortality observations were also noted.

Muskoka Bay Resort

Role: Biologist
Client: Muskoka Bay Limited
Location: Gravenhurst, ON, Canada
Date(s): 2021-ongoing

This project involved extensive studies to determine sensitive ecological features and wildlife habitats in lieu of proposed condominiums and recreational facilities in the Town of Gravenhurst. Significant Wildlife Habitat

and SAR screening exercises were performed prior to field work. Jon was involved with SAR snake habitat analysis, snake board placement and subsequent monitoring, botanical inventory, and SAR habitat surveying.

Derailment Mile 55.5 Parry Sound Subdivision

Role: Wildlife Monitor
Client: Canada Pacific Rail
Location: Britt, Ontario, Canada
Date(s): August 2021

A wildlife monitoring crew was deployed following the train derailment to observe and monitor SAR reptiles (Massasauga rattlesnake and five-lined skink) in the vicinity. This involved conducting several sweeps throughout the day to ensure no wildlife was being endangered during the clean-up process. Prior to commencing on Site, SAR identification training was completed with Magnetewan First Nation and communication was kept open with them if a SAR was identified on Site.

