

Appendix C Environmental Inventory

Appendix C1 Natural Environment Existing Conditions Technical Report



HYDRO ONE NETWORKS INC.

2020 Natural Environment Existing Conditions

Chatham X Lakeshore 230 kV Transmission Line Project Class EA

Table of Contents

1.0	Introduction	1
1.1	Project Study Area.....	1
2.0	Natural Environment Survey Methods	2
2.1	Aquatic Assessment.....	5
2.2	Ecological Land Classifications and Botanical Assessment.....	5
2.2.1	Invasive Species.....	6
2.3	Wildlife and Wildlife Habitat.....	6
2.3.1	Important Bird and Biodiversity Areas.....	6
2.3.2	Significant Wildlife Habitat.....	6
2.4	Species at Risk.....	9
2.4.1	Eastern Foxsnake Surveys.....	11
2.4.2	SAR Bats.....	11
2.5	Incidental Wildlife.....	11
3.0	Natural Environment Field Investigations - Results	12
3.1	Aquatic Assessments.....	14
3.1.1	Route Alternative 1 (Alt1).....	15
3.1.2	Route Alternative 2 (Alt2).....	15
3.1.3	Route Alternative 3 (Alt3).....	17
3.2	Ecological Land Classification.....	17
3.3	Vegetation Inventory.....	22
3.4	Wildlife and Wildlife Habitat Surveys.....	23
3.4.1	Diurnal Breeding Bird Surveys.....	23
3.4.2	Amphibian Breeding Surveys.....	27
3.5	Incidental Wildlife.....	29
4.0	Evaluation of Natural Heritage Features within the Project Study Area	32
4.1	Fish Habitat.....	32
4.2	Woodlands.....	33
4.3	Valleylands.....	34
4.4	Areas of Natural and Scientific Interest.....	34
4.5	Wetlands.....	34
4.6	Important Bird and Biodiversity Areas.....	35
4.7	Significant Wildlife Habitat.....	36

4.8	Species at Risk Habitat.....	38
4.8.1	Butternut.....	39
4.8.2	Barn Swallow.....	39
4.8.3	Bobolink.....	39
4.8.4	Potential Habitat for SAR Bats	39
4.8.5	Eastern Foxsnake.....	40
4.8.6	Lake Chubsucker	41
4.8.7	Lilliput	41
5.0	Summary	42

Tables

Table 1:	Survey Stations and Corresponding Field Investigations for the 2020 Field Program	3
Table 2:	SCC with the Potential to Occur within the Project Study Area.....	7
Table 3:	SAR with the Potential to Occur within the Project Study Area	9
Table 4:	2020 Field Program Survey Dates, Times, and Weather	12
Table 5:	ELC Communities Identified within the Project Study Area	18
Table 6:	Breeding Bird Survey Results	24
Table 7:	Results of Amphibian Call Surveys	27
Table 8:	Incidental Wildlife Observed within the Project Study Area	30
Table 9:	Unevaluated Wetland Communities Identified in in Each Route Alternative	35
Table 10:	Summary of Watercourse and Drain Crossings Containing Natural Heritage Features and Wildlife Habitat.....	42
Table 11:	Summary of Natural Heritage Features and Wildlife Habitat Identified in Terrestrial Areas.....	43

Appendices

A	Figures
B	Natural Environment Field Program Terms of Reference
C	Aquatic Data Summary Table
D	Site Photographs
E	Vegetation List

References

1.0 Introduction

Hydro One Networks Inc. (Hydro One) is proposing to construct a new double-circuit 230 kilovolt (kV) transmission line (the Project) in southwestern Ontario. The Project is anticipated to be between 46-49 kilometers (km) in length, and will connect the Chatham Switching Station (SS) in the Municipality of Chatham-Kent to the planned Lakeshore Transformer Station (TS) in the Municipality of Lakeshore. In support of the Project, Hydro One has identified three Route Alternatives, including Route Variations (*Appendix A* – Figure 1). Alternative 1A consists of a main Route, as well as three additional Variations (1B, 1C and 1D), while Alternative 2A consist of a main Route, and two possible Variations (2B and 2C). Alternative 3A contains no Variations.

In June 2019, Hydro One received direction from the Independent Electricity System Operator (IESO) to initiate work on development activities, including seeking relevant approvals for the Project. The Project is needed to help ensure the transmission system remains adequate to meet electricity demand, which is expected to increase significantly over the next decade due to strong agricultural growth in the Windsor-Essex Area. The required in-service date for the Project is prior to the winter of 2025/2026 to address the specified bulk system electricity needs.

The Project is being conducted in accordance with Hydro One's *Class Environmental Assessment (EA) Process for Minor Transmission Facilities* (2016), in accordance with the Ontario Environmental Assessment Act (1990). Dillon Consulting Limited (Dillon) was retained to provide Class EA support on behalf of Hydro One.

The Environmental Study Report (ESR) will outline existing conditions of the natural environment, describe the evaluation of Route Alternatives and selection of the preferred Route Alternative, evaluate the potential for environmental impacts associated with the construction for the Project, and recommend mitigation, restoration, and enhancement measures to preserve and/or restore natural features. In support of the Class EA, this memo provides a summary of the natural environment existing conditions associated with each of the Route Alternatives and Variations, based on the results from the 2020 field program.

1.1 Project Study Area

As illustrated in *Appendix A* – Figures 2A-2E, the Project Study Area includes the lands within 120 metres (m) of each Route Alternative center line, including the Chatham SS and Lakeshore TS.

Field assessments within the Project Study Area were conducted in accordance with the Natural Environment Field Program Terms of Reference (TOR) submitted to the Ministry of the Environment, Conservation and Parks (MECP) on February 5, 2020 (*Appendix B*). The Natural Environment Field Program TOR was developed following a preliminary desktop records review to identify the potential presence of natural features, including significant woodlands, watercourses providing potential fish habitat, Important Bird Areas (IBAs), significant wildlife habitat (SWH), and Species at Risk (SAR) within the Project Study Area (*Appendix A* – Figures 2A – 2E).

Natural Environment Survey Methods

Based on the Natural Environment Field Program TOR established for the field program, the following field investigations were conducted in support of the 2020 field program:

- Aquatic Habitat Assessments
- Ecological Land Classification (ELC)
- Botanical Surveys (Summer)
- Breeding Bird Surveys, and
- Amphibian Breeding Surveys

At each of the survey locations where the aforementioned surveys were completed, a habitat assessment was completed in order to determine whether the natural features present had the potential to support SAR identified in Natural Environment Field Program TOR. Similarly, incidental wildlife observations were also collected concurrently with each of the 2020 surveys.

The Project Study Area is geographically large, dominated by active agriculture, and spans both private and public properties. Where private property access was granted in advance of the 2020 field program, field studies occurred within or directly adjacent to natural features. Where private property access was not granted and the property was associated with a natural feature(s), field data was collected from the road right-of-way (ROW), Hydro One's existing transmission corridor and/or from property limits where access was granted. Field data collected from adjacent lands was supplemented with information collected through aerial imagery interpretation and secondary data sources.

Table 1 outlines the specific field studies conducted at each survey location within the Project Study Area during the 2020 field season. Survey stations are illustrated in *Appendix A – Figures 3A – 3E*.

Table 1: Survey Stations and Corresponding Field Investigations for the 2020 Field Program

Survey Location ¹	Figure Reference ²	Aquatic Assessment	Ecological Land Classification	Botanical Assessment	Diurnal Breeding Bird Survey	Amphibian Breeding Survey
Route Alternative 1 (Alt1)						
Survey Station 1*	Alt1-S1	---	●	●	●	●
Survey Station 2	Alt1-S2	●	●	●	●	---
Survey Station 3*	Alt1-S3	●	●	●	●	---
Survey Station 4*	Alt1-S4	●	●	●	●	---
Survey Station 5*	Alt1-S5	●	●	●	●	●
Survey Station 6*	Alt1-S6	●	●	●	●	---
Survey Station 7*	Alt1-S7	●	●	●	●	---
Survey Station 8*	Alt1-S8	●	●	●	---	---
Survey Station 9*	Alt1-S9	●	●	●	●	---
Survey Station 10*	Alt1-S10	●	●	●	●	●
Survey Station 11*	Alt1-S11	●	●	●	●	---
Survey Station 12	Alt1-S12	●	●	●	●	---
Survey Station 13*	Alt1-S13	●	●	●	---	---
Survey Station 14	Alt1-S14	---	●	●	●	●
Survey Station 15	Alt1-S15	---	●	●	●	●
Survey Station 16	Alt1-S16	---	●	●	●	●
Route Alternative 2 (Alt2)						
Survey Station 1*	Alt2-S1	●	●	●	---	---
Survey Station 2*	Alt2-S2	●	●	●	---	---
Survey Station 3*	Alt2-S3	●	●	●	---	---
Survey Station 4	Alt2-S4	---	●	●	●	●
Survey Station 5*	Alt2-S5	●	●	●	---	---
Survey Station 6*	Alt2-S6	●	●	●	---	---
Survey Station 7*	Alt2-S7	●	●	●	---	---
Survey Station 8	Alt2-S8	●	●	●	●	●
Survey Station 9*	Alt2-S9	●	●	●	●	●
Survey Station 10*	Alt2-S10	---	●	●	●	---
Survey Station 11*	Alt2-S11	●	●	●	●	---
Survey Station 12*	Alt2-12	---	●	●	●	---
Survey Station 13*	Alt2-S13	●	●	●	●	---

Survey Location ¹	Figure Reference ²	Aquatic Assessment	Ecological Land Classification	Botanical Assessment	Diurnal Breeding Bird Survey	Amphibian Breeding Survey
Survey Station 14*	Alt2-S14	●	●	●	---	---
Survey Station 15*	Alt2-S15	●	●	●	---	●
Survey Station 16*	Alt2-S16	●	●	●	●	---
Survey Station 17*	Alt2-S17	●	●	●	---	---
Survey Station 18*	Alt2-S18	●	●	●	●	---
Survey Station 19	Alt2-S19	●	●	●	---	---
Survey Station 20	Alt2-S20	●	●	●	●	---
Survey Station 21*	Alt2-S21	●	●	●	●	---
Route Alternative 3 (Alt3)						
Survey Station 1*	Alt3-S1	---	●	●	●	●
Survey Station 2*	Alt3-S2	●	●	●	●	---
Survey Station 3*	Alt3-S3	●	●	●	---	---
Survey Station 4*	Alt3-S4	●	●	●	●	---
Survey Station 5*	Alt3-S5	●	●	●	---	---
Survey Station 6*	Alt3-S6	●	●	●	---	---
Survey Station 7*	Alt3-S7	---	●	●	---	●
Survey Station 8*	Alt3-S8	●	●	●	---	---
Survey Station 9	Alt3-S9	●	●	●	●	---
Survey Station 10	Alt3-S10	●	●	●	●	---
Survey Station 11	Alt3-S11	●	●	●	●	---
Survey Station 12*	Alt3_S12	●	●	●	●	---
Survey Station 13*	Alt3-S13	---	●	●	●	---
Survey Station 14	Alt3-S14	●	●	●	●	---
Survey Station 15*	Alt3-S15	●	●	●	●	---

¹ Asterisk (*) designates roadside survey.; ² Identifier for survey location as shown in Appendix A -Figures 3A – 3E.

Methods associated with each of the surveys identified in Table 1 are summarized below.

2.1 Aquatic Assessment

The primary purpose of the aquatic field program was to characterize aquatic habitat that could potentially be affected by the Project in order to support the Class EA process and identify potential effects and mitigation.

Site-specific information collected focused on the physical characteristics including aquatic feature type (water crossing, waterbody,) permanence, channel size (bankfull width, bankfull depth, wetted width and wetted depth), adjacent land uses and potential risks of pollution. Fish habitat quality was assessed by classifying in-stream and riparian vegetation, the substrate type, bank stability, as well as the presence of groundwater seeps contributing to base flow. Specific observations of fish were also noted. General information gathered during aquatic assessments also included the date of sampling, UTM coordinates, weather conditions and digital photographs.

As identified in the Natural Environment Field Program TOR (*Appendix B*), a number of aquatic features identified as constructed drainage features, natural watercourses and waterbodies were identified along each of the three Route Alternatives within the Project Study Area. It is assumed that impacts to the majority of water crossings can be avoided through avoidance and/or mitigation measures (i.e. tower locations) during the detailed design phase. In an effort to scope down survey requirements for the 2020 field program, aquatic surveys were conducted within a subset of aquatic features with the potential to provide fish habitat, as well as potential habitat for aquatic SAR.

2.2 Ecological Land Classifications and Botanical Assessment

To map vegetation within the Project Study Area, ecological communities were assessed using a combination of aerial photograph interpretation and targeted field studies.

Initial aerial mapping of ecological communities within the Project Study Area were confirmed in the field following methods outlined in Ecological Land Classification (ELC) for Southern Ontario (Lee et al., 1998; Lee, 2008). The ELC results provided a baseline dataset that was used to determine the presence of natural features, candidate SWH, and potential habitat for SAR and/or SCC. We note that the majority of the Project Study Area is represented as anthropogenic communities, such as annual row crop and developed lands reflecting the dominant agricultural land use. Given the existing land uses, soil classification surveys were not completed as part of ELC surveys.

ELC surveys and botanical assessments for the majority of lands within the Project Study Area were performed as roadside surveys. Where private property access was permitted, assessment of vegetation communities occurred from within property boundaries (i.e., within natural features).

While conducting ELC surveys, the dominant species for each ecosite or community type was identified in the field and visual estimates of species abundance was recorded. Where appropriate, additional factors such as the level of disturbance was documented. A single season botanical assessment occurred concurrently with the ELC field survey. If encountered, the location and abundance of floral SCC or SAR was documented and GPS co-ordinates were recorded.

2.2.1 Invasive Species

Where encountered, the presence and location of invasive species infestation(s) were documented and their spatial location(s) recorded. Presence of invasive species was documented concurrently with ELC and botanical assessment surveys.

2.3 Wildlife and Wildlife Habitat

2.3.1 Important Bird and Biodiversity Areas

During the background review, it was noted that the Project Study Area overlaps with the Eastern Lake St. Clair IBA. Specifically within the Project Study Area, the southern extents of the IBA overlap with portions of Route Alternative 2A (including its Variations) and a small section of Route Alternative 1A (including its Variations) (*Attachment A – Figures 2A - E*).

IBAs are considered a relatively new concept in Canada and are not legally protected in their own right. In Canada, IBAs complement (and often overlap partially or entirely with) other national, provincial, and local conservation designations such as National and Provincial Parks, Migratory Bird Sanctuaries, National Wildlife Areas, Crown Reserve lands, and Ecological Reserves. Historically and to the present day, Lake St. Clair and the general vicinity of the IBA have been used as seasonal staging habitat and recreational hunting grounds.

The IBA promotes conservation and stewardship of migratory stopover and staging habitat for waterfowl along the eastern shoreline of Lake St. Clair. Staging and stopover habitat consists of coastal wetlands and agricultural fields subject to sheet flooding, and standing water during the spring and fall migratory seasons. Areas of suitable habitat within the Project Study Area were evaluated through assessing available background data, and refined during the 2020 field program.

2.3.2 Significant Wildlife Habitat

Species of Conservation Concern (SCC) are defined as:

- Species listed as Special Concern, Threatened, or Endangered under the federal Species at Risk Act (SARA)
- Species that are provincially rare/tracked (i.e., have a Sub-national (provincial) Rank of S1 - Critically Imperiled, S2 – Imperiled, or S3 – Vulnerable), and
- Species that are designated as Special Concern under the Endangered Species Act, 2007 (ESA)

The habitats of SCC may be considered SWH. As previously documented in Section 4.3 of the Natural Environment Field Program TOR (*Appendix B*), based on desktop background review, the following 11 SCC have the potential to occur within the Project Study Area (Table 2).

Table 2: SCC with the Potential to Occur within the Project Study Area

Scientific Name	Common Name	SARA ¹	ESA ²	SRank ³	Information Source ⁴
Botanicals					
<i>Quercus shumardii</i>	Shumard Oak	---	SC	S3	NHIC
<i>Rosa setigera</i>	Climbing Prairie Rose	SC	SC	S3	NHIC
<i>Vernonia gigantea</i>	Giant Ironweed	---	---	S1?	NHIC
Birds					
<i>Contopus virens</i>	Eastern Wood-pewee	SC	SC	S4B	OBBA
<i>Melanerpes erythrocephalus</i>	Red-headed Woodpecker	THR	SC	S4B	OBBA
Herpetofauna					
<i>Chelydra serpentina</i>	Snapping Turtle	SC	SC	S3	NHIC, OHA
Fish and Molluscs					
<i>Ichthyomyzon unicuspis</i> pop. 1	Silver Lamprey (Great Lakes - Upper St. Lawrence populations)	---	SC	S3	DFO
<i>Minytrema melanops</i>	Spotted Sucker	SC	SC	S2	DFO
<i>Quadrula quadrula</i>	Mapleleaf Mussel (Great Lakes - Upper St. Lawrence population)	SC	SC	S2	DFO
<i>Villosa iris</i>	Rainbow	SC	SC	S2S3	DFO
Lepidoptera					
<i>Danaus plexippus</i>	Monarch	SC	SC	S4	NHIC

¹ Federal Species at Risk Act, 2002 (SARA), where SC = special concern, THR = threatened. ²Provincial Endangered Species Act, 2007 (ESA), where SC = special concern.

³Provincial Conservation Ranking (SRank) where S5 = secure, S4 = apparently secure, S3 = vulnerable, S2 = imperilled, S1 = critically imperilled, SX = extirpated, SH = possibly extirpated, SNA = A conservation status rank is not applicable because the species is not a suitable target for conservation activities, SE = exotic, SU = unranked, B = breeding, N = non-breeding, and ? = some uncertainty with the classification due to insufficient information.

⁴NHIC = Natural Heritage Information Centre (MNRF, 2018), OBBA – Ontario Breeding Bird Atlas (Bird Studies Canada, 2017), OHA – Ontario Reptile and Amphibian Atlas (Ontario Nature, 2013), DFO – Fisheries and Oceans Canada SAR Mapping (DFO, 2019).

The Project is located in Ecoregion 7E (the Carolinian Zone). The Ontario Significant Wildlife Habitat Criteria Schedules for Ecoregion 7E (MNRF, 2015a) and the Significant Wildlife Habitat Technical Guide (MNR, 2000) were reviewed to assess candidate SWH within the Project Study Area. Based on the list of SCC identified in Table 2, the following Candidate SWH were assessed as having the potential to occur within the Project Study Area.

Seasonal Concentration Areas of Animals

- Bat Maternity Colonies, and
- Turtle Wintering Areas

Specialized Habitat for Wildlife

- Bald Eagle and Osprey nesting, Foraging and Perching Habitat, and
- Amphibian Breeding Habitat (woodland)

Habitat for Species of Conservation Concern

- Special Concern and Rare Wildlife Species:
 - Shumard Oak (*Quercus shumardii*)
 - Climbing Prairie Rose (*Rosa setigera*)
 - Giant Ironweed (*Vernonia gigantea*)
 - Eastern Wood-pewee (*Contopus virens*)
 - Red-Headed Woodpecker (*Melanerpes erythrocephalus*)
 - Mapleleaf (*Quadrula quadrula*)
 - Rainbow (*Villosa iris*)
 - Silver Lamprey (*Ichthyomyzon unicuspis population*), and
 - Spotted Sucker (*Minytrema melanops*)

SWH identified within the Project Study Area was confirmed or ruled out using criteria outlined in the Ontario Significant Wildlife Habitat Criteria Schedules for Ecoregion 7E (MNRF, 2015a), habitat mapping reviewed from aerial imagery, and information collected during field investigations. Incidental observations of wildlife (including dens, tracks and scats, and other wildlife evidence) and the presence of candidate SWH were recorded during field investigations.

The following sections describe the methods used to evaluate SWH within the Project Study Area.

2.3.2.1**Diurnal Breeding Bird Surveys**

Natural and anthropogenic features within the Project Study Area provide potential habitat to a number of breeding birds. As a result, breeding bird surveys were conducted to evaluate the potential impacts of the Project on birds.

Diurnal breeding bird surveys followed methods outlined in the Ontario Breeding Bird Atlas Guide for Participants (Cadman et al. 2007). Two surveys were conducted between late-May and early-July to document both early-season and late-season breeders.

Specifically, surveys consisted of 10 minute point-counts generally conducted between dawn and five hours after sunrise to establish quantitative estimates of bird abundance in suitable habitat types within the Project Study Area. A total of 35 point counts were surveyed throughout the Project Study Area.

Evidence of breeding behavior was recorded during the surveys, which generally included but was not limited to, males singing, nest building, egg incubation, territorial defense, carrying food, and feeding young.

2.3.2.2

Amphibian Breeding Surveys

While Provincially Significant Wetlands (PSW) and unevaluated wetlands were not identified within the Project Study Area through the desktop review of Land Information Ontario (LIO) data, natural features were observed along each of the Route Alternatives. Amphibian Breeding Surveys were completed at 12 survey stations with the potential to support amphibian breeding habitat.

Nocturnal acoustic amphibian surveys followed methods of the Marsh Monitoring Protocol (Bird Studies Canada, 2008). Three surveys were conducted between late-April and June in 2019 to document early, mid, and late-season breeders with a minimum of 15 days separating each survey. Contrary to the aforementioned protocol, the last and third survey was conducted in late-June rather than early-June (Bird Studies Canada, 2008). While this final survey occurred outside of the prescribed timing window of the protocol, it is noted that the reported environmental conditions (temperature and weather) required for this survey period was met; it is also noted that calling amphibians were heard during this surveys. The survey methods, as well as preferred conditions for each of the three survey periods are outlined below.

Surveys consisted of 3-minute point-counts conducted no earlier than thirty-minutes after sunset, during evenings with little wind and minimum night temperature of 5°C, 10°C and 17°C for each of the three respective survey periods. Information collected during surveys included documentation of species observed, as well as estimations of population size and density. As a supplement to the nocturnal acoustic surveys, incidental amphibian observations, which included individual species sightings, as well as evidence of breeding behaviour (i.e., the presence of eggs, tadpoles and pollywogs) within the Project Study Area was documented (if observed).

2.4

Species at Risk

As outlined in Section 4.4 of the Natural Environment Field Program TOR (*Appendix B*), the following SAR listed in Table 3 were identified as having the potential to occur within the general vicinity of the Project Study Area.

Table 3: SAR with the Potential to Occur within the Project Study Area

Scientific Name	Common Name	SARA ¹	ESA ²	SRank ³	Information Source ⁴
Botanicals					
<i>Cornus florida</i>	Eastern Flowering Dogwood	END	END	S2?	NHIC
<i>Juglans cinerea</i>	Butternut	END	END	S3?	NHIC
Birds					
<i>Hirundo rustica</i>	Barn Swallow	THR	THR	S4B	OBBA
<i>Dolichonyx oryzivorus</i>	Bobolink	THR	THR	S4B	OBBA, NHIC
<i>Sturnella magna</i>	Eastern Meadowlark	THR	THR	S4B	OBBA, NHIC

Scientific Name	Common Name	SARA ¹	ESA ²	SRank ³	Information Source ⁴
Mammals					
<i>Myotis leibii</i>	Eastern Small-footed Myotis	---	END	S2S3	MWH
<i>Myotis lucifugus</i>	Little Brown Myotis	END	END	S4	MWH
<i>Myotis septentrionalis</i>	Northern Myotis	END	END	S3	MWH
<i>Pipistrellus subflavus</i>	Tri-colored Bat	END	END	S3?	MWH
Herpetofauna					
<i>Pantherophis gloydi</i> pop. 2	Eastern Foxsnake (Carolinian population)	END	END	S2	OHA
Fish and Molluscs					
<i>Erimyzon sucetta</i>	Lake Chubsucker	END	THR	S2	DFO
<i>Lampsilis fasciola</i>	Wavy-rayed Lampmussel	SC	THR	S1	NHIC
<i>Obovaria subrotunda</i>	Round Hickorynut	END	END	S1	DFO
<i>Opsopoeodus emiliae</i>	Pugnose Minnow	SC	THR	S2	DFO
<i>Pleurobema sintoxia</i>	Round Pigtoe	END	END	S1	DFO
<i>Toxolasma parvus</i>	Lilliput	---	THR	S1	DFO

¹Federal Species at Risk Act, 2002 (SARA), where SC = special concern, THR = threatened and END = endangered.

²Provincial Endangered Species Act, 2007 (ESA), where THR = threatened and END = endangered.

³Provincial Conservation Ranking (SRank) where S5 = secure, S4 = apparently secure, S3 = vulnerable, S2 = imperiled, S1 = critically imperiled, SX = extirpated, SH = possibly extirpated, SNA = A conservation status rank is not applicable because the species is not a suitable target for conservation activities, SE = exotic, SU = unranked, B = breeding, N = non-breeding, and ? = some uncertainty with the classification due to insufficient information.

⁴NHIC = Natural Heritage Information Centre (MNR, 2018), OBBA – Ontario Breeding Bird Atlas (Bird Studies Canada, 2017), MWH = Mammals of the Western Hemisphere (Paterson et al, 2007), OHA – Ontario Reptile and Amphibian Atlas (Ontario Nature, 2013), DFO – Fisheries and Oceans Canada SAR Mapping (DFO, 2019).

As occurrences for SAR birds (including grassland species such as Eastern Meadowlark and Bobolink) are generally captured during breeding bird surveys, targeted surveys for these species were not conducted given the landscape is dominated by active agriculture (i.e., annual row-crops). Similarly, SAR botanical species would be captured during the aforementioned ELC/botanical surveys, respectively. Incidental observations of wildlife, including SAR, and the presence of suitable habitat for SAR, were also recorded during the 2020 field program. Focused surveys for SAR identified previously in Section 4.4 of the Natural Environment Field Program TOR are available in the following subsections.

2.4.1 Eastern Foxsnake Surveys

Woodlands, as well as riparian vegetation associated with aquatic features within the Project Study Area have the potential to support Regulated Habitat for Eastern Foxsnake under *Ontario Regulation 242/08*. As a result, woodlands and water crossings with associated riparian vegetation identified within the Project Study Area are assumed to provide Regulated Habitat for Eastern Foxsnake. It is also assumed that impacts to Eastern Foxsnake and Eastern Foxsnake Regulated Habitat can be avoided during the detailed design phase through avoidance and/or mitigation measures (i.e., tower locations). Due to the large geographical size, as well as the potential for Regulated Habitat for Eastern Foxsnake to occur within the Project Study Area, Visual Encounter Surveys for Eastern Foxsnake were not conducted as part of the Class EA. As such, the following scoped methodology was used to assess the presence of potential Regulated Habitat for Eastern Foxsnake within the Project Study Area.

Regulated Habitat for Eastern Foxsnake was identified within the Project Study Area through a review of aerial imagery and data collected from ELC surveys and aquatic habitat assessments. Aerial imagery as well as data collected from the 2020 field program supported the mapping exercises performed after the 2020 field season. Special focus was given during the desktop mapping exercise to assess linear treed features connected to adjacent natural features, as well as riparian habitats associated with aquatic features with the potential to be impacted by the project.

2.4.2 SAR Bats

Deciduous, coniferous and/or mixed wooded vegetation communities with trees ≥ 10 centimetres (cm) at diameter breast height (DBH) are considered potential maternity roosting habitat for SAR bats. As such, woodlands identified within the Project Study Area have the potential to provide habitat for SAR bats. Potential habitat was identified within the Project Study Area through a review of aerial imagery and data acquired from ELC surveys and botanical assessments. It was assumed that impacts to SAR bats and SAR bat habitat may be avoided during the detailed design phase through avoidance and/or mitigation measures (i.e., tower placement) where practical. As such, the following scoped methods were utilized to assess the potential for SAR bat habitat within the Project Study Area.

Where access was permitted, field staff identified snag/cavity trees concurrently during ELC surveys and botanical assessments. Where potential snag/cavity trees were identified, field staff recorded the DBH, tree species, tree height, and approximate location and height of cavities and/or cracks. GPS coordinates were recorded for each snag/cavity tree assessed. In addition, if potential bat hibernacula (e.g. buildings) were observed during field surveys, details and locations for these features were documented in the field as well.

2.5 Incidental Wildlife

A general wildlife assessment was completed within the Project Study Area through incidental observations while on site. Incidental observations of wildlife, including evidence of wildlife such as dens, tracks, and scat were documented, and when possible, photos were taken. These observations helped to determine potential ecological functions or linkages within the Project Study Area.

3.0

Natural Environment Field Investigations - Results

Field assessments for the Project were conducted between April and August, 2020 when weather conditions and timing were deemed suitable based on applicable survey protocols. Dates and weather associated with each of the field studies completed during the 2020 field program are outlined in Table 4.

Table 4: 2020 Field Program Survey Dates, Times, and Weather

Date (2020)	Survey	Time (24 Hour)	Temperature (°C)	Wind Direction ¹	Wind Speed (Beaufort) ²	Cloud Cover (%)	Precipitation	Surveyor Name ³
April 20	Amphibian Survey #1	20:50 - 23:00	6.8 - 8.1	S	1 - 2	90%	None	Brad McLeod
April 24	Amphibian Survey #1	20:37 - 21:53	9 - 7	---	1	10%	None	Dan Bourassa
May 20	Amphibian Survey #2	21:25 - 23:15	11.2 - 13.7	E	1	100%	None	Brad McLeod and Henry Anderson*
May 21	Amphibian Survey #2	21:20 - 23:15	13.8 - 13.9	S	0 - 2	10%	None	Brad McLeod and Henry Anderson*
June 8	Breeding Bird Survey #1	6:40 - 10:12	10.6 - 24	NE - E	1 - 2	5 - 10	None	Brad McLeod and Henry Anderson*
	Ecological Land Classification and Summer Vegetation Survey	10:12 - 12:30						
June 9	Breeding Bird Survey #1	6:12 - 10:55	15.4 - 30	N/A - W	0 - 2	20 - 40	None	Brad McLeod and Henry Anderson*
	Ecological Land Classification and Summer Vegetation Survey	10:55 - 12:30						
	Aquatic Assessment	8:30 - 16:30						Dylan Morse and Matthew Turner*
June 10	Breeding Bird Survey #1	6:20 - 8:55	19 - 30	SW - S	2/3 - 3	0 - 50	None	Brad McLeod and Henry Anderson*
	Ecological Land Classification and Summer Vegetation Survey	8:55 - 12:00						
	Aquatic Assessment	8:30 - 16:00						Dylan Morse and Matthew Turner*
June 11	Ecological Land Classification and Summer Vegetation Survey	6:00 - 12:30	15.5 - 23	W	4	10 - 20	N/A	Brad McLeod and Henry Anderson*
	Aquatic Assessment	8:45 - 17:15						Dylan Morse and Matthew Turner*

Date (2020)	Survey	Time (24 Hour)	Temperature (°C)	Wind Direction ¹	Wind Speed (Beaufort) ²	Cloud Cover (%)	Precipitation	Surveyor Name ³
June 12	Breeding Bird Survey #1	6:18 - 9:28	15 - 19	N	1	5	None	Brad McLeod and Henry Anderson*
	Ecological Land Classification and Summer Vegetation Survey	9:28 - 11:30						
	Aquatic Assessment	8:00 - 14:00						
June 15	Breeding Bird Survey #1	6:17 - 10:30	11 - 21	N/A - SE	0 - 2	0 - 15	None	Brad McLeod and Henry Anderson*
	Ecological Land Classification and Summer Vegetation Survey	10:30 - 12:15						
June 29	Amphibian Survey #3	21:00 - 23:50	21 - 25	N/A - N	0 - 1	10	None	Brad McLeod, Henry Anderson* and Mike Gaul*
June 30	Amphibian Survey #3	20:30 - 24:20	21 - 23	SE	1	20 - 60	None	Brad McLeod, Henry Anderson* and Mike Gaul*
July 6	Breeding Bird Survey #2	5:50 - 9:12	21 - 33	N/A - S	0 - 1	0	None	Brad McLeod, Henry Anderson* and Dan Deleary*
	Ecological Land Classification and Summer Vegetation Survey	9:12 - 11:30						
July 7	Breeding Bird Survey #2	5:51 - 9:00	24 - 33	N/A - W	0 - 1	0	None	Brad McLeod, Henry Anderson* and Dan Deleary*
	Ecological Land Classification and Summer Vegetation Survey	9:00 - 11:15						
July 8	Breeding Bird Survey 2	5:44 - 8:07	22 - 29	S - N/A	1 - 0	0 - 25	None	Brad McLeod and Henry Anderson*
	Ecological Land Classification and Summer Vegetation Survey	8:07 - 11:05						
July 9	Breeding Bird Survey #2	5:50 - 8:10	23 - 30	N/A - E	0 - 1	0 - 25	None	Brad McLeod, Henry Anderson* and Dan Deleary*
	Ecological Land Classification and Summer Vegetation Survey	8:10 - 10:20						

Date (2020)	Survey	Time (24 Hour)	Temperature (°C)	Wind Direction ¹	Wind Speed (Beaufort) ²	Cloud Cover (%)	Precipitation	Surveyor Name ³
July 10	Breeding Bird Survey #2	6:00 – 8:54	24 – 30	N/A – SW	0 – 1	20 – 0	None	Brad McLeod, Henry Anderson* and Dan Deleary*
	Ecological Land Classification and Summer Vegetation Survey	8:54 - 11:45						
July 13	Ecological Land Classification and Summer Vegetation Survey	8:00 - 13:30	19 - 26	N	2	55 - 20	None	Brad McLeod, Henry Anderson* and Dan Deleary*

¹ N/A Denotes no wind was documented.

² Beaufort Wind Scale, where 0 = Calm, 1 – Light Air, 2 = Light Breeze, 3 = Gentle Breeze, 4 = Moderate Breeze, 5 = Fresh Breeze, 6 = Strong Breeze, 7 = Near Gale, 8 = Gale, 9 = Strong Gale, 10 = Storm, 11 = Violent Storm, 12 = Hurricane.

³ Asterisk (*) Indigenous Environmental Monitors participating in the surveys.

Each section below summarizes the results of field surveys conducted as part of the 2020 field investigations.

3.1 Aquatic Assessments

As mentioned in the Natural Environment Field Program TOR (*Appendix B*), there are 182 water crossing intersections associated with constructed drains, natural watercourses and waterbodies within the Project Study Area. Of the 182, 42 crossings were assessed for the purposes of this report along Route Alternatives 1, 2 and 3. Aquatic habitat assessments were conducted by a Dillon biologist and First Nations Environmental Monitor from June 9 to June 12, 2020. The majority of features within the Project Study Area flow into Jeannettes Creek, McGregor Creek Drain, Baptiste Creek, Tilbury Creek or Big Creek. Jeannettes Creek, also identified as Duke Drain and Ferguson Drain in the upstream reaches, flows into the Thames River approximately 3 km east of Lighthouse Cove, and is the most prominent feature throughout the east portion of the Project Study Area. Jeannettes Creek is characterized by a wide, deep, naturally meandering channel west of Drake Road and is largely channelized east of Drake Road. Similar to Jeannettes Creek, Baptiste Creek (also identified as Baptiste Creek Drain), Tilbury Creek (also identified as Tremblay Creek Drain) and Big Creek (also identified as Big Creek Drain) are generally characterized by wide, deep naturally meandering channels in their lower reaches with channelized sections in the upper reaches. Tilbury Creek flows into Big Creek approximately 400 m north of Tecumseh Road, Big Creek flows into Baptiste Creek approximately 2 km further downstream and Baptiste Creek flows into the Thames River at Lighthouse Cove approximately 1.5 km further downstream. Jeannettes Creek, McGregor Creek Drain (also identified as McGregor Creek), Tilbury Creek, Baptiste Creek and Big Creek, are anticipated to provide the highest quality fish habitat within the Project Study Area.

The following sections outline results of the aquatic habitat assessments summarized by Route Alternative. A summary of survey results are included in *Appendix C*.

3.1.1 Route Alternative 1 (Alt1)

Along Route Alternative 1, 12 water crossings were assessed over the following constructed drains and watercourse systems:

- Locke Drain
- Duke Drain (Jeannettes Creek)
- Waddick Drain
- O'rourke Drain
- Government Drain
- Kersey Drain
- Deary Drain
- Baptiste Creek Drain (Baptiste Creek)
- Powell Drain
- Tremblay Creek Drain (Tilbury Creek)
- Big Creek Drain (Big Creek)

The most common substrate observed within the drainage features and watercourses consisted of clay with gravel and detritus; minor sand, boulder and cobble substrate were also observed. The dominant instream habitat consisted of emergent aquatic vegetation with woody debris and organic debris. Additional instream habitat features were comprised of boulders/cobble and undercut banks. Numerous young-of-the-year (YOY) fish were observed within Waddick Drain at survey station 4 and several small fish were observed in Kersey Drain at survey station 7. Numerous unidentified large fish were observed underneath the bridge in Deary Drain at survey station 8 and an adult top predator species (Northern Pike (*Esox lucius*) or Longnose Gar (*Lepisosteus osseus*) was observed in Locke Drain at survey station 2 (*Appendix C*).

Regarding aquatic SAR, Lake Chubsucker, listed as provincially Threatened and federally Endangered, was identified as having the potential to occur within Waddick Drain at survey station 4. Based on the turbid conditions and lack of abundant aquatic vegetation observed at the crossing, Waddick Drain at survey station 4 is not expected to provide suitable habitat for Lake Chubsucker. Representative photos from survey stations along watercourses and drains associated with Route Alternative 1 are provided in *Appendix D* (Photos 1-12).

3.1.2 Route Alternative 2 (Alt2)

Along Route Alternative 2, 17 water crossings were assessed over the following constructed drains and watercourse systems:

- McGregor Creek Drain (McGregor Creek)
- Chinnick Drain (Indian Creek)
- Bullis Creek Drain (Bullis Creek)
- Ferguson Drain (Jeannettes Creek)
- Baptiste Creek Drain (Baptiste Creek)
- Tremblay Creek Drain (Tilbury Creek)

- Big Creek Drain (Big Creek)
- Unnamed feature
- Little Creek
- Malden Road Drain Outlet
- Doyle Drain
- Unnamed Drain (tributary to Doyle Drain)
- Locke Drain
- Ferguson Drain (Jeannettes Creek)
- Finn & Cooper Drain
- 6-7 Sideroad Drain

The dominant substrate observed within drainage features and watercourses associated with Route Alternative 2 consisted of clay with minor gravel, sand, cobble, muck and detritus. The dominant instream habitat generally consisted of emergent aquatic vegetation at the majority of survey stations with woody debris noted at several survey stations. Additional instream habitat features were comprised of boulders/cobble, organic debris and undercut banks. Numerous YOY and juvenile fish were observed within Locke Drain and Ferguson Drain (Jeannettes Creek) at survey stations 18 and 19, respectively. The tributary to Doyle Drain at survey station 17 was dry at the time of assessment and is anticipated to provide fish habitat seasonally during times of higher flows (*Appendix C*).

Regarding aquatic SAR, Lake Chubsucker, listed as provincially Threatened and federally Endangered, was identified as having the potential to occur within Chinnick Drain (Indian Creek), Bullis Creek Drain (Bullis Creek) and Ferguson Drain (Jeannettes Creek) at the survey stations 2, 3, 5, 14, and 19, respectively (DFO, 2019). Based on the turbid conditions observed during field investigations, Chinnick Drain (Indian Creek) and Ferguson Drain (Jeannettes Creek) are not anticipated to provide suitable habitat for Lake Chubsucker. Based on the presence of abundant in-stream aquatic vegetation and lack of flow observed during field investigations, Bullis Creek Drain (Bullis Creek) is anticipated to provide suitable habitat for Lake Chubsucker. Round Pigtoe, listed both provincially and federally as Endangered, was identified as having the potential to occur within McGregor Creek Drain at survey station 1 (DFO, 2019). However, based on the current Canadian range of Round Pigtoe (Lake St. Clair delta, Sydenham River, Middle Thames and Grand River) McGregor Creek Drain is beyond the range of this species (DFO, 2019). Lilliput, listed federally as Endangered, was identified as having the potential to occur within Baptiste Creek at survey stations 6 and 15 (DFO, 2019).

Based on the presence of a medium to large watercourse with potential for soft substrates such as sand, mud and silt, Baptiste Creek is anticipated to provide suitable habitat for Lilliput. Representative photos from aquatic survey stations of Route Alternative 2 are presented in *Appendix D* (Photos 13 – 30).

3.1.3 Route Alternative 3 (Alt3)

Along Route Alternative 3, 12 water crossings were assessed over the following constructed drains and watercourse systems:

- Duke Drain (Jeannettes Creek)
- O'Rourke Drain
- Carter Drain
- Kersey Drain;
- Deary Drain;
- Unnamed Drain;
- Baptiste Creek Drain (Baptiste Creek);
- Thibert Drain;
- Robb-Dales Drain (Big Creek);
- East Branch of Big Creek Drain;
- Big Creek Drain – West Branch; and
- Toomey Drain.

The most common substrates observed within drainage features and watercourses associated with consisted of clay and gravel; however, muck, silt, boulder, cobble and detritus were also noted. The dominant instream habitat generally consisted of emergent aquatic vegetation with woody debris and organic debris. Additional instream habitat features were comprised of boulders/cobble, organic debris and undercut banks. Numerous small fish were observed in Carter Drain and Duke Drain (Jeanettes Creek) at survey stations 2 and 4, respectively. Regarding aquatic SAR, there are no fish or mussels identified as having the potential to occur within the features associated with Route Alternative 3 (DFO, 2019). Representative photos of watercourses and drains along Route Alternative 3 are provided in Appendix D (Photos 31- 42).

3.2 Ecological Land Classification

A total of thirty-three natural and cultural communities were observed within the Project Study Area during the ELC surveys. Vegetation communities identified within the Project Study Area are illustrated in *Appendix A - Figure 4A – 4E*. Representative photos of the ELC communities are provided in *Appendix D* (Photos 43 – 65).

The majority of the Project Study Area consists of developed cultural communities; most of which are active agricultural lands (OAG) and infrastructure (IAG), including fields of annual row crops (i.e. soya bean, wheat and corn; OAGM1); generally bisected by hedgerows (TAGM5). Additional cultural communities identified throughout the three Route Alternatives include mowed lawns, maintained ROWs, parklands, (CGL) residential properties (CVR), and commercial and industrial (CVC) parcels.

Natural communities such as deciduous forests (FOD, FODM9-4, FODM6-4, FODM5-7), woodlands (WOD), swamp (SWD, SWD02-1, SWD02, SWDM4-2), thickets (THD, THM, SWT) and marsh (MA) were predominantly isolated in the landscape.

The presence of these features were intermittent within each of the three Route Alternatives. Occasionally, deciduous forest, swamp, and woodland communities were associated with riparian habitats adjacent to watercourses (open aquatic; OA) and municipal drains. Additional meadow areas (MEG, MEF, MEM, MEMM3) were typically documented within unmanaged road right of ways, and fallow areas.

A breakdown of the total aggregate area of each ELC polygon observed per Route Alternative (including variations) within the Project Study Area is listed in Table 5. Overall, the Project Study Area had a total of 368.84 ha consisting of natural vegetation communities.

Table 5: **ELC Communities Identified within the Project Study Area**

ELC Community	Dominant Plant Species	Total hectares (ha) of ELC polygon comprising each Route Alternative			Total Area of ELC Polygon (ha)	Photos (Appendix E)
		Route Alternative 1	Route Alternative 2	Route Alternative 3		
Natural Communities						
SWT Thicket Swamp	American Elm (<i>Ulmus americana</i>), Eastern Red Cedar (<i>Juniperus virginiana</i>), Green Ash (<i>Fraxinus pennsylvanica</i>), Gray Dogwood (<i>Cornus racemosa</i>), and Common Evening Primrose (<i>Oenothera biennis</i>).	---	1.11	---	1.11	43
SWDO2-1 Red-Maple Organic Deciduous Swamp	Red Maple (<i>Acer rubrum</i>), Eastern Cottonwood (<i>Populus deltoides ssp. deltoides</i>), Freeman's Maple (<i>Acer x freemanii</i>), Sugar Maple (<i>Acer saccharum</i>), Gray Dogwood, Sensitive Fern (<i>Onoclea sensibilis</i>), Riverbank Grape (<i>Vitis riparia</i>), Virginia Creeper (<i>Parthenocissus quinquefolia</i>), and Climbing Poison Ivy (<i>Toxicodendron radicans</i>)..	2.94	---	---	2.94	44
SWD02 Maple Organic Deciduous Swamp	Red Maple, Eastern Cottonwood, Sugar Maple, Gray Dogwood, Poplar Species (<i>Populus sp.</i>), Black Walnut (<i>Juglans nigra</i>), Silver Maple (<i>Acer saccharinum</i>), European Wood-sorrel (<i>Oxalis stricta</i>), English Plantain (<i>Plantago lanceolata</i>), and American Water-horehound (<i>Lycopus americanus</i>).	---	1.57	---	1.57	45

ELC Community	Dominant Plant Species	Total hectares (ha) of ELC polygon comprising each Route Alternative			Total Area of ELC Polygon (ha)	Photos (Appendix E)
		Route Alternative 1	Route Alternative 2	Route Alternative 3		
SWDM4-2 White Elm Mineral Deciduous Swamp	American Elm, Green Ash, Gray Dogwood, and Eastern Cottonwood.	---	1.18	---	1.18	46
FOD Deciduous Forest	Sugar Maple, Black Walnut, Black Locust (<i>Robinia pseudoacacia</i>), Northern Red Oak (<i>Quercus rubra</i>), American Elm, Poplar Species, White Avens (<i>Geum canadense</i>), and Northern Prickly Ash (<i>Zanthoxylum americanum</i>).	4.88	1.63	2.58	9.09	47
FODM9-4 Fresh-Moist Shagbark Hickory Deciduous Forest	Shagbark Hickory (<i>Carya ovata</i>), Northern Prickly Ash, American Elm, and Bur Oak (<i>Quercus macrocarpa</i>).	---	3.44	3.31	6.75	48
FODM6-4 Fresh-Moist Sugar Maple-White Elm Deciduous Forest	Green Ash, Sugar Maple, Freeman's Maple, American Basswood (<i>Tilia Americana</i>), American Elm, Northern Red Oak, Eastern Cottonwood, and Yellow Birch (<i>Betula alleghaniensis</i>)	---	---	0.52	0.52	49
FODM5-7 Dry-Fresh Sugar Maple-Black Cherry Deciduous Forest	Sugar Maple, Wild Black Cherry (<i>Prunus serotina</i>), Yellow Birch, American Elm, Northern Prickly Ash, American Beech (<i>Fagus grandifolia</i>), Spicebush (<i>Lindera benzoin</i>), Jack-in-the-Pulpit (<i>Arisaema triphyllum</i>), Broad-leaved Enchanter's Nightshade (<i>Circaea canadensis</i>), and May Apple (<i>Podophyllum peltatum</i>).	0.82	---	---	0.82	50
WOD Deciduous Woodland	Black Walnut, Russian Olive (<i>Elaeagnus angustifolia</i>), Curly Dock (<i>Rumex crispus</i>), Black-eyed Susan (<i>Rudbeckia hirta</i> var. <i>hirta</i>), and Common Milkweed (<i>Asclepias syriaca</i>).	4.64	3.22	0.67	8.54	51, 52
THD Thicket	Manitoba Maple (<i>Acer negundo</i>), Staghorn Sumac (<i>Rhus hirta</i>), and Black Locust.	0.23	0.18	---	0.40	53

ELC Community	Dominant Plant Species	Total hectares (ha) of ELC polygon comprising each Route Alternative			Total Area of ELC Polygon (ha)	Photos (Appendix E)
		Route Alternative 1	Route Alternative 2	Route Alternative 3		
THM Mixed Thicket	Eastern Red Cedar, and Northern Prickly Ash.	---	0.09	---	0.09	54
MAS Shallow Marsh	Field Penny-cress (<i>Thlaspi arvense</i>), Dame's Rocket (<i>Hesperis matronalis</i>), European Common Reed (<i>Phragmites australis</i> ssp. <i>australis</i>), Common Blackberry (<i>Rubus allegheniensis</i>), and Virginia Creeper.	---	0.66	---	0.66	---
OA or OAO Open Aquatic	European Common Reed.	0.21	13.96	---	14.17	55, 56
SA Shallow Aquatic	European Common Reed and Broad-leaved Cattail (<i>Typha latifolia</i>).	7.51	4.99	0.34	12.85	57
MEF Forb Meadow	Dominated by broadleaf species.	0.13	0.13	---	0.25	58
MEM Mixed Meadow	Curly Dock, Fuller's Teasel (<i>Dipsacus fullonum</i>), Orange Daylily (<i>Hemerocallis fulva</i>), Red Clover (<i>Trifolium pratense</i>), and Yellow Parsnip (<i>Pastinaca sativa</i>), etc.	33.15	82.62	13.35	129.14	59
MEMM3 Dry-Fresh Mixed Meadow		0.21	0.54	0.41	1.17	60
Cultural Communities						
FODM12 Naturalized Deciduous Plantation	Ecosites observed via aerial photograph. Vegetation appeared to consist of trees planted in maintained rows within private properties.	---	---	1.32	1.32	---
TAGM3 Deciduous Plantation		---	0.18	---	0.18	---
TAGM5 Hedgerow	Black Locust, Manitoba Maple, Eastern White Cedar (<i>Thuja occidentalis</i>), Colts-foot (<i>Tussilago farfara</i>), Norway Spruce (<i>Picea abies</i>), Common Mullein (<i>Verbascum thapsus</i>), Common Burdock (<i>Arctium minus</i>), and Hemp Dogbane (<i>Apocynum cannabinum</i>)	19.07	28.19	18.27	65.54	61

ELC Community	Dominant Plant Species	Total hectares (ha) of ELC polygon comprising each Route Alternative			Total Area of ELC Polygon (ha)	Photos (Appendix E)
		Route Alternative 1	Route Alternative 2	Route Alternative 3		
SAG Shrub Agriculture	Active agricultural fields.	0.01	---	---	0.01	62
OAGM1 Annual Row Crop	Active agricultural fields, planted with corn, wheat or bean crops.	1499.60	1763.51	1115.93	4379.02	
CVR Residential	Residential properties identified in subdivisions or as single rural parcels. Contains mowed lawns and landscaping trees.	2.27	4.43	0.81	7.51	
CVR_3 Single Family Residential		12.10	18.74	5.28	36.12	---
CVR_4 Rural Property		6.36	11.10	5.29	22.76	
IAG Agricultural Infrastructure	Rural farm properties containing large agricultural infrastructure (i.e. barns, silos, etc.).	16.20	5.08	1.89	23.17	---
IAGM1 Agricultural Buildings		0.54	0.96	---	1.50	
CVC Commercial and Industrial	Lands being used as commercial businesses or light industrial work. May contain equipment, paved parking lots, and areas of maintained lawn and landscaping trees.	0.35	12.38	---	12.74	---
CVC_1 Light Industrial		1.15	---	---	1.15	
CGL Parkland (mowed grass)	Great Ragweed (<i>Ambrosia trifida</i>), Common Yarrow (<i>Achillea millefolium</i>), Broad-leaved Enchanter's Nightshade, Field Sow-thistle (<i>Sonchus arvensis ssp. arvensis</i>), White Sweet-clover (<i>Melilotus albus</i>), and Canada Thistle (<i>Cirsium arvense</i>).	9.48	8.15	4.05	21.70	63
CGL_4 Recreational	Mowed grass areas.	4.33	4.33	5.07	13.74	
CVI_1 Transportation	Municipal Roads, Highways, and railways observed within Project Study Area.	34.011	87.97	18.85	140.83	64
CVI_4 Power Generation	Hydro One Infrastructure.	1.49	0.38	0.47	2.34	65

3.3 Vegetation Inventory

A total of 111 plant species were observed during 2020 field studies. A total of 73 botanical species were documented within Route Alternative 1; 68 species were observed during surveys of Route Alternative 2, and 63 species were reported within the Study Area of Route Alternative 3. Of the total species observed, 61 are listed as native species and are considered to be Secure (SRank of S5) or Apparently Secure (SRank of S4) in the province of Ontario. Forty-seven additional species were listed as introduced species; therefore, a status ranking is not applicable as the species is not a suitable target for conservation activities (SRank of SE, SU or SNA). The remaining three species include one SAR (Butternut (*Juglans cinerea*)) and two SCC (Climbing Prairie Rose (*Rosa setigera*) and Honey-locust (*Gleditsia triacanthos*)).

Nine Butternut trees were observed along Route Alternative 1 (all documented from survey station 2; Alt 1-S2 in *Appendix A* – Figure 4A-4E). Butternut are listed as Endangered, and therefore are protected under the ESA. Climbing Prairie Rose is listed as Special Concern under the ESA, and therefore is considered an SCC. A total of 52 stems of Climbing Prairie Rose was observed from survey stations 14 (40 stems) and 19 (12 stems) from Route Alternatives 1 and 2 (Alt S14 and –Alt2 S19; *Appendix A* – Figure 4A-4E). Honey-locust is considered Imperiled (SRank of S2) by the province, and therefore also meets criteria for SCC. A total of 17 Honey-locust were observed from survey station 10 along Route Alternative 1 (13 stems, Alt1-S10), as well as at survey station 14 along Route Alternative 3 (4 stems, Alt3-S14; *Appendix A* – Figure 4A-4E). Photos for each of the listed SAR and SCC are provided in *Appendix D* (Photos 76- 73).

The Co-efficient of Conservatism (CC) provides additional information on the nature of the vegetation communities within the Project Study Area. The CC values range from 0 to 10 and represents an estimated probability that a plant is likely to occur in a landscape that is relatively unaltered or is in a pre-settlement condition. For example, a CC of 0 is given to plants such as Manitoba maple (*Acer negundo*) that demonstrate little fidelity to any remnant natural community, i.e. may be found almost anywhere. Similarly, a CC of 10 is applied to plants like shrubby cinquefoil (*Potentilla fruticosa*) that are almost always restricted to a pre-settlement remnant, i.e. a high quality natural area. Introduced plants were not part of the pre-settlement flora, so no CC values have been applied to these species.

Of the 111 species identified, four have a CC value of 7 or greater [i.e. Canada Garlic (*Allium canadense*; CC of 8), Yellow Pimpernell (*Taenidia integerrima*, CC of 9), Swamp White Oak (*Quercus bicolor*, CC of 8), and Canada Moonseed (*Menispermum canadense*, of 7)]. Canada Garlic and Canada Moonseed were observed from Route Alternative 1, whereas Yellow Pimpernell and Swamp White Oak were observed from Route Alternative 2 and 3, respectively. The mean CC value for the Project Study Area was 3.88 out of a possible 10, indicating a highly disturbed landscape. Of the three Route Alternatives, Route Alternative 1 had the highest mean CC (3.83), followed by Route Alternative 3 (CC of 3.72) and Route Alternative 2 (CC of 3.21). Refer to *Appendix E* (Table F-1) for a full list of the vegetation species observed.

3.4 Wildlife and Wildlife Habitat Surveys

Results of wildlife surveys conducted within the Project Study Area during the 2020 field season are reported in the following subsections.

3.4.1 Diurnal Breeding Bird Surveys

A total of forty-nine bird species were observed in 2020 (Table 6). Of the three Route Alternatives, Route Alternatives 1 and 3 had the highest number of species observed (forty-one species each) in comparison to Route Alternative 2 (thirty-five species). Forty-six of the reported bird species observed are considered Apparently Secure (SRank of S4) or Secure (SRank of S5) by the province. The remaining three species, European Starling (*Sturnus vulgaris*), House Finch (*Carpodacus mexicanus*) and House Sparrow (*Passer domesticus*), are not considered suitable targets for conservation activities (SRank of SNA). In addition, two SAR (Barn Swallow (*Hirundo rustica*) and Bobolink (*Dolichonyx oryzivorus*)) and one SCC (Eastern Wood-Pewee (*Contopus virens*)) were also documented during the breeding bird surveys.

Barn Swallow are listed as Threatened under both the ESA and SARA, and therefore are protected. As indicated in Table 6, Barn Swallow were recorded along all three Route Alternatives. Barn Swallows were documented at survey stations 1, 4, 7, and 11 of Route Alternative 1; survey stations 11, 13, 16 and 21 of Route Alternative 2; and at survey station 12 along Route Alternative 3 (*Appendix A - Figures 4A – 4E*). While the species was frequently observed throughout the Project Study Area, no breeding behaviors were documented. During each observation, individuals of the species were documented to be flying through the Project Study Area (breeding bird codes indicate “flying over” (F/O) in Table 6). Furthermore, no suitable nesting habitat, or evidence of active nests were observed within the general vicinity of survey stations during the breeding bird surveys.

Similarly, observations of Bobolink were made during 2020 breeding bird surveys; however, no suitable breeding habitat for Bobolink was identified. Bobolink is listed as Threatened under both the ESA and SARA, and therefore is protected. During the 2020 breeding bird surveys, this species was heard calling from wheat fields (e.g. annual row crop) located adjacent to survey stations 2 and 12 of Route Alternative 1, and from survey station 10 of Route Alternative 3 (Table 6; *Appendix A – Figures 4A – 4E*). Annual row crops (e.g. wheat) are not considered suitable breeding habitat for the species.

Lastly, Eastern Wood-pewee was heard signing from woodlands adjacent to survey station 16 of Route Alternative 1, survey stations 4 and 8 of Route Alternative 2, and from survey station 13 of Route Alternative 3 (*Appendix A – Figure 4A – 4E*). Eastern Wood-pewee is listed as Special Concern under both the ESA and SARA, and is therefore considered an SCC.

Table 6: Breeding Bird Survey Results

Scientific Name	Common Name	SARA ¹	ESA ²	SRank ³	Breeding Evidence ⁴	Route Alternative 1	Route Alternative 2	Route Alternative 3
<i>Accipiter cooperii</i>	Cooper's Hawk	---	---	S4	H	•	•	•
<i>Anas platyrhynchos</i>	Mallard	---	---	S5	F/O	•	---	---
<i>Ardea herodias</i>	Great Blue Heron	---	---	S4	F/O	•	•	•
<i>Bombycilla cedrorum</i>	Cedar Waxwing	---	---	S5B	F/O	•	•	•
<i>Branta canadensis</i>	Canada Goose	---	---	S5	F/O	---	•	---
<i>Buteo jamaicensis</i>	Red-tailed Hawk	---	---	S5	F/O	•	---	•
<i>Cardinalis cardinalis</i>	Northern Cardinal	---	---	S5	S	•	•	•
<i>Carduelis tristis</i>	American Goldfinch	---	---	S5B	F/O	•	•	•
<i>Carpodacus mexicanus</i>	House Finch	---	---	SNA	X	---	---	•
<i>Cathartes aura</i>	Turkey Vulture	---	---	S5B	F/O	•	•	•
<i>Charadrius vociferus</i>	Killdeer	---	---	S5B,S5N	X	•	•	•
<i>Circus cyaneus</i>	Northern Harrier	---	---	S4B	F/O	---	•	•
<i>Coccyzus americanus</i>	Yellow-billed Cuckoo	---	---	S4B	S	•	---	---
<i>Colaptes auratus</i>	Northern Flicker	---	---	S4B	H	•	•	•
<i>Contopus virens</i>	Eastern Wood-pewee	SC	SC	S4B	S	•	•	•
<i>Cyanocitta cristata</i>	Blue Jay	---	---	S5	X	•	•	•
<i>Dolichonyx oryzivorus</i>	Bobolink	THR	THR	S4B	S	•	---	•
<i>Dumetella carolinensis</i>	Gray Catbird	---	---	S4B	S	•	•	•
<i>Empidonax traillii</i>	Willow Flycatcher	---	---	S5B	S	•	•	•
<i>Eremophila alpestris</i>	Horned Lark	---	---	S5B	S	•	•	•
<i>Hirundo rustica</i>	Barn Swallow	THR	THR	S4B	F/O, X	•	•	•

Scientific Name	Common Name	SARA ¹	ESA ²	SRank ³	Breeding Evidence ⁴	Route Alternative 1	Route Alternative 2	Route Alternative 3
<i>Icterus galbula</i>	Baltimore Oriole	---	---	S4B	S	●	●	●
<i>Megaceryle alcyon</i>	Belted Kingfisher	---	---	S4B	H	●	---	---
<i>Melanerpes carolinus</i>	Red-bellied Woodpecker	---	---	S4	S	---	●	---
<i>Melospiza melodia</i>	Song Sparrow	---	---	S5B	S	●	●	●
<i>Molothrus ater</i>	Brown-headed Cowbird	---	---	S4B	X	●	●	●
<i>Myiarchus crinitus</i>	Great Crested Flycatcher	---	---	S4B	S	●	●	●
<i>Passer domesticus</i>	House Sparrow	---	---	SNA	X	●	---	●
<i>Passerculus sandwichensis</i>	Savannah Sparrow	---	---	S4B	S	●	●	●
<i>Passerina cyanea</i>	Indigo Bunting	---	---	S4B	P	●	●	●
<i>Petrochelidon pyrrhonota</i>	Cliff Swallow	---	---	S4B	AE	●	●	●
<i>Pheucticus ludovicianus</i>	Rose-breasted Grosbeak	---	---	S4B	X	---	---	●
<i>Picoides pubescens</i>	Downy Woodpecker	---	---	S5	P	●	●	●
<i>Poecile atricapillus</i>	Black-capped Chickadee	---	---	S5	S	---	---	●
<i>Quiscalus quiscula</i>	Common Grackle	---	---	S5B	F/O	●	●	●
<i>Sayornis phoebe</i>	Eastern Phoebe	---	---	S5B	X	---	●	---
<i>Sayornis phoebe</i>	Eastern Phoebe	---	---	S5B	X	●	---	---
<i>Scolopax minor</i>	American Woodcock	---	---	S4B	X	●	---	---
<i>Setophaga petechia</i>	Yellow Warbler	---	---	S5B	S	●	●	●
<i>Spizella passerina</i>	Chipping Sparrow	---	---	S5B	S	●	●	●
<i>Spizella pusilla</i>	Field Sparrow	---	---	S4B	S	---	---	●
<i>Sturnus vulgaris</i>	European Starling	---	---	SNA	F/O	●	●	●

Scientific Name	Common Name	SARA ¹	ESA ²	SRank ³	Breeding Evidence ⁴	Route Alternative 1	Route Alternative 2	Route Alternative 3
<i>Tachycineta bicolor</i>	Tree Swallow	---	---	S4B	F/O	●	●	●
<i>Toxostoma rufum</i>	Brown Thrasher	---	---	S4B	S	●	---	●
<i>Troglodytes aedon</i>	House Wren	---	---	S5B	S	●	●	●
<i>Turdus migratorius</i>	American Robin	---	---	S5B	P	●	●	●
<i>Vireo gilvus</i>	Warbling Vireo	---	---	S5B	S	●	●	●
<i>Vireo olivaceus</i>	Red-eyed Vireo	---	---	S5B	S	●	---	●
<i>Zenaida macroura</i>	Mourning Dove	---	---	S5	X	●	●	●
Total Bird Species Observed						41	35	41

¹Federal Species at Risk Act, 2002 (SARA), where SC = special concern and THR = threatened.

²Provincial Endangered Species Act, 2007 (ESA), where SC = special concern and THR = threatened.

³Provincial Conservation Ranking (SRank) where S5 = secure, S4 = apparently secure, S3 = vulnerable, S2 = imperiled, S1 = critically imperiled, SX = extirpated, SH = possibly extirpated, SNA = A conservation status rank is not applicable because the species is not a suitable target for conservation activities, SE = exotic, SU = unranked, B = breeding, N = non-breeding, and ? = some uncertainty with the classification due to insufficient information.

⁴Breeding Bird Codes from Breeding Bird Atlas of Ontario (Cadman *et al.* 2007)

Observed

F/O Species observed flying over study area (no breeding evidence)

X Species observed in its breeding season (no breeding evidence)

Possible

H Species observed in its breeding season in suitable nesting habitat

S Singing male(s) present, or breeding calls heard, in suitable nesting habitat in breeding season

Probable

P Pair observed in suitable nesting habitat in nesting season

T Permanent territory presumed through registration of territorial song, or the occurrence of an adult bird, at the same place, in breeding habitat, on at least two days a week or more apart, during its breeding season.

D Courtship or display, including interaction between a male and a female or two 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, except by a wren or a woodpecker

Confirmed

NB Nest-building or excavation of nest hole by a species other than a wren or a woodpecker

DD Distraction display or injury feigning

NU Used nest or egg shells found (occupied or laid within the period of the survey)

FY Recently fledged young (nidicolous species) or downy young (nidifugous species), including incapable of sustained flight

AE Adult leaving or entering nest sites 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

3.4.2 Amphibian Breeding Surveys

In total, six amphibian species were recorded during the amphibian breeding surveys. All six species are considered either Secure (SRank of S5) or Apparently Secure (SRank of S4) by the province. Amphibians were heard from all stations surveyed in 2020; low numbers were recorded for each species documented at each survey station (call codes of 1 or 2). No full choruses were heard from any species of the species observed during the three rounds of surveys. Survey stations 14, 15 and 16 of Route Alternatives 1 and 2 had the highest number of species documented out of the survey stations (five species observed). Route Alternative 3 had fewer documented species (two species total). Results of the amphibian breeding surveys are presented in Table 7, below:

Table 7: Results of Amphibian Call Surveys

Scientific Name	Common Name	SARA ¹	ESA ²	SRANK ³	Call Codes Identified per Survey Date ⁴					
					April 20, 2020		May 20-21, 2020		June 29-30, 2020	
					Within 100 m	Outside 100 m	Within 100 m	Outside 100 m	Within 100 m	Outside 100 m
<i>Route Alternative 1</i>										
<i>Alternative 1, Station 1</i>										
<i>Anaxyrus americanus</i>	American Toad	---	---	S5	---	1-1	---	---	---	---
<i>Pseudacris triseriata pop. 2</i>	Western Chorus Frog (Carolinian Population)	---	---	S4	---	---	1-1	---	---	---
<i>Alternative 1, Station 5</i>										
<i>Anaxyrus americanus</i>	American Toad	---	---	S5	---	---	2-2	---	---	---
<i>Lithobates clamitans</i>	Green Frog	---	---	S5	---	---	---	---	1-1	---
<i>Pseudacris triseriata pop. 2</i>	Western Chorus Frog (Carolinian Population)	---	---	S4	---	---	1-1	---	---	---
<i>Alternative 1, Station 10</i>										
<i>Anaxyrus americanus</i>	American Toad	---	---	S5	---	---	2-2	---	---	---
<i>Lithobates clamitans</i>	Green Frog	---	---	S5	---	---	---	---	2-2, 2-3, 2-2	---
<i>Pseudacris triseriata pop. 2</i>	Western Chorus Frog (Carolinian Population)	---	---	S4	---	---	1-1	---	---	---
<i>Alternative 1, Station 14</i>										
<i>Anaxyrus americanus</i>	American Toad	---	---	S5	---	---	1-1	---	1-1	---

Scientific Name	Common Name	SARA ¹	ESA ²	SRANK ³	Call Codes Identified per Survey Date ⁴					
					April 20, 2020		May 20-21, 2020		June 29-30, 2020	
					Within 100 m	Outside 100 m	Within 100 m	Outside 100 m	Within 100 m	Outside 100 m
<i>Lithobates clamitans</i>	Green Frog	---	---	S5	---	---	1-1	---	3	---
<i>Lithobates pipiens</i>	Northern Leopard Frog	---	---	S5	---	---	---	---	2-5	---
<i>Pseudacris triseriata pop. 2</i>	Western Chorus Frog (Carolinian Population)	---	---	S4	1-2, 1-2	---	1-1	---	---	---
Alternative 1, Station 15										
<i>Anaxyrus americanus</i>	American Toad	---	---	S5	2-6	---	---	---	---	---
<i>Lithobates clamitans</i>	Green Frog	---	---	S5	---	---	2-6	---	3	---
<i>Lithobates pipiens</i>	Northern Leopard Frog	---	---	S5	---	1-1	1-1, 1-1	---	---	---
<i>Pseudacris triseriata pop. 2</i>	Western Chorus Frog (Carolinian Population)	---	---	S4	1-1	---	1-1	---	---	---
Alternative 1, Station 16										
<i>Anaxyrus americanus</i>	American Toad	---	---	S5	2-4	---	1-1	---	2-3	---
<i>Lithobates catesbeianus</i>	American Bullfrog	---	---	S4	---	---	---	---	2-2	---
<i>Lithobates clamitans</i>	Green Frog	---	---	S5	---	---	2-5, 1-1	---	3	---
<i>Pseudacris triseriata pop. 2</i>	Western Chorus Frog (Carolinian Population)	---	---	S4	1-3	---	---	---	---	---
Route Alternative 2										
Alternative 2, Station 4										
<i>Anaxyrus americanus</i>	American Toad	---	---	S5	1-1	---	1-1, 1-1	---	---	---
<i>Lithobates clamitans</i>	Green Frog	---	---	S5	---	---	---	---	2-6	---
<i>Pseudacris crucifer</i>	Spring Peeper	---	---	S5	1-3	---	---	---	---	---
Alternative 2, Station 8										
<i>Anaxyrus americanus</i>	American Toad	---	---	S5	---	---	3	---	---	---

Scientific Name	Common Name	SARA ¹	ESA ²	SRANK ³	Call Codes Identified per Survey Date ⁴					
					April 20, 2020		May 20-21, 2020		June 29-30, 2020	
					Within 100 m	Outside 100 m	Within 100 m	Outside 100 m	Within 100 m	Outside 100 m
<i>Lithobates catesbeianus</i>	American Bullfrog	---	---	S4	---	---	---	---	1-1	---
<i>Lithobates clamitans</i>	Green Frog	---	---	S5	---	---	---	---	1-2	---
Alternative 2, Station 9										
<i>Pseudacris triseriata pop. 2</i>	Western Chorus Frog (Carolinian Population)	---	---	S4	2-2	---	2-4	---	---	---
Alternative 2, Station 15										
<i>Anaxyrus americanus</i>	American Toad	---	---	S5	---	1-1	---	2-4	---	---
Route Alternative 3										
Alternative 3, Station 1										
<i>Anaxyrus americanus</i>	American Toad	---	---	S5	1-1	---	---	---	---	---
<i>Pseudacris crucifer</i>	Spring Peeper	---	---	S5	1-1, 1-2	1-3	---	---	---	---
Alternative 3, Station 7										
<i>Anaxyrus americanus</i>	American Toad	---	---	S5	---	---	2-2, 2-2	---	---	---

¹Federal Species at Risk Act, 2002 (SARA), where "---" = no status.

²Provincial Endangered Species Act, 2007 (ESA), where "---" = no status.

³Provincial Conservation Ranking (SRank) where S5 = secure, S4 = apparently secure, S3 = vulnerable, S2 = imperiled, S1 = critically imperiled, SX = extirpated, SH = possibly extirpated, SNA = A conservation status rank is not applicable because the species is not a suitable target for conservation activities, SE = exotic, SU = unranked, B = breeding, N = non-breeding, and ? = some uncertainty with the classification due to insufficient information.

⁴Call codes represented by: X-Y; where X denote the estimated population size, and Y estimated the number of individuals heard. X of 1 = very low population estimate with few individuals present/no overlap in calls, X of 2 = medium population with few overlapping calls, X of 3 = large population, full chorus singing

3.5 Incidental Wildlife

During the 2020 field investigations, the following 16 species listed in Table 8 were incidentally observed within the Project Study Area.

Nine of the 16 incidentally observed species are considered Secure (SRank of S5) or Apparently Secure (SRank of S4) in the province. A single species (Cabbage White, *Pieris rapae*) was not identified as a suitable target for conservation activities (SRank of SNA). Snapping Turtle (*Chelydra serpentina*) and Monarch (*Danaus plexippus*) are both listed as Special Concern under both the ESA and SARA, and therefore are considered SCC.

Similarly, Great Egret (*Ardea alba*) is considered Imperiled (SRank of S2) by the province, and therefore is also considered a SCC. The observation locations for each of these species are provided in *Appendix A* – Figures 3A – 3E.

A single Snapping Turtle was observed crossing Dillon Road near survey station 4 of Route Alternative 2. The approximate location of the Snapping Turtle is mapped in *Appendix A* – Figure 4A- 4E; no breeding or nesting behavior was observed.

A single observation of Great Egret flyover was made near riparian habitat at survey station 8 of Route Alternative 2. No active nests or breeding behavior were observed during the site visit. Similarly, a single Monarch was observed within a maintained municipal road ROW associated with Gray Line (survey station 15 of Route Alternative 3). No breeding habitat (dense areas of Common Milkweed, *Asclepias syriaca*) were observed within the Project Study Area.

Lastly, six small burrows were incidentally observed at survey station 1 of Route Alternative 3 on July 7, 2020. Photos of one of the burrows is provided in *Appendix D* (Photo 54).

Table 8: Incidental Wildlife Observed within the Project Study Area

Scientific Name	Common Name	SARA ¹	ESA ²	SRank ³	Route Alternative	Survey Station	Date Observed
Mammals							
<i>Marmota monax</i>	Woodchuck	---	---	S5	3	2	July 9, 2020
<i>Odocoileus virginianus</i>	White-tailed Deer	---	---	S5	3	9	July 10, 2020
<i>Sylvilagus floridanus</i>	Eastern Cottontail	---	---	S5	1	15	June 10, 2020
					2	8	June 12, 2020
Birds							
<i>Ardea alba</i>	Great Egret	---	---	S2B	2	8	June 12, 2020
<i>Ardea herodias</i>	Great Blue Heron	---	---	S4	2	4	June 11, 2020
<i>Actitis macularius</i>	Spotted Sandpiper	---	---	S5	3	5	June 11, 2020
<i>Coccyzus americanus</i>	Yellow-billed Cuckoo	---	---	S4B	2	4	June 11, 2020
<i>Colaptes auratus</i>	Northern Flicker	---	---	S4B	2	4	June 11, 2020
<i>Dumetella carolinensis</i>	Gray Catbird	---	---	S4B	3	11	June 10, 2020
<i>Toxostoma rufum</i>	Brown Thrasher	---	---	S4B	1	12	June 12, 2020
Herpetofauna							
<i>Chelydra serpentina</i>	Snapping Turtle	SC	SC	S3	2	4	June 11, 2020
<i>Chrysemys picta marginata</i>	Midland Painted Turtle	---	---	S4	1	13	July 8, 2020

Scientific Name	Common Name	SARA ¹	ESA ²	SRank ³	Route Alternative	Survey Station	Date Observed
Insects							
<i>Cercyonis pegala</i>	Common Wood-Nymph	---	---	S5	2	9	July 13, 2020
<i>Danaus plexippus</i>	Monarch	SC	SC	S2N,S4B	3	15	July 7, 2020
<i>Papilio cresphontes</i>	Giant Swallowtail	---	---	S4	2	10	June 8, 2020
<i>Pieris rapae</i>	Cabbage White	---	---	SNA	1	8	July 8, 2020

¹Federal Species at Risk Act, 2002 (SARA), where SC = special concern.

²Provincial Endangered Species Act, 2007 (ESA), where SC = special concern.

³Provincial Conservation Ranking (SRank) where S5 = secure, S4 = apparently secure, S3 = vulnerable, S2 = imperiled, S1 = critically imperiled, SX = extirpated, SH = possibly extirpated, SNA = A conservation status rank is not applicable because the species is not a suitable target for conservation activities, SE = exotic, SU = unranked, B = breeding, N = non-breeding, and ? = some uncertainty with the classification due to insufficient information.

4.0 Evaluation of Natural Heritage Features within the Project Study Area

4.1 Fish Habitat

As mentioned in the Natural Environment Field Program TOR (*Appendix B*), there are 182 water crossing intersections associated with constructed drains, natural watercourses and waterbodies within the Project Study Area. Of the 182, 42 crossings were assessed for the purposes of this report along Route Alternatives 1, 2 and 3. The majority of watercourses within the Project Study Area are characterized as a combination of open natural watercourses, roadside and agricultural drains with permanent flow regimes, and direct fish habitat. An overall summary of fish habitat identified within features along each of the Route Alternatives is provided below.

Route Alternative 1

Five watercourses are identified as Class 'E' municipal drainage features by DFO indicating a permanent flow regime with sensitive fish species present. Three features are identified as Class 'C' municipal drainage features by DFO, indicating a permanent flow regime with no sensitive fish species present. One feature is identified as Class 'F' municipal drainage feature by DFO, indicating an intermittent flow regime with no fish community information. The remaining three features are identified as a 'NR' municipal drainage feature by DFO indicating not rated with no data regarding flow regime or fish community (OMAFRA, 2020). Through background review and field investigations, the Locke Drain, Waddick Drain, Kersey Drain and Deary Drain crossings were confirmed as providing direct fish habitat, including a top predator (Northern Pike or Longnose Gar) observed in Locke Drain. The remaining watercourse crossings (Duke Drain (Jeannettes Creek), O'Rourke Drain, Government Drain, Baptiste Creek Drain, Powell Drain, Tremblay Creek Drain and Big Creek Drain) are anticipated to provide direct fish habitat based on site specific conditions and/or the DFO drain classifications; though fish were not observed during the field investigations. The Tremblay Creek Drain (Tilbury Creek) crossing at survey station 12 is anticipated to provide seasonal fish habitat based on the DFO drainage classification and conditions observed. Through background review and aquatic assessments, the watercourse crossings associated with Route Alternative 1 are not anticipated to provide habitat for aquatic SAR.

Route Alternative 2

Seven watercourses are identified as Class 'E' municipal drainage features by DFO indicating a permanent flow regime and sensitive species present. Three watercourses are identified as a Class 'C' municipal drainage feature by DFO, indicating a permanent flow regime with no sensitive species present. Two watercourses are identified as a Class 'F' municipal drainage features by DFO indicating an intermittent flow regime with no sensitive species present. Five features are identified as 'NR' by DFO indicating not rated with no data regarding flow regime or fish community while the ill-defined swale at survey station 9 was not identified by DFO (OMAFRA, 2020). Through background review and field investigations, the Locke Drain and Ferguson Drain (Jeannettes Creek) crossings were confirmed as providing direct fish habitat.

Although fish were not observed due to unsafe wading conditions and/or turbid water conditions, McGregor Creek Drain, Chinnick Drain (Indian Creek), Bullis Creek Drain (Bullis Creek), Doyle Drain, Ferguson Drain (Jeanettes Creek), Baptiste Creek Drain (Baptiste Creek), Tremblay Creek Drain (Tilbury Creek), Big Creek Drain (Big Creek), Little Creek, Malden Road Drain Outlet and Finn & Cooper Drain are anticipated to provide direct fish habitat based on site specific conditions and/or the DFO drain classifications. The unnamed tributary to Doyle Drain was dry at the time of investigation and is anticipated to provide seasonal fish habitat at best. The 6-7 Sideroad Drain was non-existent or piped at survey station 21. In addition, Bullis Creek Drain (Bullis Creek) at survey station 3 (Alt2_S3; *Appendix A* – Figures 5A, 5B-29) is anticipated to provide suitable habitat for Lake Chubsucker (*Erimyzon sucetta*), a species listed as Threatened under the ESA and Endangered under SARA and Baptiste Creek Drain (Baptiste Creek) at survey stations 6 and 15 (Alt2_S6 and Alt2_S15; *Appendix A* – Figures 5A, 5B-1 – 5B-50) are anticipated to provide suitable habitat for Lilliput (*Toxolasma parvum*), a species listed as Threatened under the ESA and Endangered under SARA. Further details of the SAR habitat provided at these survey stations are provided below in subsequent sections.

Route Alternative 3

Two watercourses are identified as Class ‘E’ by DFO indicating a permanent flow regime and sensitive species present. One watercourse is identified as Class ‘C’ by DFO indicating a permanent flow regime with no sensitive species present. Four watercourses are identified as Class ‘F’ by DFO indicating an intermittent flow regime with no sensitive species present. The remaining five features are identified as ‘NR’ by DFO indicating not rated with no data regarding flow regime or fish community. Through background review and field investigations, the Duke Drain (Jeanettes Creek) and Carter Drain crossings were confirmed as providing direct fish habitat. Although fish were not observed due to unsafe wading conditions and/or turbid water conditions, Kersey Drain, Deary Drain, East Branch of Big Creek Drain and Big Creek Drain – West Branch are anticipated to provide direct fish habitat based on site specific conditions and/or the DFO drain classifications. O’Rourke Drain, the unnamed drain at survey station 8, Thibert Drain, Robb-Dales Drain (Big Creek) and Toomey Drain are anticipated to provide seasonal fish habitat based on site specific conditions and/or the DFO drain classifications. There are no aquatic SAR identified as having the potential to occur within the features associated with Route Alternative 3.

4.2 Woodlands

As mentioned in the Natural Environment Field Program TOR (*Appendix B*), sixty-nine woodlands were identified within the Project Study Area based on desktop review; this count included features considered linear treed fencerows. Of the sixty-nine, fourteen were identified as significant to the Town of Lakeshore ($n=9$ woodlands; 2020) and Municipality of Chatham-Kent five; ($n=5$ woodlands; 2014) Official Plans, respectively. No woodlands within the Project Study Area were identified as significant by the County of Essex (Schedule B1; 2014). A total of six significant woodlands are associated with Route Alternative 1, while four are associated with each Route Alternatives 2 and 3, respectively. The remaining woodlands are located along the periphery of the Project Study Area.

As part of the 2020 field investigations, additional forest communities were identified and evaluated during ELC surveys.

As a result of the 2020 field investigations, four additional forest communities met criteria for significant woodlands; three of the four forests were located at survey stations 4 (SWDO2) and 19 (FOD) along Route Alternative 2, and at survey station 1 (FOD) of Route Alternative 3 (*Appendix A* – Figures 5A, 5B-1 – 5B-50). These three forest communities met criteria for significance as they consisted of natural vegetation communities greater than 2 ha in size (Table 3, County of Essex Official Plan, 2014). The fourth forest (located at survey station 7 of Route Alternative 1) was considered a significant woodland as it met criteria of Section 4.3.2 of the Chatham-Kent Official Plan, 2005). In addition, these forest communities were also classified as having potential habitat for SAR and SWH (discussed in subsequent sections below). Based on these updated findings, a total of seven significant woodlands are now associated with Route Alternative 1, six significant woodlands are associated with Route Alternative 2, and five significant woodlands are associated with Route Alternative 3.

The remaining woodland features identified within the Project Study Area as a result of the ELC surveys were too small to be considered significant under Regional or Municipal Official Plans. In addition, the forest communities identified were often isolated in the landscape and were limited in connectivity to adjacent natural heritage features.

4.3 Valleylands

As identified in Table 2 of the Natural Environment Field Program TOR, no valleylands were identified within the Project Study Area as part of the background review (*Appendix B*). In addition, no topographic features or valleylands meeting criteria of Section 8.0 of the 2010 MNRF Natural Heritage Reference Manual were observed as a result of the 2020 field investigations.

4.4 Areas of Natural and Scientific Interest

As identified previously in Table 2 of the Natural Environment Field Program TOR (*Appendix B*), no Life Science or Earth Science Areas of Natural and Scientific Interest (ANSI) have been documented within the Project Study Area.

4.5 Wetlands

While no unevaluated wetlands or PSWs were identified in the Project Study Area during the background review of LIO data completed in support of the Natural Environment Field Program TOR (*Appendix B*), wetland vegetation communities were documented during the 2020 ELC field surveys.

Wetland vegetation communities observed within the Project Study Area consisted of deciduous swamp, thicket swamp, and marsh. In total, five wetland vegetation communities, totaling 7.5 ha were identified within the Project Study Area. An aggregate breakdown of unevaluated wetland units present within each Route Alternative (including variations) is provided in Table 9 below. Four unevaluated wetlands were identified in association with Route Alternative 2, while a single swamp community was identified in association with Route Alternative 1. No wetland communities were identified in association with Route Alternative 3.

The location and estimated boundaries of the five unevaluated wetland units are mapped within Appendix A – Figure 5A, 5B-1 – 5B-50)

Table 9: Unevaluated Wetland Communities Identified in in Each Route Alternative

ELC Community	Survey Station	Wetland Unit Size (ha) ¹	Total Area (ha)
Route Alternative 1			
SWDO2-1 Red-Maple Organic Deciduous Swamp	14, 15	2.94 ha	2.94 ha
Route Alternative 2			
MAS Shallow Marsh	8	0.66 ha	4.56 ha
SWT Thicket Swamp	9	1.11 ha	
SWDM4-2 White Elm Mineral Deciduous Swamp	8	1.19 ha	
SWD02 Maple Organic Deciduous Swamp	4	1.60 ha	

¹Wetland unit size is estimated based on 2020 ELC field data and represent the aggregate area per Route Alternative (including variations).

While no PSWs were identified within the Project Study Area in current land use planning documents and LIO data, the five wetland units observed during ELC investigations may meet criteria for significance under the NHRM (2010) and Ontario Wetland Evaluation system (OWES; MNRF, 2002) based on the presence of potential SAR habitat (i.e. SAR Bats and Eastern Foxsnake) observed during the results of the 2020 field program.

The OWES scores wetlands using a points-based system. As per Section 6.3.1 of the NHRM (2010) and OWES, a PSW is an evaluated wetland that receives either a total of 600 or more points, or 200 or more points in either biological components (i.e. wetland type, biodiversity) and special features components (i.e. SAR Habitat and SWH).

As described in Section 6.3.1 of the NHRM (2010) and under Section 6.3.3 of the OWES (MNRF, 2002), the wetland units have the potential to meet criteria for significance as they provide potential biological, hydrological, and special feature components. At the broader landscape level, the three deciduous swamp units meet criteria for Significant Woodlands. Potential habitat for Eastern Foxsnake (Endangered) and SAR Bats (Endangered) were identified within vegetation communities associated with the five wetland units (SWT, MAS, SWDO2-1, SWDM4-2 and SWD02).

4.6 Important Bird and Biodiversity Areas

Lake St. Clair is included in two major migration flyaways (the Atlantic and Mississippi) and is identified as a critical feeding, resting and staging area for numerous species, such as: Canvasbacks (*Aythya valisineria*), Redheads (*Aythya americana*), Black-bellied Plovers (*Pluvialis squatarola*) and American

Golden Plovers (*Pluvialis dominica*). The IBA is intended to promote conservation stewardship and to ensure recreational practices and hunting traditions are maintained.

While the IBA was identified as a mid-point between the two migration flyaways, it is noted that migration routes differ among species. Telemetry data collected in support of scientific studies track the trajectory of individual birds in Ontario during spring and fall migration. Through reviewing available data, flight paths for the species listed above do not appear to extend through the eastern extents of the IBA that overlap with the Project Study Area. Despite this, structural elements of the Project (i.e., tower placement) should be considered as mitigation to reduce potential impacts on birds.

In addition, wetland habitat within the IBA area may provide suitable habitat for two SAR birds; King Rail (*Rallus elegans*; Endangered) and Least Bittern (*Lxobrychus exilis*; Threatened). Both species prefer large undisturbed marsh habitat (MNRF, 2017). Suitable habitat conditions for these species within the IBA were not identified within the Project Study Area as a result of the background review and/or 2020 field investigations; however, potential suitable habitat does exist adjacent to the Project Study Area in association with Route Alternatives 2A and 2B.

4.7 Significant Wildlife Habitat

Criteria for determining the significance of wildlife habitat follow the guidelines outlined in the NHRM (MNRF, 2010) and the Significant Wildlife Habitat Technical Guide Ecoregion 7E Criterion Schedules (MNRF, 2015), where applicable. Candidate and Confirmed SWH has been mapped within *Appendix A* (Figures 5A, 5B-1 to 5B-50).

While surveys for snag and cavity trees were not formally conducted throughout the Project Study Area, Candidate SWH for Bat Maternity Roosts have the potential to occur within forest communities identified within each of the three Route Alternatives. Forest communities identified within the Project Study Area (i.e. FOD, FODM9-4, FODM6-4, FODM5-7, SWDO2-1, SWDO2, and SWDM4-2) have the potential to provide suitable habitat for roosting bats.

Similarly, unevaluated wetland communities may provide suitable wintering habitat for turtles. As such, the following swamp (SWD, SWDO2-1, SWDO2, and SWDM4-2), marsh (MAS) and open aquatic (OA) communities have been identified as Candidate SWH for Turtle Wintering Areas. One area of deciduous thicket swamp (SWT) was ruled out as potential overwintering habitat for reptiles as the vegetation community was observed to be dry during summer ELC surveys. Shallow Aquatic (SA) communities identified within the Project Study Area appeared to consist of man-made ponds; these areas were not included in the classification for SWH.

Results collected from the 2020 amphibian breeding surveys did not meet criteria for significance. While amphibians were observed at each of the survey stations, low call codes documented for individual species did not meet criteria of significance. As such, no ponds or aquatic features surveyed within the Project Study Area are considered SWH for amphibian breeding (wetland and woodland).

Eastern Wood-pewee (Special Concern) was observed at several stations throughout the Project Study Area during the 2020 diurnal breeding bird surveys. Along Route Alternative 1, this species was observed within deciduous forest (FOD) at survey station 16. Along Route Alternative 2, Eastern Wood-pewee was

heard calling from swamp and forest communities at survey stations 4 (SWDO2) and 8 (SWDM4-2 and FODM9-4), respectively.

Lastly, calls from this species were heard from deciduous forests (FODM9-4) adjacent to survey station 13 of Route Alternative 3. Based on the results of the diurnal breeding bird surveys, each of the aforementioned ELC polygons identified are considered Confirmed SWH for SCC, and Rare Wildlife for Eastern Wood-pewee.

Additional Confirmed SWH for SCC and Rare Wildlife exists within the Project Study Area for two botanical species (i.e. Climbing Prairie Rose and Honey Locust). Both species were identified during the 2020 ELC and summer botanical surveys. As described previously, multiple stems of Climbing Prairie Rose (Special Concern) were observed within swamp (SWDO2-1 – 40 stems) and deciduous forest (FOD – 12 stems) communities located at survey station 14 of Route Alternative 1, and survey station 19 of Route Alternative 2, respectively. In accordance with criteria of the 2010 Significant Wildlife Habitat Technical Guide Ecoregion 7E Criterion Schedules, these aforementioned ELC polygons are therefore considered Confirmed SWH for SCC and Rare Wildlife for Climbing Prairie Rose. Similarly, Confirmed SWH for SCC and Rare wildlife for Honey-locust (S2) exists within hedgerows (TAGM5) near survey station 10 of Route Alternative 1 (13 stems), and survey station 14 of Route Alternative 3 (4 stems).

Although Shumard Oak and Giant Ironweed (both SCC) had the potential to occur within the Project Study Area, neither species was observed during ELC/summer botanical surveys or incidentally in 2020. As such, no SWH for either species exists within the Project Study Area.

While suitable combinations of riparian deciduous forest and aquatic habitat exist within the Project Study Area, no evidence of active or old Bald Eagle or Osprey nests were documented during the 2020 field investigations. Furthermore, no breeding evidence or observations of Bald Eagle or Osprey were noted incidentally or during the diurnal breeding bird surveys. As a result of these findings, SWH for Bald Eagle and Osprey Nesting, foraging and Perching Habitat has been ruled out for the Project Study Area.

Candidate SWH for SCC or Rare Wildlife was identified for the following aquatic species within the Project Study Area:

- Mapleleaf (*Quadrula quadrula*)
- Rainbow (*Villosa iris*)
- Silver Lamprey (*Ichthyomyzon unicuspis population*)
- Spotted Sucker (*Minytrema melanops*)

As mentioned previously, each of the aforementioned species were identified as having the potential to occur within watercourses during the background review. Although targeted fish and mussel surveys were not completed, based on suitable habitat observed during the aquatic surveys, candidate SWH for SCC and Rare Wildlife was identified for Mapleleaf in McGregor Creek Drain at survey station 1 of Route Alternative 2, Baptiste Creek Drain at survey station 9 of Route Alternative 1 and survey stations 6 and 15 of Route Alternative 2; Spotted Sucker in Baptiste Creek Drain (Baptiste Creek) at survey stations 6 and 15, Tremblay Creek Drain (Tilbury Creek) at survey station 7 and Little Creek at survey station 11 of Route Alternative 2, respectively. As McGregor Creek Drain crosses Route Alternative 1, candidate SWH

for Mapleleaf is also present in Route Alternative 1; however this is based on background review as there were no survey stations associated with Route Alternative 1 along McGregor Creek.

Based on the background review and habitat screening, Rainbow and Silver Lamprey were not identified as potential within 100 m of aquatic survey stations within the Project Study Area, and therefore no candidate SWH for SCC and Rare Wildlife exists for these species.

4.8 Species at Risk Habitat

Throughout the 2020 field season, SAR (Butternut, Barn Swallow and Bobolink) were observed within the Project Study Area. While Eastern Flowering Dogwood (*Cornus florida*) and Eastern Meadowlark (*Sturnella magna*) were identified as having the potential to occur within the Project Study Area, neither species was observed during the botanical surveys or breeding bird surveys, respectively. Eastern Flowering Dogwood is an understory species, preferring the sub-canopy and edges of open mature deciduous forests but is also known to occur along hedgerows (Bickerton and Thompson-Black, 2010). While deciduous woodlands and hedgerows exist within the Project Study Area, no critical habitat was identified for the species. Similarly, Eastern Meadowlark are grassland species preferring large meadow areas of at least 5 ha in size (COSEWIC, 2011). Mixed meadow areas (MEM, MEMM3) observed within Project Study Area were too small to provide suitable breeding habitat (i.e. critical habitat).

The following aquatic SAR were identified as having the potential to occur within aquatic habitat within with Project Study Area:

- Lake Chubsucker (*Erimyzon sucetta*)
- Wavy-rayed Lampmussel (*Lampsilis fasciola*)
- Round Hickorynut (*Obovaria subrotunda*)
- Pugnose Minnow (*Opsopoeodus emiliae*)
- Round Pigtoe (*Pleurobema sintoxia*), and
- Lilliput (*Toxolasma parvum*)

As a result of the background review and 2020 field assessments, suitable habitat was identified for Lake Chubsucker, at survey station 3 of Route Alternative 2 and for Lilliput, at survey stations 6 and 15 of Route Alternative 2 within the Project Study Area. If impacts to aquatic habitats with the potential to support Lake Chubsucker and Lilliput are anticipated, consultation with DFO and MECP is recommended to confirm next steps. In addition, although background mapping suggested presence of Round Pigtoe habitat in association with McGregor Drain, based on the current Canadian range of Round Pigtoe (Lake St. Clair delta, Sydenham River, Middle Thames and Grand River) McGregor Creek Drain is beyond the range of this species (DFO, 2019). If impacts to aquatic habitat are anticipated at the McGregor Creek Drain, DFO and MECP should be consulted to confirm absence of Round Pigtoe.

Based on the background review and habitat screening, habitat for Wavy-rayed Lampmussel, Round Hickorynut and Pugnose Minnow, was not identified within 100 m of any aquatic survey stations within the Project Study Area. Therefore, watercourses associated with aquatic survey stations in the Project Study Area are not anticipated to support the remaining three species. Although SAR bats, Eastern Foxsnake, Lake Chubsucker and Lilliput were not observed, natural features within the Project Study

Area were assessed as potential SAR habitat based on the 2020 field investigation results. Descriptions of suitable habitat for each species are provided in the following subsections.

4.8.1 Butternut

Nine Butternut trees were observed within significant woodlands (FODM5-7) and a hedgerow (TAGM5) located near survey station 2 of Route Alternative 1. While formal Butternut Health Assessments (BHA) were not conducted, there is evidence that the observed Butternut trees are infected with Butternut Canker disease. Cankers and canopy loss were observed for several of the Butternut; photos of Butternut observed are provided in *Appendix D* (Photos 68 - 73). A 25 m buffer is identified by the Butternut Recovery Strategy (Poisson and Uric, 2013) as habitat to protect the canopy and root zone of 'retainable' Butternut (*Appendix A* – Figures 5A and 5B-50).

It is noted that the Butternut observed within the hedgerow (TAGM5) would likely require removal, should Route Alternative 1 be chosen as the preferred Route Alternative. Should Butternut and Butternut habitat have the potential to be impacted as a result of the Project, formal BHA are required. A BHA would be required to confirm infection with Butternut canker and to assess the tree category. Additional surveys and genetic testing may also be required to determine genetic purity. Removal of Non-retainable (Category 1) and Retainable (Category 2) trees may occur via Project registration under Section 23 of *Ontario Regulation 242/08*, so long as the conditions in the Regulation are followed.

4.8.2 Barn Swallow

As stated previously, Barn Swallow observations were documented during the 2020 breeding bird surveys. Individuals of this species were observed foraging over agricultural lands of Route Alternatives 1, 2 and 3. Although suitable nesting habitat has the potential to occur within the Project Study Area in association with residential homes, agricultural buildings and culverts, the presence of active Barn Swallow nests was not observed during the 2020 field investigations.

4.8.3 Bobolink

Bobolink observations were documented during the 2020 breeding bird surveys; three observations of Bobolink were reported in association with annual row crop (wheat fields) adjacent to survey stations 2 and 12 of Route Alternative 1, and survey station 10 of Route Alternative 3. Annual row crops are not considered suitable breeding habitat for Bobolink. Furthermore, large hayfields (5 ha or larger) conducive to Bobolink (and Eastern Meadowlark) nesting were not observed within the Project Study Area during ELC surveys (MNRF, 2019).

4.8.4 Potential Habitat for SAR Bats

As a result of the ELC mapping, the significant woodlands and smaller forest communities within the Project Study Area were assessed as potential SAR bat habitat. Although confirmation of SAR bat habitat is traditionally based on acoustic survey results, the forest communities identified as potential SAR bat habitat is based on Dillon's knowledge of SAR bat habitat requirements as well as Dillon's southwestern Ontario bat acoustic experience.

Based on the ELC communities observed, it is assumed that deciduous forest and swamp communities (FOD and SWM) provide potential SAR bat habitat (*Appendix A – Figures 5A, 5B-1 to 5B-50*).

This assumption is based on the limited availability of forest communities at the broader landscape scale (i.e. habitat is limited across the landscape).

Furthermore, where access was permitted, snag/cavity trees were identified concurrently during ELC surveys and botanical assessments. A total of 15 potential suitable snag trees were identified; 11 snag trees were identified along Route Alternative 1; two snag trees were identified along Route Alternative 2; with an additional two snag trees identified along Route Alternative 3 (*Appendix A – Figure 5A, 5B-1 – 5B-50*). The majority of snag trees were associated with forest and woodland communities; however, the numbers of snags observed did not meet criteria outlined in the 2017 MNRF Guelph District Survey Protocol for Species at Risk Bats within Treed Habitats for high quality SAR bat habitat.

Direct impacts to SAR bats from tree clearing can be largely avoided if trees representing potential roosts are removed during the non-active bat season (October 1 through March 31). However, should it be determined that the preferred Route Alternative has the potential to impact forest communities within the Project Study Area, further studies may be required to confirm the presence of SAR bat habitat. Should SAR bat habitat be confirmed, the MECP will be consulted to determine whether a permit under the ESA is required.

4.8.5 Eastern Foxsnake

According to the Recovery strategy for the Eastern Foxsnake (*Pantherophis gloydi*) – Carolinian and Georgian Bay populations in Ontario (MNRF, 2010), Eastern Foxsnake prefer a variety of habitats, with a strong preference towards hedgerows, marshes, naturalized pasture, and open woodland areas; the species is typically found in habitats near water. Eastern Foxsnake Habitat is regulated per Section 24.3 of *Ontario Regulation 242/08*; with critical habitat is classified as nesting and hibernacula. Nest sites include rotting cavities of downed trees, decaying vegetation piles, rodent burrows, and hay piles. From late October until April the species hibernates in burrows, limestone bedrock fissures, canals, and old building foundations. Although specific surveys to identify hibernacula habitat for Eastern Foxsnake were not included as part of the 2020 field program, hibernacula habitat has the potential to occur within the Project Study Area. Burrows incidentally observed at survey station 1 of Route Alternative 3 (*Appendix D – Photo 74*) have the potential to provide hibernacula habitat for the species. No other features identified as potential hibernacula habitat were identified within the Project Study Area during field investigations.

Based on this habitat description, hedgerows, marsh, meadow, forests and naturalized riparian corridors with a mix of canopy and meadow coverage were identified as potential Eastern Foxsnake habitat within the Project Study Area (*Appendix A – Figures 5A, 5B-1 to 5B-24*).

Given that Eastern Foxsnake have Regulated habitat protection under the ESA, in the event the preferred Route Alternative has the potential to impact Eastern Foxsnake Habitat, the MECP will be consulted to determine whether a permit under the ESA is required.

4.8.6 Lake Chubsucker

As mentioned previously, Bullis Creek Drain (Bullis Creek) at survey station 3 along Route Alternative 2 (Alt2_S3; *Appendix A* – Figure 5A, 5B-15) has the potential to provide suitable habitat for Lake Chubsucker.

The preferred habitat of Lake Chubsucker consists of clear, still, well-vegetated waters, including backwaters, bayous, drainage ditches, floodplain lakes, marshes, oxbows, sloughs and wetlands, with substrates of gravel, sand and silt mixed with organic debris (COSEWIC, 2008). In Ontario, Lake Chubsucker has been captured primarily in heavily vegetated, stagnant bays, channels, ponds, and wetlands with low turbidity and substrates of clay, silt, sand and organic debris (COSEWIC, 2008). Due to unsafe conditions for wading, a shoreline aquatic assessment was completed and identified abundant aquatic vegetation and clay substrate at survey station 3 along Route Alternative 2 which is anticipated to provide potential suitable habitat for the species. No critical habitat has been identified by DFO for Lake Chubsucker at or adjacent to survey station 3 along Route Alternative 2.

Should potential impacts to Lake Chubsucker habitat be anticipated as a result of the Project, additional consultation with DFO and the MECP is recommended to confirm species presence within the area identified as potential habitat, if known. Should the presence of Lake Chubsucker be identified, additional permitting under the ESA and/or *Fisheries Act* may be required.

4.8.7 Lilliput

As mentioned previously, Baptiste Creek Drain (Baptiste Creek) at survey stations 6 and 15 along Route Alternative 2 (Alt2_S6 & Alt2_S15; *Appendix A* – Figure 5A, 5B-23, 5B-32) has the potential to provide suitable habitat for Lilliput.

The preferred habitat of Lilliput consists of small to large rivers, wetlands, shallows of lakes, ponds and reservoirs with soft substrates such as mud, sand and silt (COSEWIC, 2013). Due to unsafe conditions for wading, shoreline aquatic assessments were completed and identified a wide, deep watercourse with turbid conditions at survey stations 6 and 15 along Route Alternative 2 which are anticipated to provide potential suitable habitat for the species. No critical habitat has been identified by DFO for Lilliput at or adjacent to survey stations 6 or 15 along Route Alternative 2.

Should potential impacts to Lilliput habitat be anticipated as a result of the Project, additional consultation with DFO and the MECP is recommended to confirm species presence within the area identified as potential habitat, if known. Should the presence of Lilliput be identified, additional permitting under the ESA and/or *Fisheries Act* may be required.

5.0 Summary

As a result of the background review and 2020 field investigations several natural heritage features and wildlife habitats were identified throughout the Project Study Area. A summary of natural heritage features and wildlife habitats observed in association with each of the Route Alternatives aquatic and terrestrial habitat is presented in Table 10 and Table 11, respectively. The natural heritage features and habitat presented in Table 10 and Table 11 represent an aggregate summary of the Route Alternatives, including their variations.

Table 10: Summary of Watercourse and Drain Crossings Containing Natural Heritage Features and Wildlife Habitat

Natural Heritage Feature	Route Alternative 1	Route Alternative 2	Route Alternative 3
Fish Habitat	Yes Each of the 12 crossings assessed.	Yes Each of the 17 crossings assessed.	Yes Each of the 12 crossings assessed.
Significant Wildlife Habitat	Candidate SWH for SCC and Rare Wildlife: <ul style="list-style-type: none"> • Mapleleaf* • Spotted Sucker 	Candidate SWH for SCC and Rare Wildlife: <ul style="list-style-type: none"> • Mapleleaf* • Spotted Sucker 	Candidate SWH for SCC and Rare Wildlife: <ul style="list-style-type: none"> • Mapleleaf*
SAR Habitat	None	Potential habitat for: <ul style="list-style-type: none"> • Lake Chubsucker • Lilliput 	None

*candidate SWH associated with McGregor Creek crossing based on background review

Table 11: Summary of Natural Heritage Features and Wildlife Habitat Identified in Terrestrial Areas

Natural Heritage Features	Route Alternative 1	Route Alternative 2	Route Alternative 3
Woodlands	7 Significant Woodlands	6 Significant Woodlands	5 Significant Woodlands
Valleylands	None	None	None
Wetlands	1 (SWDO2-1)	4 (MAS, SWT, SWDM4-2, SWD02)	None
ANSI	None	None	None
Significant Wildlife Habitat	Candidate SWH for Bat Maternity Roosts. Candidate SWH for Turtle Wintering Areas. Confirmed SWH for SCC and Rare Wildlife for: <ul style="list-style-type: none"> • Eastern Wood-pewee • Climbing Prairie Rose • Honey Locust 	Candidate SWH for Bat Maternity Roosts. Candidate SWH for Turtle Wintering Areas. Confirmed SWH for SCC and Rare Wildlife for: <ul style="list-style-type: none"> • Eastern Wood-pewee • Climbing Prairie Rose 	Candidate SWH for Bat Maternity Roosts. Confirmed SWH for SCC and Rare Wildlife for: <ul style="list-style-type: none"> • Eastern Wood-pewee • Honey-locust
SAR Habitat	Potential Habitat for Eastern Foxsnake. Potential Habitat for SAR Bats. Confirmed Habitat for Butternut.	Potential Habitat for Eastern Foxsnake. Potential Habitat for SAR Bats.	Potential Habitat for Eastern Foxsnake. Potential Habitat for SAR Bats.












While natural heritage features identified within the Project Study Area do pose potential constraints to the Project, it is anticipated that impacts to the features and their associated habitats could be mitigated or avoided through sound project design (i.e. infrastructure placement).

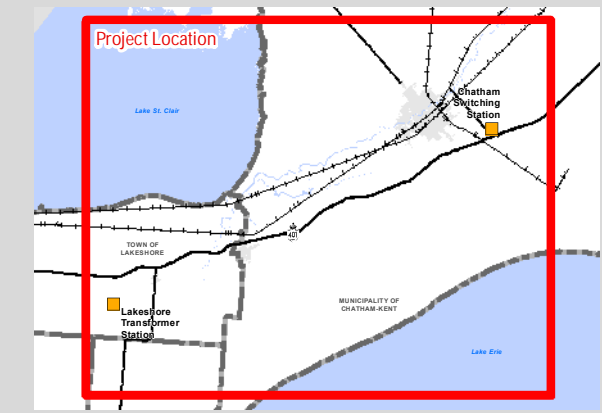
Appendix A

Figures

**HYDRO ONE NETWORKS INC.
CHATHAM TO LAKESHORE LINE
CLASS ENVIRONMENTAL ASSESSMENT**

**ROUTE ALTERNATIVES
FIGURE 1**

-  Switching Station
 -  Alternative 1
 -  Variation
 -  Alternative 2
 -  Variation
 -  Alternative 3
- Base Data**
-  Existing Electrical Transmission Line
 -  Highway
 -  Road
 -  Railway
 -  Municipality Boundary



MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR, IMAGERY SWOOP 2015

MAP CREATED BY: SFG/LMM
MAP CHECKED BY: -
MAP PROJECTION: NAD 1983 UTM Zone 17N
















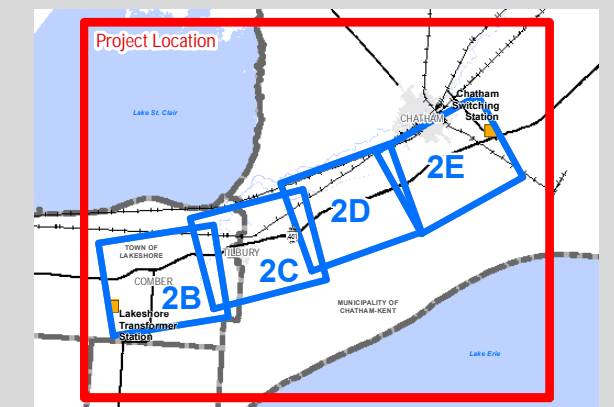
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STATUS: INTERNAL DRAFT
DATE: 2020-11-11

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

**HYDRO ONE NETWORKS INC.
CHATHAM TO LAKESHORE LINE
CLASS ENVIRONMENTAL ASSESSMENT**

**NATURAL HERITAGE FEATURES
BACKGROUND REVIEW
FIGURE 2A**

-  Switching Station
 -  Alternative 1
 -  Variation
 -  Alternative 2
 -  Variation
 -  Alternative 3
 -  Project Study Area (120m)
 -  Parcel with Confirmed Access
- Base Data**
-  Existing Electrical Transmission Line
 -  Highway
 -  Road
 -  Railway
 -  Municipality Boundary



SCALE 1:160,000

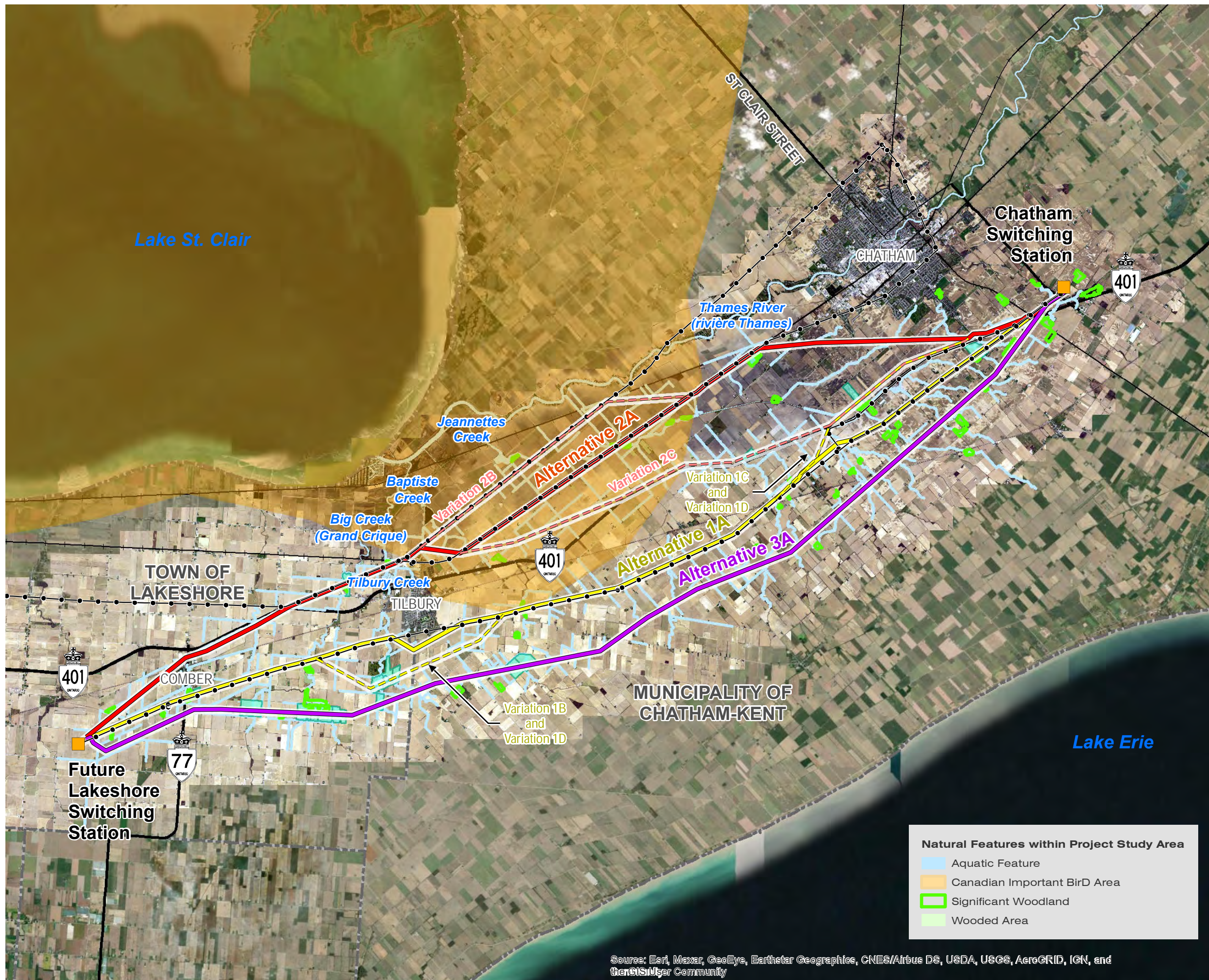
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MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR, IMAGERY SWOOP 2015

MAP CREATED BY: SFG/LMM
MAP CHECKED BY: -
MAP PROJECTION: NAD 1983 UTM Zone 17N

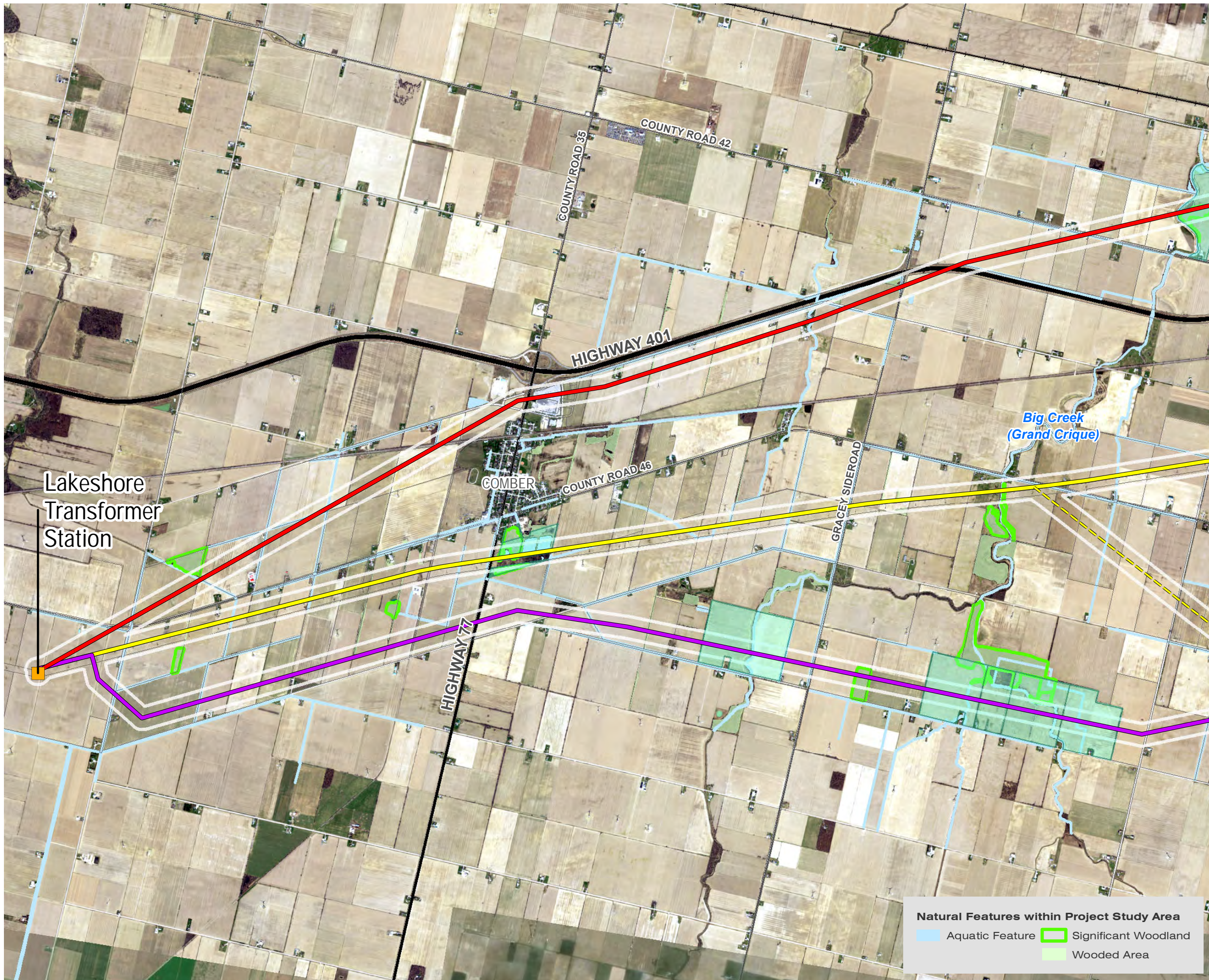
- Natural Features within Project Study Area**
-  Aquatic Feature
 -  Canadian Important BirD Area
 -  Significant Woodland
 -  Wooded Area



Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



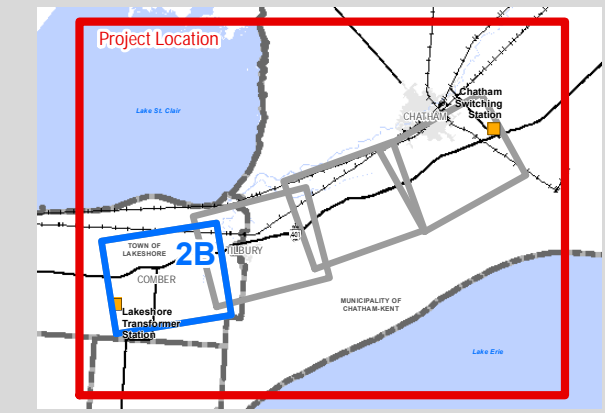
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STATUS: INTERNAL DRAFT
DATE: 2021-03-11



**HYDRO ONE NETWORKS INC.
CHATHAM TO LAKESHORE LINE
CLASS ENVIRONMENTAL ASSESSMENT**

**NATURAL HERITAGE FEATURES
BACKGROUND REVIEW
FIGURE - 2B**

- Project Transmission Stations
- Alternative 1
- Variation
- Alternative 2
- Variation
- Alternative 3
- Project Study Area (120m)
- Parcel with Confirmed Access
- Parcel
- Base Data**
- Highway
- Road
- Railway



SCALE 1:40,000
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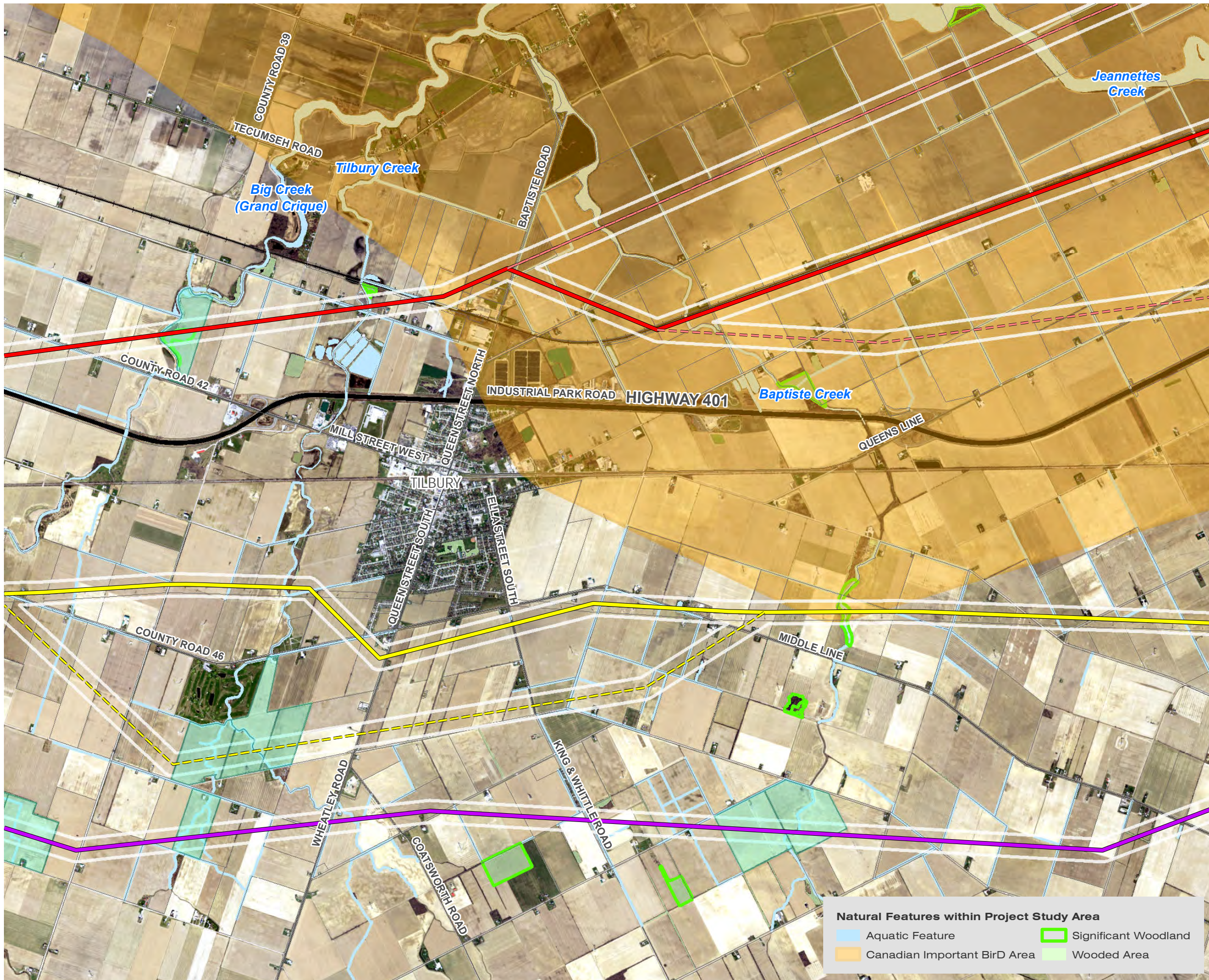
MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR, IMAGERY SWOOP 2015

MAP CREATED BY: SFG/LMM
MAP CHECKED BY: -
MAP PROJECTION: NAD 1983 UTM Zone 17N

- Natural Features within Project Study Area**
- Aquatic Feature
 - Significant Woodland
 - Wooded Area



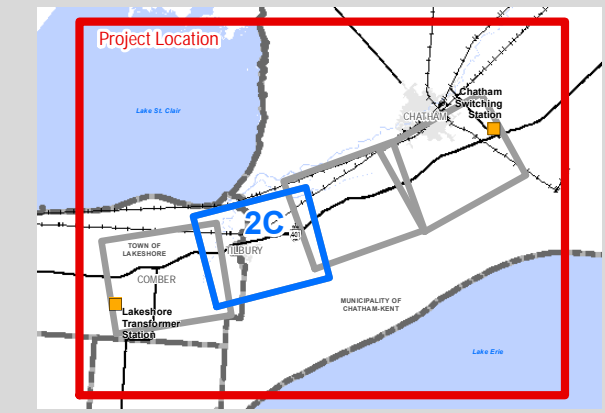
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STATUS: INTERNAL DRAFT
DATE: 2021-03-11



**HYDRO ONE NETWORKS INC.
CHATHAM TO LAKESHORE LINE
CLASS ENVIRONMENTAL ASSESSMENT**

**NATURAL HERITAGE FEATURES
BACKGROUND REVIEW
FIGURE - 2C**

- Alternative 1
 - - - Variation
 - Alternative 2
 - - - Variation
 - Alternative 3
 - Project Study Area (120m)
 - Parcel with Confirmed Access
 - Parcel
- Base Data**
- Highway
 - Road
 - Railway



SCALE 1:40,000
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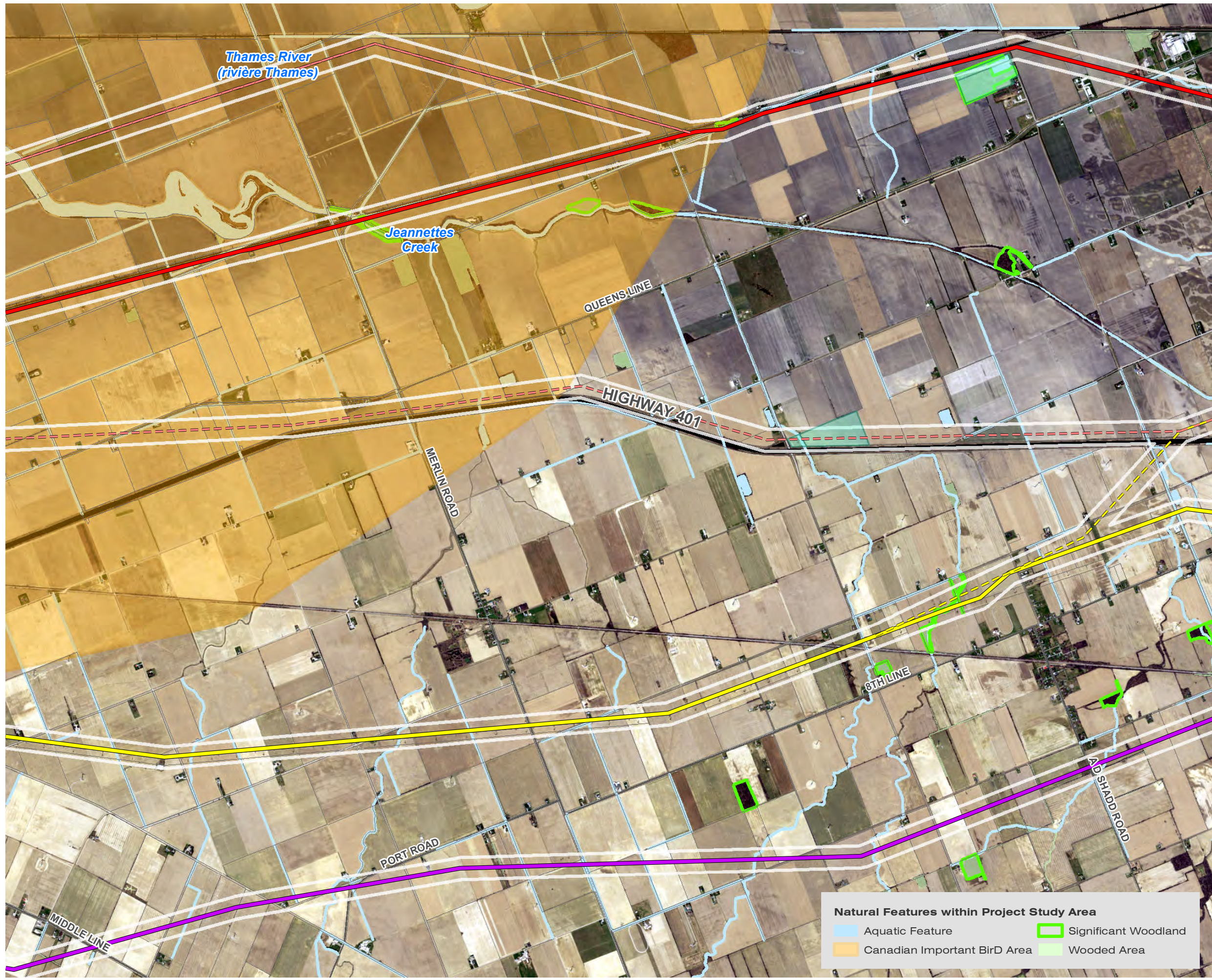
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DATA PROVIDED BY MNR, IMAGERY SWOOP 2015

MAP CREATED BY: SFG/LMM
MAP CHECKED BY: -
MAP PROJECTION: NAD 1983 UTM Zone 17N

- Natural Features within Project Study Area**
- Aquatic Feature
 - Canadian Important Bird Area
 - Significant Woodland
 - Wooded Area



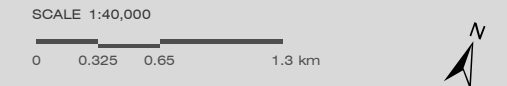
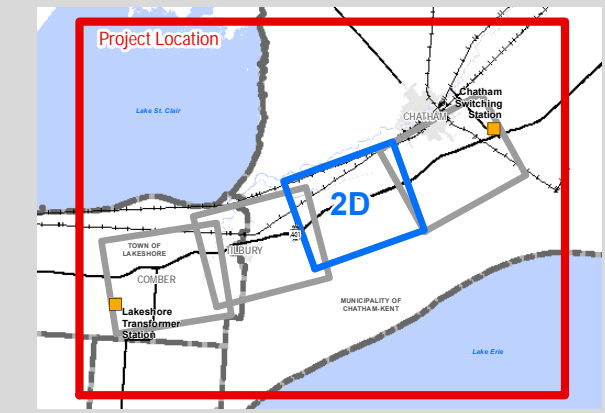
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STATUS: INTERNAL DRAFT
DATE: 2021-03-11



**HYDRO ONE NETWORKS INC.
CHATHAM TO LAKESHORE LINE
CLASS ENVIRONMENTAL ASSESSMENT**

**NATURAL HERITAGE FEATURES
BACKGROUND REVIEW
FIGURE - 2D**

- Alternative 1
 - - - Variation
 - Alternative 2
 - - - Variation
 - Alternative 3
 - Project Study Area (120m)
 - Parcel with Confirmed Access
 - Parcel
- Base Data**
- Highway
 - Road
 - + + + Railway



MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR, IMAGERY SWOOP 2015

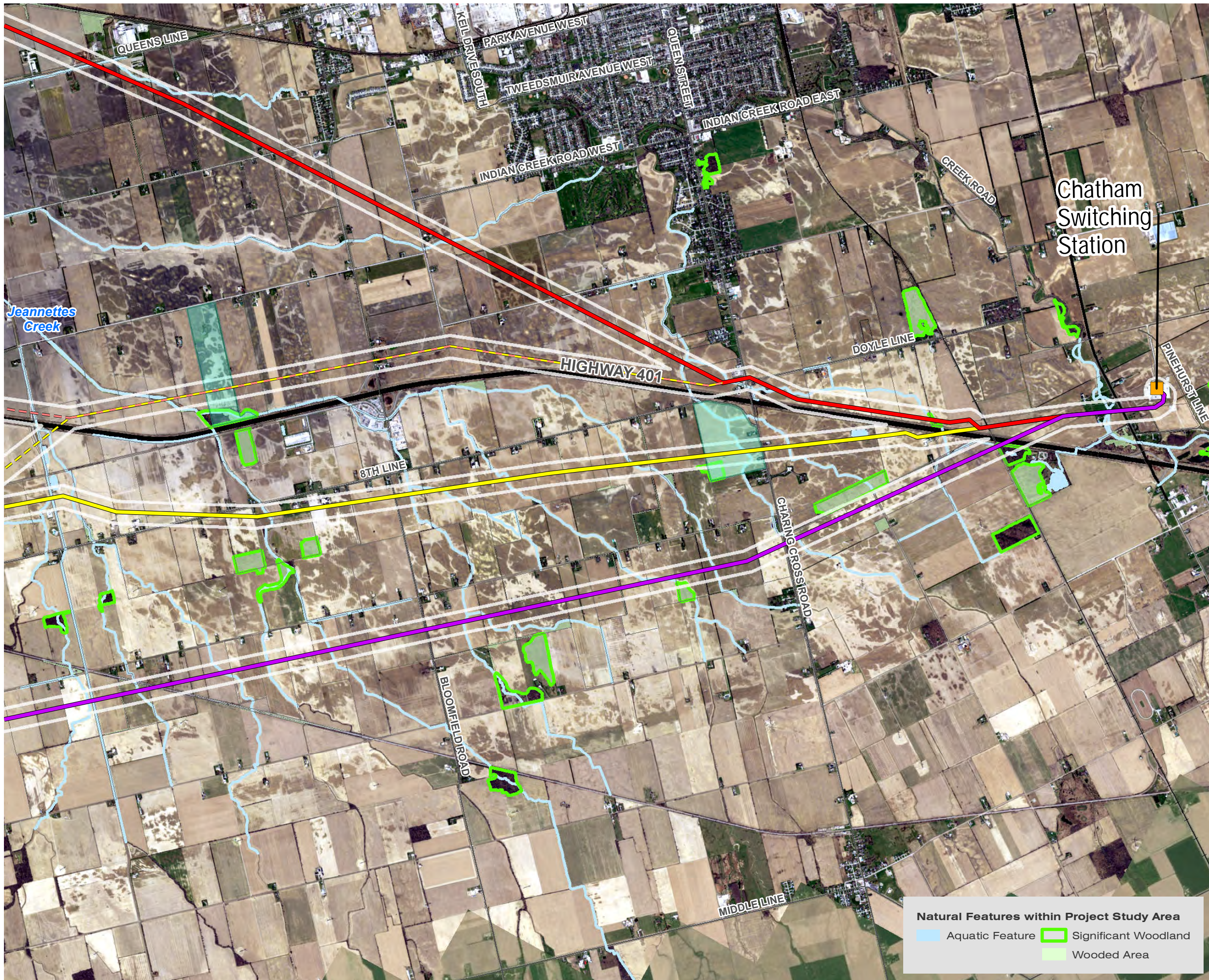
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Natural Features within Project Study Area

 Aquatic Feature	 Significant Woodland
 Canadian Important Bird Area	 Wooded Area



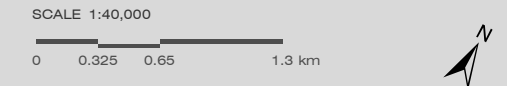
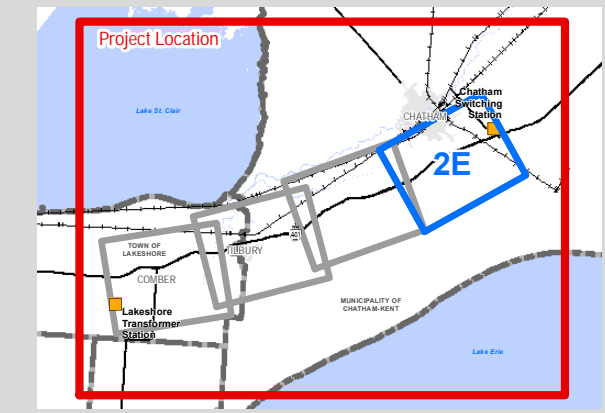
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STATUS: INTERNAL DRAFT
DATE: 2021-03-11



HYDRO ONE NETWORKS INC.
CHATHAM TO LAKESHORE LINE
 CLASS ENVIRONMENTAL ASSESSMENT

NATURAL HERITAGE FEATURES
BACKGROUND REVIEW
 FIGURE - 2E

- Project Transmission Stations
 - Alternative 1
 - Variation
 - Alternative 2
 - Variation
 - Alternative 3
 - Project Study Area (120m)
 - Parcel with Confirmed Access
 - Parcel
- Base Data**
- Highway
 - Road
 - Railway



MAP DRAWING INFORMATION:
 DATA PROVIDED BY MNR, IMAGERY SWOOP 2015

MAP CREATED BY: SFG/LMM
 MAP CHECKED BY: -
 MAP PROJECTION: NAD 1983 UTM Zone 17N

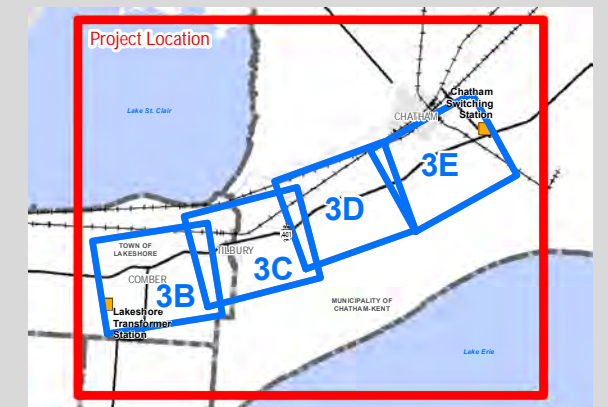


PROJECT: 19-1917
 STATUS: INTERNAL DRAFT
 DATE: 2021-03-11

**HYDRO ONE NETWORKS INC.
CHATHAM TO LAKESHORE LINE
CLASS ENVIRONMENTAL ASSESSMENT**

**PROPOSED SURVEY LOCATIONS
FIGURE 3A**

- Switching Station
 - Alternative 1
 - Variation
 - Alternative 2
 - Variation
 - Alternative 3
 - Project Study Area (120m)
 - Proposed Survey Locations
 - Parcel with Confirmed Access
- Base Data**
- Existing Electrical Transmission Line
 - Highway
 - Road
 - Railway
 - Municipality Boundary



SCALE 1:160,000

0 1 2 4 km



MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR, IMAGERY SWOOP 2015

MAP CREATED BY: SFG/LMM
MAP CHECKED BY: -
MAP PROJECTION: NAD 1983 UTM Zone 17N

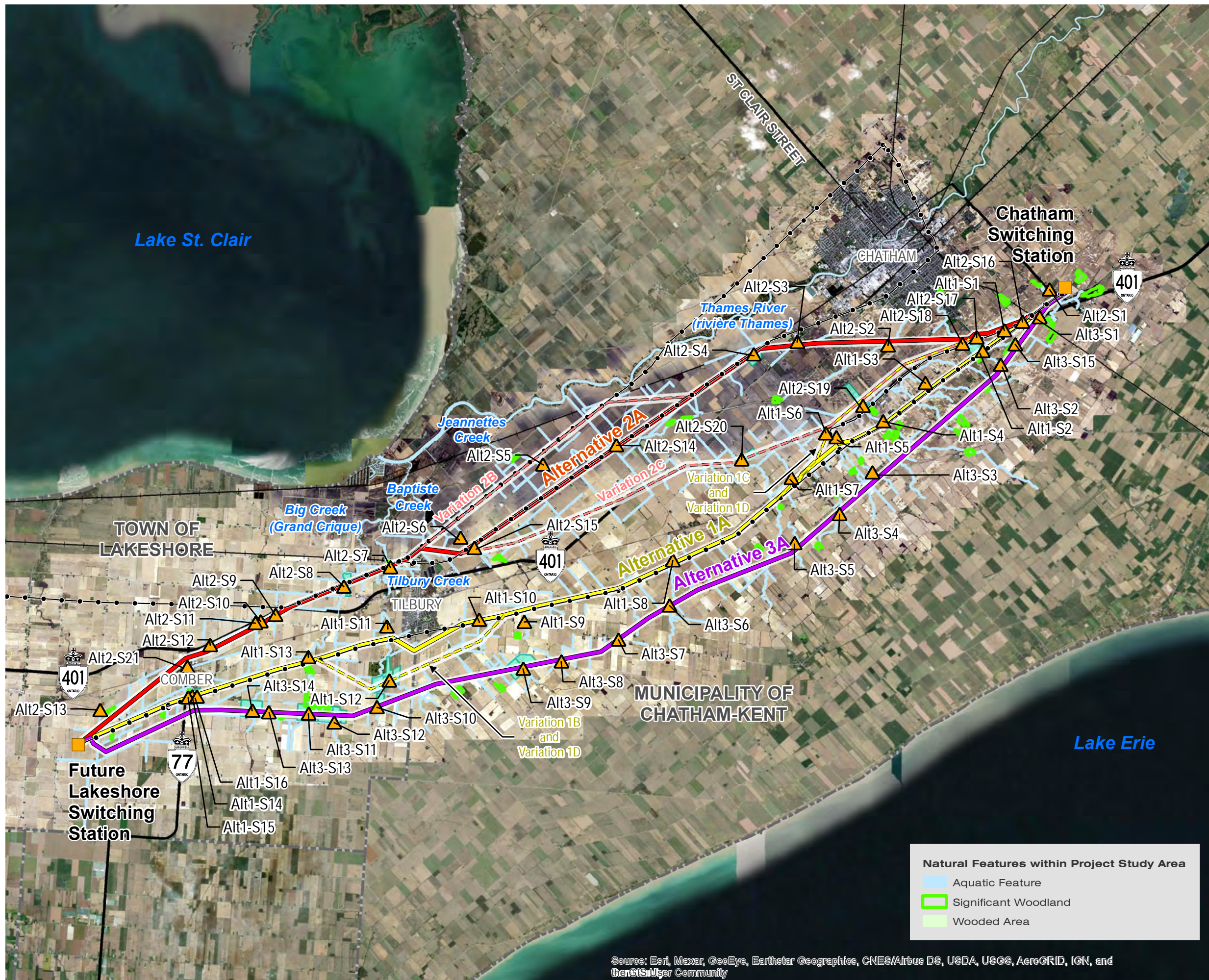
Natural Features within Project Study Area

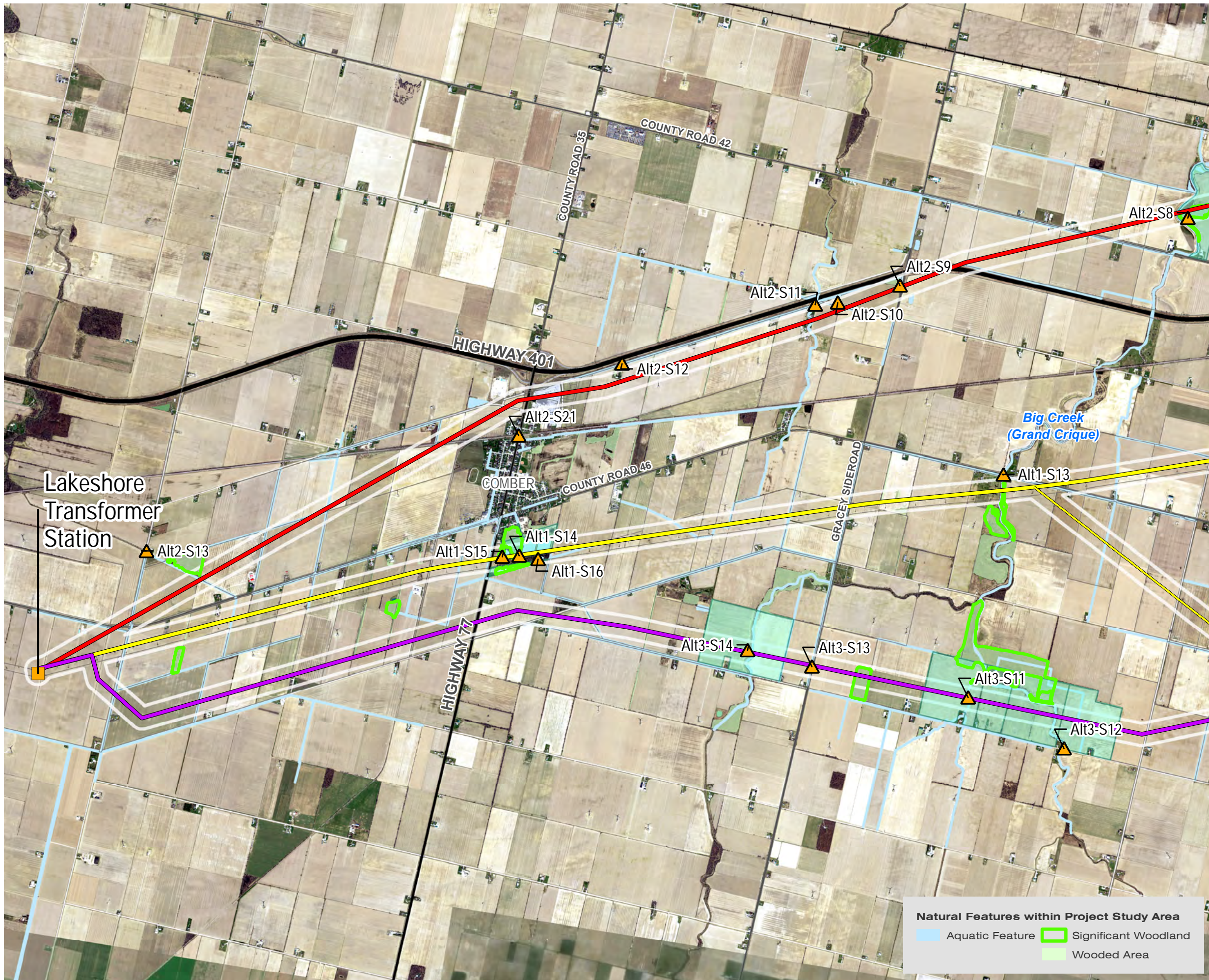
- Aquatic Feature
- Significant Woodland
- Wooded Area

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



PROJECT: 19-1917
STATUS: INTERNAL DRAFT
DATE: 2020-11-17

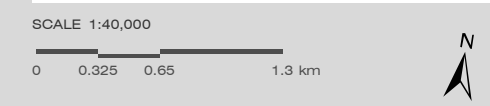
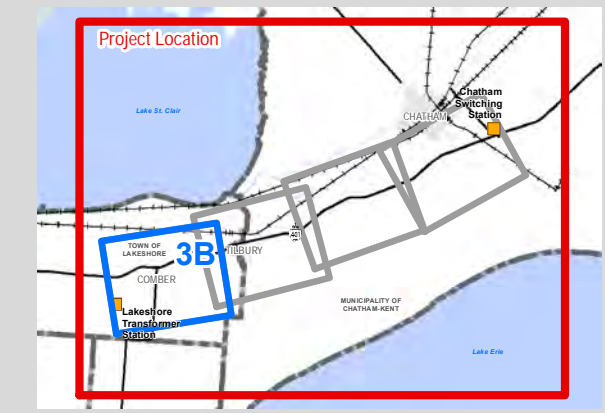




**HYDRO ONE NETWORKS INC.
CHATHAM TO LAKESHORE LINE
CLASS ENVIRONMENTAL ASSESSMENT**

**PROPOSED SURVEY LOCATIONS
FIGURE - 3B**

- Project Transmission Stations
- ▲ Proposed Survey Locations
- Alternative 1
- - - Variation
- Alternative 2
- - - Variation
- Alternative 3
- Project Study Area (120m)
- Parcel with Confirmed Access
- Parcel
- Base Data**
- Highway
- Road
- + — Railway



MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR, IMAGERY SWOOP 2015

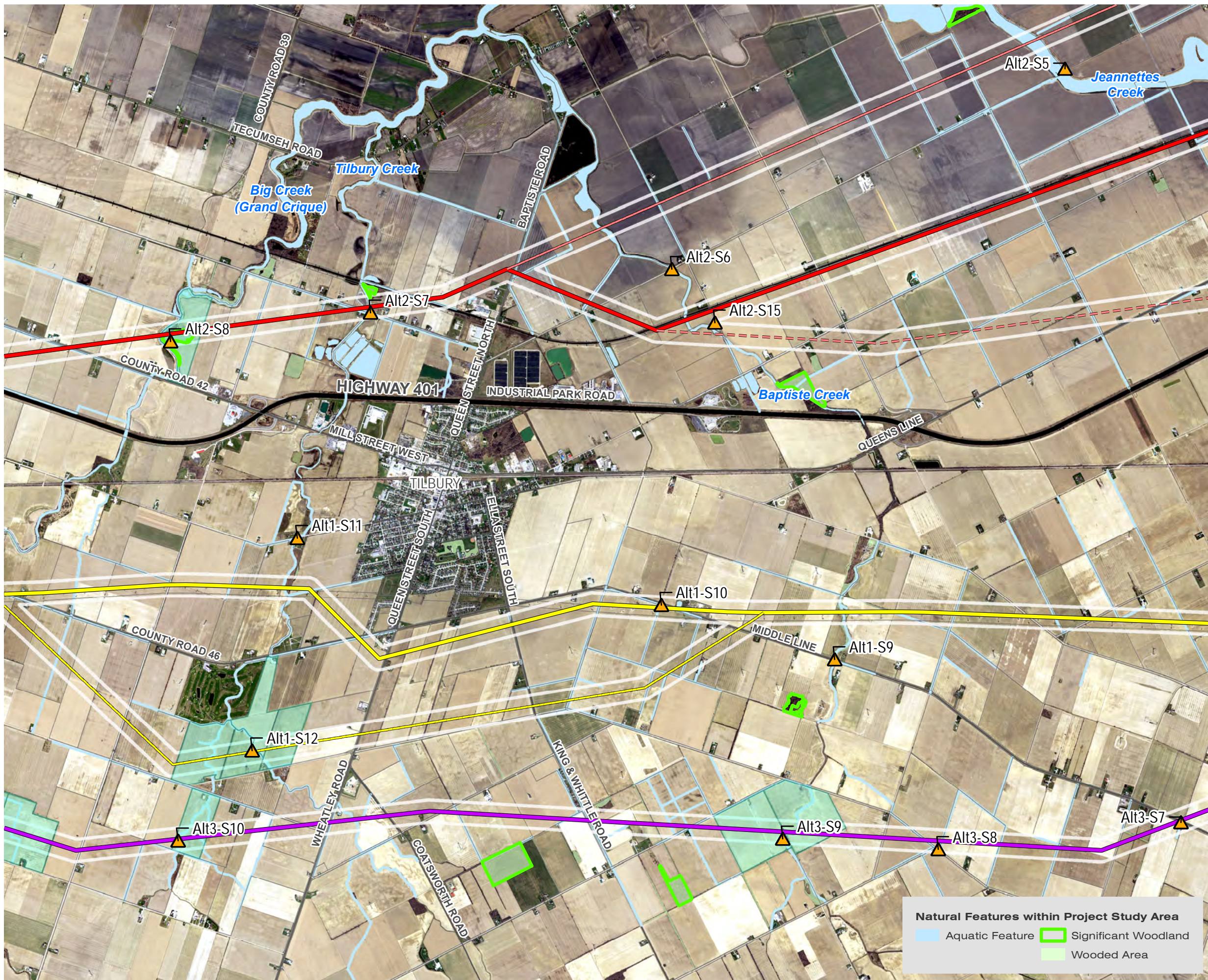
MAP CREATED BY: SFG/LMM
MAP CHECKED BY: -
MAP PROJECTION: NAD 1983 UTM Zone 17N

Natural Features within Project Study Area

- Aquatic Feature
- Significant Woodland
- Wooded Area



PROJECT: 19-1917
STATUS: INTERNAL DRAFT
DATE: 2020-11-17



**HYDRO ONE NETWORKS INC.
CHATHAM TO LAKESHORE LINE
CLASS ENVIRONMENTAL ASSESSMENT**

**PROPOSED SURVEY LOCATIONS
FIGURE - 3C**

- Proposed Survey Locations
 - Alternative 1
 - Variation
 - Alternative 2
 - Variation
 - Alternative 3
 - Project Study Area (120m)
 - Parcel with Confirmed Access
 - Parcel
- Base Data**
- Highway
 - Road
 - Railway



SCALE 1:40,000
0 0.325 0.65 1.3 km

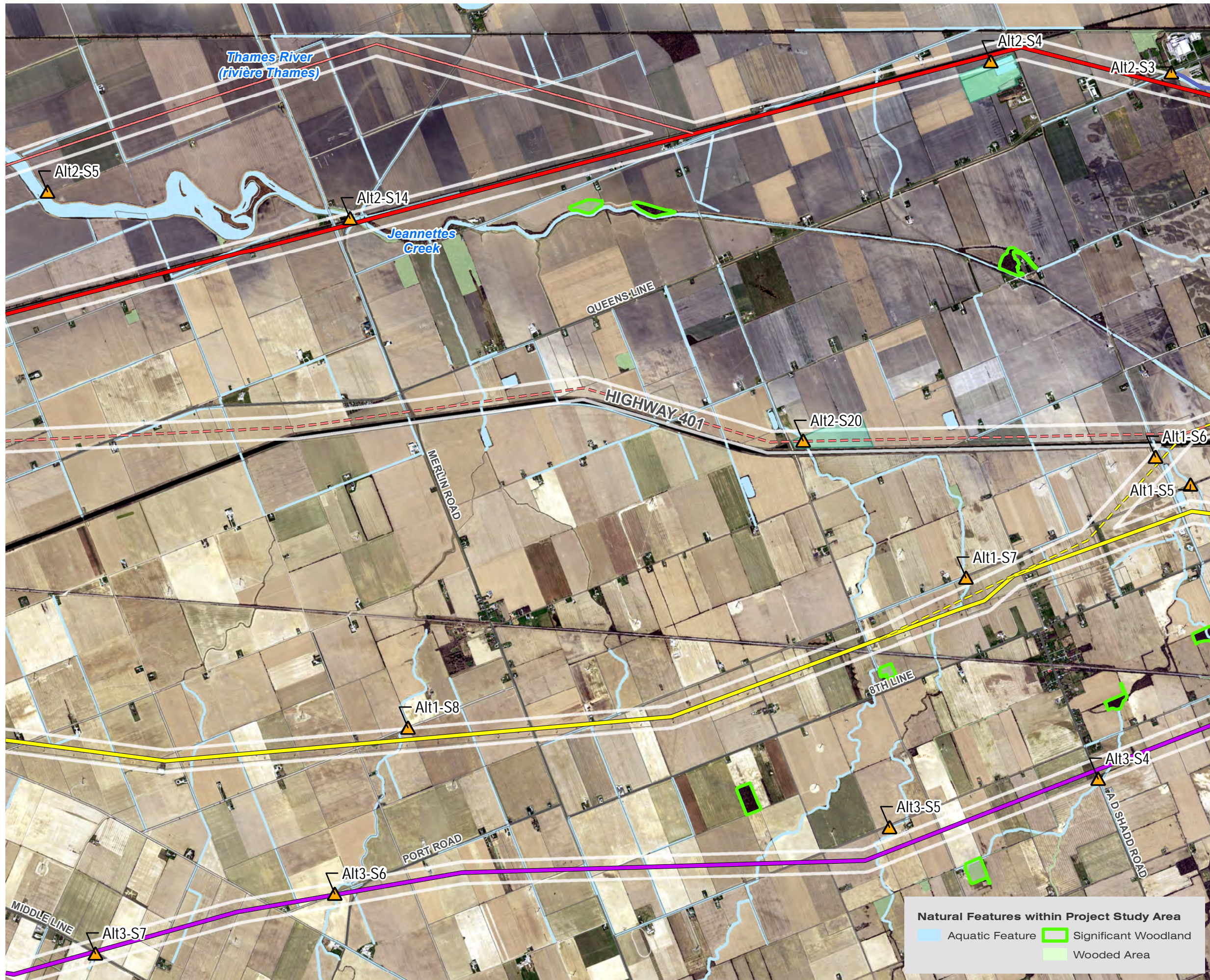
MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR, IMAGERY SWOOP 2015
MAP CREATED BY: SFG/LMM
MAP CHECKED BY: -
MAP PROJECTION: NAD 1983 UTM Zone 17N

Natural Features within Project Study Area

- Aquatic Feature
- Significant Woodland
- Wooded Area



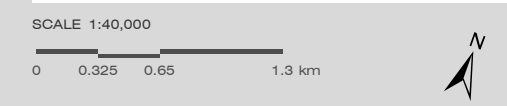
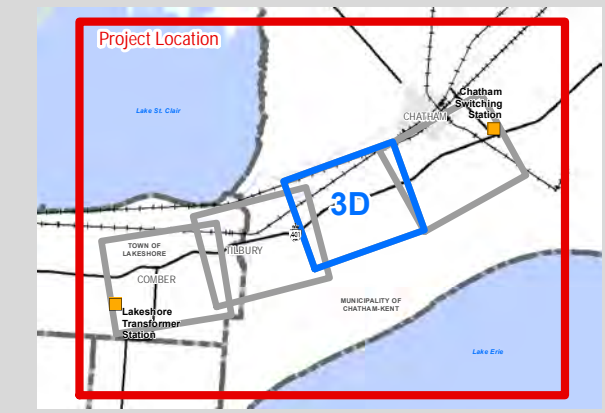
PROJECT: 19-1917
STATUS: INTERNAL DRAFT
DATE: 2020-11-17



**HYDRO ONE NETWORKS INC.
CHATHAM TO LAKESHORE LINE
CLASS ENVIRONMENTAL ASSESSMENT**

**PROPOSED SURVEY LOCATIONS
FIGURE - 3D**

- Proposed Survey Locations
- Alternative 1
- Variation
- Alternative 2
- Variation
- Alternative 3
- Project Study Area (120m)
- Parcel with Confirmed Access
- Parcel
- Base Data**
- Highway
- Road
- Railway



MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR, IMAGERY SWOOP 2015

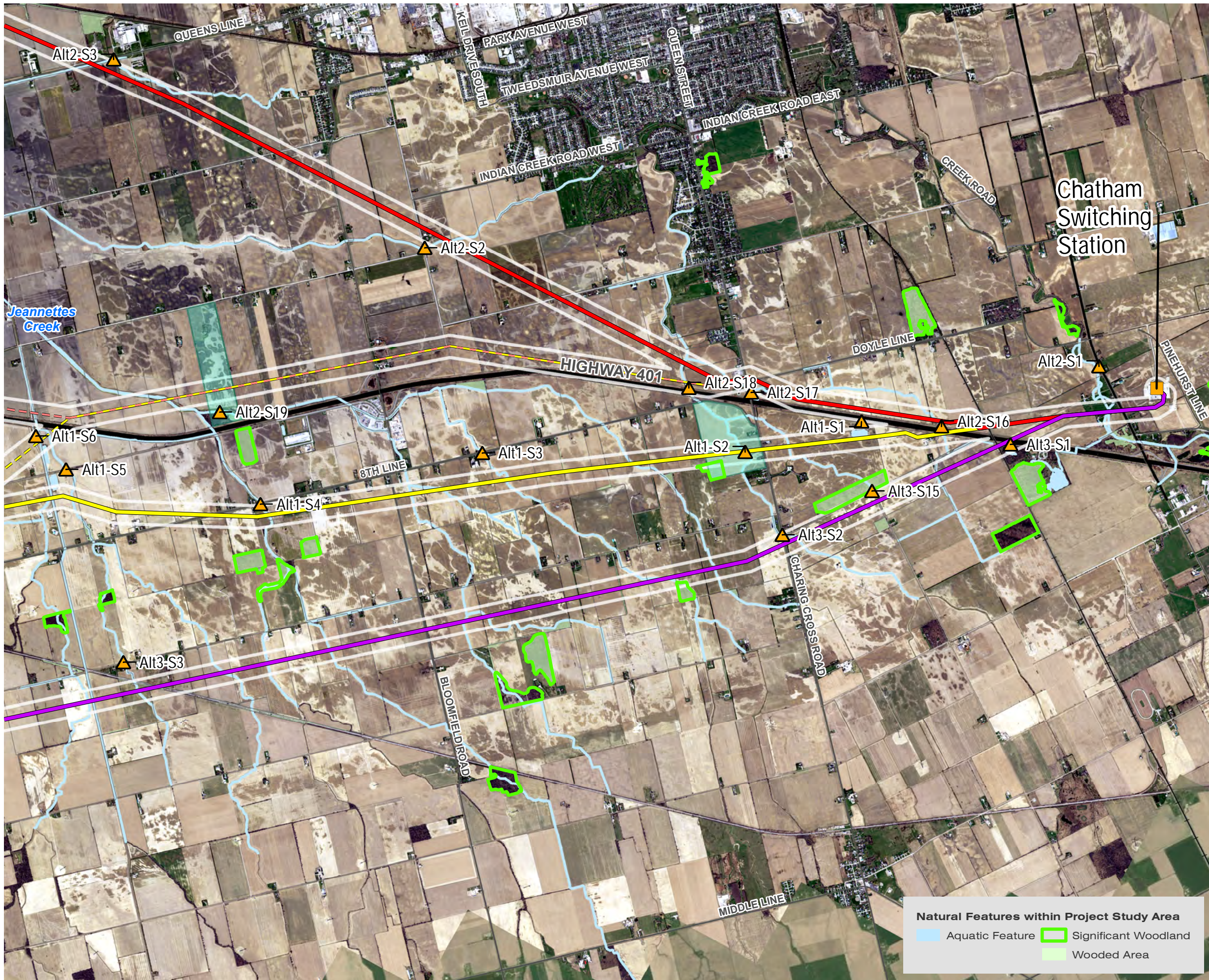
MAP CREATED BY: SFG/LMM
MAP CHECKED BY: -
MAP PROJECTION: NAD 1983 UTM Zone 17N

Natural Features within Project Study Area

- Aquatic Feature
- Significant Woodland
- Wooded Area



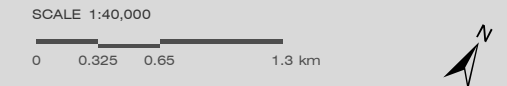
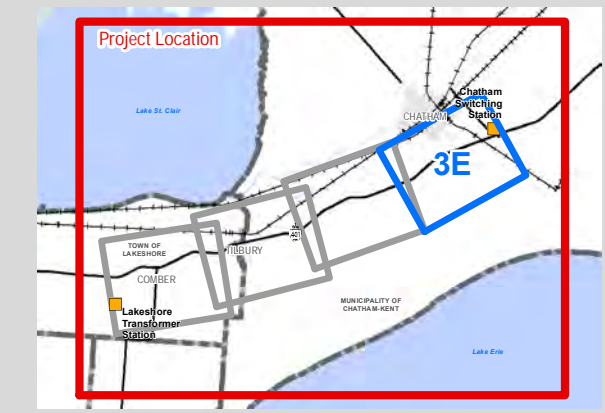
PROJECT: 19-1917
STATUS: INTERNAL DRAFT
DATE: 2020-11-17



HYDRO ONE NETWORKS INC.
CHATHAM TO LAKESHORE LINE
 CLASS ENVIRONMENTAL ASSESSMENT

PROPOSED SURVEY LOCATIONS
 FIGURE - 3E

- Project Transmission Stations
 - Proposed Survey Locations
 - Alternative 1
 - Variation
 - Alternative 2
 - Variation
 - Alternative 3
 - Project Study Area (120m)
 - Parcel with Confirmed Access
 - Parcel
- Base Data**
- Highway
 - Road
 - Railway



MAP DRAWING INFORMATION:
 DATA PROVIDED BY MNR, IMAGERY SWOOP 2015

MAP CREATED BY: SFG/LMM
 MAP CHECKED BY: -
 MAP PROJECTION: NAD 1983 UTM Zone 17N

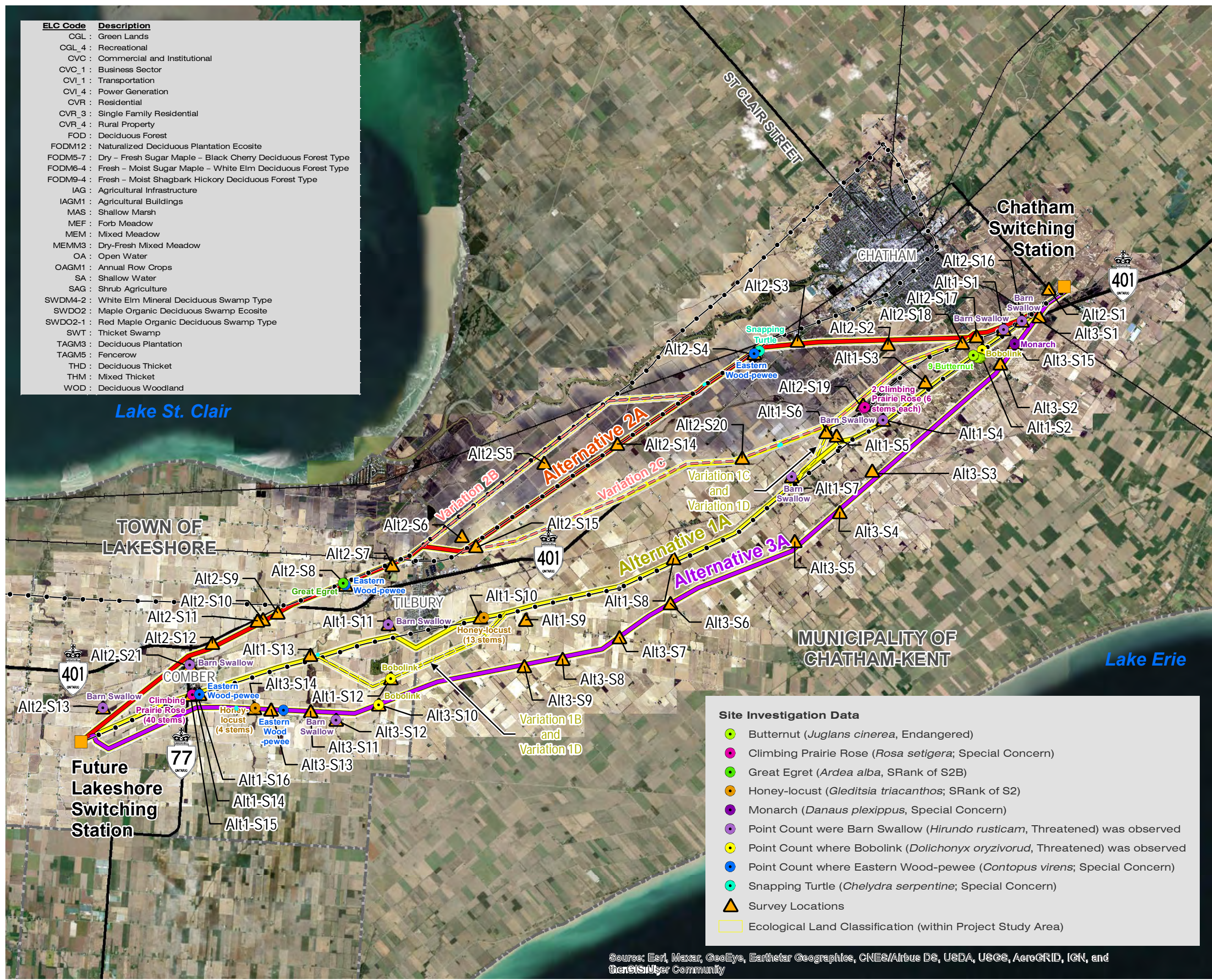
Natural Features within Project Study Area

 Aquatic Feature	 Significant Woodland
 Wooded Area	



PROJECT: 19-1917
 STATUS: INTERNAL DRAFT
 DATE: 2020-11-17

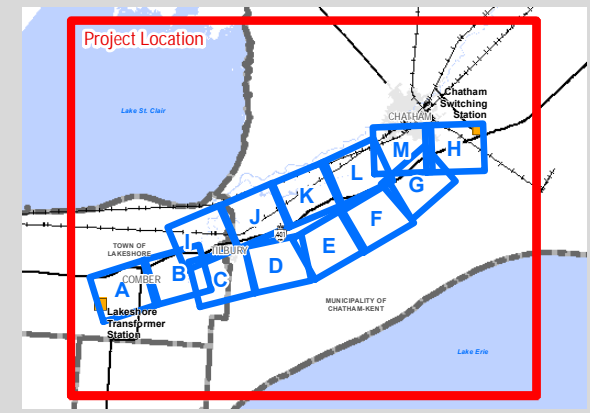
ELC Code	Description
CGL	Green Lands
CGL_4	Recreational
CVC	Commercial and Institutional
CVC_1	Business Sector
CVI_1	Transportation
CVI_4	Power Generation
CVR	Residential
CVR_3	Single Family Residential
CVR_4	Rural Property
FOD	Deciduous Forest
FODM12	Naturalized Deciduous Plantation Ecosite
FODM5-7	Dry - Fresh Sugar Maple - Black Cherry Deciduous Forest Type
FODM6-4	Fresh - Moist Sugar Maple - White Elm Deciduous Forest Type
FODM9-4	Fresh - Moist Shagbark Hickory Deciduous Forest Type
IAG	Agricultural Infrastructure
IAGM1	Agricultural Buildings
MAS	Shallow Marsh
MEF	Forb Meadow
MEM	Mixed Meadow
MEMM3	Dry-Fresh Mixed Meadow
OA	Open Water
OAGM1	Annual Row Crops
SA	Shallow Water
SAG	Shrub Agriculture
SWDM4-2	White Elm Mineral Deciduous Swamp Type
SWDO2	Maple Organic Deciduous Swamp Ecosite
SWDO2-1	Red Maple Organic Deciduous Swamp Type
SWT	Thicket Swamp
TAGM3	Deciduous Plantation
TAGM5	Fencerow
THD	Deciduous Thicket
THM	Mixed Thicket
WOD	Deciduous Woodland



**HYDRO ONE NETWORKS INC.
CHATHAM TO LAKESHORE LINE
CLASS ENVIRONMENTAL ASSESSMENT**

**BIOLOGICAL PHYSICAL INVENTORY
RESULTS OVERVIEW
FIGURE 4A**

- Switching Station
 - Alternative 1
 - - - Variation
 - Alternative 2
 - - - Variation
 - Alternative 3
 - Project Study Area (120m)
- Base Data**
- Existing Electrical Transmission Line
 - Highway
 - Road
 - Railway
 - Municipality Boundary



SCALE 1:160,000
0 1 2 4 km

MAP DRAWING INFORMATION:
Data provided by LIO, MNR, CanVec, Imagery is SWOOP 2015, Project data provided by Hydro One Networks and refined by Dillon Consulting Limited.

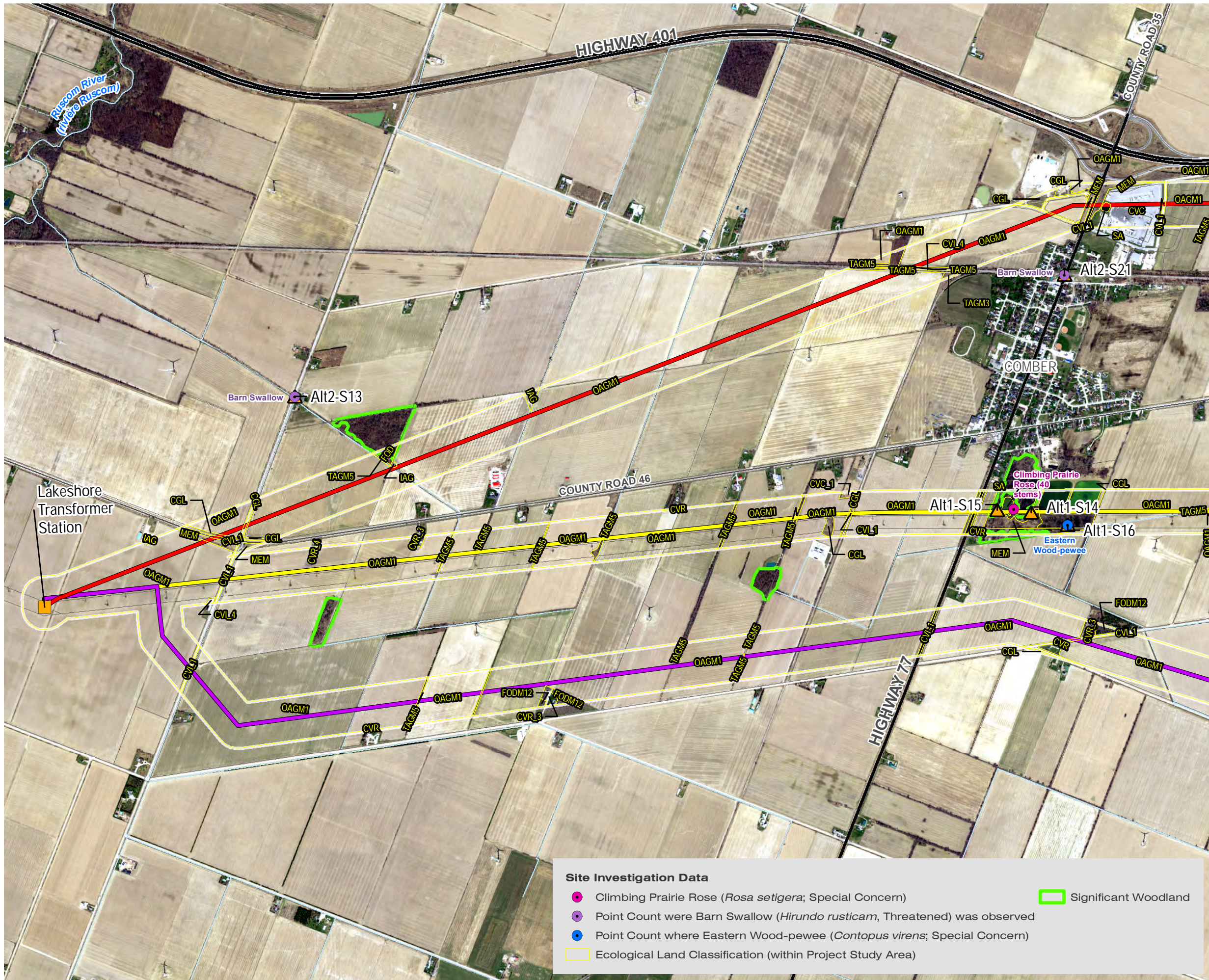
MAP CREATED BY: SFG/LMM
MAP CHECKED BY: -
MAP PROJECTION: NAD 1983 UTM Zone 17N

- Site Investigation Data**
- Butternut (*Juglans cinerea*, Endangered)
 - Climbing Prairie Rose (*Rosa setigera*; Special Concern)
 - Great Egret (*Ardea alba*, SRank of S2B)
 - Honey-locust (*Gleditsia triacanthos*; SRank of S2)
 - Monarch (*Danaus plexippus*, Special Concern)
 - Point Count where Barn Swallow (*Hirundo rusticom*, Threatened) was observed
 - Point Count where Bobolink (*Dolichonyx oryzivorus*, Threatened) was observed
 - Point Count where Eastern Wood-pewee (*Contopus virens*; Special Concern)
 - Snapping Turtle (*Chelydra serpentina*; Special Concern)
 - ▲ Survey Locations
 - Ecological Land Classification (within Project Study Area)

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



PROJECT: 19-1917
STATUS: DRAFT
DATE: 2021-03-11



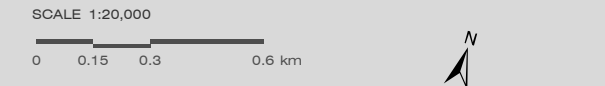
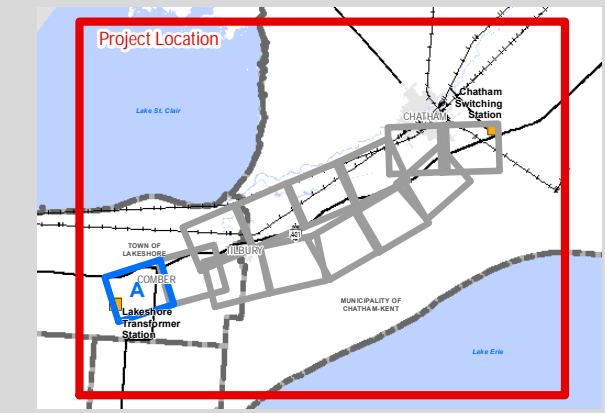
Site Investigation Data

- Climbing Prairie Rose (*Rosa setigera*; Special Concern)
- Point Count where Barn Swallow (*Hirundo rustica*, Threatened) was observed
- Point Count where Eastern Wood-pewee (*Contopus virens*; Special Concern)
- Ecological Land Classification (within Project Study Area)
- Significant Woodland

HYDRO ONE NETWORKS INC.
CHATHAM TO LAKESHORE LINE
 CLASS ENVIRONMENTAL ASSESSMENT

BIOLOGICAL PHYSICAL INVENTORY RESULTS
 FIGURE 4B

- Project Transmission Stations
- Alternative 1
- Variation
- Alternative 2
- Variation
- Alternative 3
- Project Study Area (120m)
- ▲ Survey Locations
- Parcel
- Base Data**
- Highway
- Road
- Watercourse



MAP DRAWING INFORMATION:
 Data provided by LIO, MNR, CanVec, Imagery is SWOOP 2015, Project data provided by Hydro One Networks and refined by Dillon Consulting Limited.

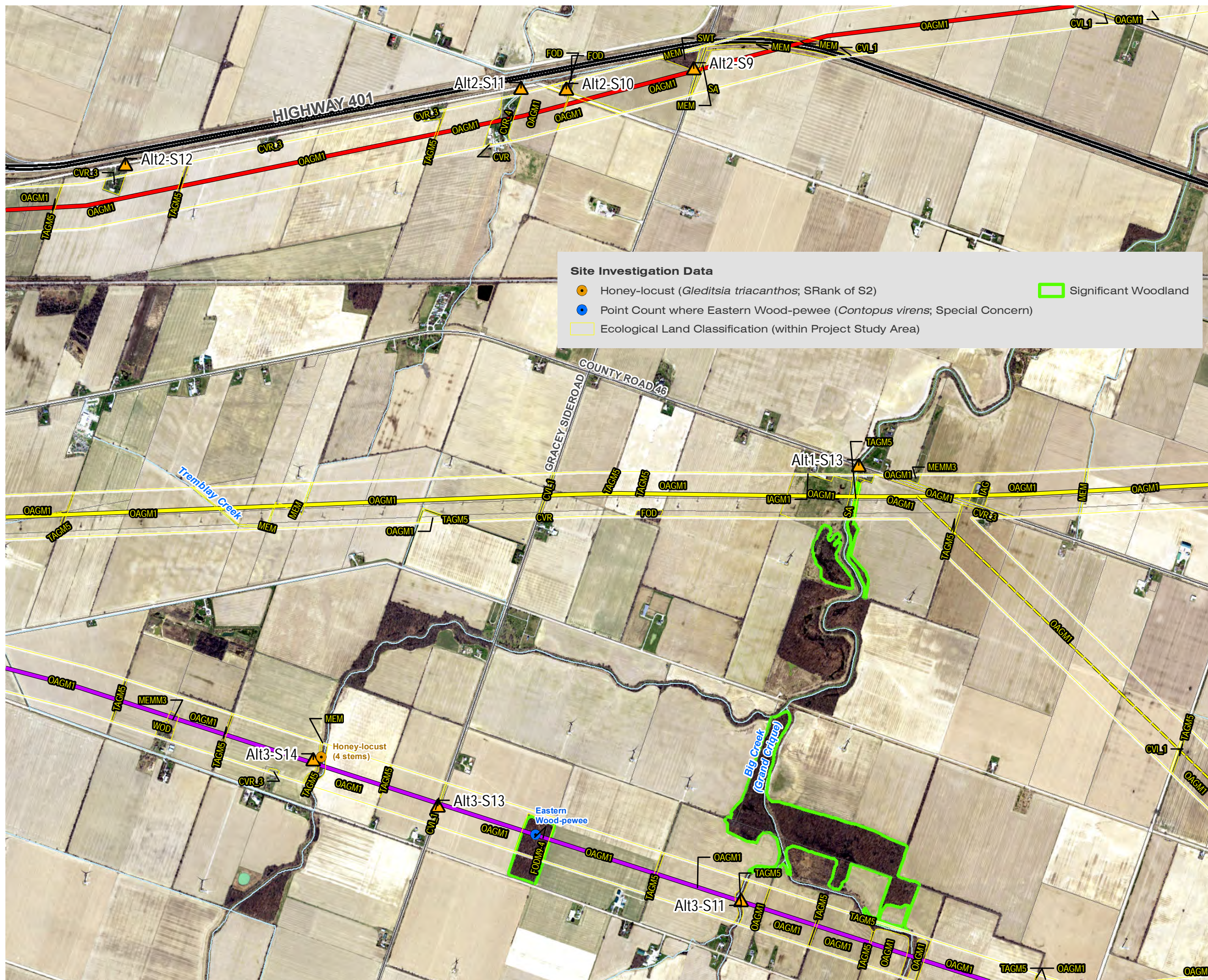
MAP CREATED BY: SFG/LMM
 MAP CHECKED BY: -
 MAP PROJECTION: NAD 1983 UTM Zone 17N

PROJECT: 19-1917
 STATUS: INTERNAL DRAFT
 DATE: 2021-03-11

**HYDRO ONE NETWORKS INC.
CHATHAM TO LAKESHORE LINE
CLASS ENVIRONMENTAL ASSESSMENT**

**BIOLOGICAL PHYSICAL INVENTORY
RESULTS**

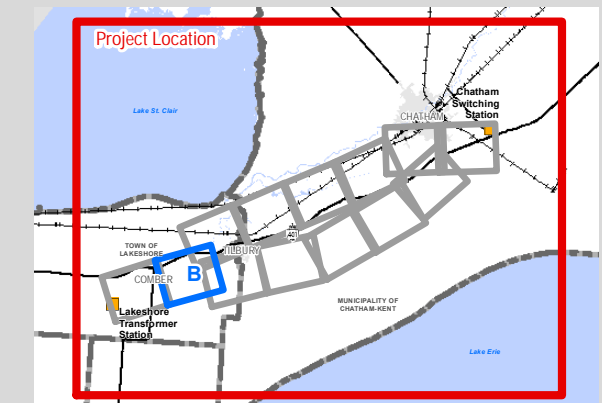
FIGURE 4C



Site Investigation Data

- Honey-locust (*Gleditsia triacanthos*; SRank of S2)
- Point Count where Eastern Wood-pewee (*Contopus virens*; Special Concern)
- Ecological Land Classification (within Project Study Area)
- Significant Woodland

- Alternative 1
- Variation
- Alternative 2
- Variation
- Alternative 3
- Project Study Area (120m)
- ▲ Survey Locations
- Parcel
- Base Data**
- Highway
- Road
- Watercourse



SCALE 1:20,000
0 0.15 0.3 0.6 km



MAP DRAWING INFORMATION:
Data provided by LIO, MNR, CanVec, Imagery is SWOOP 2015, Project data provided by Hydro One Networks and refined by Dillon Consulting Limited.

MAP CREATED BY: SFG/LMM
MAP CHECKED BY: -
MAP PROJECTION: NAD 1983 UTM Zone 17N



PROJECT: 19-1917
STATUS: INTERNAL DRAFT
DATE: 2021-03-11

HYDRO ONE NETWORKS INC.
CHATHAM TO LAKESHORE LINE
 CLASS ENVIRONMENTAL ASSESSMENT

BIOLOGICAL PHYSICAL INVENTORY
RESULTS

FIGURE 4D

- Alternative 1
- Variation
- Alternative 3
- Project Study Area (120m)
- ▲ Survey Locations
- Parcel
- Base Data**
- Road
- Watercourse



SCALE 1:20,000
 0 0.15 0.3 0.6 km

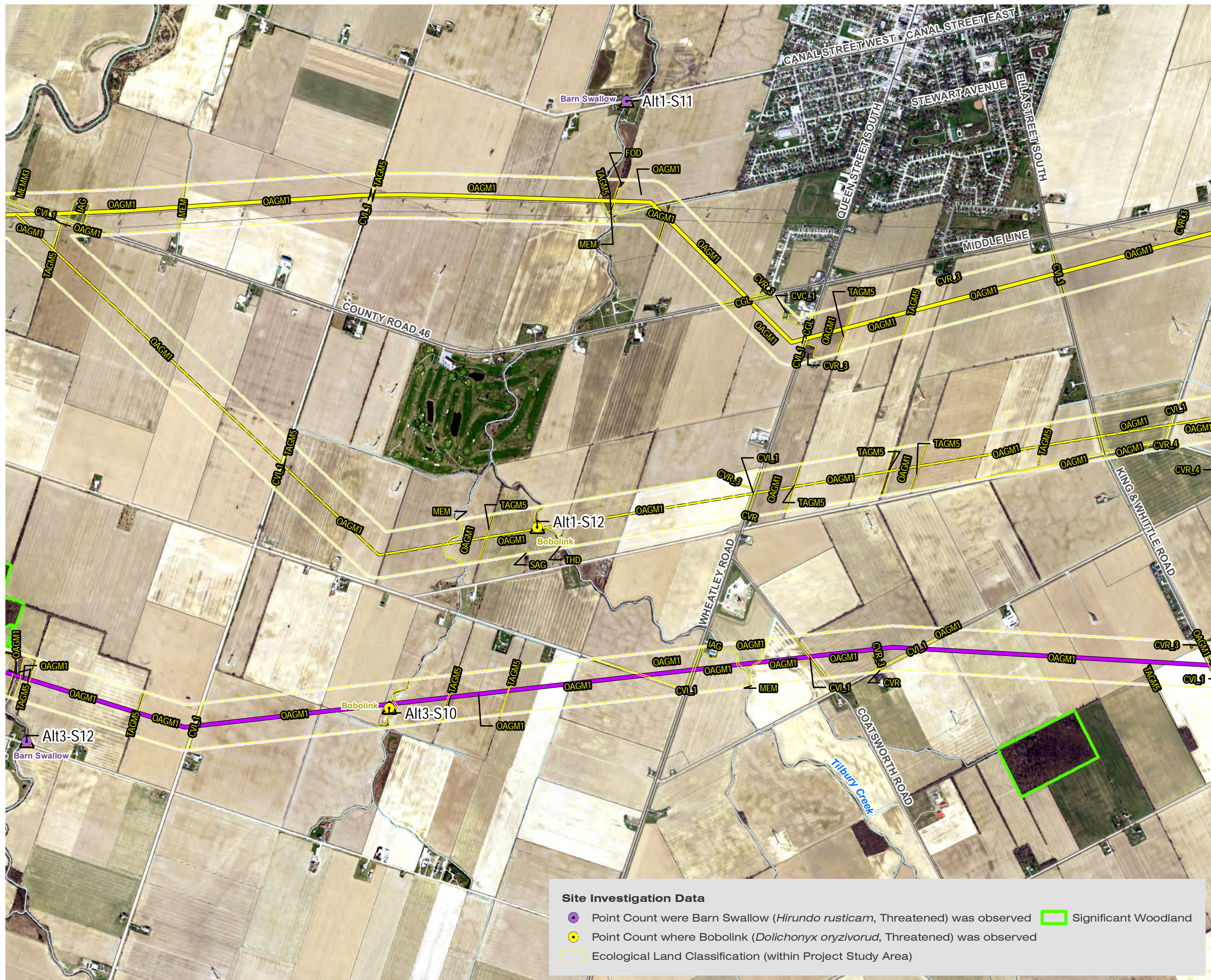


MAP DRAWING INFORMATION:
 Data provided by LIO, MNR, CanVec, Imagery is SWOOP 2015, Project data provided by Hydro One Networks and refined by Dillon Consulting Limited.

MAP CREATED BY: SFG/LMM
 MAP CHECKED BY: -
 MAP PROJECTION: NAD 1983 UTM Zone 17N



PROJECT: 19-1917
 STATUS: INTERNAL DRAFT
 DATE: 2021-03-11



Site Investigation Data

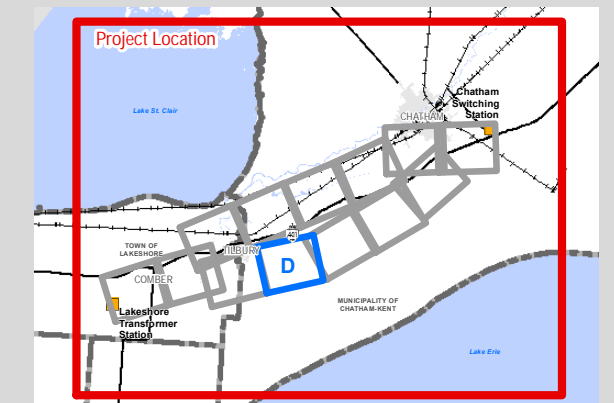
- Point Count where Barn Swallow (*Hirundo rustica*, Threatened) was observed
- Point Count where Bobolink (*Dolichonyx oryzivorus*, Threatened) was observed
- Ecological Land Classification (within Project Study Area)
- Significant Woodland

**HYDRO ONE NETWORKS INC.
CHATHAM TO LAKESHORE LINE
CLASS ENVIRONMENTAL ASSESSMENT**

**BIOLOGICAL PHYSICAL INVENTORY
RESULTS**

FIGURE 4E

- Alternative 1
- - - Variation
- Alternative 3
- Project Study Area (120m)
- ▲ Survey Locations
- Parcel
- Base Data**
- Road
- Watercourse



SCALE 1:20,000
0 0.15 0.3 0.6 km



MAP DRAWING INFORMATION:
Data provided by LIO, MNR, CanVec, Imagery is SWOOP 2015, Project data provided by Hydro One Networks and refined by Dillon Consulting Limited.

MAP CREATED BY: SFG/LMM
MAP CHECKED BY: -
MAP PROJECTION: NAD 1983 UTM Zone 17N



PROJECT: 19-1917
STATUS: INTERNAL DRAFT
DATE: 2021-03-11



Site Investigation Data

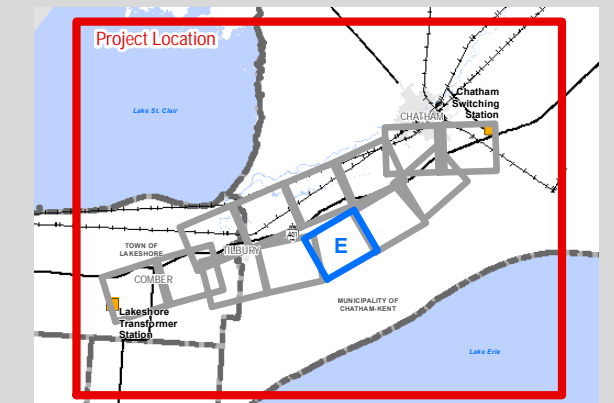
- Honey-locust (*Gleditsia triacanthos*; SRank of S2)
- Significant Woodland
- Ecological Land Classification (within Project Study Area)

**HYDRO ONE NETWORKS INC.
CHATHAM TO LAKESHORE LINE
CLASS ENVIRONMENTAL ASSESSMENT**

**BIOLOGICAL PHYSICAL INVENTORY
RESULTS**

FIGURE 4F

- Alternative 1
- - - Variation
- Alternative 3
- Project Study Area (120m)
- ▲ Survey Locations
- Parcel
- Base Data**
- Road
- Watercourse



SCALE 1:20,000
0 0.15 0.3 0.6 km



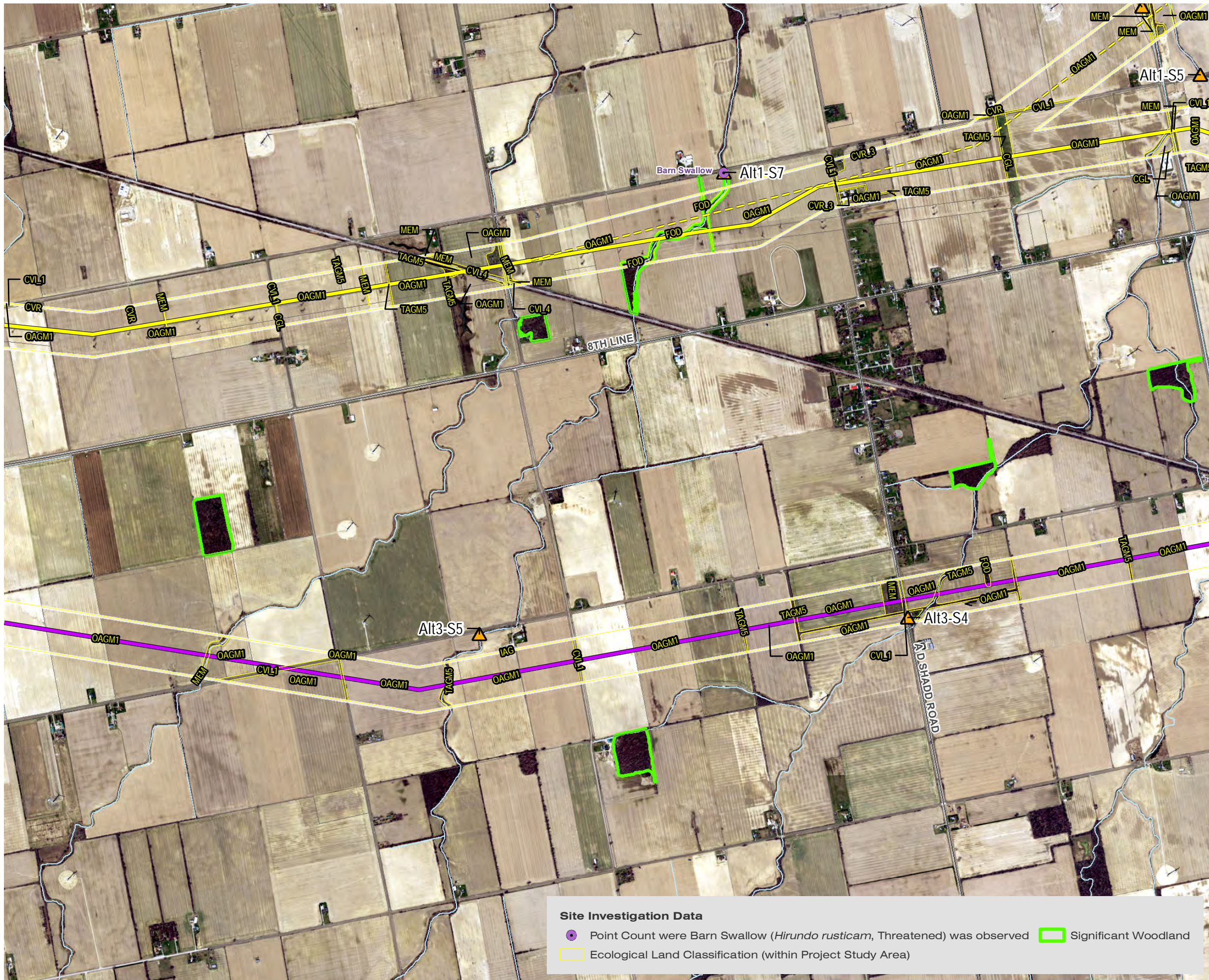
MAP DRAWING INFORMATION:
Data provided by LIO, MNR, CanVec, Imagery is SWOOP 2015, Project data provided by Hydro One Networks and refined by Dillon Consulting Limited.

MAP CREATED BY: SFG/LMM
MAP CHECKED BY: -
MAP PROJECTION: NAD 1983 UTM Zone 17N

Site Investigation Data
Ecological Land Classification (within Project Study Area)



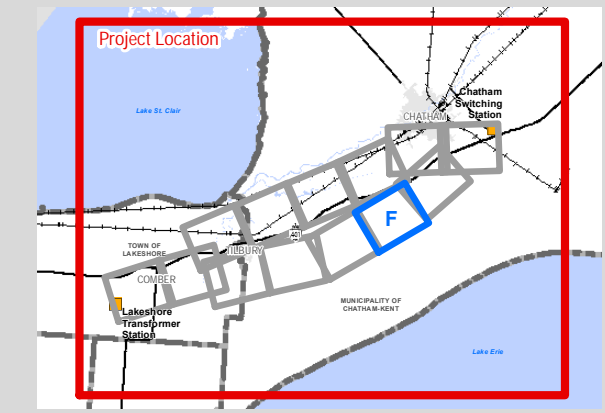
PROJECT: 19-1917
STATUS: INTERNAL DRAFT
DATE: 2021-03-11



**HYDRO ONE NETWORKS INC.
CHATHAM TO LAKESHORE LINE
CLASS ENVIRONMENTAL ASSESSMENT**

**BIOLOGICAL PHYSICAL INVENTORY
RESULTS
FIGURE 4G**

- Alternative 1
- Variation
- Alternative 3
- Project Study Area (120m)
- ▲ Survey Locations
- Parcel
- Base Data**
- Road
- Watercourse



SCALE 1:20,000
0 0.15 0.3 0.6 km



MAP DRAWING INFORMATION:
Data provided by LIO, MNR, CanVec, Imagery is SWOOP 2015, Project data provided by Hydro One Networks and refined by Dillon Consulting Limited.

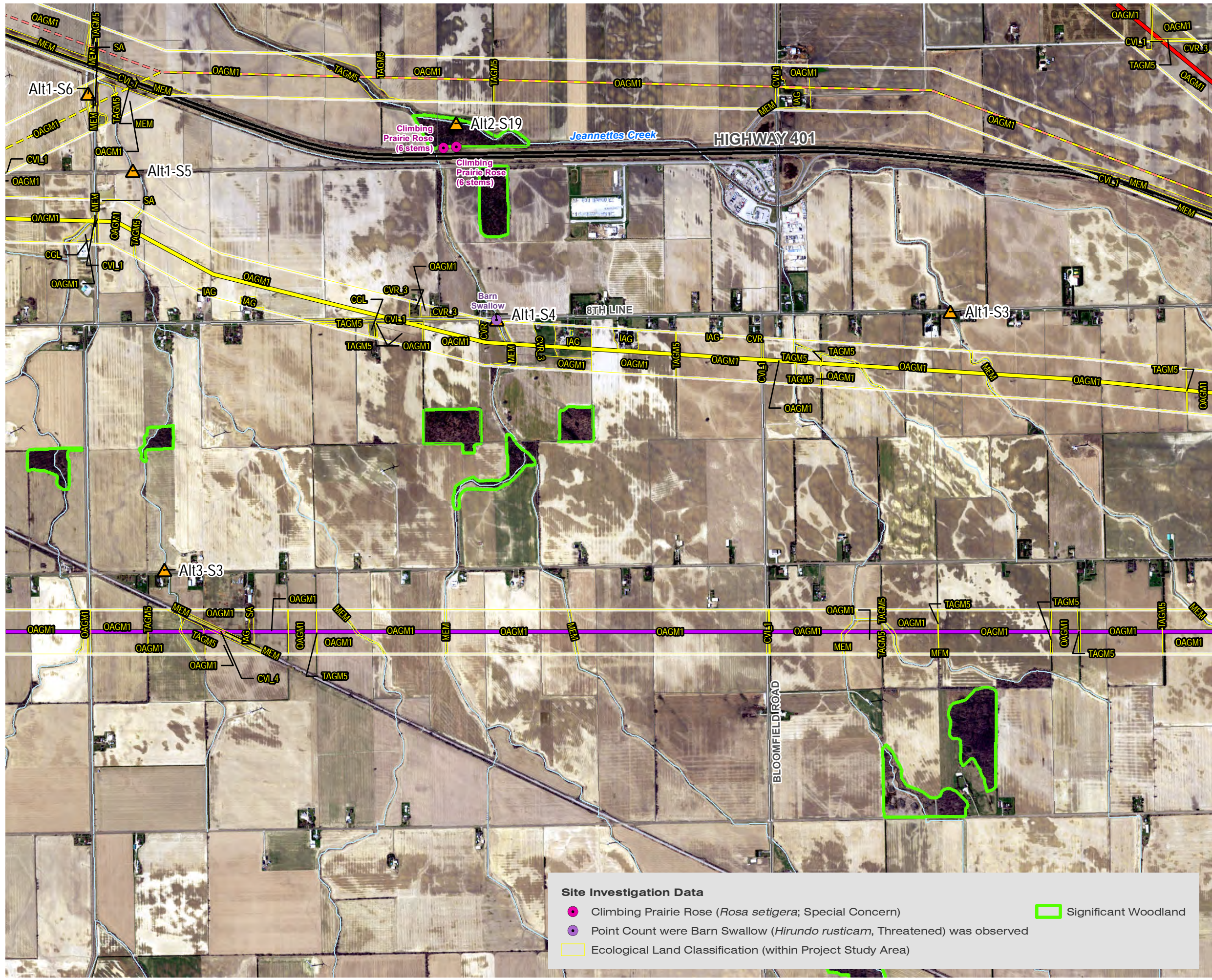
MAP CREATED BY: SFG/LMM
MAP CHECKED BY: -
MAP PROJECTION: NAD 1983 UTM Zone 17N

Site Investigation Data

- Point Count were Barn Swallow (*Hirundo rustica*, Threatened) was observed
- Significant Woodland
- Ecological Land Classification (within Project Study Area)



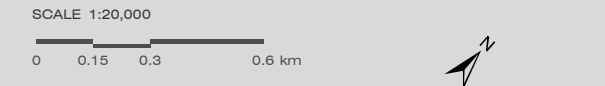
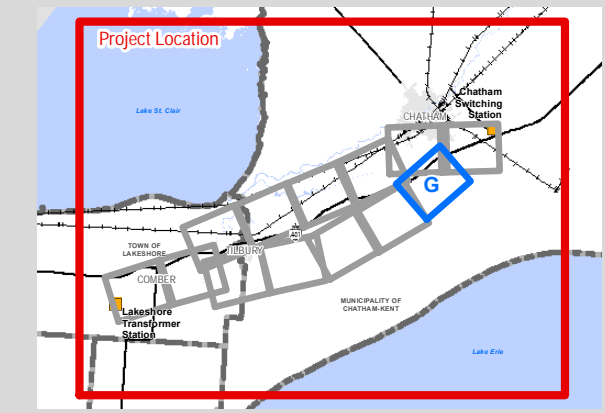
PROJECT: 19-1917
STATUS: INTERNAL DRAFT
DATE: 2021-03-11



HYDRO ONE NETWORKS INC.
CHATHAM TO LAKESHORE LINE
 CLASS ENVIRONMENTAL ASSESSMENT

BIOLOGICAL PHYSICAL INVENTORY RESULTS
 FIGURE 4H

- Alternative 1
- Variation
- Alternative 2
- Variation
- Alternative 3
- Project Study Area (120m)
- ▲ Survey Locations
- Parcel
- Base Data**
- Highway
- Road
- Watercourse

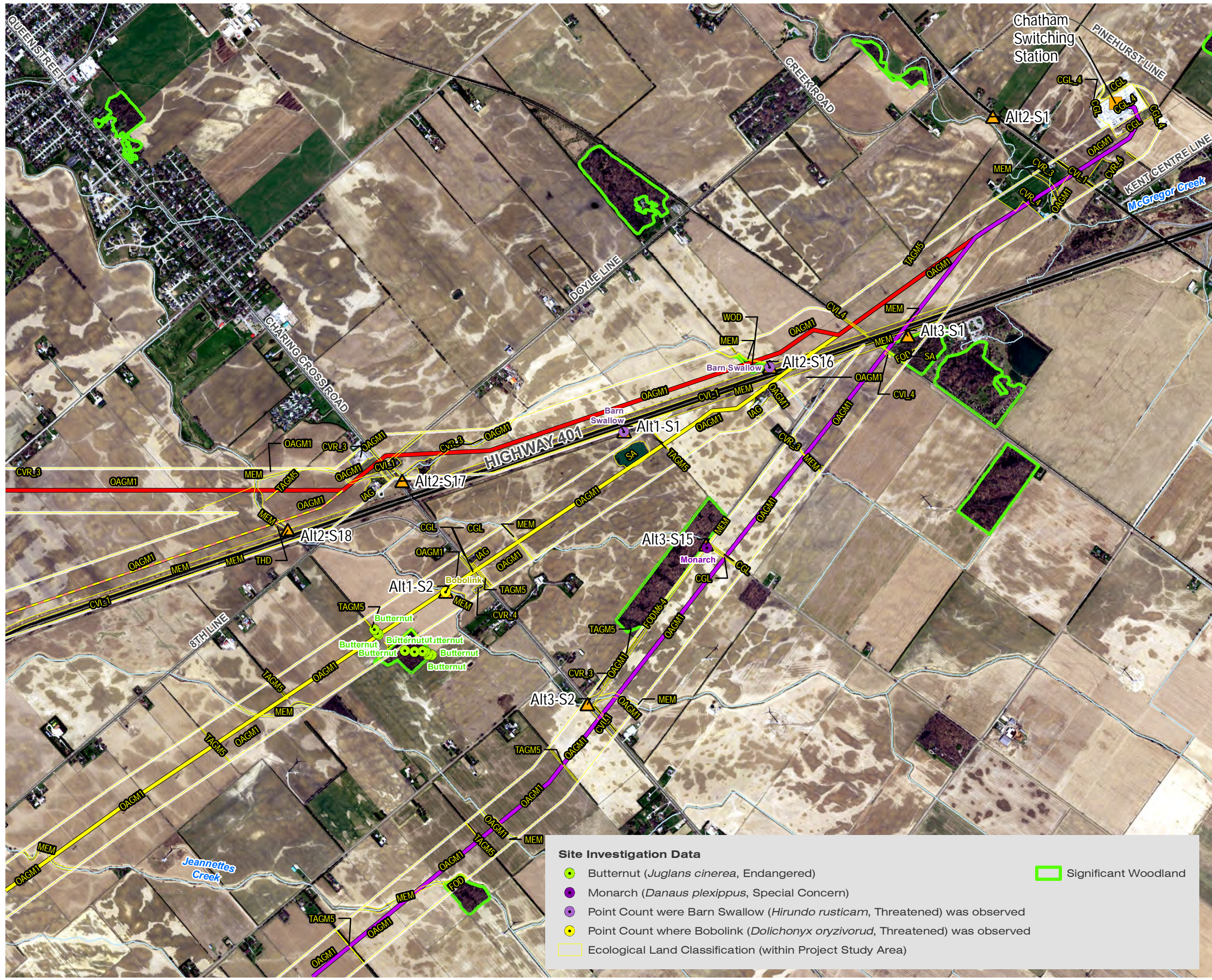


MAP DRAWING INFORMATION:
 Data provided by LIO, MNR, CanVec, Imagery is SWOOP 2015, Project data provided by Hydro One Networks and refined by Dillon Consulting Limited.

MAP CREATED BY: SFG/LMM
 MAP CHECKED BY: -
 MAP PROJECTION: NAD 1983 UTM Zone 17N

Site Investigation Data

- Climbing Prairie Rose (*Rosa setigera*; Special Concern)
- Point Count where Barn Swallow (*Hirundo rustica*, Threatened) was observed
- Ecological Land Classification (within Project Study Area)
- Significant Woodland



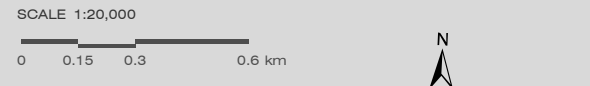
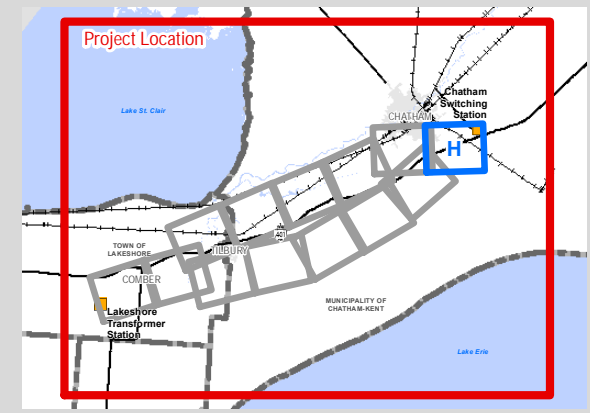
Site Investigation Data

- Butternut (*Juglans cinerea*, Endangered)
- Monarch (*Danaus plexippus*, Special Concern)
- Point Count where Barn Swallow (*Hirundo rustica*, Threatened) was observed
- Point Count where Bobolink (*Dolichonyx oryzivorus*, Threatened) was observed
- Ecological Land Classification (within Project Study Area)
- Significant Woodland

HYDRO ONE NETWORKS INC.
CHATHAM TO LAKESHORE LINE
 CLASS ENVIRONMENTAL ASSESSMENT

BIOLOGICAL PHYSICAL INVENTORY
RESULTS
 FIGURE 41

- Project Transmission Stations
- Alternative 1
- Variation
- Alternative 2
- Variation
- Alternative 3
- Project Study Area (120m)
- Survey Locations
- Parcel
- Base Data**
- Highway
- Road
- Railway
- Watercourse



MAP DRAWING INFORMATION:
 Data provided by LIO, MNR, CanVec, Imagery is SWOOP 2015, Project data provided by Hydro One Networks and refined by Dillon Consulting Limited.

MAP CREATED BY: SFG/LMM
 MAP CHECKED BY: -
 MAP PROJECTION: NAD 1983 UTM Zone 17N



PROJECT: 19-1917
 STATUS: INTERNAL DRAFT
 DATE: 2021-03-11

**HYDRO ONE NETWORKS INC.
CHATHAM TO LAKESHORE LINE
CLASS ENVIRONMENTAL ASSESSMENT**

**BIOLOGICAL PHYSICAL INVENTORY
RESULTS**

FIGURE 4J

- Alternative 1
- - - Variation
- Alternative 2
- - - Variation
- Project Study Area (120m)
- ▲ Survey Locations
- Parcel
- Base Data**
- Highway
- Road
- + Railway
- Watercourse



SCALE 1:22,000

0 0.175 0.35 0.7 km

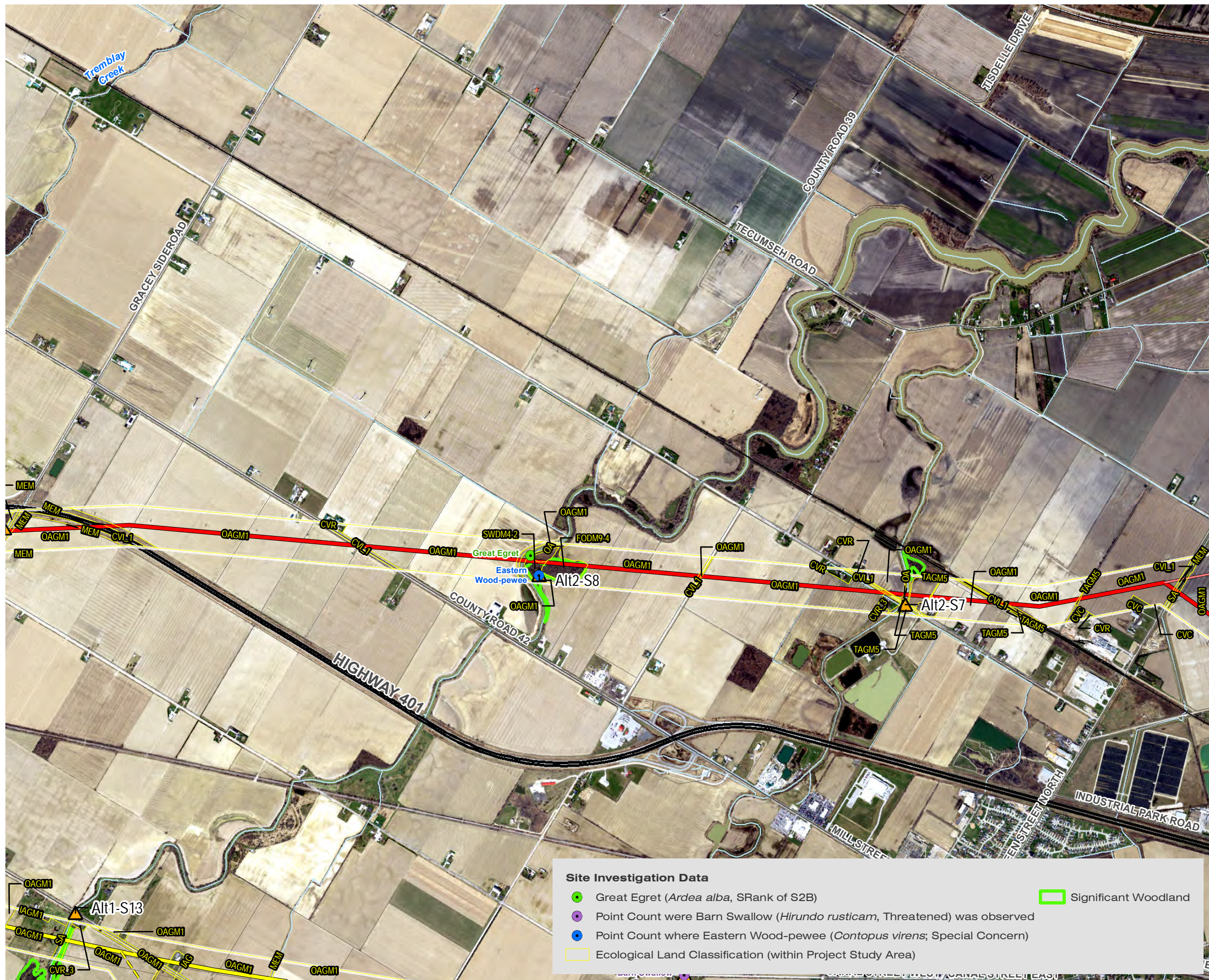


MAP DRAWING INFORMATION:
Data provided by LIO, MNR, CanVec, Imagery is SWOOP 2015, Project data provided by Hydro One Networks and refined by Dillon Consulting Limited.

MAP CREATED BY: SFG/LMM
MAP CHECKED BY: -
MAP PROJECTION: NAD 1983 UTM Zone 17N



PROJECT: 19-1917
STATUS: INTERNAL DRAFT
DATE: 2021-03-11



Site Investigation Data

- Great Egret (*Ardea alba*, SRank of S2B) □ Significant Woodland
- Point Count where Barn Swallow (*Hirundo rustica*, Threatened) was observed
- Point Count where Eastern Wood-pewee (*Contopus virens*; Special Concern)
- Ecological Land Classification (within Project Study Area)

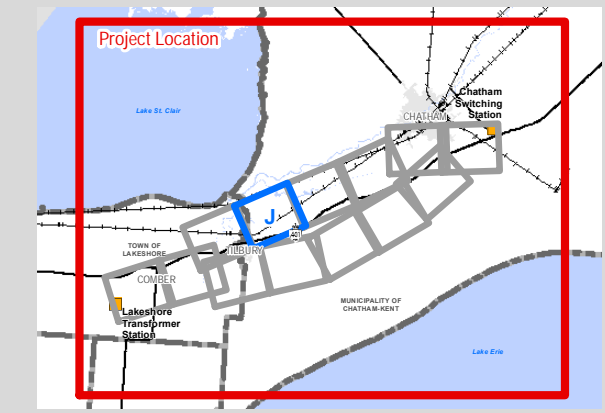


Site Investigation Data
 Ecological Land Classification (within Project Study Area) Significant Woodland

HYDRO ONE NETWORKS INC.
CHATHAM TO LAKESHORE LINE
 CLASS ENVIRONMENTAL ASSESSMENT

BIOLOGICAL PHYSICAL INVENTORY
RESULTS
 FIGURE 4K

- Alternative 2
- - - Variation
- Project Study Area (120m)
- ▲ Survey Locations
- Parcel
- Base Data**
- Highway
- Road
- + Railway
- Watercourse



SCALE 1:20,000
 0 0.15 0.3 0.6 km

MAP DRAWING INFORMATION:
 Data provided by LIO, MNR, CanVec, Imagery is SWOOP 2015, Project data provided by Hydro One Networks and refined by Dillon Consulting Limited.

MAP CREATED BY: SFG/LMM
 MAP CHECKED BY: -
 MAP PROJECTION: NAD 1983 UTM Zone 17N



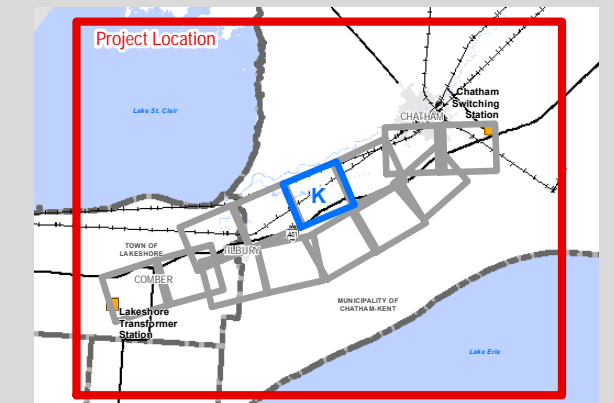
PROJECT: 19-1917
 STATUS: INTERNAL DRAFT
 DATE: 2021-03-11

**HYDRO ONE NETWORKS INC.
CHATHAM TO LAKESHORE LINE
CLASS ENVIRONMENTAL ASSESSMENT**

**BIOLOGICAL PHYSICAL INVENTORY
RESULTS**

FIGURE 4L

- Alternative 2
- - - Variation
- Project Study Area (120m)
- ▲ Survey Locations
- Parcel
- Base Data**
- Highway
- Road
- +— Railway
- Watercourse



SCALE 1:20,000
0 0.15 0.3 0.6 km



MAP DRAWING INFORMATION:
Data provided by LIO, MNR, CanVec, Imagery is SWOOP 2015, Project data provided by Hydro One Networks and refined by Dillon Consulting Limited.

MAP CREATED BY: SFG/LMM
MAP CHECKED BY: -
MAP PROJECTION: NAD 1983 UTM Zone 17N



PROJECT: 19-1917
STATUS: INTERNAL DRAFT
DATE: 2021-03-11



Site Investigation Data

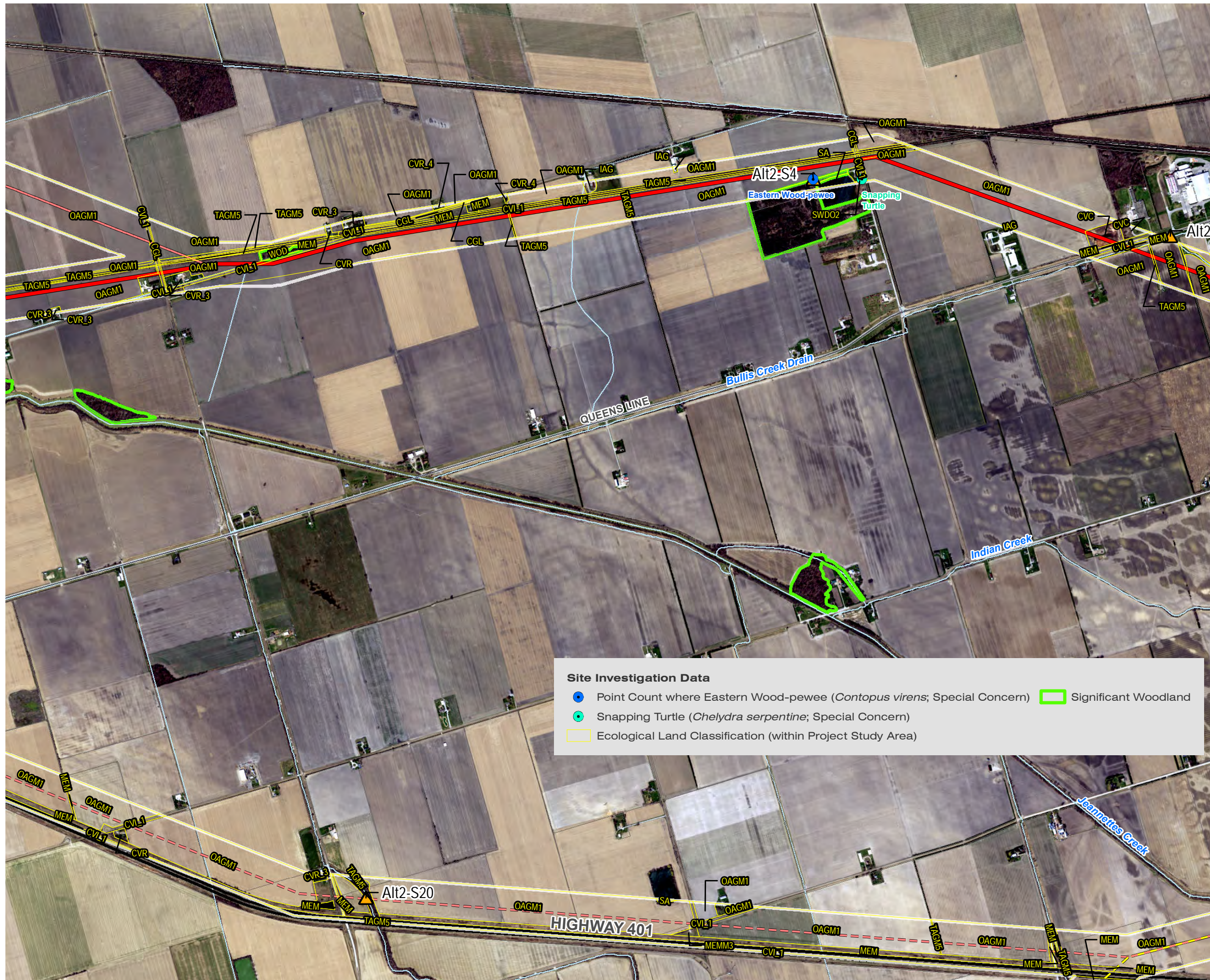
- Ecological Land Classification (within Project Study Area)
- Significant Woodland

HYDRO ONE NETWORKS INC.
CHATHAM TO LAKESHORE LINE
 CLASS ENVIRONMENTAL ASSESSMENT

BIOLOGICAL PHYSICAL INVENTORY
RESULTS

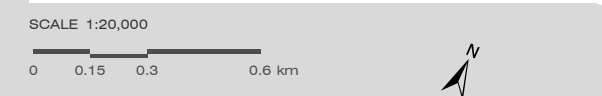
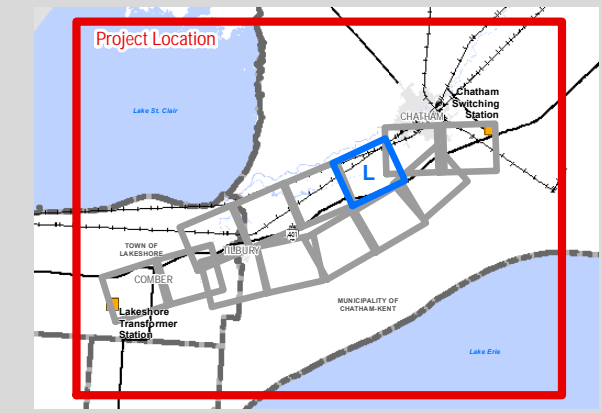
FIGURE 4M

- Alternative 2
- - - Variation
- Project Study Area (120m)
- ▲ Survey Locations
- Parcel
- Base Data**
- Highway
- Road
- Railway
- Watercourse



Site Investigation Data

- Point Count where Eastern Wood-pewee (*Contopus virens*; Special Concern)
- Snapping Turtle (*Chelydra serpentina*; Special Concern)
- Ecological Land Classification (within Project Study Area)
- Significant Woodland

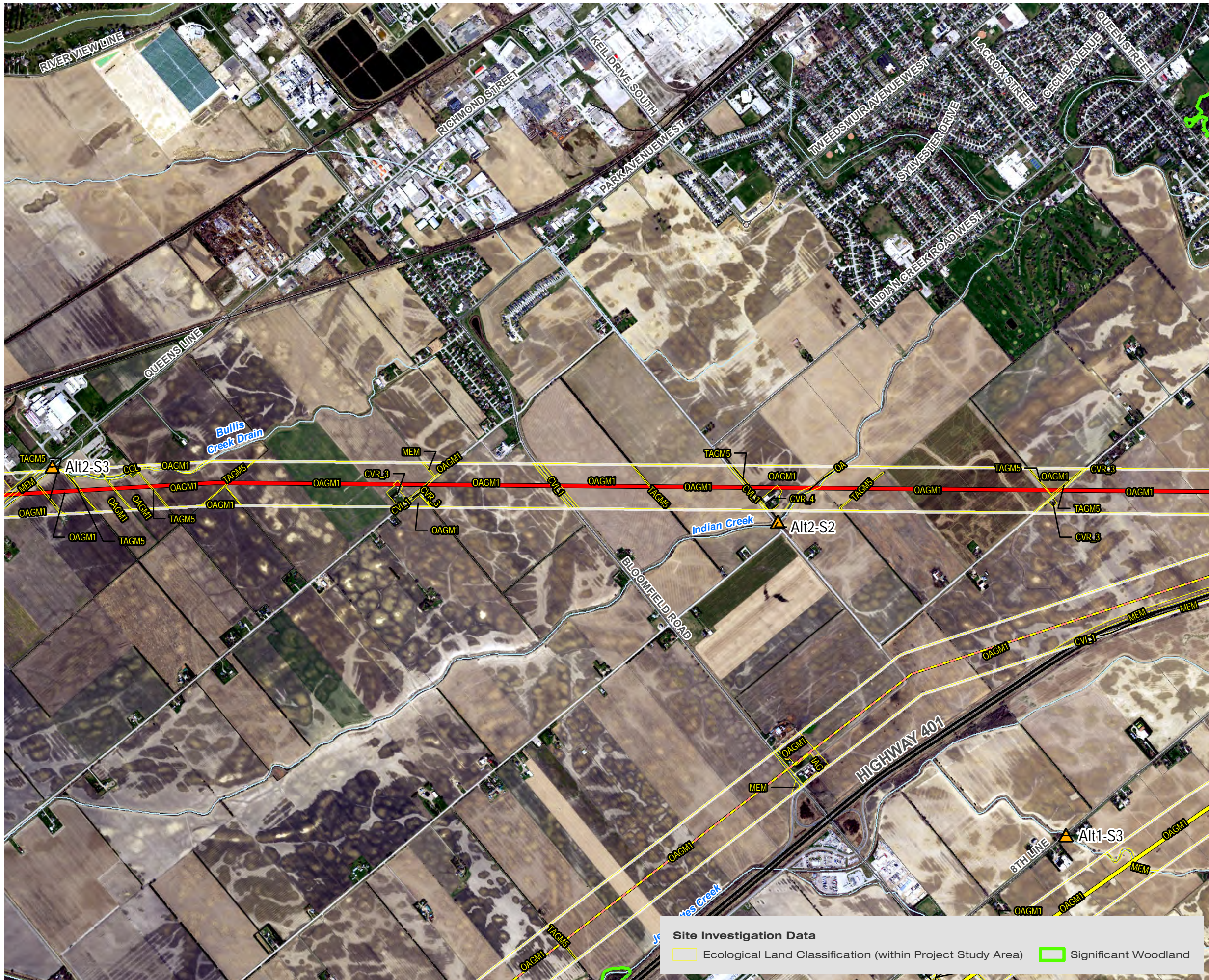


MAP DRAWING INFORMATION:
 Data provided by LIO, MNR, CanVec, Imagery is SWOOP 2015, Project data provided by Hydro One Networks and refined by Dillon Consulting Limited.

MAP CREATED BY: SFG/LMM
 MAP CHECKED BY: -
 MAP PROJECTION: NAD 1983 UTM Zone 17N



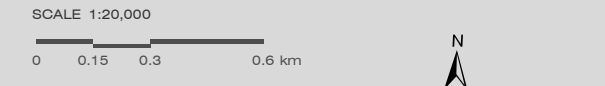
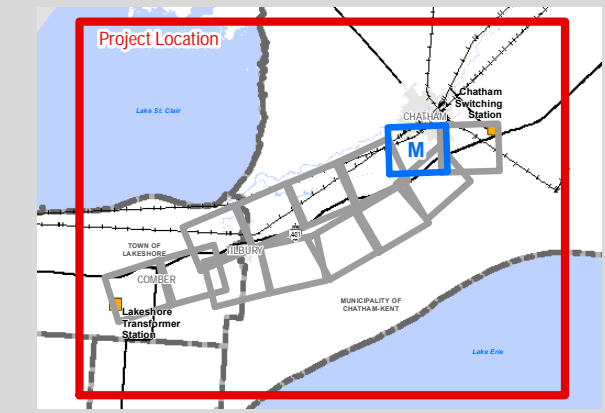
PROJECT: 19-1917
 STATUS: INTERNAL DRAFT
 DATE: 2021-03-11



HYDRO ONE NETWORKS INC.
CHATHAM TO LAKESHORE LINE
 CLASS ENVIRONMENTAL ASSESSMENT

BIOLOGICAL PHYSICAL INVENTORY
RESULTS
 FIGURE 4N

- Alternative 1
- - - Variation
- Alternative 2
- - - Variation
- Project Study Area (120m)
- ▲ Survey Locations
- Parcel
- Base Data**
- Highway
- Road
- + Railway
- Watercourse



MAP DRAWING INFORMATION:
 Data provided by LIO, MNR, CanVec, Imagery is SWOOP 2015, Project data provided by Hydro One Networks and refined by Dillon Consulting Limited.

MAP CREATED BY: SFG/LMM
 MAP CHECKED BY: -
 MAP PROJECTION: NAD 1983 UTM Zone 17N



PROJECT: 19-1917
 STATUS: INTERNAL DRAFT
 DATE: 2021-03-11

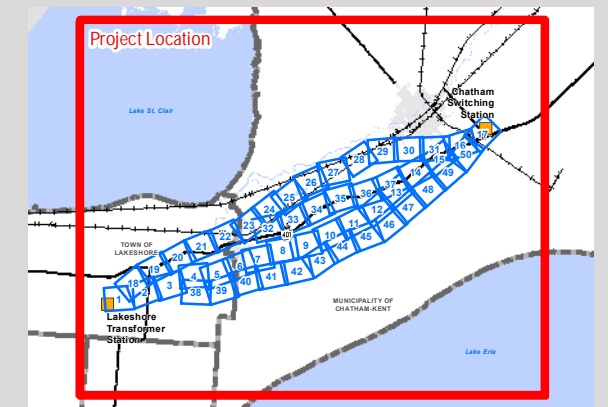
Site Investigation Data

- Ecological Land Classification (within Project Study Area)
- Significant Woodland

HYDRO ONE NETWORKS INC.
CHATHAM TO LAKESHORE LINE
 CLASS ENVIRONMENTAL ASSESSMENT

NATURAL HERITAGE FEATURES
 FIGURE 5A

- Switching Station
 - Alternative 1
 - Variation
 - Alternative 2
 - Variation
 - Alternative 3
 - Project Study Area (120m)
- Base Data**
- Existing Electrical Transmission Line
 - Highway
 - Road
 - Railway
 - Municipality Boundary
 - Watercourse



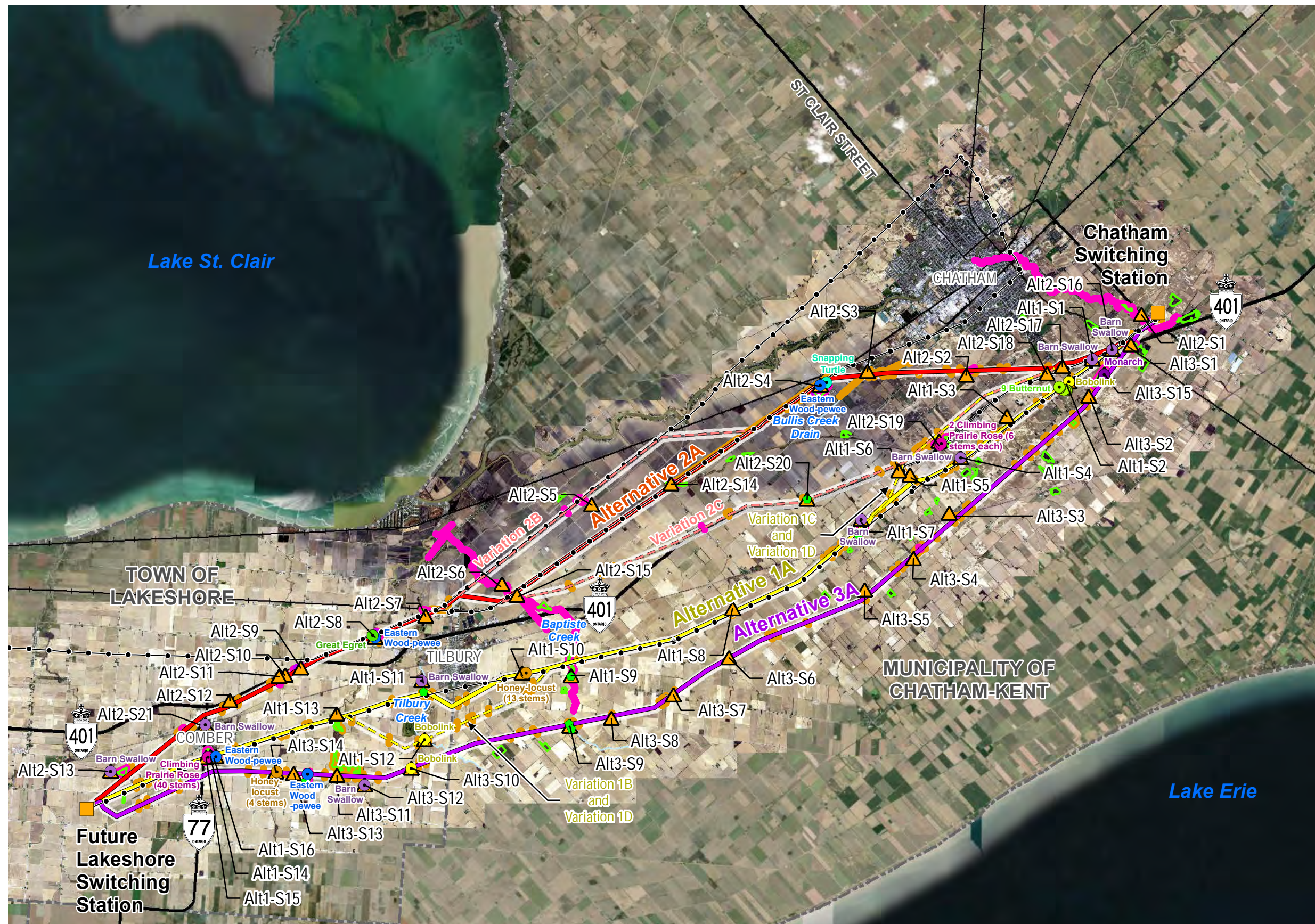
SCALE 1:160,000

0 1 2 4 km



MAP DRAWING INFORMATION:
 DATA PROVIDED BY MNR, IMAGERY SWOOP 2015

MAP CREATED BY: SFG/LMM
 MAP CHECKED BY: -
 MAP PROJECTION: NAD 1983 UTM Zone 17N



Natural Heritage Features

- | | | |
|---|--|------------------------------|
| Butternut (<i>Juglans cinerea</i> , Endangered) | Point Count where Barn Swallow (<i>Hirundo rustica</i> , Threatened) was observed | Snag Tree |
| Climbing Prairie Rose (<i>Rosa setigera</i> ; Special Concern) | Point Count where Bobolink (<i>Dolichonyx oryzivorus</i> , Threatened) was observed | Significant Woodland |
| Great Egret (<i>Ardea alba</i> , SRank of S2B) | Point Count where Eastern Wood-pewee (<i>Contopus virens</i> ; Special Concern) | Wetlands |
| Honey-locust (<i>Gleditsia triacanthos</i> ; SRank of S2) | Snapping Turtle (<i>Chelydra serpentina</i> ; Special Concern) | Significant Wildlife Habitat |
| Monarch (<i>Danaus plexippus</i> , Special Concern) | Survey Locations | Species At Risk Habitat |

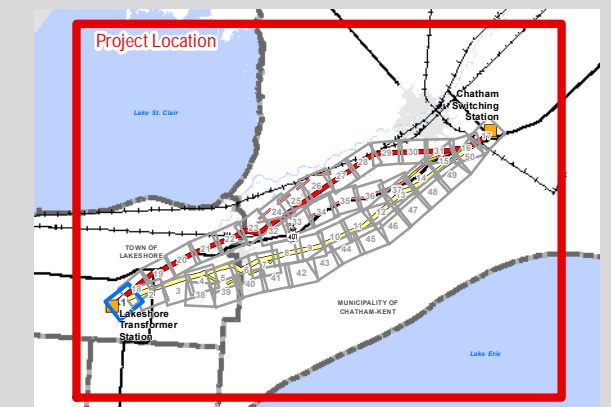


PROJECT: 19-1917
 STATUS: INTERNAL DRAFT
 DATE: 2020-12-15

**HYDRO ONE NETWORKS INC.
CHATHAM TO LAKESHORE LINE
CLASS ENVIRONMENTAL ASSESSMENT**

**NATURAL HERITAGE FEATURES
FIGURE - 5B-1**

- Project Transmission Stations
- Alternative 1
- Variation
- Alternative 2
- Variation
- Alternative 3
- Project Study Area (120m)
- Parcel
- Base Data**
- Road
- Watercourse



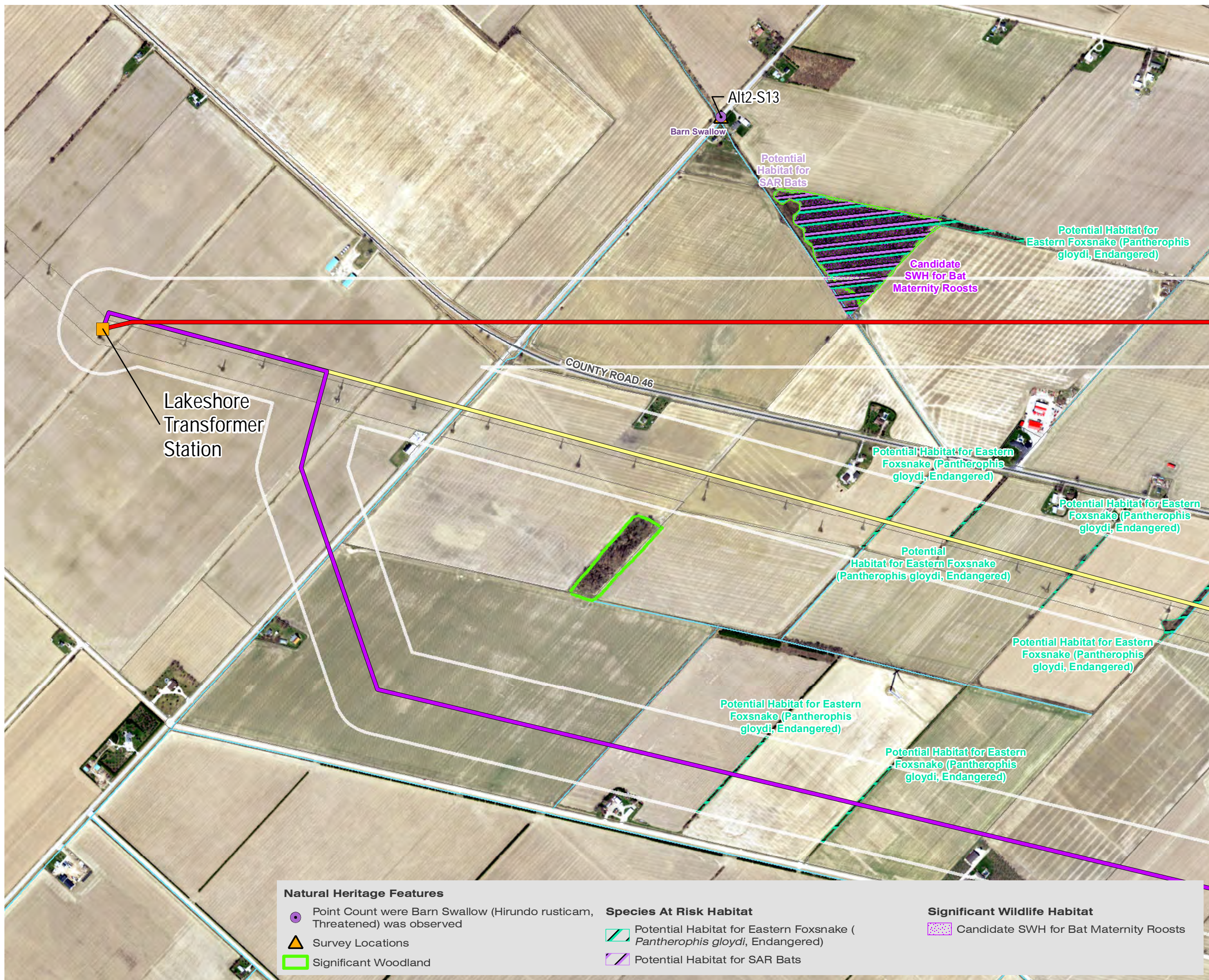
SCALE 1:10,000
0 0.075 0.15 0.3 km

MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR, IMAGERY SWOOP 2015

MAP CREATED BY: SFG/LMM
MAP CHECKED BY: -
MAP PROJECTION: NAD 1983 UTM Zone 17N



PROJECT: 19-1917
STATUS: INTERNAL DRAFT
DATE: 2020-12-16



Natural Heritage Features

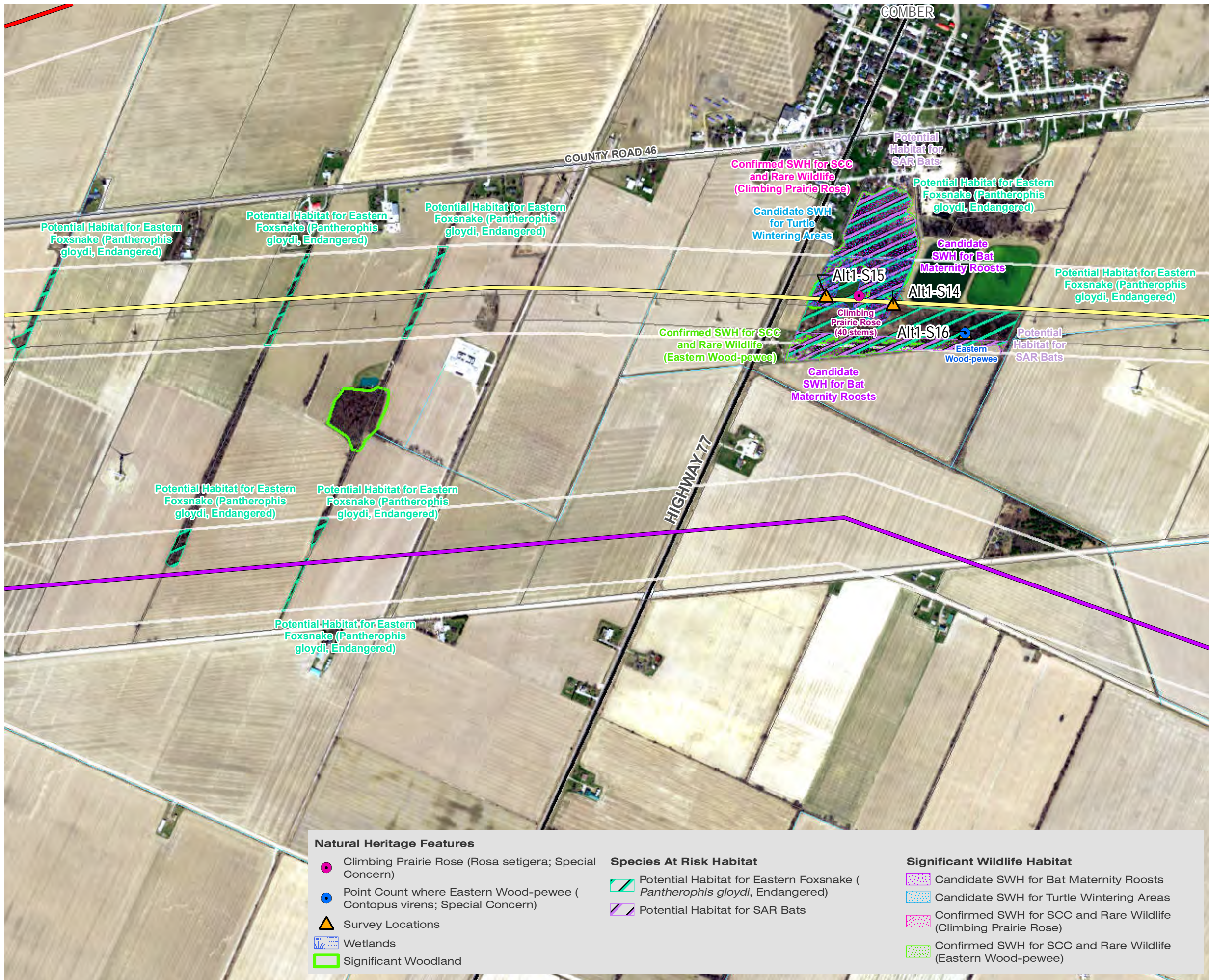
- Point Count where Barn Swallow (*Hirundo rustica*, Threatened) was observed
- ▲ Survey Locations
- Significant Woodland

Species At Risk Habitat

- Potential Habitat for Eastern Foxsnake (*Pantherophis gloydi*, Endangered)
- Potential Habitat for SAR Bats

Significant Wildlife Habitat

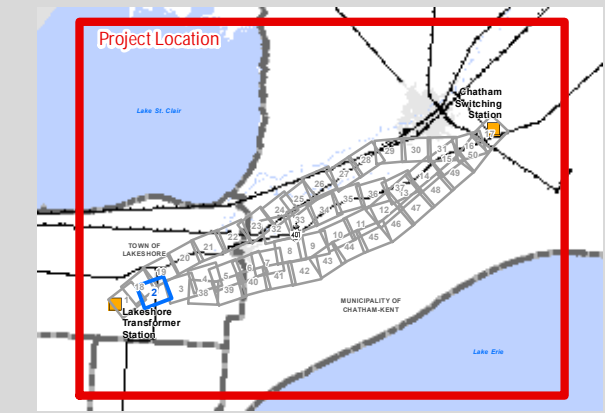
- Candidate SWH for Bat Maternity Roosts



HYDRO ONE NETWORKS INC.
CHATHAM TO LAKESHORE LINE
 CLASS ENVIRONMENTAL ASSESSMENT

NATURAL HERITAGE FEATURES
 FIGURE - 5B-2

- Alternative 1
- - - Variation
- Alternative 2
- - - Variation
- Alternative 3
- Project Study Area (120m)
- Parcel
- Base Data**
- Highway
- Road
- Watercourse



SCALE 1:10,000
 0 0.075 0.15 0.3 km

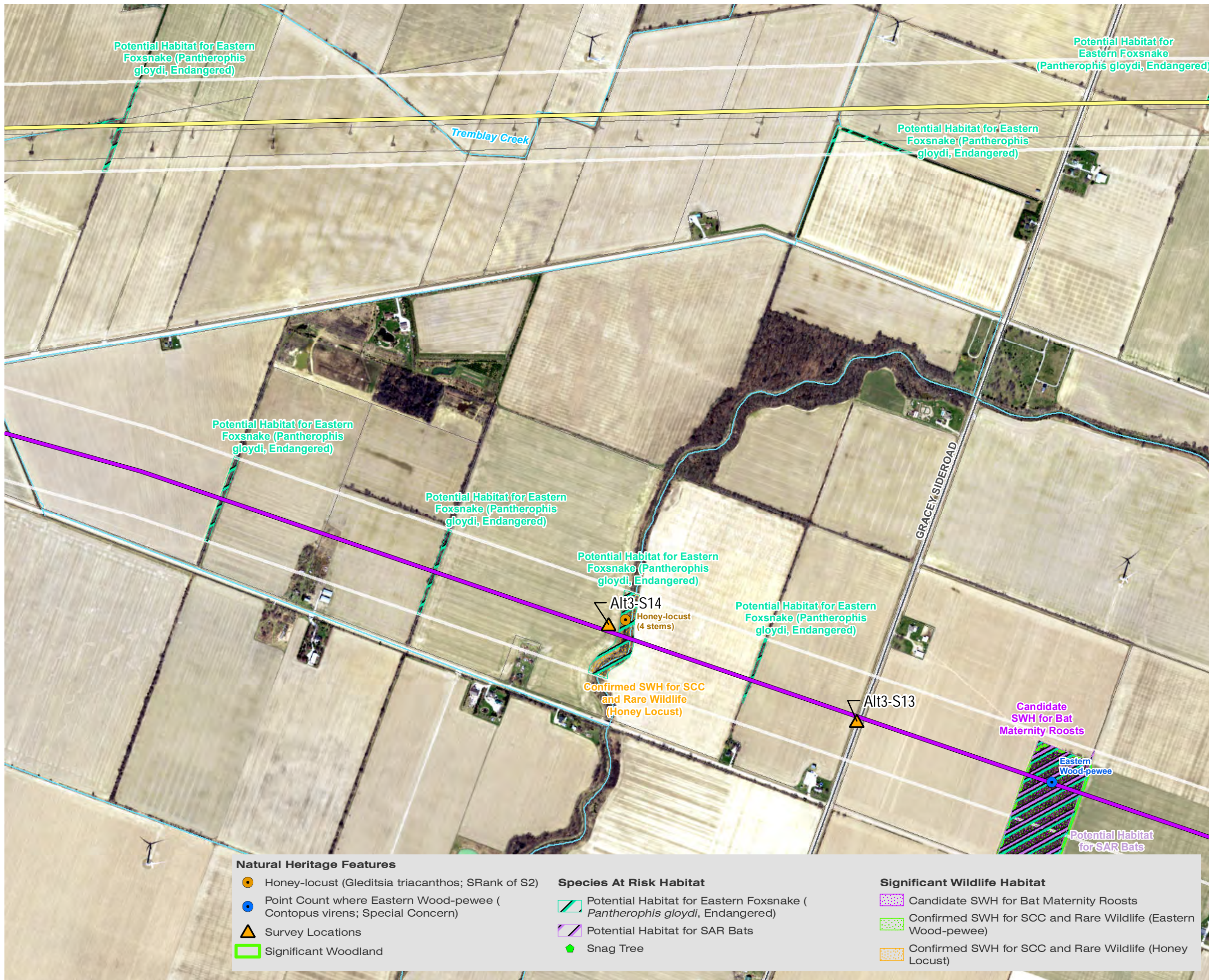
MAP DRAWING INFORMATION:
 DATA PROVIDED BY MNR, IMAGERY SWOOP 2015

MAP CREATED BY: SFG/LMM
 MAP CHECKED BY: -
 MAP PROJECTION: NAD 1983 UTM Zone 17N

Natural Heritage Features		
● Climbing Prairie Rose (Rosa setigera; Special Concern)	▨ Potential Habitat for Eastern Foxsnake (Pantherophis gloydi, Endangered)	▨ Potential Habitat for SAR Bats
● Point Count where Eastern Wood-pewee (Contopus virens; Special Concern)		
▲ Survey Locations		
▨ Wetlands		
▭ Significant Woodland		
Species At Risk Habitat		
Significant Wildlife Habitat		
	▨ Candidate SWH for Bat Maternity Roosts	▨ Candidate SWH for Turtle Wintering Areas
	▨ Confirmed SWH for SCC and Rare Wildlife (Climbing Prairie Rose)	▨ Confirmed SWH for SCC and Rare Wildlife (Eastern Wood-pewee)



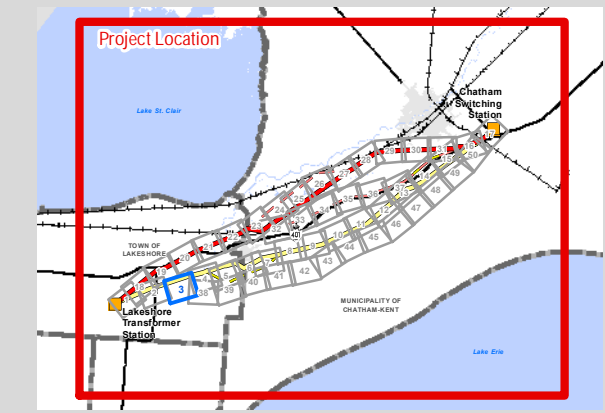
PROJECT: 19-1917
 STATUS: INTERNAL DRAFT
 DATE: 2020-12-16



**HYDRO ONE NETWORKS INC.
CHATHAM TO LAKESHORE LINE
CLASS ENVIRONMENTAL ASSESSMENT**

**NATURAL HERITAGE FEATURES
FIGURE - 5B-3**

- Alternative 1
- - - Variation
- Alternative 3
- Project Study Area (120m)
- Parcel
- Base Data**
- Road
- Watercourse



SCALE 1:10,000
0 0.075 0.15 0.3 km

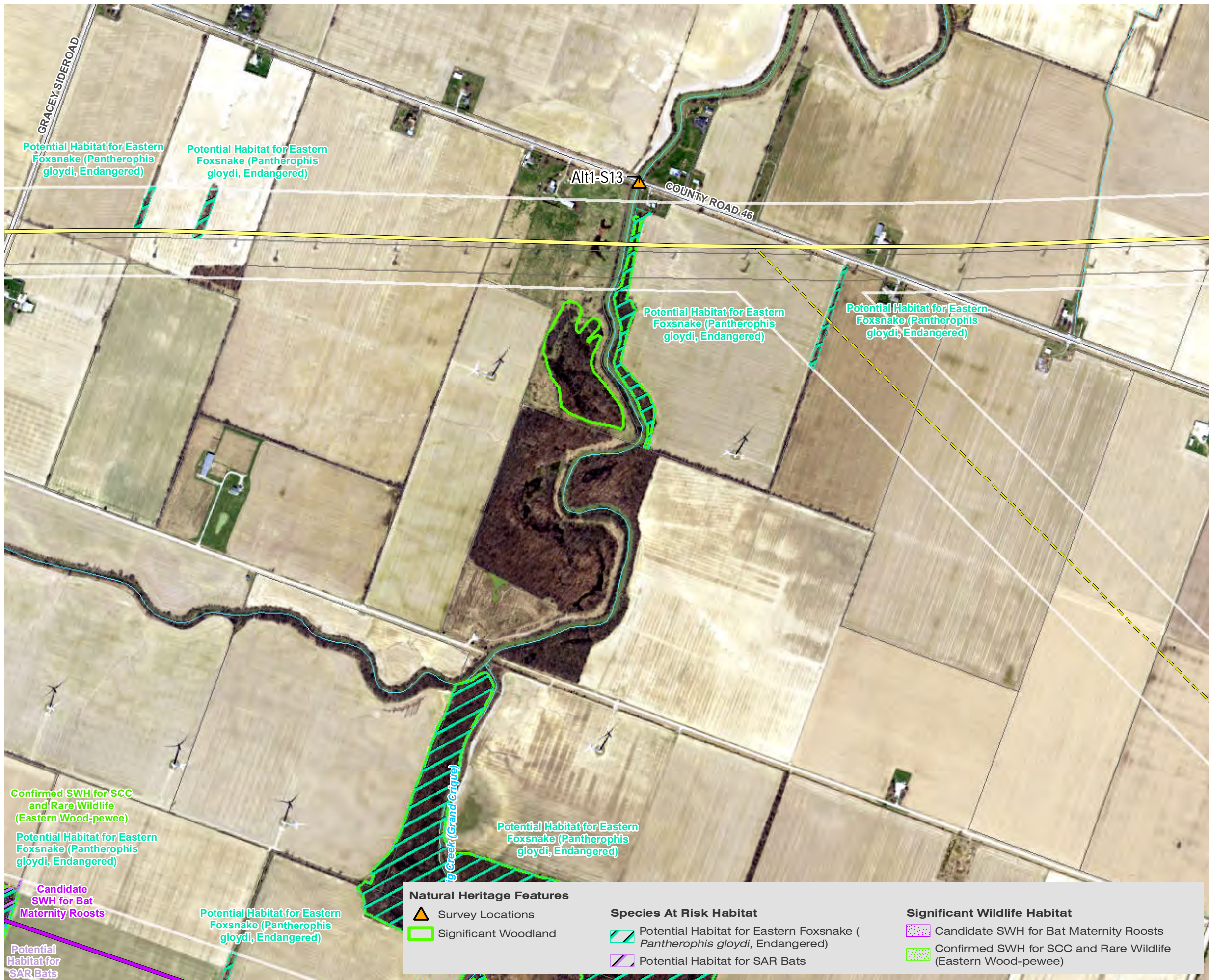
MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR, IMAGERY SWOOP 2015

MAP CREATED BY: SFG/LMM
MAP CHECKED BY: -
MAP PROJECTION: NAD 1983 UTM Zone 17N

Natural Heritage Features		Species At Risk Habitat	Significant Wildlife Habitat
●	Honey-locust (<i>Gleditsia triacanthos</i> ; SRank of S2)		
●	Point Count where Eastern Wood-pewee (<i>Contopus virens</i> ; Special Concern)		
▲	Survey Locations	◆	
	Significant Woodland		



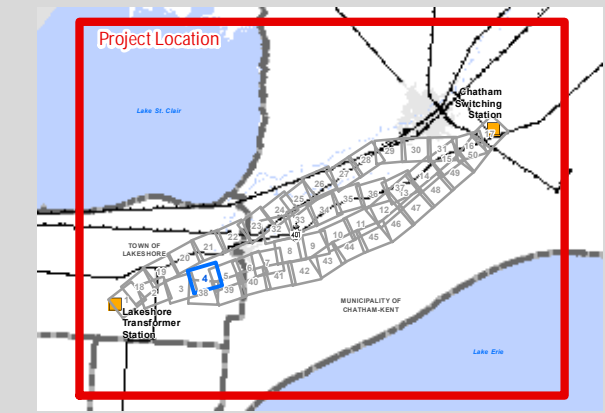
PROJECT: 19-1917
STATUS: INTERNAL DRAFT
DATE: 2020-12-16



**HYDRO ONE NETWORKS INC.
CHATHAM TO LAKESHORE LINE
CLASS ENVIRONMENTAL ASSESSMENT**

**NATURAL HERITAGE FEATURES
FIGURE - 5B-4**

- Alternative 1
- Variation
- Alternative 3
- Project Study Area (120m)
- Parcel
- Base Data**
- Road
- Watercourse



SCALE 1:10,000
0 0.075 0.15 0.3 km

MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR, IMAGERY SWOOP 2015

MAP CREATED BY: SFG/LMM
MAP CHECKED BY: -
MAP PROJECTION: NAD 1983 UTM Zone 17N

Natural Heritage Features		
▲ Survey Locations	 Significant Woodland	
Species At Risk Habitat		
 Potential Habitat for Eastern Foxsnake (<i>Pantherophis gloydi</i> , Endangered)	 Potential Habitat for SAR Bats	
Significant Wildlife Habitat		
 Candidate SWH for Bat Maternity Roosts	 Confirmed SWH for SCC and Rare Wildlife (Eastern Wood-pewee)	



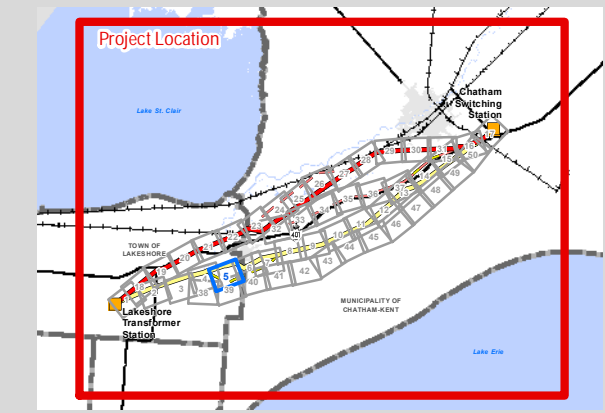
PROJECT: 19-1917
STATUS: INTERNAL DRAFT
DATE: 2020-12-16



**HYDRO ONE NETWORKS INC.
CHATHAM TO LAKESHORE LINE
CLASS ENVIRONMENTAL ASSESSMENT**

**NATURAL HERITAGE FEATURES
FIGURE - 5B-5**

- Alternative 1
- - - Variation
- Project Study Area (120m)
- Parcel
- Base Data**
- Road
- Watercourse



SCALE 1:10,000
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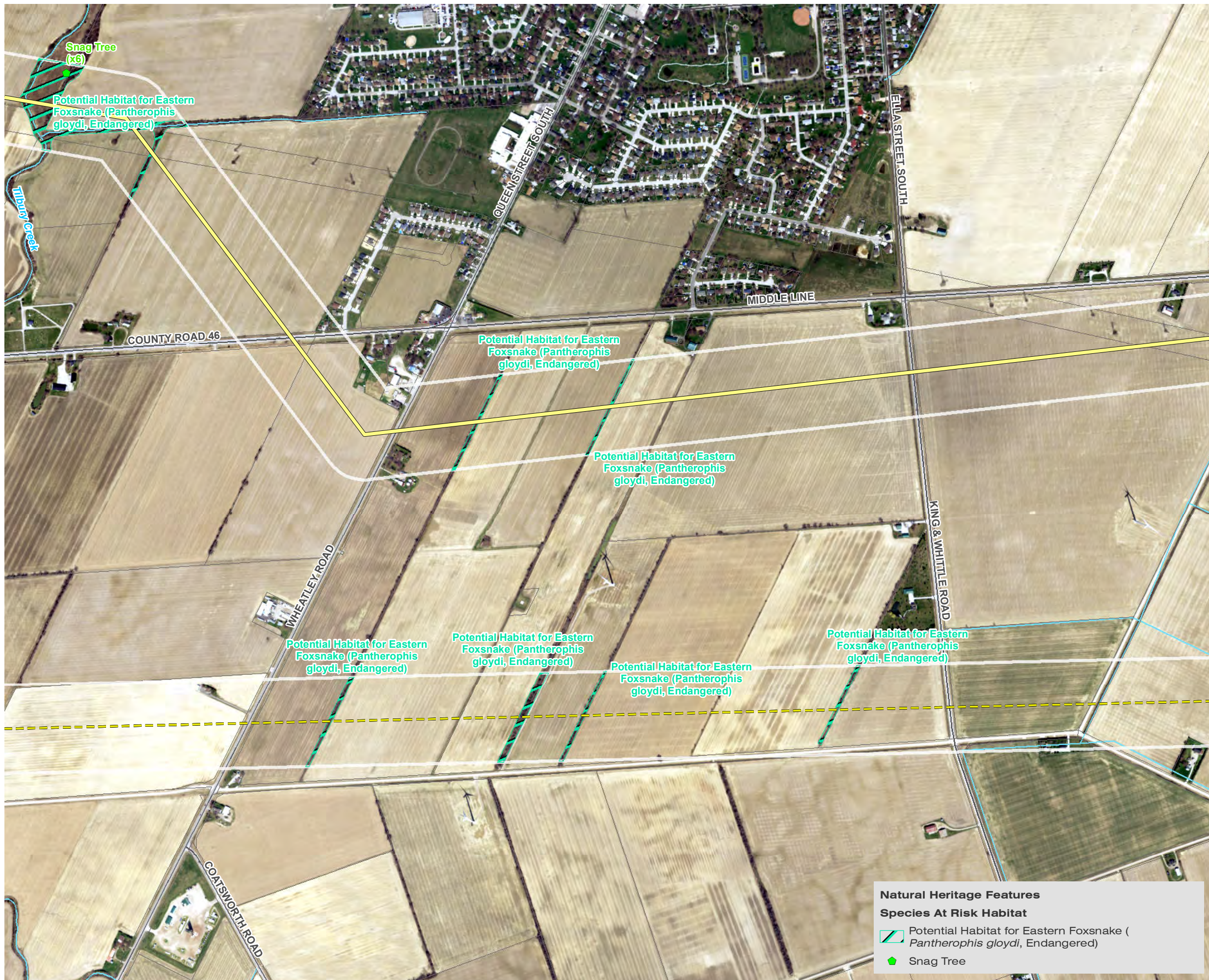
MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR, IMAGERY SWOOP 2015

MAP CREATED BY: SFG/LMM
MAP CHECKED BY: -
MAP PROJECTION: NAD 1983 UTM Zone 17N

Natural Heritage Features		Species At Risk Habitat	
● Point Count where Bobolink (Dolichonyx oryzivorus, Threatened) was observed	▨ Potential Habitat for Eastern Foxsnake (Pantherophis gloydi, Endangered)	◆ Snag Tree	
▲ Survey Locations			



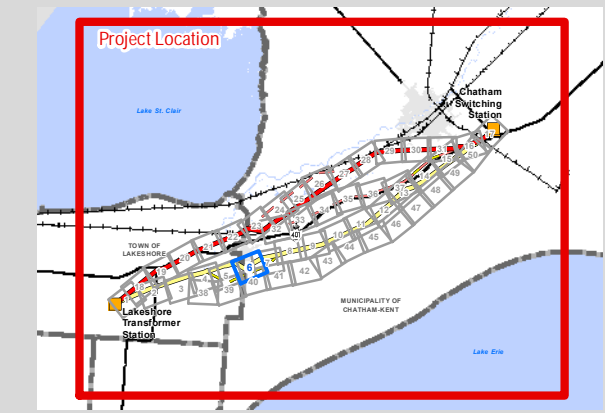
PROJECT: 19-1917
STATUS: INTERNAL DRAFT
DATE: 2020-12-16



**HYDRO ONE NETWORKS INC.
CHATHAM TO LAKESHORE LINE
CLASS ENVIRONMENTAL ASSESSMENT**

**NATURAL HERITAGE FEATURES
FIGURE - 5B-6**

- Alternative 1
- - - Variation
- Project Study Area (120m)
- Parcel
- Base Data**
- Road
- Watercourse



SCALE 1:10,000
0 0.075 0.15 0.3 km

MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR, IMAGERY SWOOP 2015

MAP CREATED BY: SFG/LMM
MAP CHECKED BY: -
MAP PROJECTION: NAD 1983 UTM Zone 17N

Natural Heritage Features
Species At Risk Habitat

- ▨ Potential Habitat for Eastern Foxsnake (*Pantherophis gloydi*, Endangered)
- ◆ Snag Tree



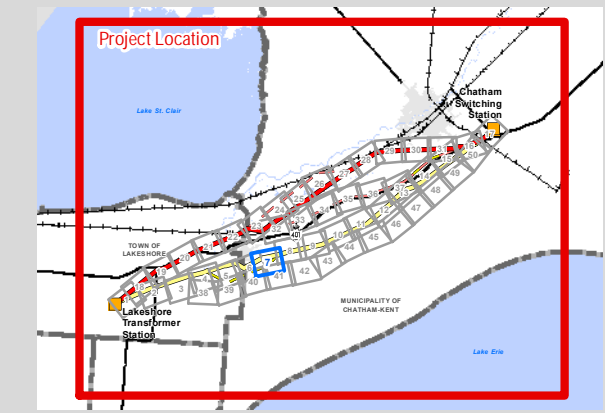
PROJECT: 19-1917
STATUS: INTERNAL DRAFT
DATE: 2020-12-16



**HYDRO ONE NETWORKS INC.
CHATHAM TO LAKESHORE LINE
CLASS ENVIRONMENTAL ASSESSMENT**

**NATURAL HERITAGE FEATURES
FIGURE - 5B-7**

- Alternative 1
- - - Variation
- Project Study Area (120m)
- Parcel
- Base Data**
- Road
- Watercourse



SCALE 1:10,000
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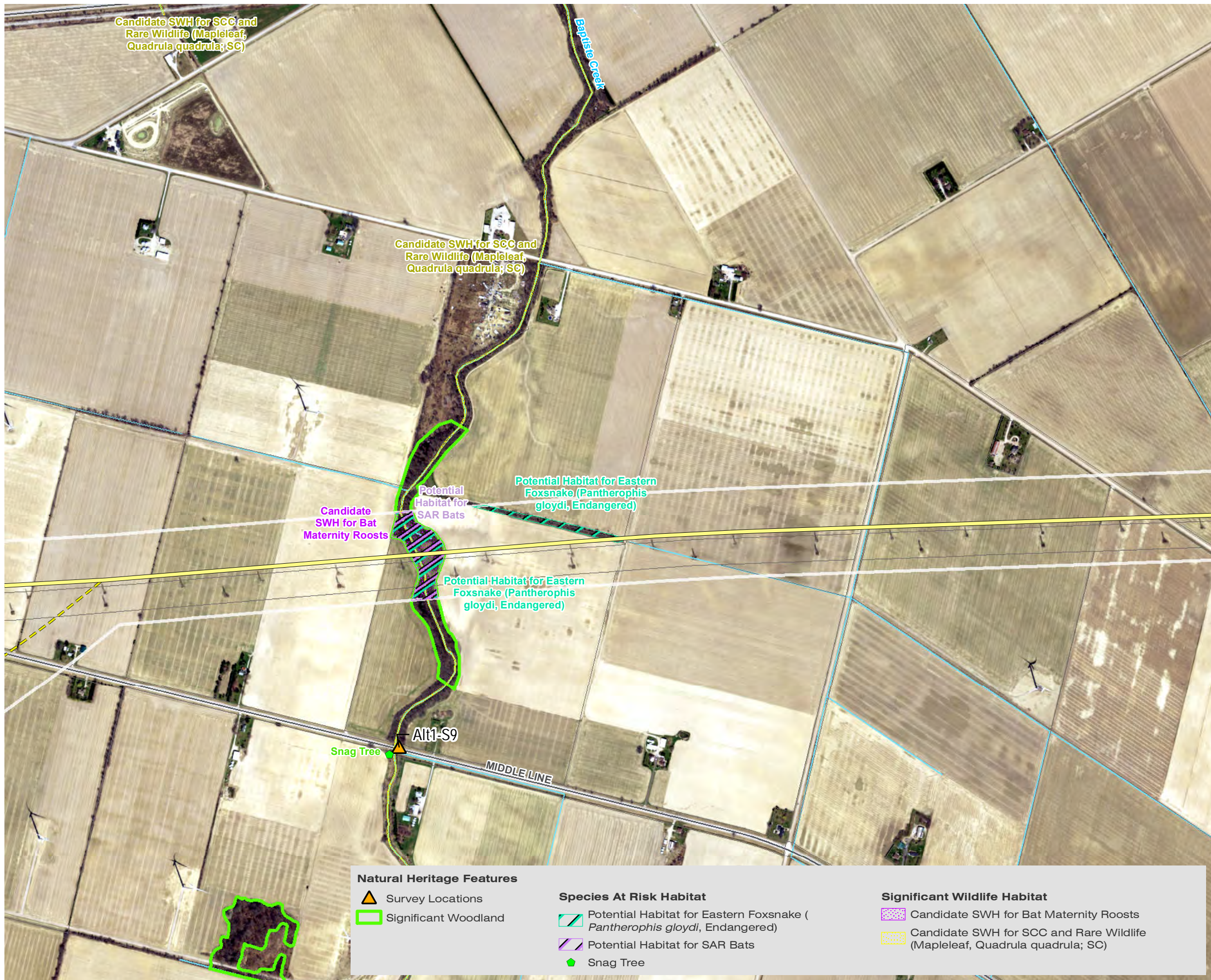
MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR, IMAGERY SWOOP 2015

MAP CREATED BY: SFG/LMM
MAP CHECKED BY: -
MAP PROJECTION: NAD 1983 UTM Zone 17N

Natural Heritage Features			Species At Risk Habitat			Significant Wildlife Habitat		
●	Honey-locust (<i>Gleditsia triacanthos</i> ; SRank of S2)	▨	Potential Habitat for Eastern Foxsnake (<i>Pantherophis gloydi</i> , Endangered)		Confirmed SWH for SCC and Rare Wildlife (Honey Locust)		Significant Woodland	
▲	Survey Locations							



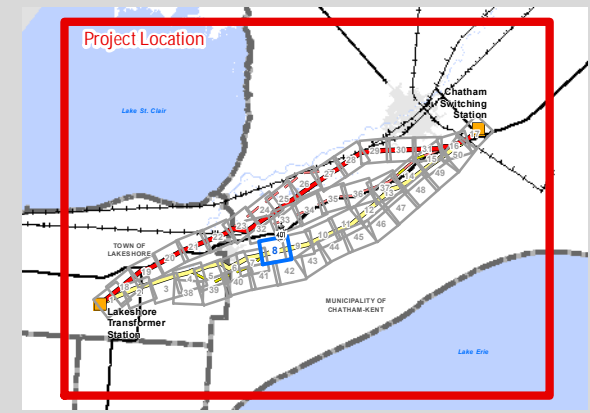
PROJECT: 19-1917
STATUS: INTERNAL DRAFT
DATE: 2020-12-16



**HYDRO ONE NETWORKS INC.
CHATHAM TO LAKESHORE LINE
CLASS ENVIRONMENTAL ASSESSMENT**

NATURAL HERITAGE FEATURES
FIGURE - 5B-8

- Alternative 1
- - - Variation
- Project Study Area (120m)
- Parcel
- Base Data**
- Road
- Watercourse



SCALE 1:10,000
0 0.075 0.15 0.3 km

MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR, IMAGERY SWOOP 2015

MAP CREATED BY: SFG/LMM
MAP CHECKED BY: -
MAP PROJECTION: NAD 1983 UTM Zone 17N

Natural Heritage Features		
▲ Survey Locations		
 Significant Woodland		
Species At Risk Habitat		
 Potential Habitat for Eastern Foxsnake (<i>Pantherophis gloydi</i> , Endangered)		
 Potential Habitat for SAR Bats		
◆ Snag Tree		
Significant Wildlife Habitat		
 Candidate SWH for Bat Maternity Roosts		
 Candidate SWH for SCC and Rare Wildlife (Mapleleaf, <i>Quadrala quadrula</i> ; SC)		



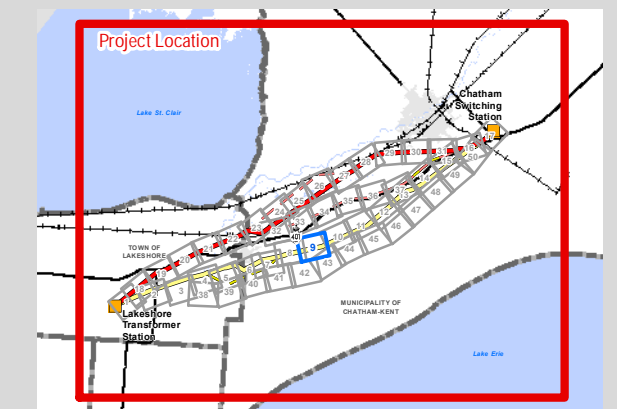
PROJECT: 19-1917
STATUS: INTERNAL DRAFT
DATE: 2020-12-16



**HYDRO ONE NETWORKS INC.
CHATHAM TO LAKESHORE LINE
CLASS ENVIRONMENTAL ASSESSMENT**

**NATURAL HERITAGE FEATURES
FIGURE - 5B-9**

- Alternative 1
- Variation
- Project Study Area (120m)
- Parcel
- Base Data**
- Watercourse



SCALE 1:10,000
0 0.075 0.15 0.3 km

MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR, IMAGERY SWOOP 2015

MAP CREATED BY: SFG/LMM
MAP CHECKED BY: -
MAP PROJECTION: NAD 1983 UTM Zone 17N



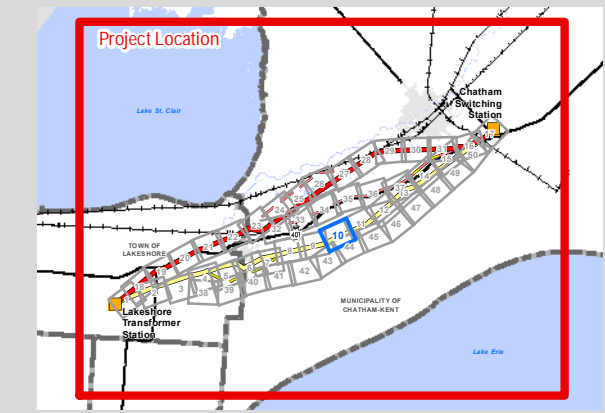
PROJECT: 19-1917
STATUS: INTERNAL DRAFT
DATE: 2020-12-16



**HYDRO ONE NETWORKS INC.
CHATHAM TO LAKESHORE LINE
CLASS ENVIRONMENTAL ASSESSMENT**

**NATURAL HERITAGE FEATURES
FIGURE - 5B-10**

- Alternative 1
- Variation
- Project Study Area (120m)
- Parcel
- Base Data**
- Road
- Watercourse



SCALE 1:10,000
0 0.075 0.15 0.3 km

MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR, IMAGERY SWOOP 2015

MAP CREATED BY: SFG/LMM
MAP CHECKED BY: -
MAP PROJECTION: NAD 1983 UTM Zone 17N

Natural Heritage Features		Species At Risk Habitat	
Survey Locations		Potential Habitat for Eastern Foxsnake (Pantherophis gloydi, Endangered)	



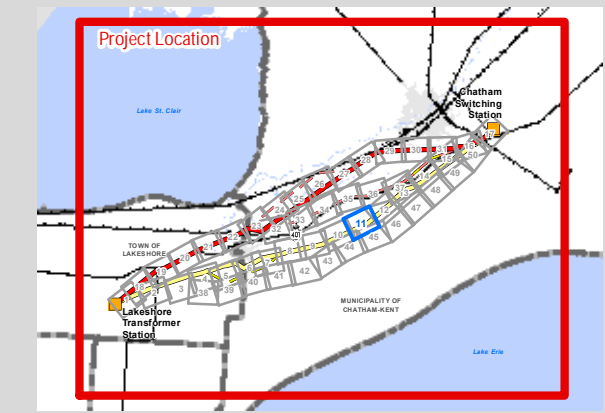
PROJECT: 19-1917
STATUS: INTERNAL DRAFT
DATE: 2020-12-16



**HYDRO ONE NETWORKS INC.
CHATHAM TO LAKESHORE LINE
CLASS ENVIRONMENTAL ASSESSMENT**

**NATURAL HERITAGE FEATURES
FIGURE - 5B-11**

- Alternative 1
- Variation
- Project Study Area (120m)
- Parcel
- Base Data**
- Road
- Watercourse



SCALE 1:10,000
0 0.075 0.15 0.3 km

MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR, IMAGERY SWOOP 2015

MAP CREATED BY: SFG/LMM
MAP CHECKED BY: -
MAP PROJECTION: NAD 1983 UTM Zone 17N







Natural Heritage Features
 Significant Woodland

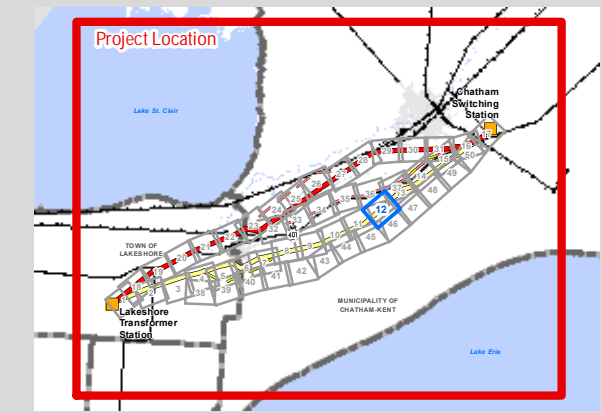
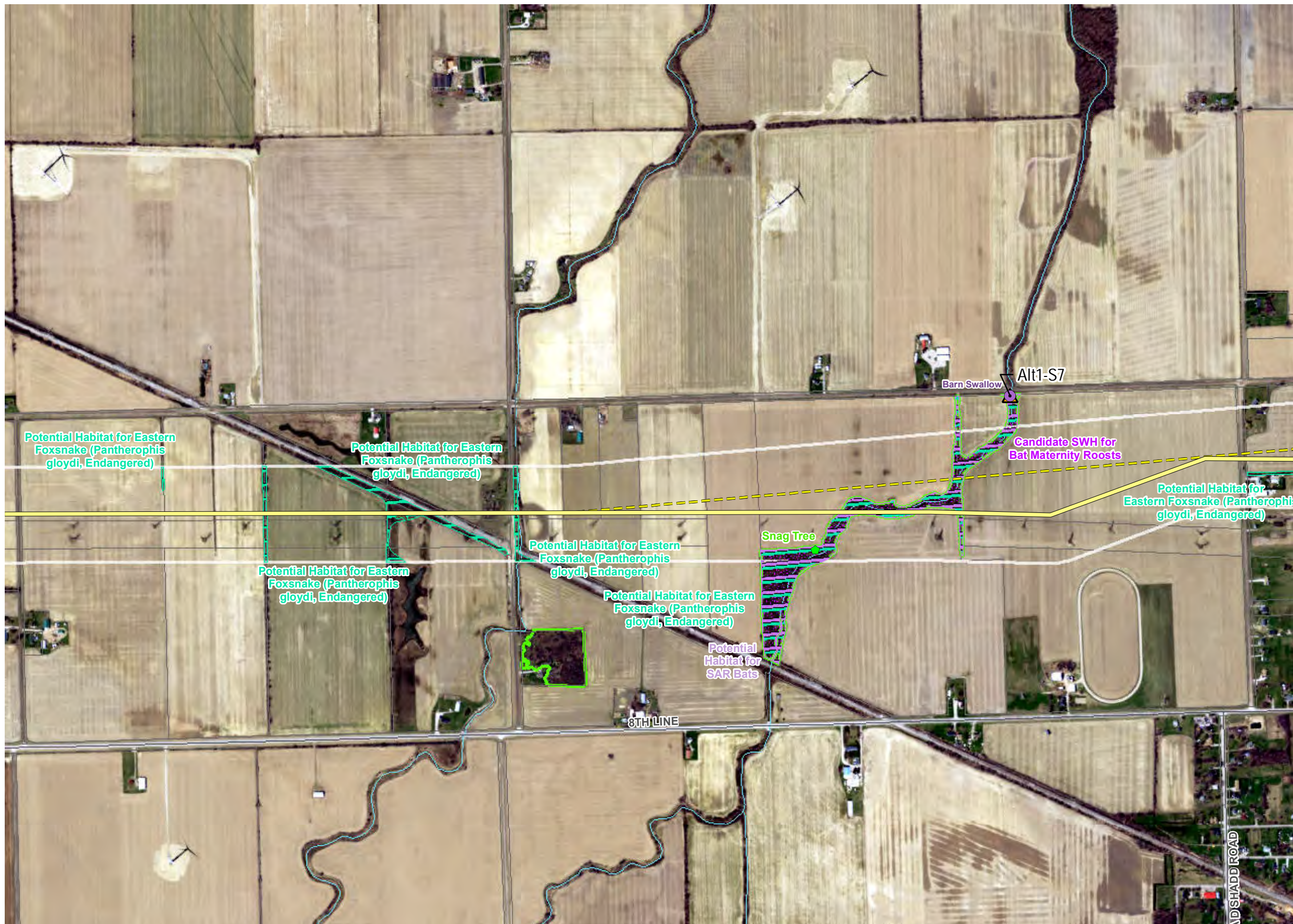


PROJECT: 19-1917
STATUS: INTERNAL DRAFT
DATE: 2020-12-16

**HYDRO ONE NETWORKS INC.
CHATHAM TO LAKESHORE LINE
CLASS ENVIRONMENTAL ASSESSMENT**

**NATURAL HERITAGE FEATURES
FIGURE - 5B-12**

-  Alternative 1
-  Variation
-  Project Study Area (120m)
-  Parcel
- Base Data**
-  Road
-  Watercourse



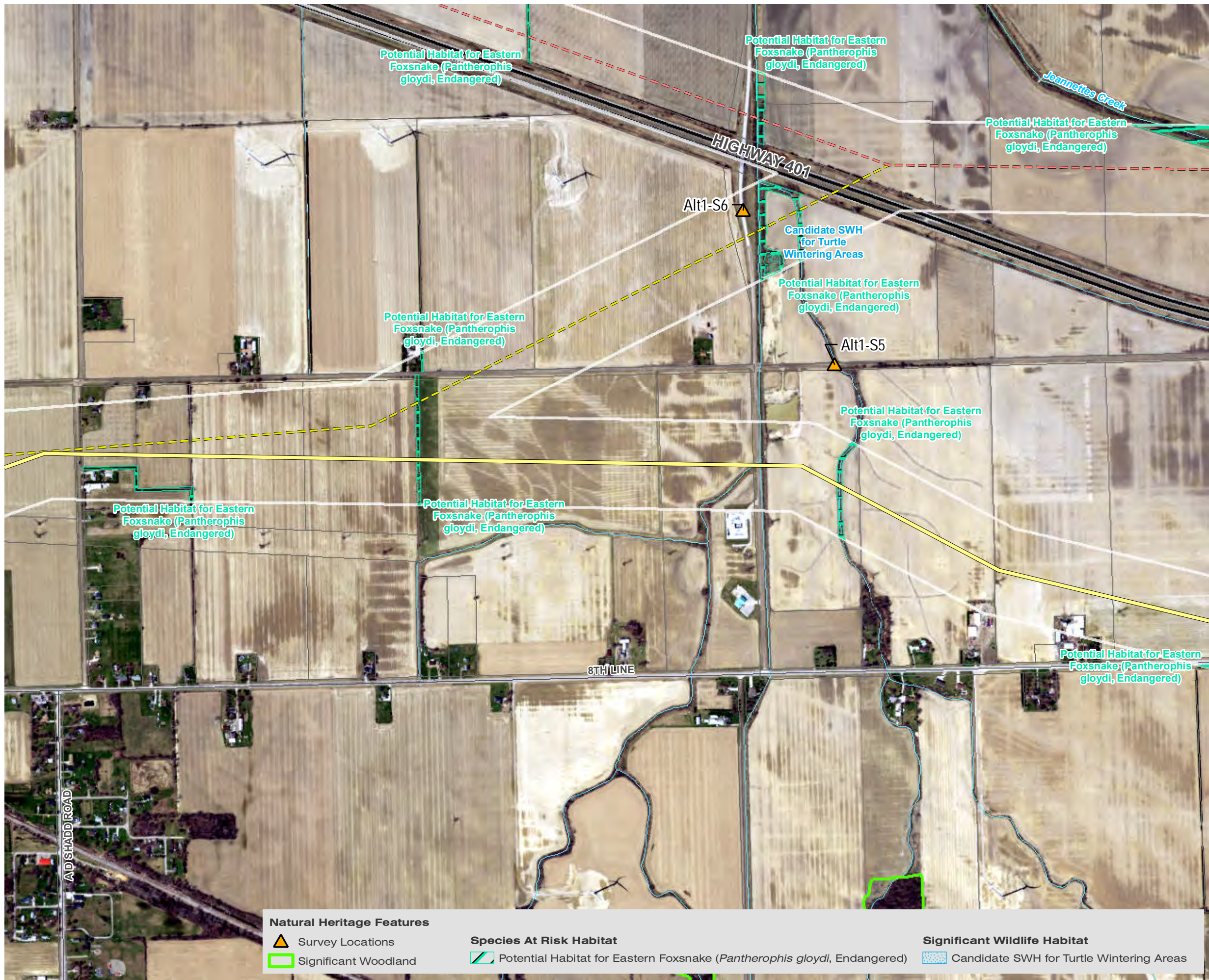
SCALE 1:10,000
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MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR, IMAGERY SWOOP 2015
MAP CREATED BY: SFG/LMM
MAP CHECKED BY: -
MAP PROJECTION: NAD 1983 UTM Zone 17N

Natural Heritage Features			Species At Risk Habitat			Significant Wildlife Habitat		
	Point Count where Barn Swallow (<i>Hirundo rustica</i> , Threatened) was observed			Potential Habitat for Eastern Foxsnake (<i>Pantherophis gloydi</i> , Endangered)			Candidate SWH for Bat Maternity Roosts	
	Survey Locations			Potential Habitat for SAR Bats				
	Significant Woodland			Snag Tree				



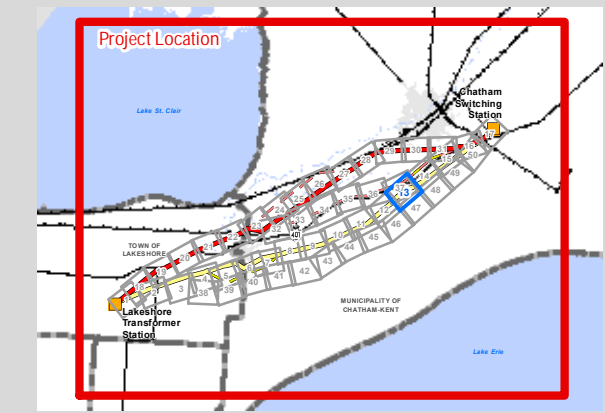
PROJECT: 19-1917
STATUS: INTERNAL DRAFT
DATE: 2020-12-16



**HYDRO ONE NETWORKS INC.
CHATHAM TO LAKESHORE LINE
CLASS ENVIRONMENTAL ASSESSMENT**

NATURAL HERITAGE FEATURES
FIGURE - 5B-13

- Alternative 1
- - - Variation
- - - Variation
- Project Study Area (120m)
- Parcel
- Base Data**
- Highway
- Road
- Watercourse



SCALE 1:10,000
0 0.075 0.15 0.3 km

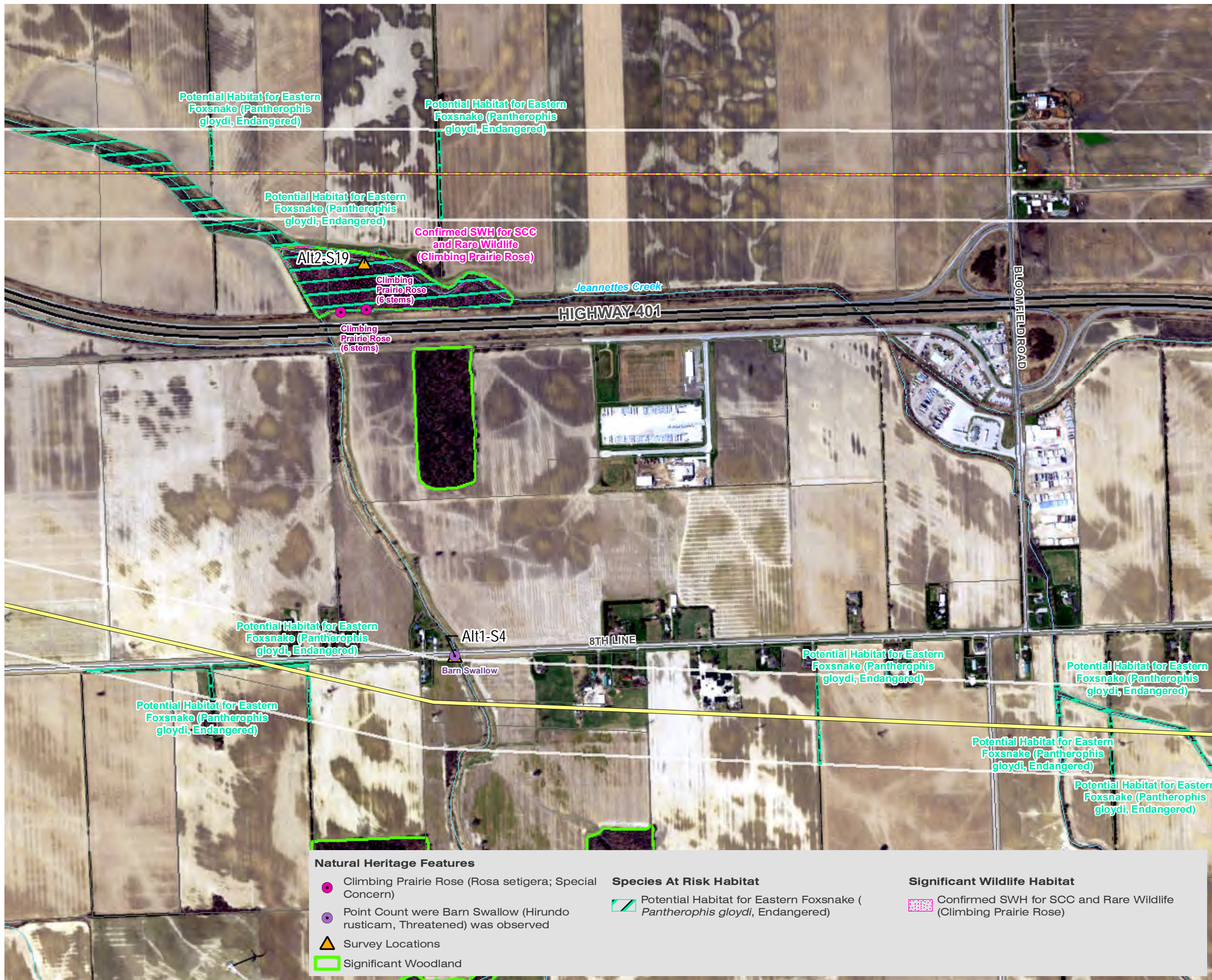
MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR, IMAGERY SWOOP 2015

MAP CREATED BY: SFG/LMM
MAP CHECKED BY: -
MAP PROJECTION: NAD 1983 UTM Zone 17N

Natural Heritage Features		Species At Risk Habitat	Significant Wildlife Habitat
▲ Survey Locations	 Significant Woodland	 Potential Habitat for Eastern Foxsnake (<i>Pantherophis gloydi</i> , Endangered)	 Candidate SWH for Turtle Wintering Areas



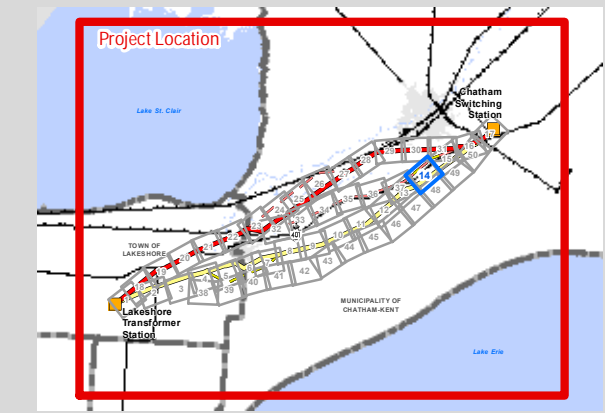
PROJECT: 19-1917
STATUS: INTERNAL DRAFT
DATE: 2020-12-16



**HYDRO ONE NETWORKS INC.
CHATHAM TO LAKESHORE LINE
CLASS ENVIRONMENTAL ASSESSMENT**

NATURAL HERITAGE FEATURES
FIGURE - 5B-14

- Alternative 1
- - - Variation
- - - Variation
- Project Study Area (120m)
- Parcel
- Base Data**
- Highway
- Road
- Watercourse



SCALE 1:10,000
0 0.075 0.15 0.3 km

MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR, IMAGERY SWOOP 2015
MAP CREATED BY: SFG/LMM
MAP CHECKED BY: -
MAP PROJECTION: NAD 1983 UTM Zone 17N

Natural Heritage Features		
● Climbing Prairie Rose (Rosa setigera; Special Concern)	Species At Risk Habitat	
● Point Count where Barn Swallow (Hirundo rusticum, Threatened) was observed	 Potential Habitat for Eastern Foxsnake (<i>Pantherophis gloydi</i> , Endangered)	 Confirmed SWH for SCC and Rare Wildlife (Climbing Prairie Rose)
▲ Survey Locations		
 Significant Woodland		

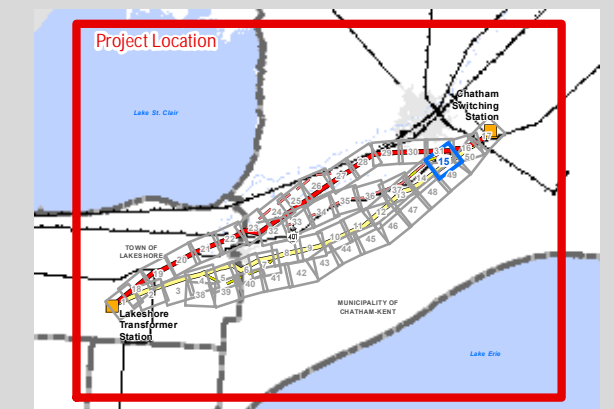


PROJECT: 19-1917
STATUS: INTERNAL DRAFT
DATE: 2020-12-16

**HYDRO ONE NETWORKS INC.
CHATHAM TO LAKESHORE LINE
CLASS ENVIRONMENTAL ASSESSMENT**

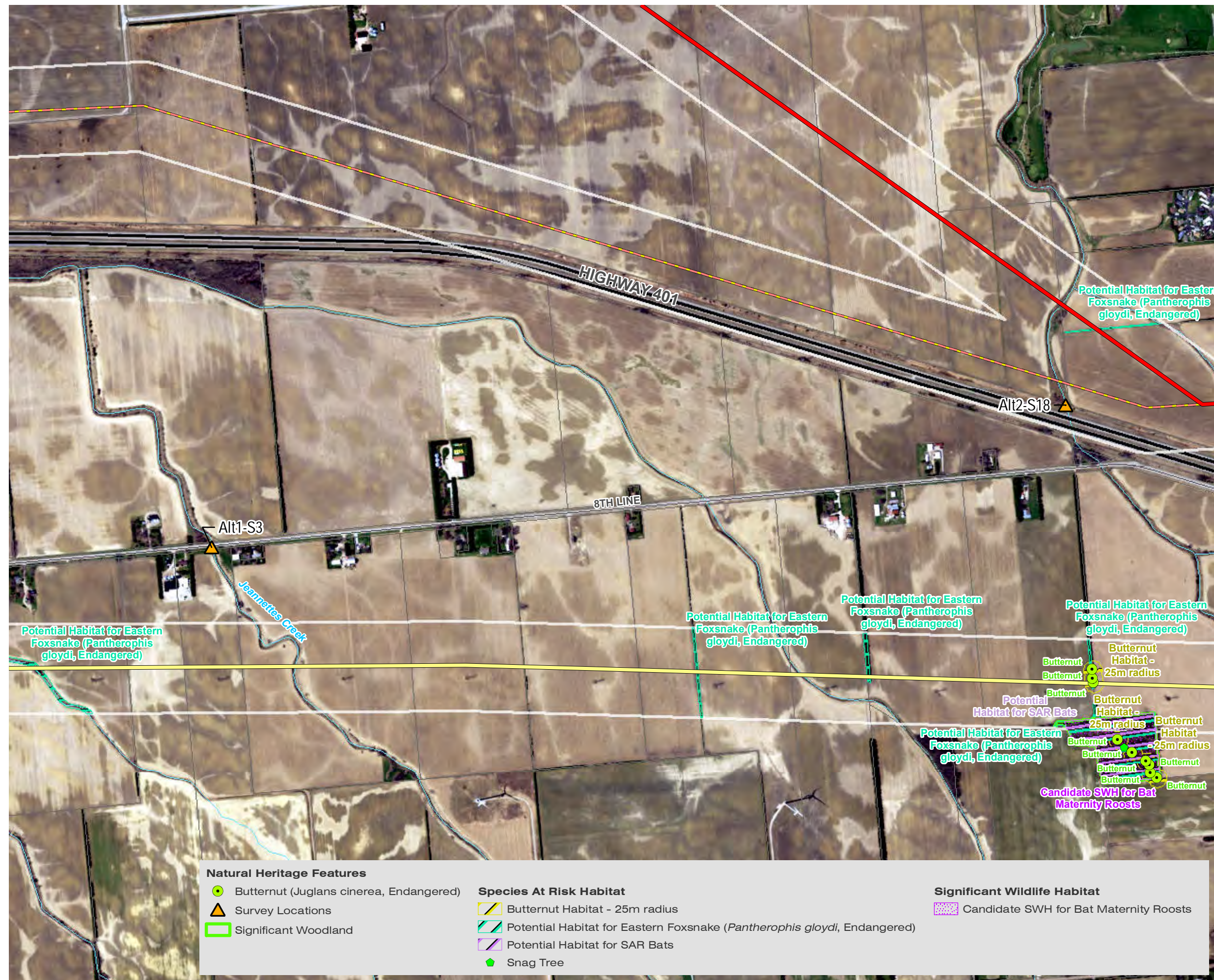
**NATURAL HERITAGE FEATURES
FIGURE - 5B-15**

- Alternative 1
 - - - Variation
 - Alternative 2
 - - - Variation
 - Project Study Area (120m)
 - Parcel
- Base Data**
- Highway
 - Road
 - Watercourse



SCALE 1:10,000
0 0.075 0.15 0.3 km

MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR, IMAGERY SWOOP 2015
MAP CREATED BY: SFG/LMM
MAP CHECKED BY: -
MAP PROJECTION: NAD 1983 UTM Zone 17N



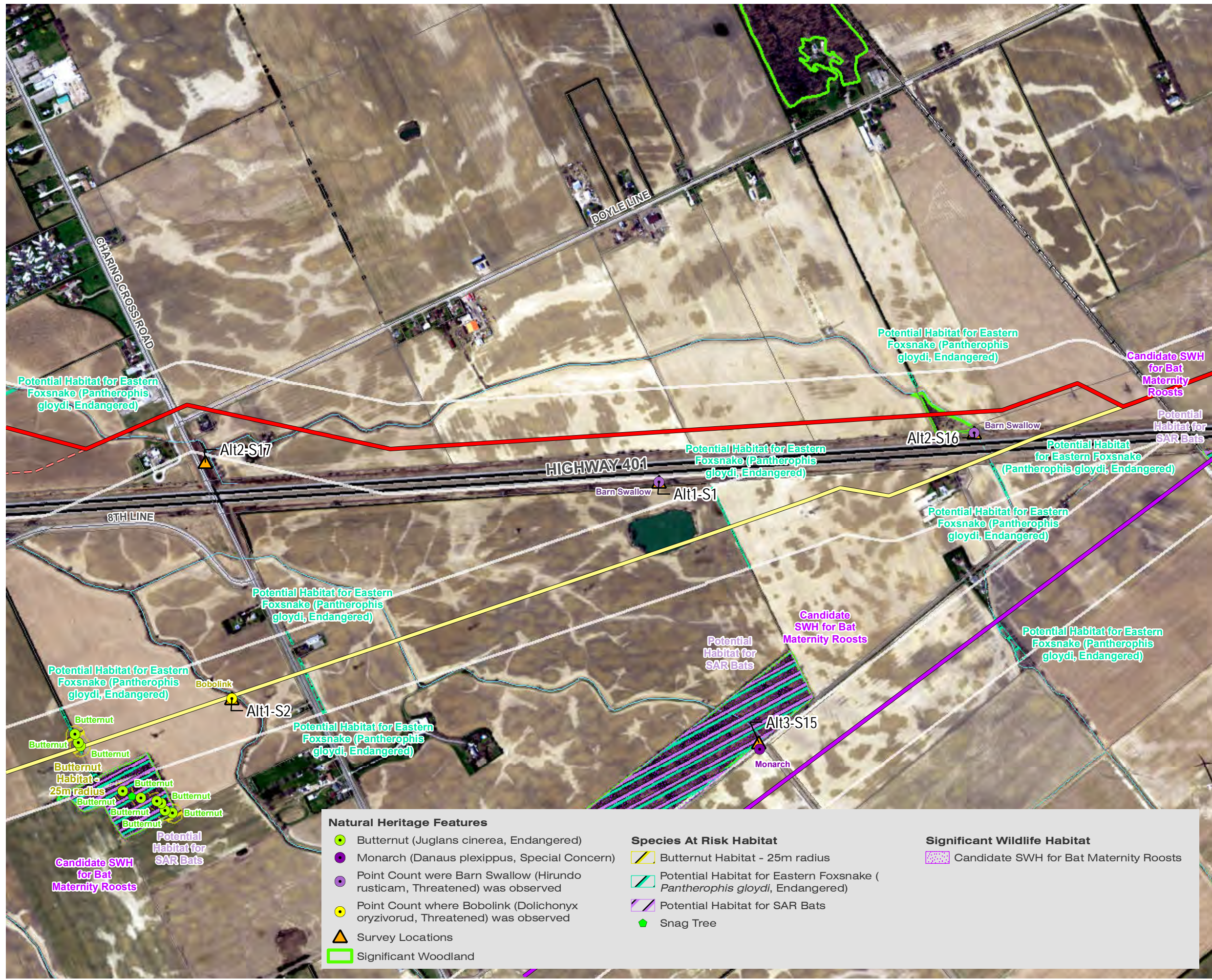
Natural Heritage Features		Species At Risk Habitat	Significant Wildlife Habitat
● Butternut (<i>Juglans cinerea</i> , Endangered)	▲ Survey Locations	 Butternut Habitat - 25m radius	 Candidate SWH for Bat Maternity Roosts
 Significant Woodland		 Potential Habitat for Eastern Foxsnake (<i>Pantherophis gloydi</i> , Endangered)	
		 Potential Habitat for SAR Bats	
		◆ Snag Tree	



PROJECT: 19-1917
STATUS: INTERNAL DRAFT
DATE: 2020-12-16

**HYDRO ONE NETWORKS INC.
CHATHAM TO LAKESHORE LINE
CLASS ENVIRONMENTAL ASSESSMENT**

**NATURAL HERITAGE FEATURES
FIGURE - 5B-16**



- Alternative 1
 - Variation
 - Alternative 2
 - Variation
 - Alternative 3
 - Project Study Area (120m)
 - Parcel
- Base Data**
- Highway
 - Road
 - Railway
 - Watercourse



SCALE 1:10,000
0 0.075 0.15 0.3 km

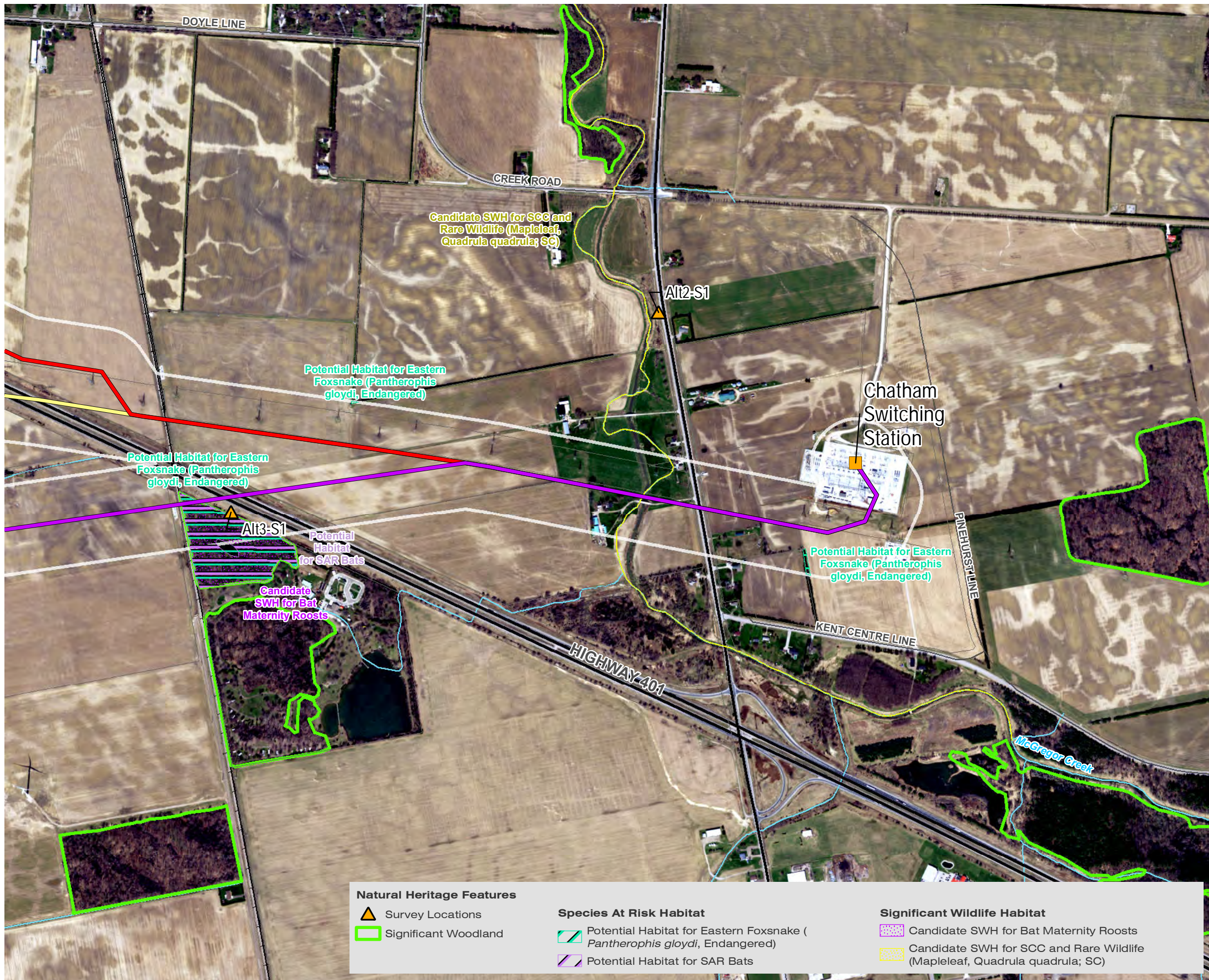
MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR, IMAGERY SWOOP 2015

MAP CREATED BY: SFG/LMM
MAP CHECKED BY: -
MAP PROJECTION: NAD 1983 UTM Zone 17N

Natural Heritage Features			Species At Risk Habitat			Significant Wildlife Habitat		
	Butternut (<i>Juglans cinerea</i> , Endangered)		Butternut Habitat - 25m radius		Potential Habitat for Eastern Foxsnake (<i>Pantherophis gloydi</i> , Endangered)		Candidate SWH for Bat Maternity Roosts	
	Monarch (<i>Danaus plexippus</i> , Special Concern)		Potential Habitat for Eastern Foxsnake (<i>Pantherophis gloydi</i> , Endangered)		Potential Habitat for SAR Bats			
	Point Count where Barn Swallow (<i>Hirundo rustica</i> , Threatened) was observed		Snag Tree					
	Point Count where Bobolink (<i>Dolichonyx oryzivorus</i> , Threatened) was observed							
	Survey Locations							
	Significant Woodland							



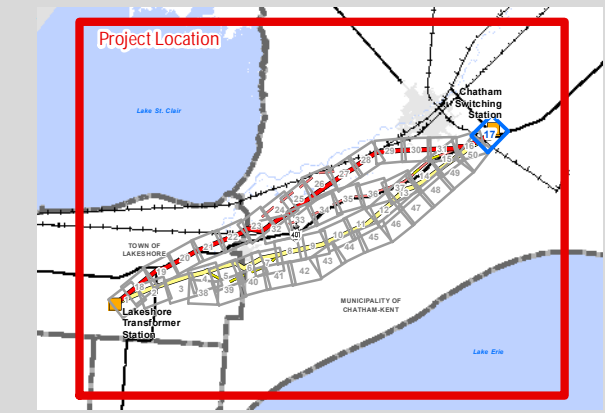
PROJECT: 19-1917
STATUS: INTERNAL DRAFT
DATE: 2020-12-16



**HYDRO ONE NETWORKS INC.
CHATHAM TO LAKESHORE LINE
CLASS ENVIRONMENTAL ASSESSMENT**

NATURAL HERITAGE FEATURES
FIGURE - 5B-17

- Project Transmission Stations
- Alternative 1
- Variation
- Alternative 2
- Variation
- Alternative 3
- Project Study Area (120m)
- Parcel
- Base Data**
- Highway
- Road
- Railway



SCALE 1:10,000
0 0.075 0.15 0.3 km

MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR, IMAGERY SWOOP 2015

MAP CREATED BY: SFG/LMM
MAP CHECKED BY: -
MAP PROJECTION: NAD 1983 UTM Zone 17N

Natural Heritage Features		
 Survey Locations		
 Significant Woodland		
Species At Risk Habitat		
 Potential Habitat for Eastern Foxsnake (<i>Pantherophis gloydi</i> , Endangered)		
 Potential Habitat for SAR Bats		
Significant Wildlife Habitat		
 Candidate SWH for Bat Maternity Roosts		
 Candidate SWH for SCC and Rare Wildlife (Mapleleaf, <i>Quadrula quadrula</i> ; SC)		

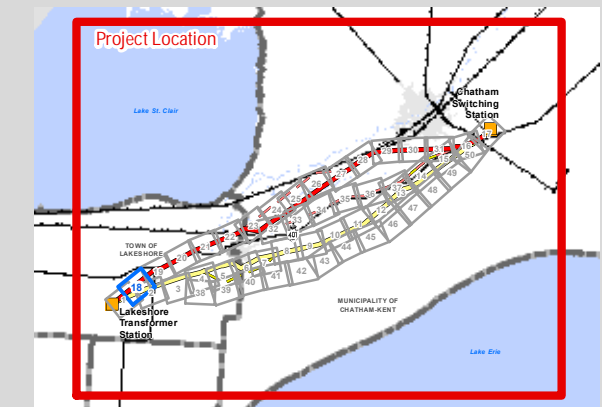


PROJECT: 19-1917
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DATE: 2020-12-16

**HYDRO ONE NETWORKS INC.
CHATHAM TO LAKESHORE LINE
CLASS ENVIRONMENTAL ASSESSMENT**

**NATURAL HERITAGE FEATURES
FIGURE - 5B-18**

- Alternative 1
 - Variation
 - Alternative 2
 - Variation
 - Alternative 3
 - Project Study Area (120m)
 - Parcel
- Base Data**
- Highway
 - Road
 - Watercourse



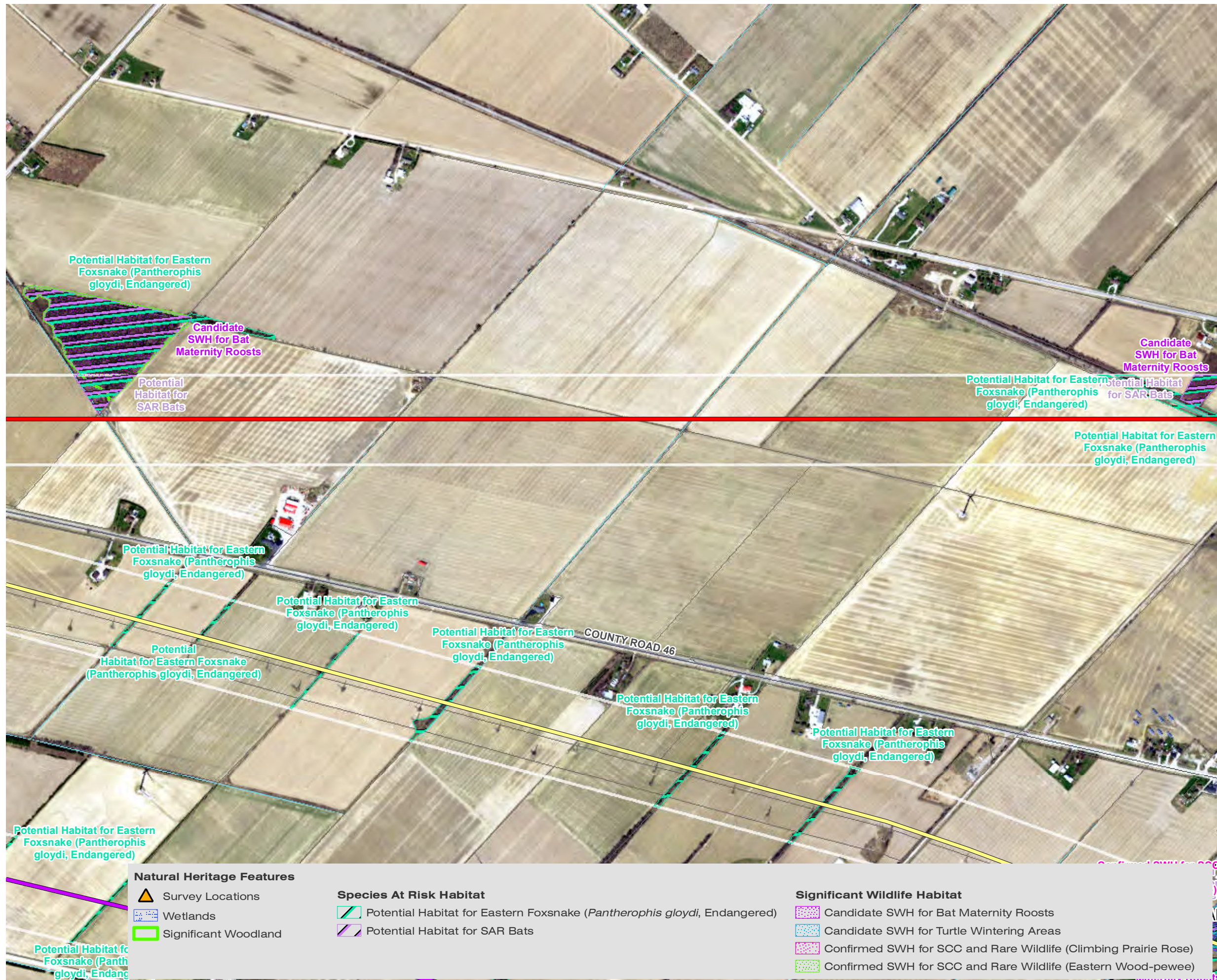
SCALE 1:10,000
0 0.075 0.15 0.3 km

MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR, IMAGERY SWOOP 2015

MAP CREATED BY: SFG/LMM
MAP CHECKED BY: -
MAP PROJECTION: NAD 1983 UTM Zone 17N



PROJECT: 19-1917
STATUS: INTERNAL DRAFT
DATE: 2020-12-16



Natural Heritage Features

- Survey Locations
- Wetlands
- Significant Woodland

Species At Risk Habitat






- Potential Habitat for Eastern Foxsnake (*Pantherophis gloydi*, Endangered)
- Potential Habitat for SAR Bats

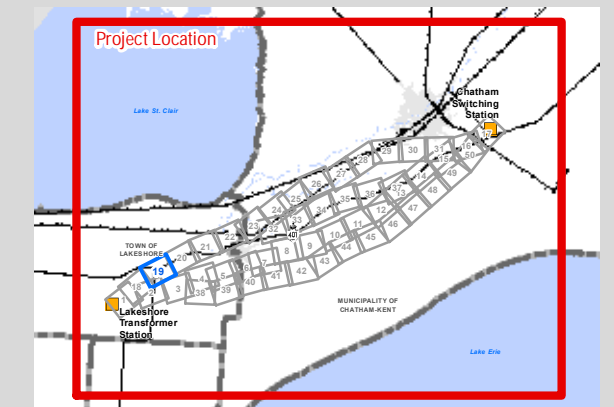
Significant Wildlife Habitat

- Candidate SWH for Bat Maternity Roosts
- Candidate SWH for Turtle Wintering Areas
- Confirmed SWH for SCC and Rare Wildlife (Climbing Prairie Rose)
- Confirmed SWH for SCC and Rare Wildlife (Eastern Wood-pewee)

**HYDRO ONE NETWORKS INC.
CHATHAM TO LAKESHORE LINE
CLASS ENVIRONMENTAL ASSESSMENT**

**NATURAL HERITAGE FEATURES
FIGURE - 5B-19**

-  Alternative 1
-  Variation
-  Alternative 2
-  Variation
-  Project Study Area (120m)
-  Parcel
- Base Data**
-  Highway
-  Road
-  Watercourse



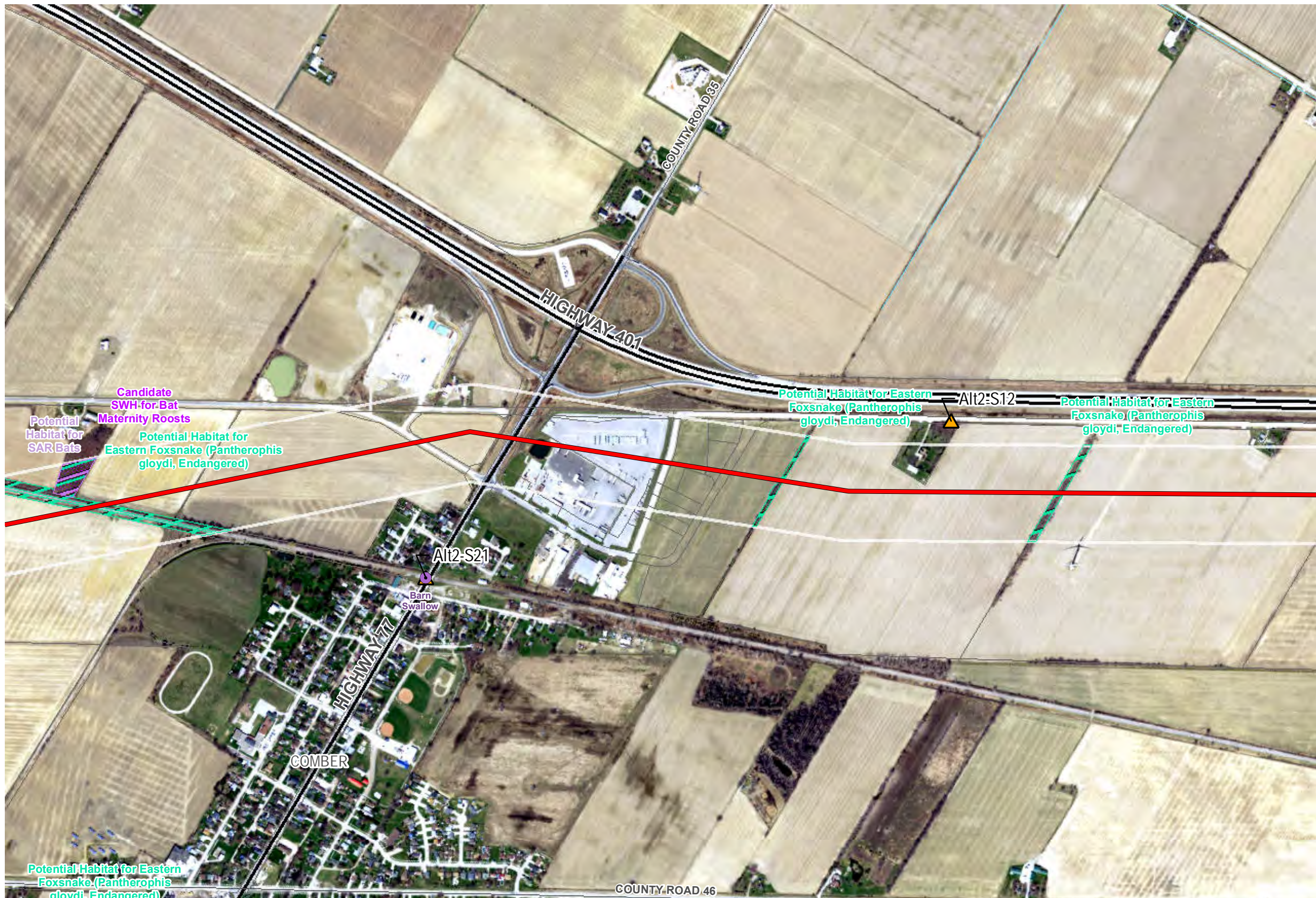
SCALE 1:10,000
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MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR, IMAGERY SWOOP 2015

MAP CREATED BY: SFG/LMM
MAP CHECKED BY: -
MAP PROJECTION: NAD 1983 UTM Zone 17N



PROJECT: 19-1917
STATUS: INTERNAL DRAFT
DATE: 2020-12-16

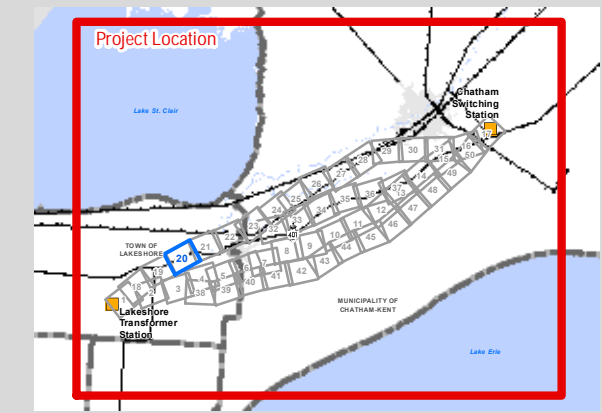
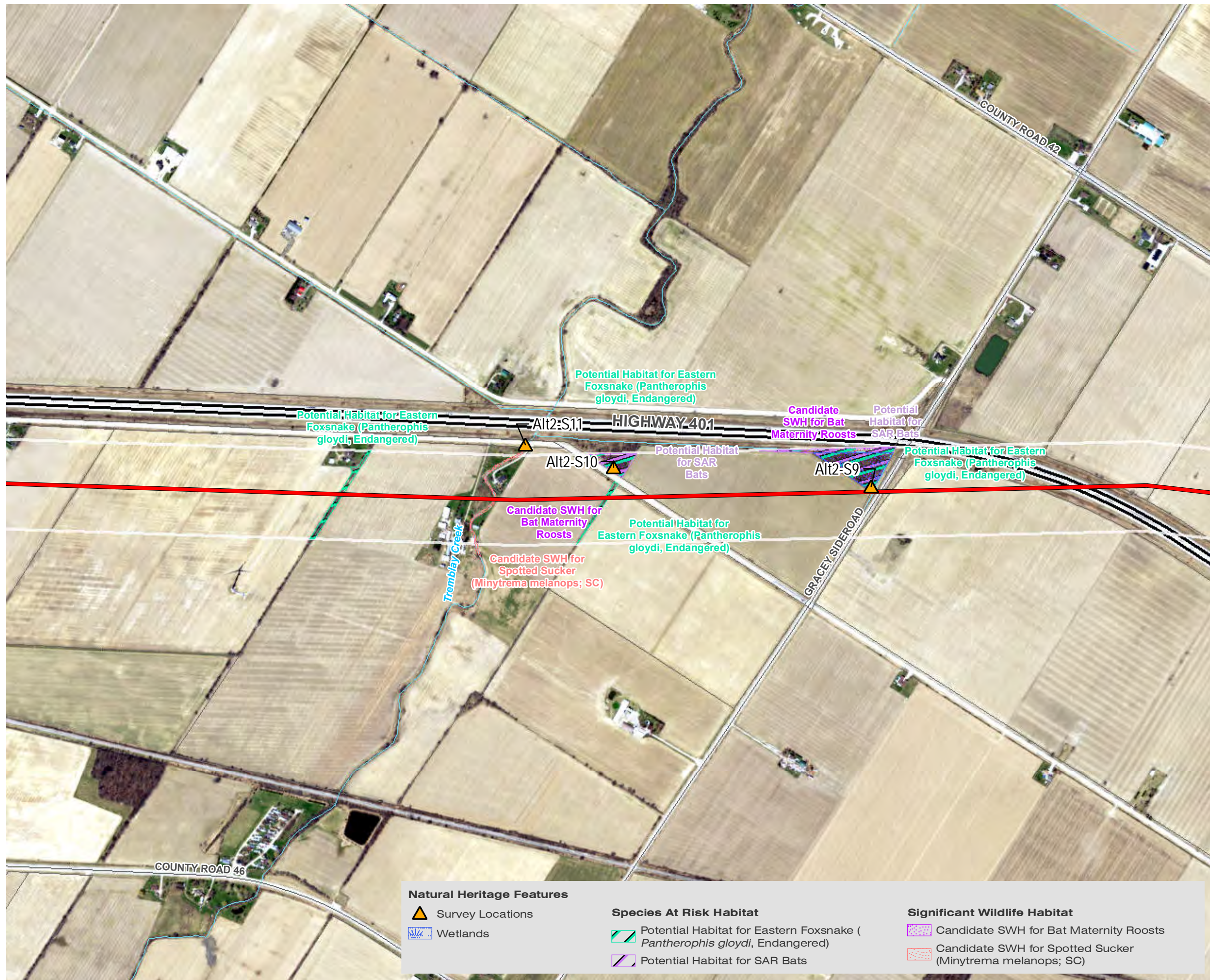


Natural Heritage Features		
 Climbing Prairie Rose (<i>Rosa setigera</i> ; Special Concern)	Species At Risk Habitat	
 Point Count where Barn Swallow (<i>Hirundo rustica</i> , Threatened) was observed	 Potential Habitat for Eastern Foxsnake (<i>Pantherophis gloydi</i> , Endangered)	 Potential Habitat for SAR Bats
 Survey Locations	Significant Wildlife Habitat	
 Wetlands	 Candidate SWH for Bat Maternity Roosts	
 Significant Woodland	 Candidate SWH for Turtle Wintering Areas	
	 Confirmed SWH for SCC and Rare Wildlife (Climbing Prairie Rose)	

**HYDRO ONE NETWORKS INC.
CHATHAM TO LAKESHORE LINE
CLASS ENVIRONMENTAL ASSESSMENT**

**NATURAL HERITAGE FEATURES
FIGURE - 5B-20**

- Alternative 2
- - - Variation
- Project Study Area (120m)
- Parcel
- Base Data**
- Highway
- Road
- Watercourse



SCALE 1:10,000
0 0.075 0.15 0.3 km

MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR, IMAGERY SWOOP 2015
MAP CREATED BY: SFG/LMM
MAP CHECKED BY: -
MAP PROJECTION: NAD 1983 UTM Zone 17N

Natural Heritage Features		
▲ Survey Locations		
 Wetlands		
Species At Risk Habitat		
 Potential Habitat for Eastern Foxsnake (<i>Pantherophis gloydi</i> , Endangered)		
 Potential Habitat for SAR Bats		
Significant Wildlife Habitat		
 Candidate SWH for Bat Maternity Roosts		
 Candidate SWH for Spotted Sucker (<i>Minytrema melanops</i> ; SC)		

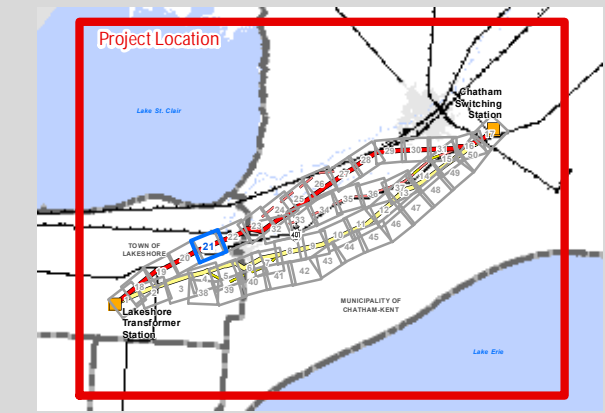
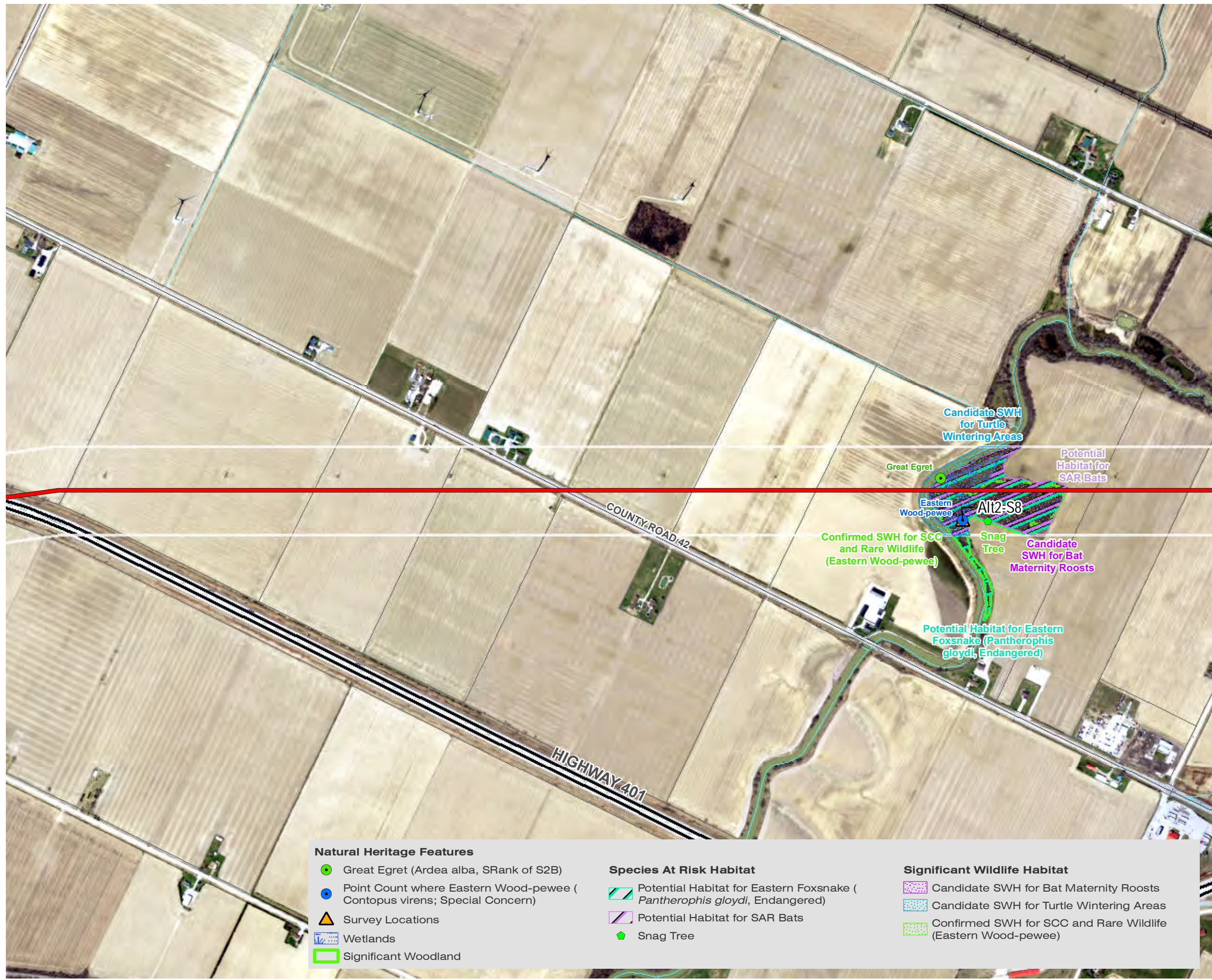


PROJECT: 19-1917
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DATE: 2020-12-16

**HYDRO ONE NETWORKS INC.
CHATHAM TO LAKESHORE LINE
CLASS ENVIRONMENTAL ASSESSMENT**

**NATURAL HERITAGE FEATURES
FIGURE - 5B-21**

- Alternative 2
- - - Variation
- Project Study Area (120m)
- Parcel
- Base Data**
- Highway
- Road
- Railway
- Watercourse



SCALE 1:10,000
0 0.075 0.15 0.3 km

MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR, IMAGERY SWOOP 2015

MAP CREATED BY: SFG/LMM
MAP CHECKED BY: -
MAP PROJECTION: NAD 1983 UTM Zone 17N

Natural Heritage Features		
● Great Egret (<i>Ardea alba</i> , SRank of S2B)		
● Point Count where Eastern Wood-pewee (<i>Contopus virens</i> ; Special Concern)		
▲ Survey Locations		
 Wetlands		
 Significant Woodland		
Species At Risk Habitat		
 Potential Habitat for Eastern Foxsnake (<i>Pantherophis gloydi</i> , Endangered)		
 Potential Habitat for SAR Bats		
◆ Snag Tree		
Significant Wildlife Habitat		
 Candidate SWH for Bat Maternity Roosts		
 Candidate SWH for Turtle Wintering Areas		
 Confirmed SWH for SCC and Rare Wildlife (Eastern Wood-pewee)		



PROJECT: 19-1917
STATUS: INTERNAL DRAFT
DATE: 2020-12-16

**HYDRO ONE NETWORKS INC.
CHATHAM TO LAKESHORE LINE
CLASS ENVIRONMENTAL ASSESSMENT**

**NATURAL HERITAGE FEATURES
FIGURE - 5B-22**

- Alternative 2
- - - Variation
- Project Study Area (120m)
- Parcel
- Base Data**
- Highway
- Road
- Railway
- Watercourse



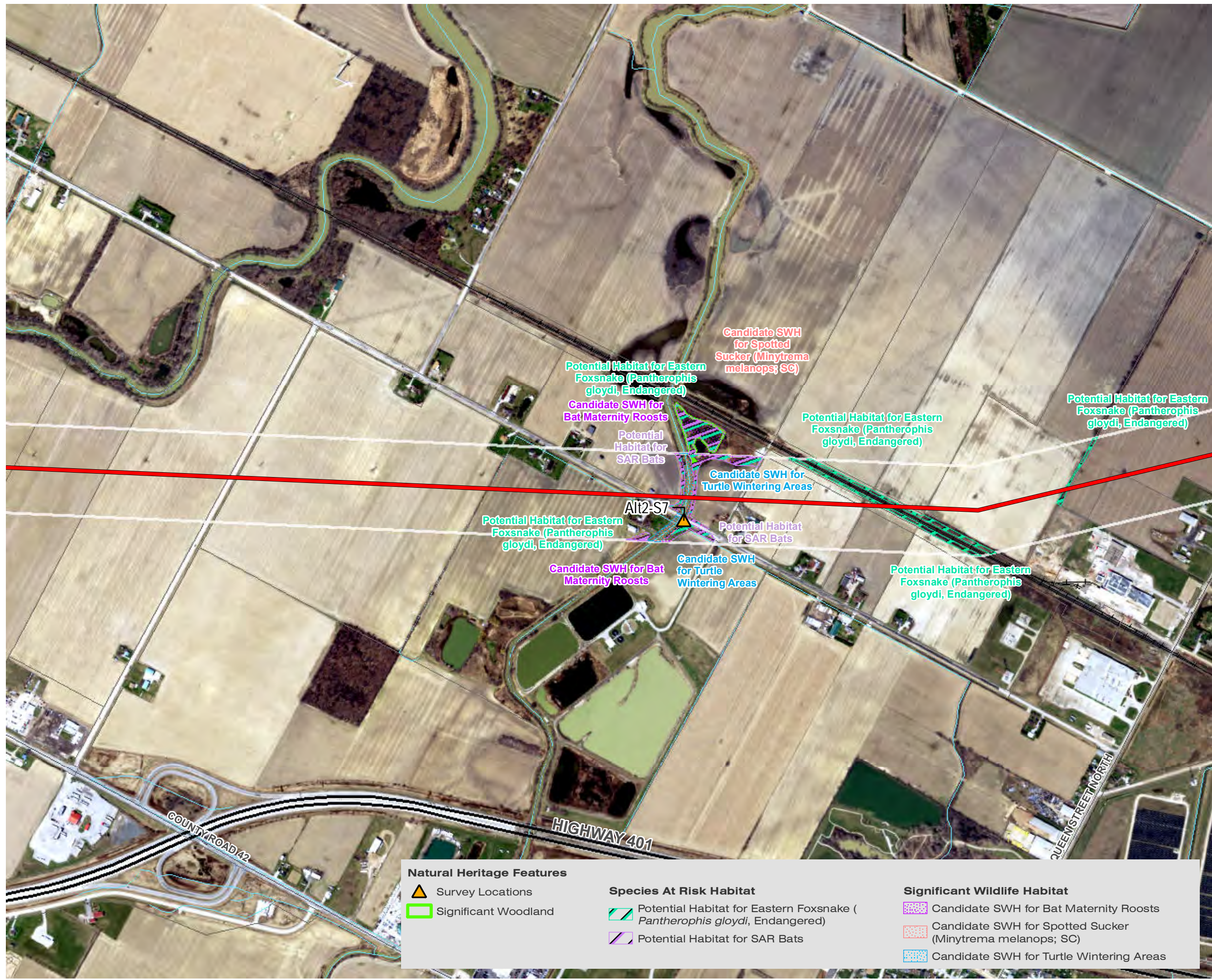
SCALE 1:10,000
0 0.075 0.15 0.3 km

MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR, IMAGERY SWOOP 2015

MAP CREATED BY: SFG/LMM
MAP CHECKED BY: -
MAP PROJECTION: NAD 1983 UTM Zone 17N



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STATUS: INTERNAL DRAFT
DATE: 2020-12-16



Natural Heritage Features		
▲ Survey Locations		
 Significant Woodland		
Species At Risk Habitat		
 Potential Habitat for Eastern Foxsnake (<i>Pantherophis gloydi</i> , Endangered)		
 Potential Habitat for SAR Bats		
Significant Wildlife Habitat		
 Candidate SWH for Bat Maternity Roosts		
 Candidate SWH for Spotted Sucker (<i>Minytrema melanops</i> ; SC)		
 Candidate SWH for Turtle Wintering Areas		

**HYDRO ONE NETWORKS INC.
CHATHAM TO LAKESHORE LINE
CLASS ENVIRONMENTAL ASSESSMENT**

**NATURAL HERITAGE FEATURES
FIGURE - 5B-23**

- Alternative 2
 - - - Variation
 - Project Study Area (120m)
 - Parcel
- Base Data**
- Highway
 - Road
 - Railway
 - Watercourse



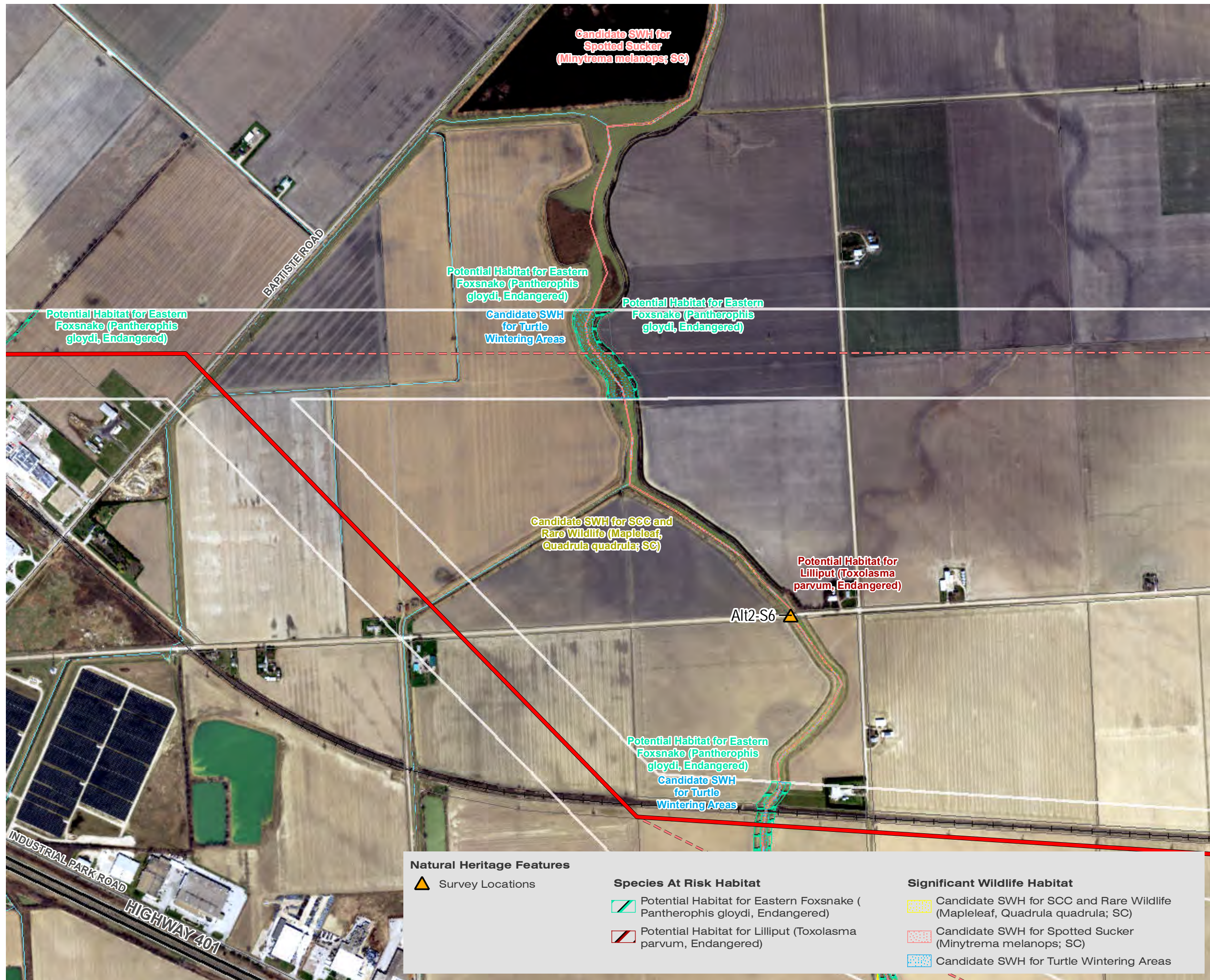
SCALE 1:10,000
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MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR, IMAGERY SWOOP 2015

MAP CREATED BY: SFG/LMM
MAP CHECKED BY: -
MAP PROJECTION: NAD 1983 UTM Zone 17N



PROJECT: 19-1917
STATUS: INTERNAL DRAFT
DATE: 2020-12-16



Natural Heritage Features		
▲ Survey Locations		
Species At Risk Habitat		
 Potential Habitat for Eastern Foxsnake (Pantherophis gloydi, Endangered)		
 Potential Habitat for Lilliput (Toxolasma parvum, Endangered)		
Significant Wildlife Habitat		
 Candidate SWH for SCC and Rare Wildlife (Mapleleaf, Quadrula quadrula; SC)		
 Candidate SWH for Spotted Sucker (Minytrema melanops; SC)		
 Candidate SWH for Turtle Wintering Areas		

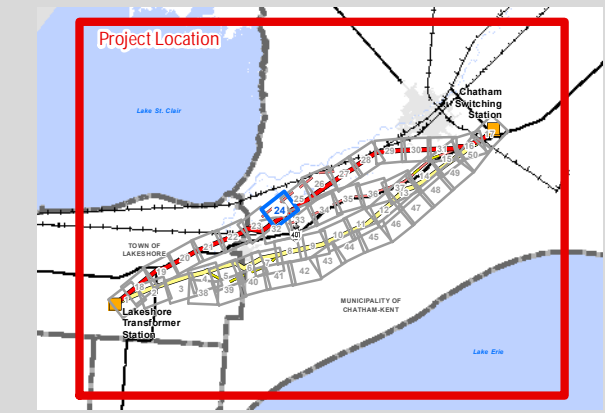


Candidate SWH
for Turtle
Wintering Areas

**HYDRO ONE NETWORKS INC.
CHATHAM TO LAKESHORE LINE
CLASS ENVIRONMENTAL ASSESSMENT**

**NATURAL HERITAGE FEATURES
FIGURE - 5B-24**

- Alternative 2
- - - Variation
- Project Study Area (120m)
- Parcel
- Base Data**
- +— Railway
- Watercourse



SCALE 1:10,000
0 0.075 0.15 0.3 km

MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR, IMAGERY SWOOP 2015

MAP CREATED BY: SFG/LMM
MAP CHECKED BY: -
MAP PROJECTION: NAD 1983 UTM Zone 17N

Natural Heritage Features		Significant Wildlife Habitat	
— Significant Woodland	— Significant Wildlife Habitat	 Candidate SWH for Turtle Wintering Areas	



PROJECT: 19-1917
STATUS: INTERNAL DRAFT
DATE: 2020-12-16



Candidate SWH
for Turtle
Wintering Areas

Candidate SWH
for Turtle
Wintering Areas

Alt2-S5

Natural Heritage Features

▲ Survey Locations

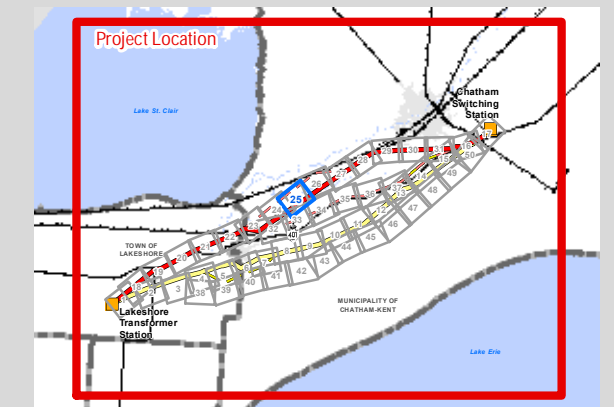
Significant Wildlife Habitat

▨ Candidate SWH for Turtle Wintering Areas

**HYDRO ONE NETWORKS INC.
CHATHAM TO LAKESHORE LINE
CLASS ENVIRONMENTAL ASSESSMENT**

**NATURAL HERITAGE FEATURES
FIGURE - 5B-25**

- Alternative 2
- - - Variation
- Project Study Area (120m)
- Parcel
- Base Data**
- +— Railway
- Watercourse



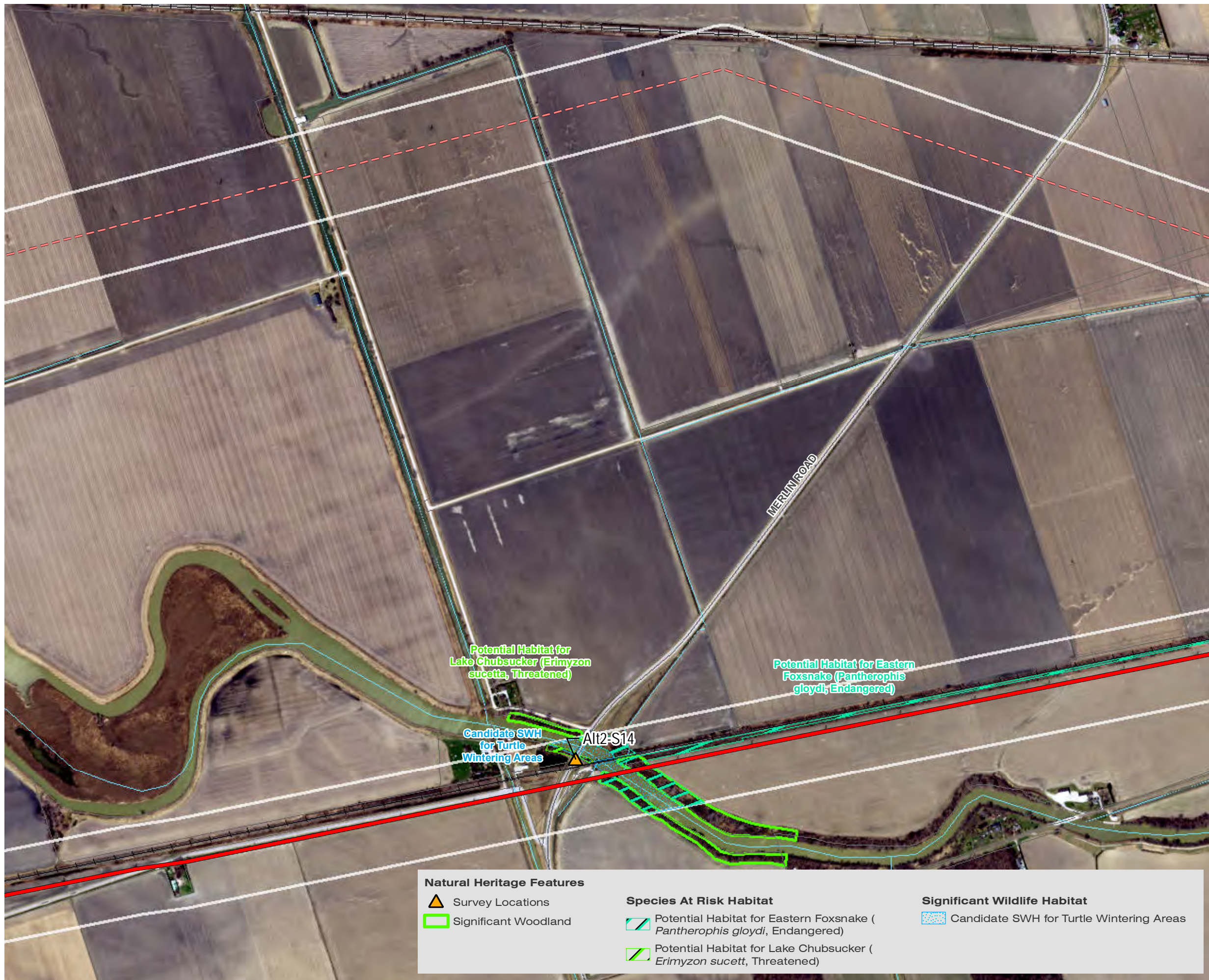
SCALE 1:10,000
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MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR, IMAGERY SWOOP 2015

MAP CREATED BY: SFG/LMM
MAP CHECKED BY: -
MAP PROJECTION: NAD 1983 UTM Zone 17N



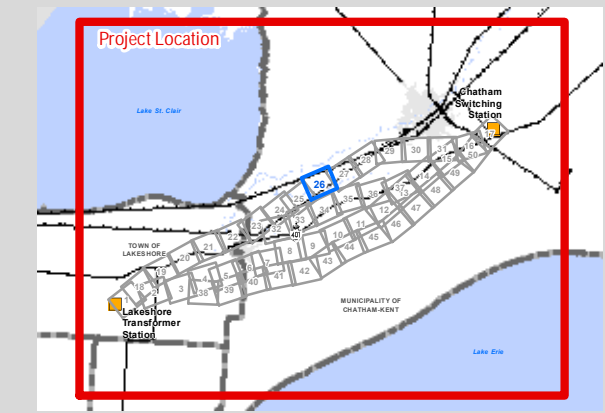
PROJECT: 19-1917
STATUS: INTERNAL DRAFT
DATE: 2020-12-16



**HYDRO ONE NETWORKS INC.
CHATHAM TO LAKESHORE LINE
CLASS ENVIRONMENTAL ASSESSMENT**

**NATURAL HERITAGE FEATURES
FIGURE - 5B-26**

- Alternative 2
- - - Variation
- Project Study Area (120m)
- Parcel
- Base Data**
- Road
- +— Railway
- Watercourse



SCALE 1:10,000
0 0.075 0.15 0.3 km

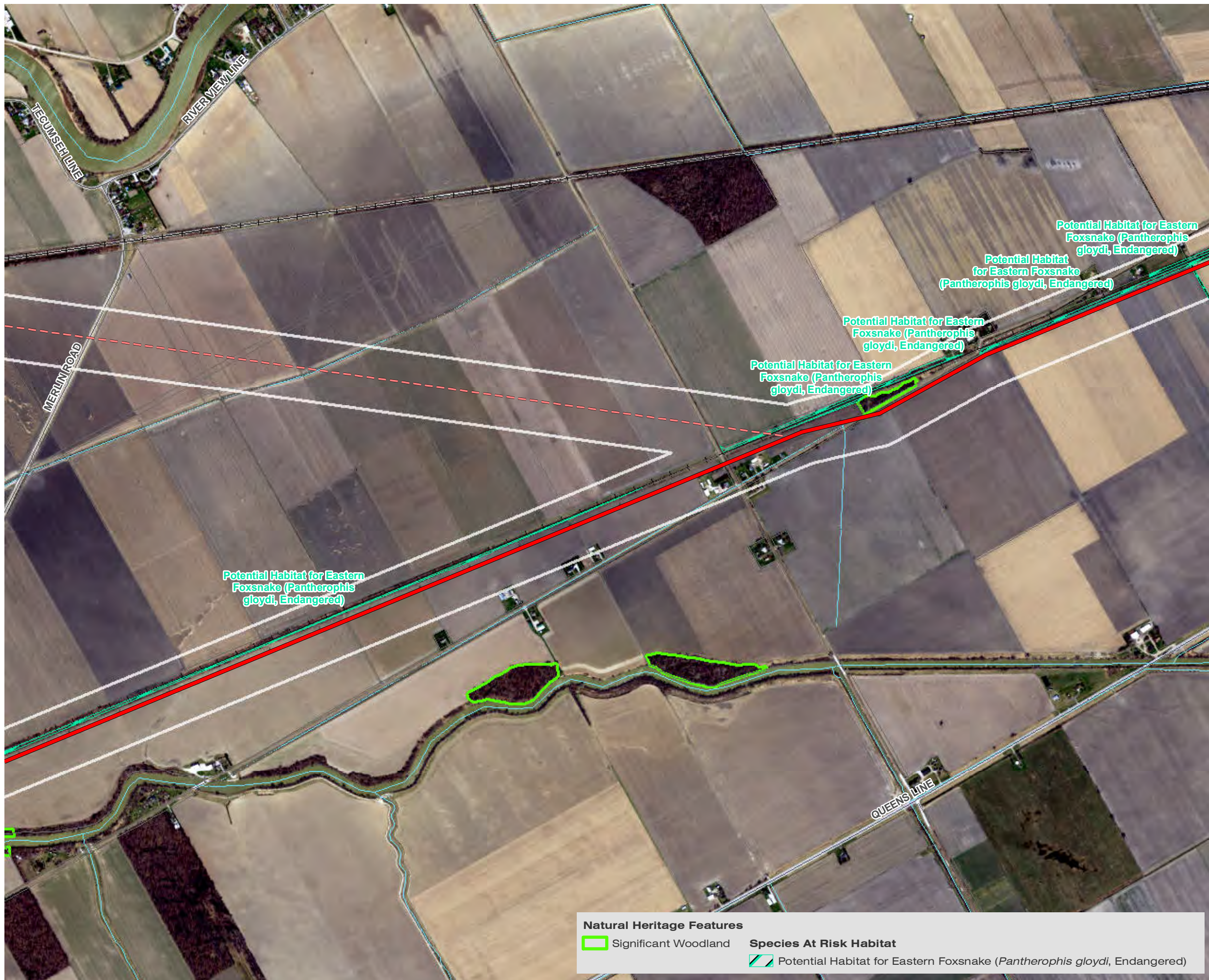
MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR, IMAGERY SWOOP 2015

MAP CREATED BY: SFG/LMM
MAP CHECKED BY: -
MAP PROJECTION: NAD 1983 UTM Zone 17N

Natural Heritage Features		
▲ Survey Locations	Species At Risk Habitat	Significant Wildlife Habitat
 Significant Woodland	 Potential Habitat for Eastern Foxsnake (<i>Pantherophis gloydi</i> , Endangered)	 Candidate SWH for Turtle Wintering Areas
	 Potential Habitat for Lake Chubsucker (<i>Erimyzon sucetta</i> , Threatened)	



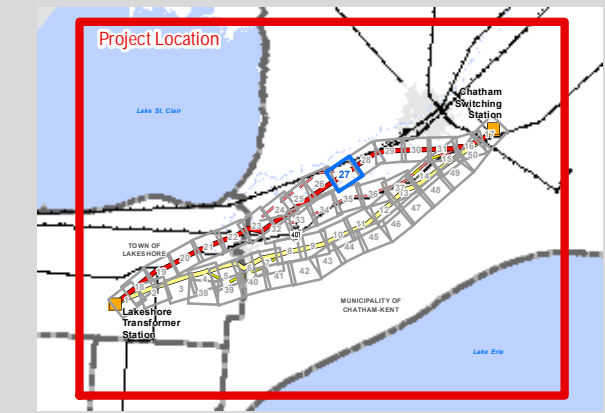
PROJECT: 19-1917
STATUS: INTERNAL DRAFT
DATE: 2020-12-16



**HYDRO ONE NETWORKS INC.
CHATHAM TO LAKESHORE LINE
CLASS ENVIRONMENTAL ASSESSMENT**

**NATURAL HERITAGE FEATURES
FIGURE - 5B-27**

- Alternative 2
- - - Variation
- Project Study Area (120m)
- Parcel
- Base Data**
- Road
- +— Railway
- Watercourse



SCALE 1:14,000
0 0.1 0.2 0.4 km

MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR, IMAGERY SWOOP 2015

MAP CREATED BY: SFG/LMM
MAP CHECKED BY: -
MAP PROJECTION: NAD 1983 UTM Zone 17N

Natural Heritage Features		Species At Risk Habitat	
 Significant Woodland	 Potential Habitat for Eastern Foxsnake (<i>Pantherophis gloydi</i> , Endangered)		



PROJECT: 19-1917
STATUS: INTERNAL DRAFT
DATE: 2020-12-16

**HYDRO ONE NETWORKS INC.
CHATHAM TO LAKESHORE LINE
CLASS ENVIRONMENTAL ASSESSMENT**

**NATURAL HERITAGE FEATURES
FIGURE - 5B-28**

- Alternative 2
- - - Variation
- Project Study Area (120m)
- Parcel
- Base Data**
- Road
- +— Railway
- Watercourse



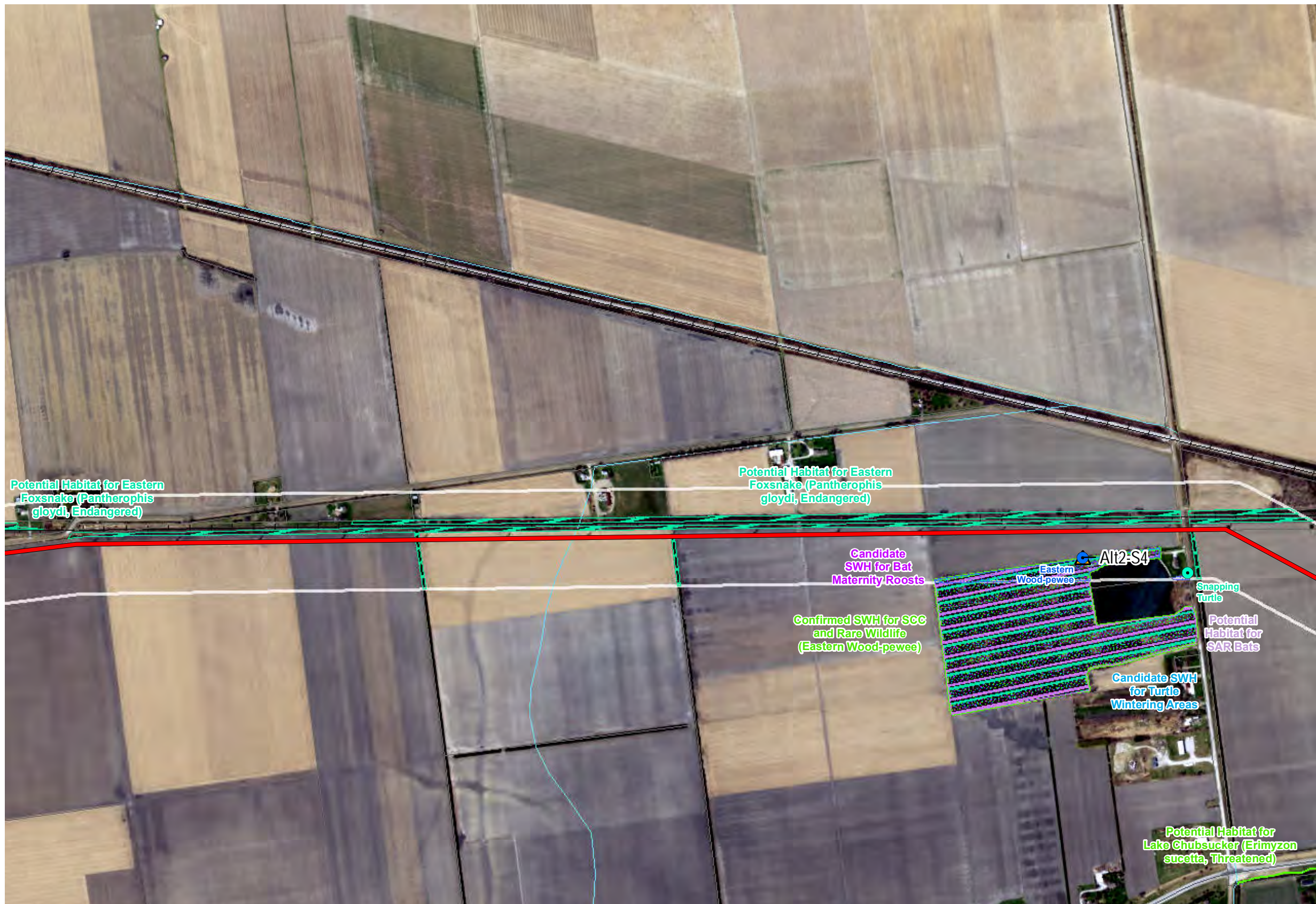
SCALE 1:10,000
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MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR, IMAGERY SWOOP 2015

MAP CREATED BY: SFG/LMM
MAP CHECKED BY: -
MAP PROJECTION: NAD 1983 UTM Zone 17N



PROJECT: 19-1917
STATUS: INTERNAL DRAFT
DATE: 2020-12-16



Natural Heritage Features

- Point Count where Eastern Wood-pewee (Contopus virens; Special Concern)
- Snapping Turtle (Chelydra serpentine; Special Concern)
- ▲ Survey Locations
- Wetlands
- Significant Woodland

Species At Risk Habitat

- Potential Habitat for Eastern Foxsnake (*Pantherophis gloydi*, Endangered)
- Potential Habitat for Lake Chubsucker (*Erimyzon sucetta*, Threatened)
- Potential Habitat for SAR Bats

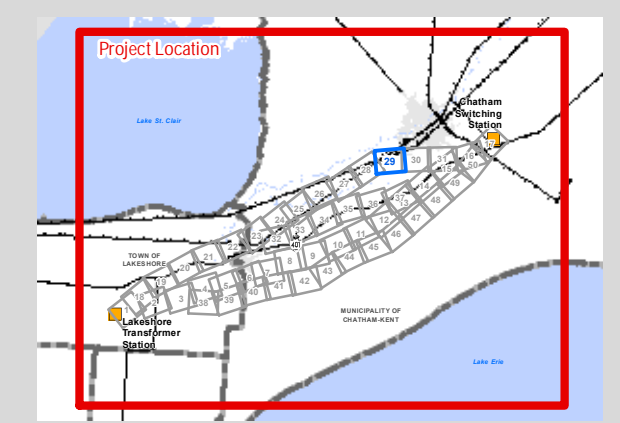
Significant Wildlife Habitat

- Candidate SWH for Bat Maternity Roosts
- Candidate SWH for Turtle Wintering Areas
- Confirmed SWH for SCC and Rare Wildlife (Eastern Wood-pewee)

**HYDRO ONE NETWORKS INC.
CHATHAM TO LAKESHORE LINE
CLASS ENVIRONMENTAL ASSESSMENT**

**NATURAL HERITAGE FEATURES
FIGURE - 5B-29**

- Alternative 2
- - - Variation
- Project Study Area (120m)
- Parcel
- Base Data**
- Road
- +— Railway
- Watercourse



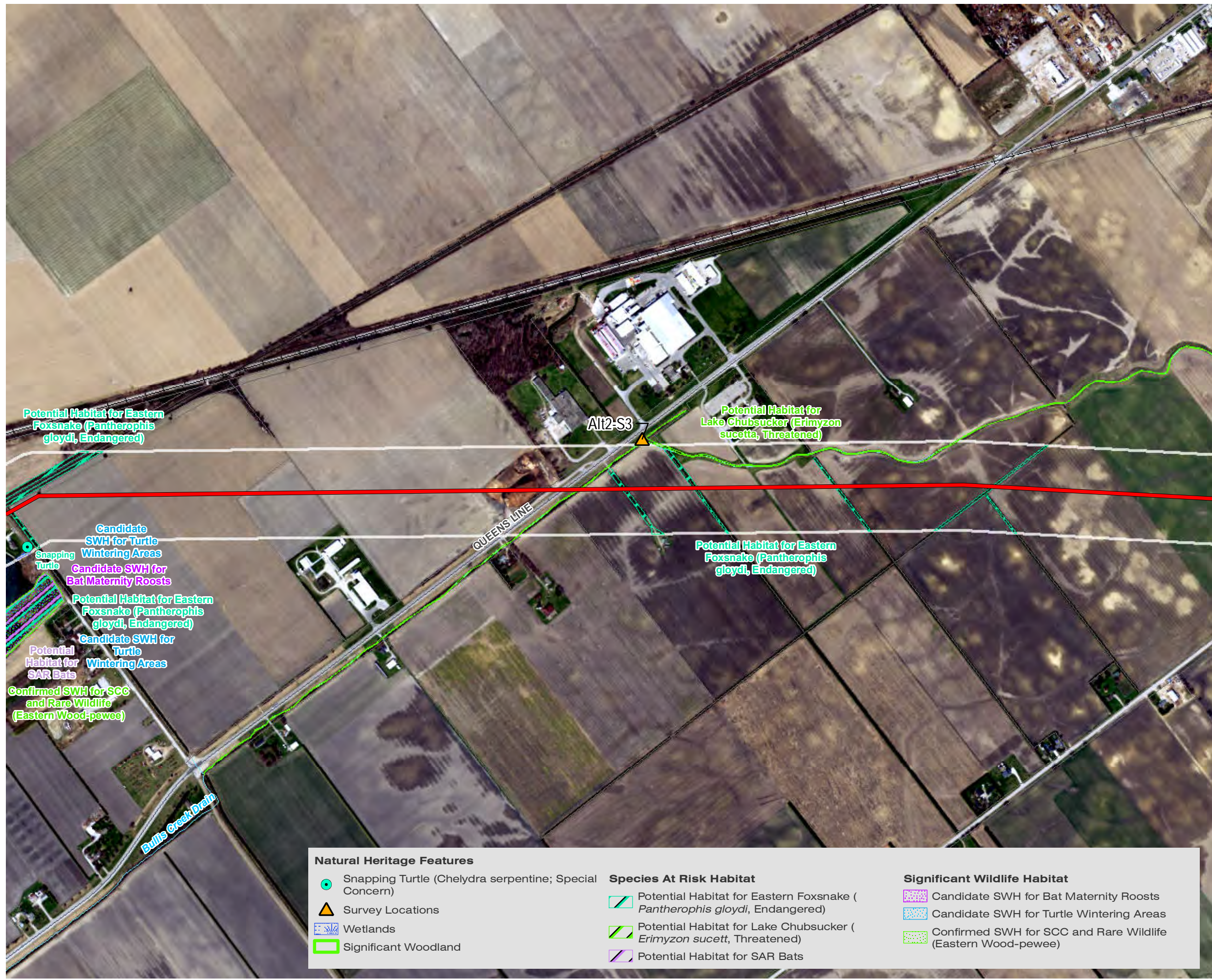
SCALE 1:10,000
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MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR, IMAGERY SWOOP 2015

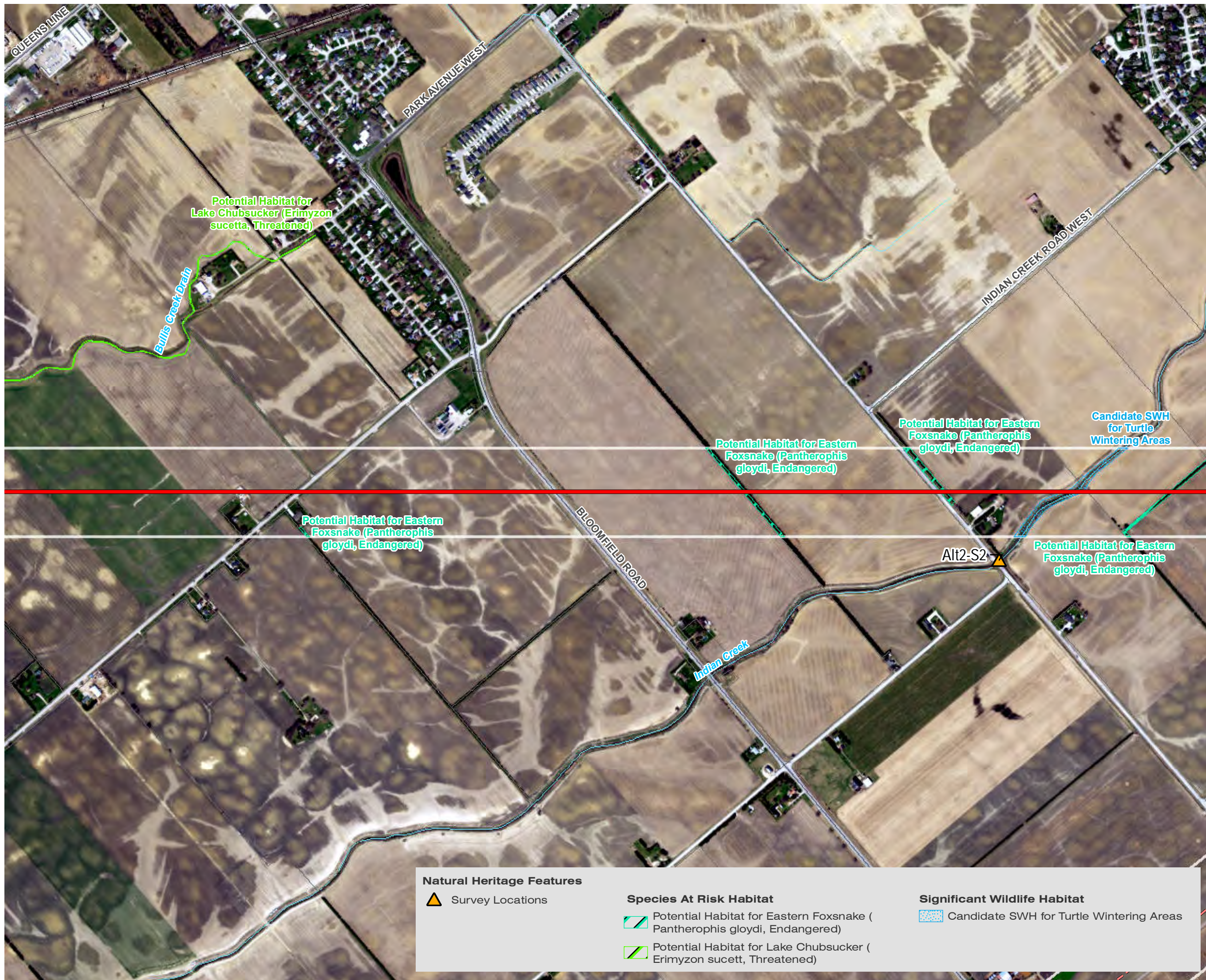
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MAP CHECKED BY: -
MAP PROJECTION: NAD 1983 UTM Zone 17N



PROJECT: 19-1917
STATUS: INTERNAL DRAFT
DATE: 2020-12-16



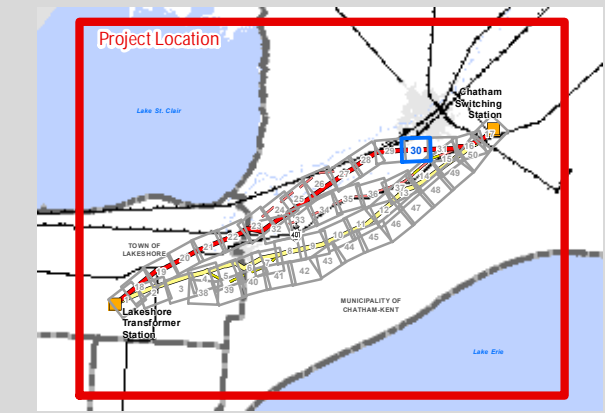
Natural Heritage Features		
●	Snapping Turtle (Chelydra serpentine; Special Concern)	
▲	Survey Locations	
■	Wetlands	
■	Significant Woodland	
Species At Risk Habitat		
▨	Potential Habitat for Eastern Foxsnake (<i>Pantherophis gloydi</i> , Endangered)	
▨	Potential Habitat for Lake Chubsucker (<i>Erimyzon sucett</i> , Threatened)	
▨	Potential Habitat for SAR Bats	
Significant Wildlife Habitat		
▨	Candidate SWH for Bat Maternity Roosts	
▨	Candidate SWH for Turtle Wintering Areas	
▨	Confirmed SWH for SCC and Rare Wildlife (Eastern Wood-pewee)	



**HYDRO ONE NETWORKS INC.
CHATHAM TO LAKESHORE LINE
CLASS ENVIRONMENTAL ASSESSMENT**

**NATURAL HERITAGE FEATURES
FIGURE - 5B-30**

- Variation
- Alternative 2
- Variation
- Project Study Area (120m)
- Parcel
- Base Data**
- Road
- +— Railway
- Watercourse



SCALE 1:10,000
0 0.075 0.15 0.3 km

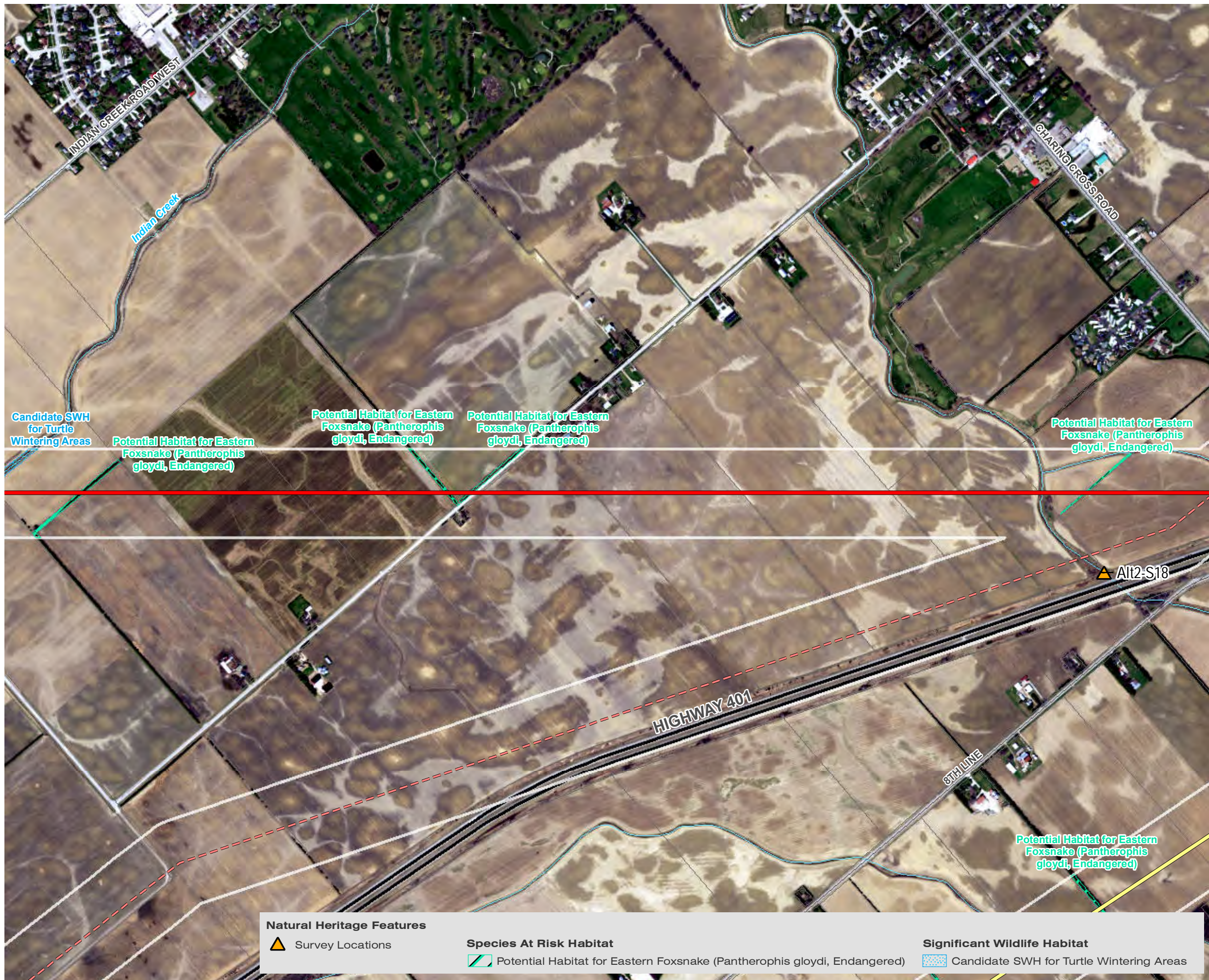
MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR, IMAGERY SWOOP 2015

MAP CREATED BY: SFG/LMM
MAP CHECKED BY: -
MAP PROJECTION: NAD 1983 UTM Zone 17N

Natural Heritage Features		
▲ Survey Locations	Species At Risk Habitat	Significant Wildlife Habitat
	▨ Potential Habitat for Eastern Foxsnake (Pantherophis gloydi, Endangered)	▨ Candidate SWH for Turtle Wintering Areas
	▨ Potential Habitat for Lake Chubsucker (Erimyzon sucetta, Threatened)	



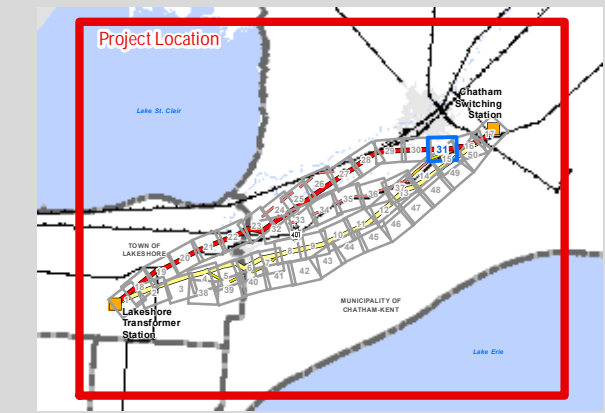
PROJECT: 19-1917
STATUS: INTERNAL DRAFT
DATE: 2020-12-16



**HYDRO ONE NETWORKS INC.
CHATHAM TO LAKESHORE LINE
CLASS ENVIRONMENTAL ASSESSMENT**

**NATURAL HERITAGE FEATURES
FIGURE - 5B-31**

- Alternative 1
- - - Variation
- Alternative 2
- - - Variation
- Project Study Area (120m)
- Parcel
- Base Data**
- Highway
- Road
- Watercourse



SCALE 1:10,000
0 0.075 0.15 0.3 km

MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR, IMAGERY SWOOP 2015

MAP CREATED BY: SFG/LMM
MAP CHECKED BY: -
MAP PROJECTION: NAD 1983 UTM Zone 17N

Natural Heritage Features		Species At Risk Habitat		Significant Wildlife Habitat	
▲ Survey Locations	▭ Potential Habitat for Eastern Foxsnake (Pantherophis gloydi, Endangered)	▭ Candidate SWH for Turtle Wintering Areas			



PROJECT: 19-1917
STATUS: INTERNAL DRAFT
DATE: 2020-12-16

Potential Habitat for Lilliput (*Toxolasma parvum*, Endangered)

Alt2-S6

Candidate SWH for Turtle Wintering Areas

Potential Habitat for Lilliput (*Toxolasma parvum*, Endangered)

Alt2-S15

Potential Habitat for Eastern Foxsnake (*Pantherophis gloydi*, Endangered)








Candidate SWH for Turtle Wintering Areas

Candidate SWH for SCC and Rare Wildlife (Mapleleaf, *Quadrula quadrula*; SC)

Candidate SWH for Spotted Sucker (*Minytrema melanops*; SC)









HIGHWAY 401

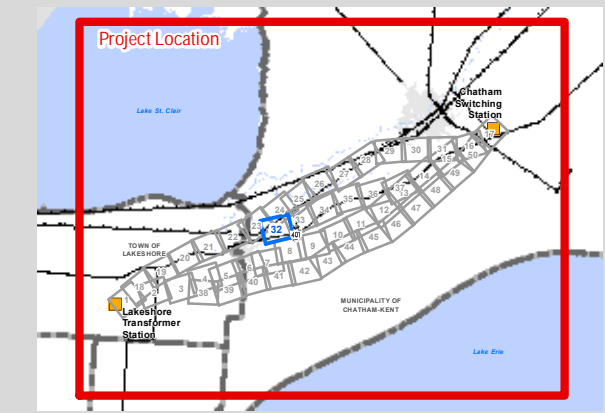
Potential Habitat for Eastern Foxsnake (*Pantherophis gloydi*, Endangered)

Natural Heritage Features		
	Survey Locations	
	Significant Woodland	
Species At Risk Habitat		
	Potential Habitat for Eastern Foxsnake (<i>Pantherophis gloydi</i> , Endangered)	
	Potential Habitat for Lilliput (<i>Toxolasma parvum</i> , Endangered)	
Significant Wildlife Habitat		
	Candidate SWH for SCC and Rare Wildlife (Mapleleaf, <i>Quadrula quadrula</i> ; SC)	
	Candidate SWH for Spotted Sucker (<i>Minytrema melanops</i> ; SC)	
	Candidate SWH for Turtle Wintering Areas	

**HYDRO ONE NETWORKS INC.
CHATHAM TO LAKESHORE LINE
CLASS ENVIRONMENTAL ASSESSMENT**

**NATURAL HERITAGE FEATURES
FIGURE - 5B-32**

-  Alternative 2
-  Variation
-  Project Study Area (120m)
-  Parcel
- Base Data**
-  Highway
-  Road
-  Railway
-  Watercourse



SCALE 1:10,000
0 0.075 0.15 0.3 km

MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR, IMAGERY SWOOP 2015

MAP CREATED BY: SFG/LMM
MAP CHECKED BY: -
MAP PROJECTION: NAD 1983 UTM Zone 17N



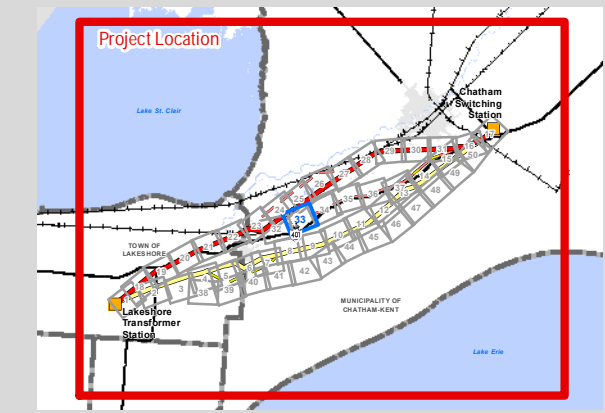
PROJECT: 19-1917
STATUS: INTERNAL DRAFT
DATE: 2020-12-16



**HYDRO ONE NETWORKS INC.
CHATHAM TO LAKESHORE LINE
CLASS ENVIRONMENTAL ASSESSMENT**

**NATURAL HERITAGE FEATURES
FIGURE - 5B-33**

- Alternative 2
- - - Variation
- Project Study Area (120m)
- Parcel
- Base Data**
- Highway
- Road
- + Railway
- Watercourse



SCALE 1:10,000
0 0.075 0.15 0.3 km

MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR, IMAGERY SWOOP 2015

MAP CREATED BY: SFG/LMM
MAP CHECKED BY: -
MAP PROJECTION: NAD 1983 UTM Zone 17N

Natural Heritage Features
Species At Risk Habitat

▨ Potential Habitat for Eastern Foxsnake (*Pantherophis gloydi*, Endangered)



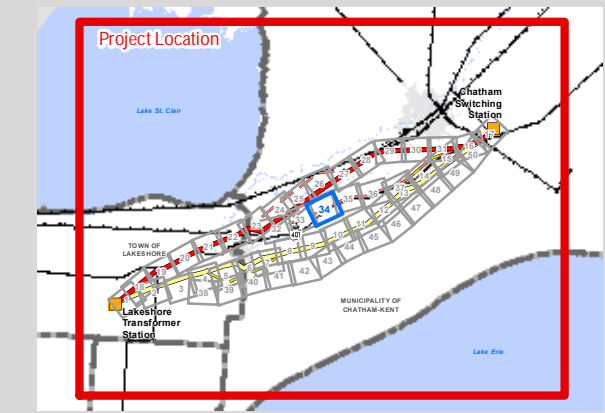
PROJECT: 19-1917
STATUS: INTERNAL DRAFT
DATE: 2020-12-16



**HYDRO ONE NETWORKS INC.
CHATHAM TO LAKESHORE LINE
CLASS ENVIRONMENTAL ASSESSMENT**

**NATURAL HERITAGE FEATURES
FIGURE - 5B-34**

- - - Variation
- Project Study Area (120m)
- Parcel
- Base Data**
- Highway
- Road
- Watercourse



SCALE 1:10,000
0 0.075 0.15 0.3 km

MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR, IMAGERY SWOOP 2015

MAP CREATED BY: SFG/LMM
MAP CHECKED BY: -
MAP PROJECTION: NAD 1983 UTM Zone 17N

Natural Heritage Features
Significant Wildlife Habitat
Candidate SWH for Turtle Wintering Areas



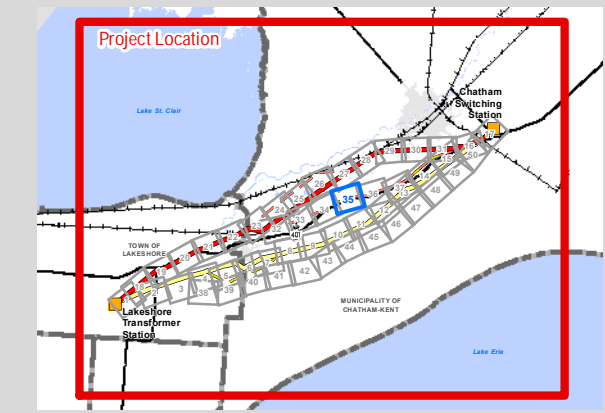
PROJECT: 19-1917
STATUS: INTERNAL DRAFT
DATE: 2020-12-16



**HYDRO ONE NETWORKS INC.
CHATHAM TO LAKESHORE LINE
CLASS ENVIRONMENTAL ASSESSMENT**

**NATURAL HERITAGE FEATURES
FIGURE - 5B-35**

- - - Variation
- Project Study Area (120m)
- Parcel
- Base Data**
- Highway
- Road
- Watercourse



SCALE 1:10,000
0 0.075 0.15 0.3 km

MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR, IMAGERY SWOOP 2015

MAP CREATED BY: SFG/LMM
MAP CHECKED BY: -
MAP PROJECTION: NAD 1983 UTM Zone 17N

Natural Heritage Features
Species At Risk Habitat

Potential Habitat for Eastern Foxsnake (*Pantherophis gloydi*, Endangered)

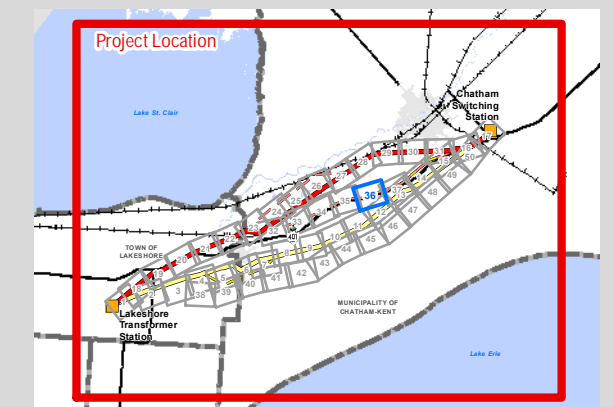


PROJECT: 19-1917
STATUS: INTERNAL DRAFT
DATE: 2020-12-16

**HYDRO ONE NETWORKS INC.
CHATHAM TO LAKESHORE LINE
CLASS ENVIRONMENTAL ASSESSMENT**

**NATURAL HERITAGE FEATURES
FIGURE - 5B-36**

- - - Variation
- Project Study Area (120m)
- Parcel
- Base Data**
- Highway
- Watercourse



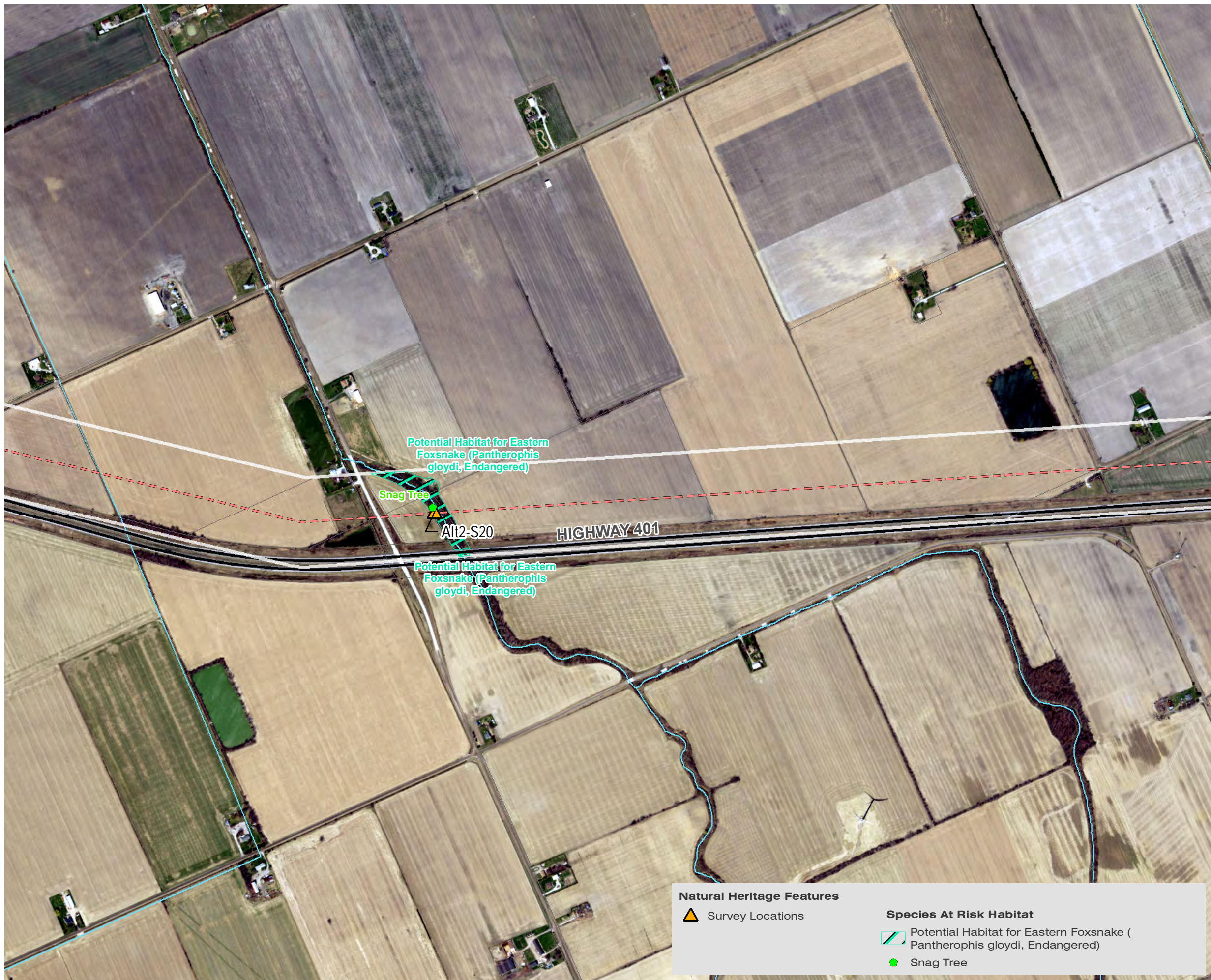
SCALE 1:10,000
0 0.075 0.15 0.3 km

MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR, IMAGERY SWOOP 2015

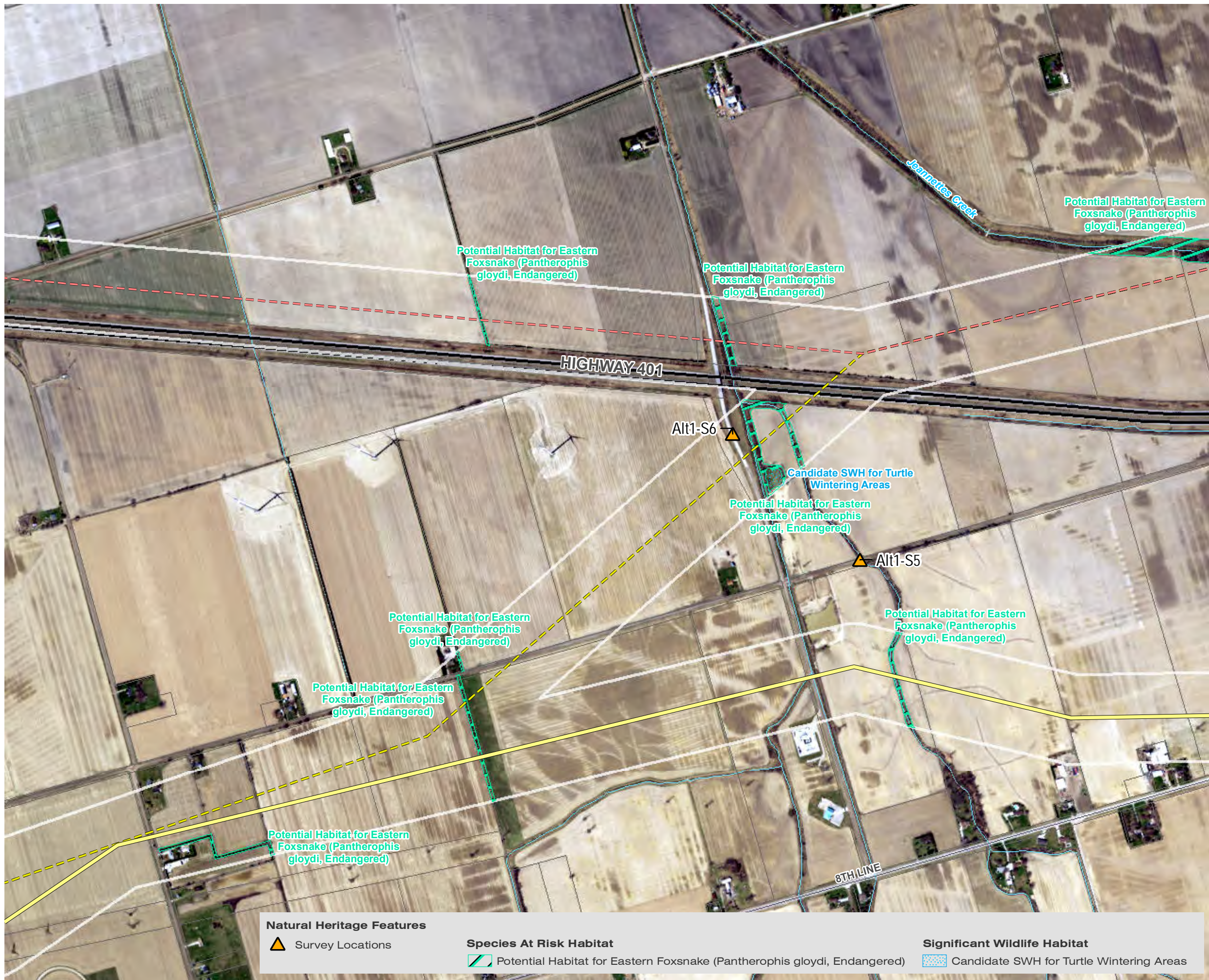
MAP CREATED BY: SFG/LMM
MAP CHECKED BY: -
MAP PROJECTION: NAD 1983 UTM Zone 17N



PROJECT: 19-1917
STATUS: INTERNAL DRAFT
DATE: 2020-12-16



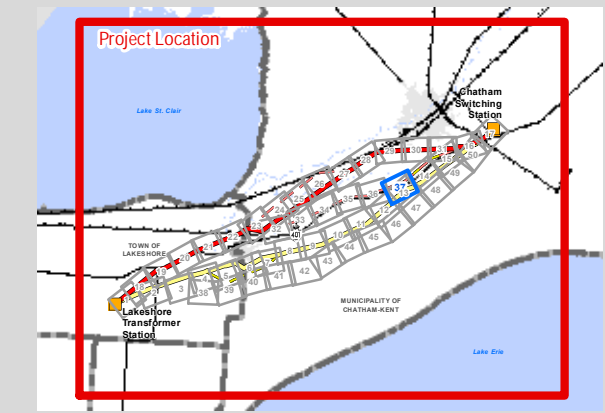
Natural Heritage Features		Species At Risk Habitat	
	Survey Locations		Potential Habitat for Eastern Foxsnake (<i>Pantherophis gloydi</i> , Endangered)
			Snag Tree



**HYDRO ONE NETWORKS INC.
CHATHAM TO LAKESHORE LINE
CLASS ENVIRONMENTAL ASSESSMENT**

**NATURAL HERITAGE FEATURES
FIGURE - 5B-37**

- Alternative 1
- - - Variation
- - - Variation
- Project Study Area (120m)
- Parcel
- Base Data**
- Highway
- Road
- Watercourse



SCALE 1:10,000
0 0.075 0.15 0.3 km

MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR, IMAGERY SWOOP 2015





MAP CREATED BY: SFG/LMM
MAP CHECKED BY: -
MAP PROJECTION: NAD 1983 UTM Zone 17N

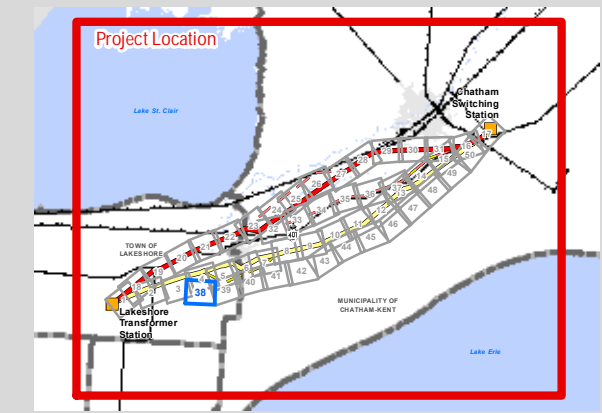
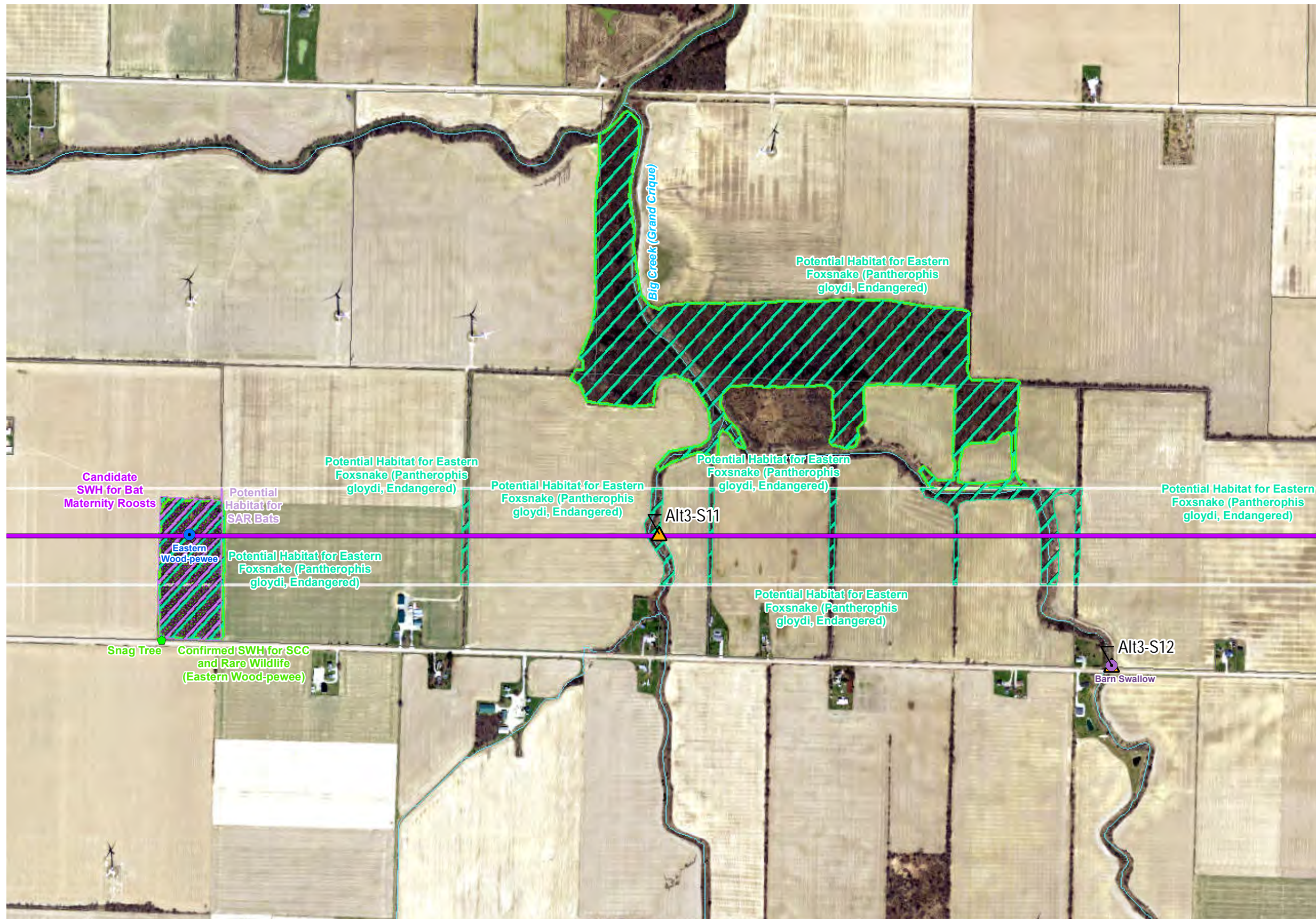
Natural Heritage Features		Species At Risk Habitat	Significant Wildlife Habitat
▲ Survey Locations	▭ Potential Habitat for Eastern Foxsnake (Pantherophis gloydi, Endangered)	 Candidate SWH for Turtle Wintering Areas	



PROJECT: 19-1917
STATUS: INTERNAL DRAFT
DATE: 2020-12-16






NATURAL HERITAGE FEATURES
 FIGURE - 5B-38

-  Alternative 3
-  Project Study Area (120m)
-  Parcel
- Base Data**
-  Watercourse



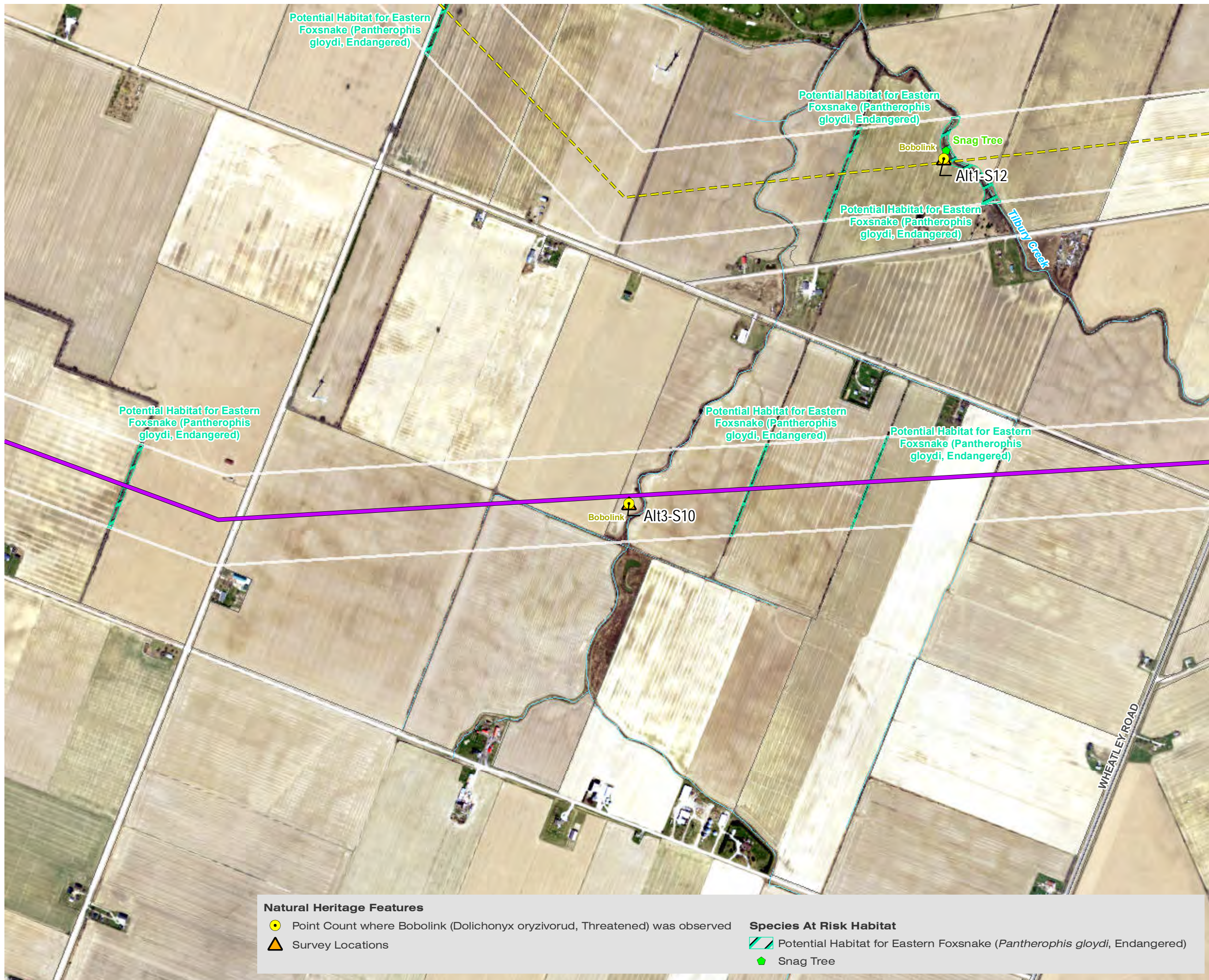
SCALE 1:10,000
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MAP DRAWING INFORMATION:
 DATA PROVIDED BY MNR, IMAGERY SWOOP 2015
 MAP CREATED BY: SFG/LMM
 MAP CHECKED BY: -
 MAP PROJECTION: NAD 1983 UTM Zone 17N

Natural Heritage Features			
	Point Count where Barn Swallow (<i>Hirundo rustica</i> , Threatened) was observed	Species At Risk Habitat	
	Point Count where Eastern Wood-pewee (<i>Contopus virens</i> ; Special Concern)		
	Survey Locations		Potential Habitat for Eastern Foxsnake (<i>Pantherophis gloydi</i> , Endangered)
	Significant Woodland		Potential Habitat for SAR Bats
			Snag Tree
Significant Wildlife Habitat			
	Candidate SWH for Bat Maternity Roosts		
	Confirmed SWH for SCC and Rare Wildlife (Eastern Wood-pewee)		



PROJECT: 19-1917
 STATUS: INTERNAL DRAFT
 DATE: 2020-12-16



Natural Heritage Features

- Point Count where Bobolink (*Dolichonyx oryzivorus*, Threatened) was observed
- Survey Locations

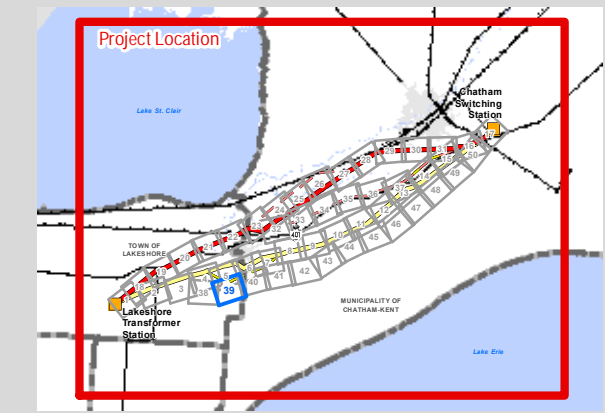
Species At Risk Habitat

- Potential Habitat for Eastern Foxsnake (*Pantherophis gloydi*, Endangered)
- Snag Tree

**HYDRO ONE NETWORKS INC.
CHATHAM TO LAKESHORE LINE
CLASS ENVIRONMENTAL ASSESSMENT**

**NATURAL HERITAGE FEATURES
FIGURE - 5B-39**

- Variation
 - Alternative 3
 - Project Study Area (120m)
 - Parcel
- Base Data**
- Road
 - Watercourse



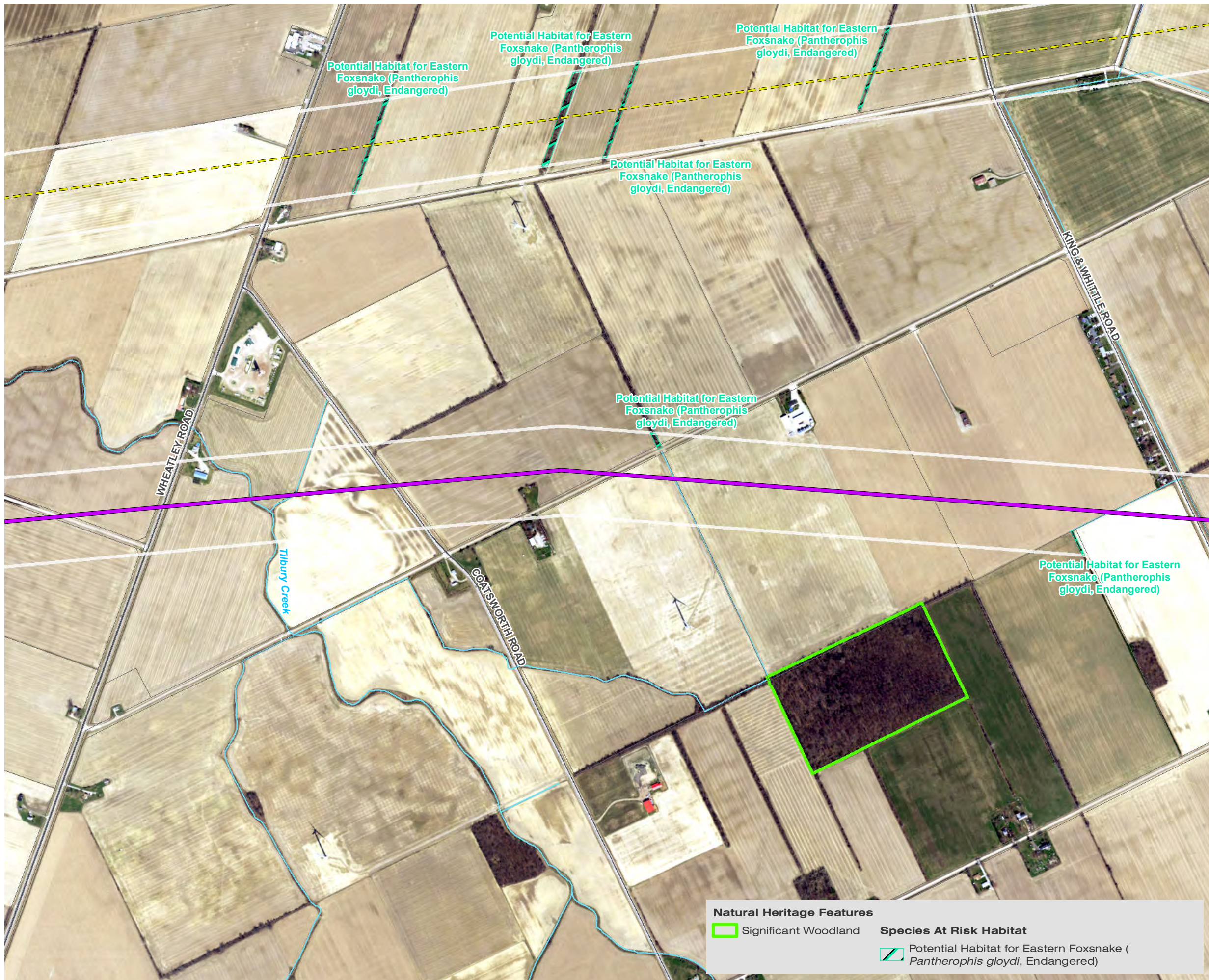
SCALE 1:10,000
0 0.075 0.15 0.3 km

MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR, IMAGERY SWOOP 2015

MAP CREATED BY: SFG/LMM
MAP CHECKED BY: -
MAP PROJECTION: NAD 1983 UTM Zone 17N



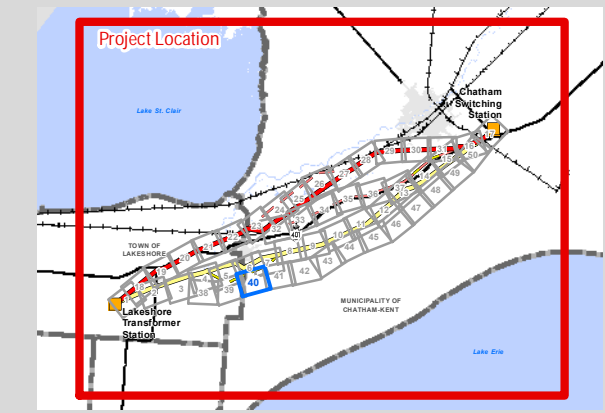
PROJECT: 19-1917
STATUS: INTERNAL DRAFT
DATE: 2020-12-16



**HYDRO ONE NETWORKS INC.
CHATHAM TO LAKESHORE LINE
CLASS ENVIRONMENTAL ASSESSMENT**

**NATURAL HERITAGE FEATURES
FIGURE - 5B-40**

- - - Variation
- Alternative 3
- Project Study Area (120m)
- Parcel
- Base Data**
- Road
- Watercourse



SCALE 1:10,000
0 0.075 0.15 0.3 km

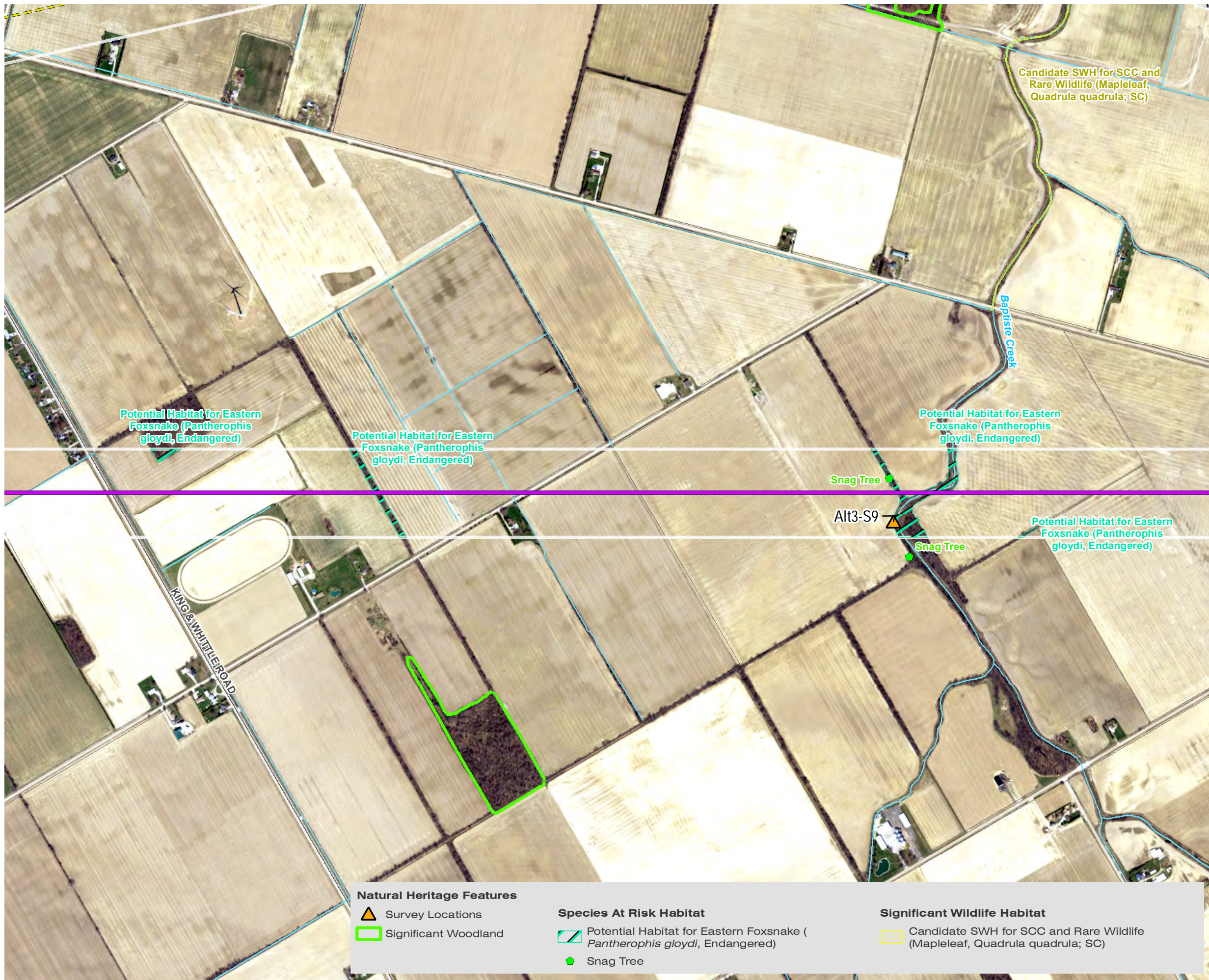
MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR, IMAGERY SWOOP 2015

MAP CREATED BY: SFG/LMM
MAP CHECKED BY: -
MAP PROJECTION: NAD 1983 UTM Zone 17N

Natural Heritage Features		Species At Risk Habitat	
 Significant Woodland		 Potential Habitat for Eastern Foxsnake (<i>Pantherophis gloydi</i> , Endangered)	



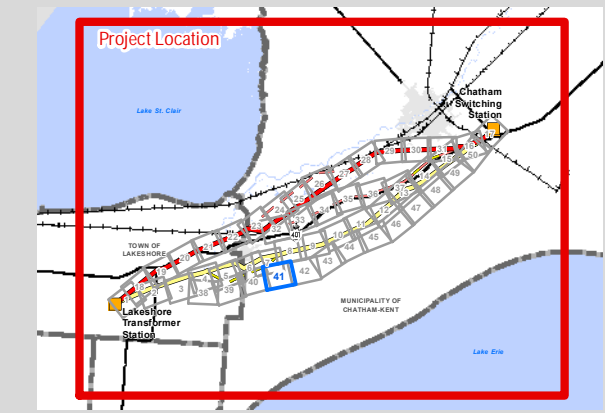
PROJECT: 19-1917
STATUS: INTERNAL DRAFT
DATE: 2020-12-16



**HYDRO ONE NETWORKS INC.
CHATHAM TO LAKESHORE LINE
CLASS ENVIRONMENTAL ASSESSMENT**

**NATURAL HERITAGE FEATURES
FIGURE - 5B-41**

- - - Variation
- Alternative 3
- Project Study Area (120m)
- Parcel
- Base Data**
- Road
- Watercourse



SCALE 1:10,000
0 0.075 0.15 0.3 km

MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR, IMAGERY SWOOP 2015

MAP CREATED BY: SFG/LMM
MAP CHECKED BY: -
MAP PROJECTION: NAD 1983 UTM Zone 17N






Natural Heritage Features		
▲ Survey Locations	Species At Risk Habitat	
 Significant Woodland	 Potential Habitat for Eastern Foxsnake (<i>Pantherophis gloydi</i> , Endangered)	 Candidate SWH for SCC and Rare Wildlife (Mapleleaf, <i>Quadrula quadrula</i> ; SC)
	◆ Snag Tree	





PROJECT: 19-1917
STATUS: INTERNAL DRAFT
DATE: 2020-12-16

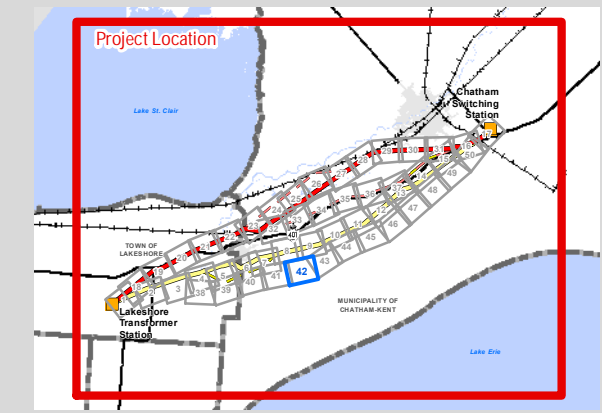
**HYDRO ONE NETWORKS INC.
CHATHAM TO LAKESHORE LINE
CLASS ENVIRONMENTAL ASSESSMENT**

**NATURAL HERITAGE FEATURES
FIGURE - 5B-42**

-  Alternative 3
-  Project Study Area (120m)
-  Parcel
- Base Data**
-  Road
-  Watercourse



Natural Heritage Features		Species At Risk Habitat	
	Survey Locations		Potential Habitat for Eastern Foxsnake (Pantherophis gloydi, Endangered)



SCALE 1:10,000
0 0.075 0.15 0.3 km

MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR, IMAGERY SWOOP 2015






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MAP CHECKED BY: -
MAP PROJECTION: NAD 1983 UTM Zone 17N

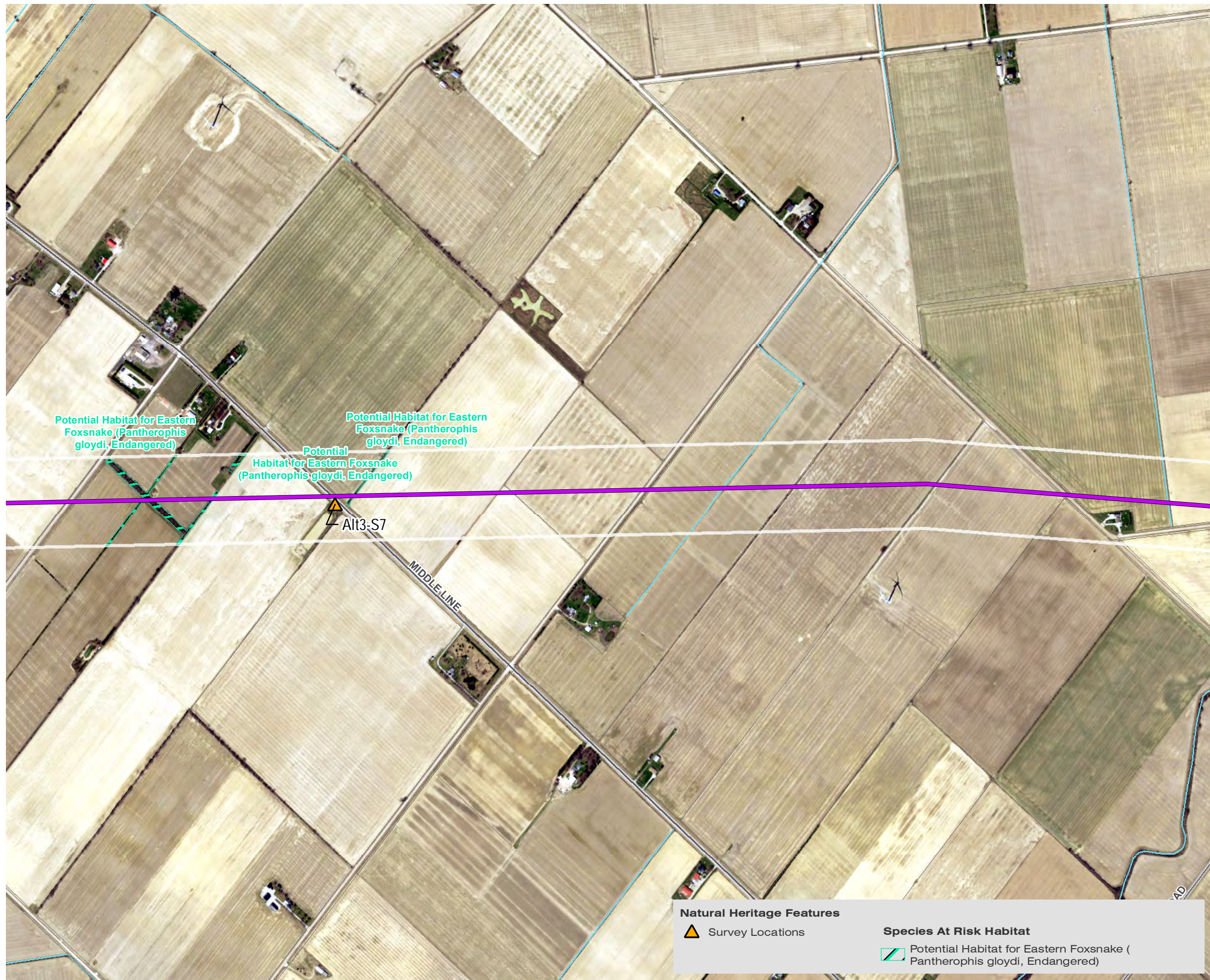




PROJECT: 19-1917
STATUS: INTERNAL DRAFT
DATE: 2020-12-16

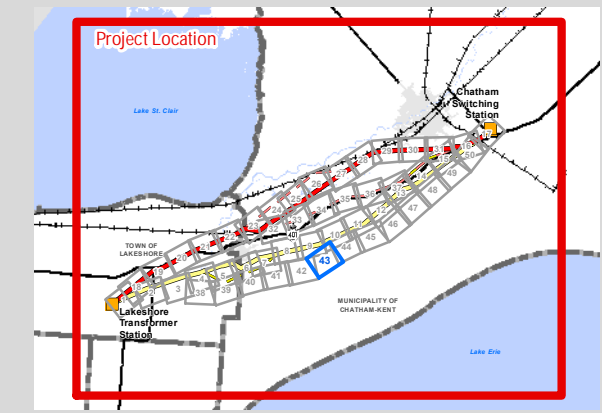
**HYDRO ONE NETWORKS INC.
CHATHAM TO LAKESHORE LINE
CLASS ENVIRONMENTAL ASSESSMENT**

**NATURAL HERITAGE FEATURES
FIGURE - 5B-43**

-  Alternative 3
-  Project Study Area (120m)
-  Parcel
- Base Data**
-  Road
-  Watercourse



Natural Heritage Features		Species At Risk Habitat	
	Survey Locations		Potential Habitat for Eastern Foxsnake (Pantherophis gloydi, Endangered)



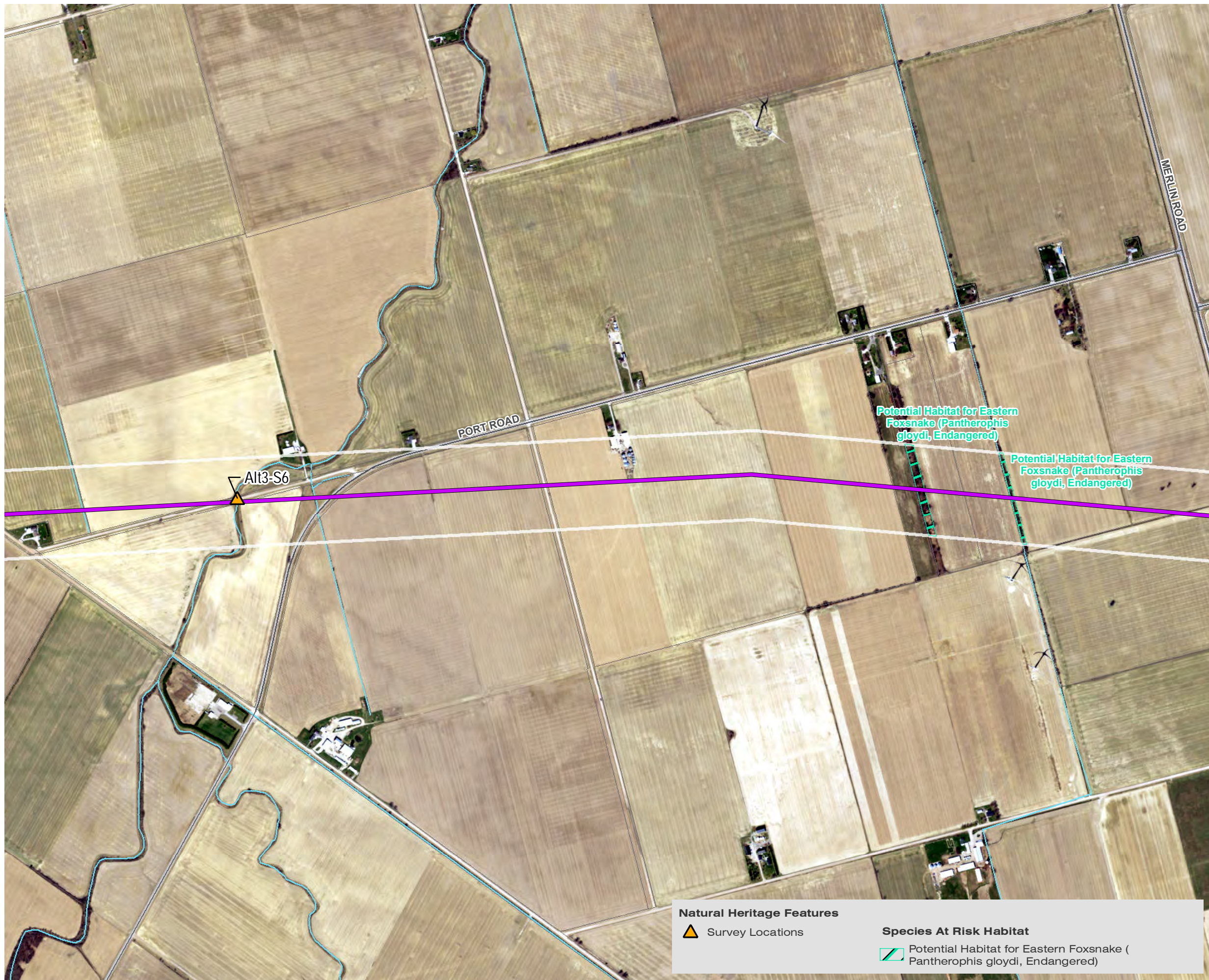
SCALE 1:10,000
0 0.075 0.15 0.3 km

MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR, IMAGERY SWOOP 2015

MAP CREATED BY: SFG/LMM
MAP CHECKED BY: -
MAP PROJECTION: NAD 1983 UTM Zone 17N



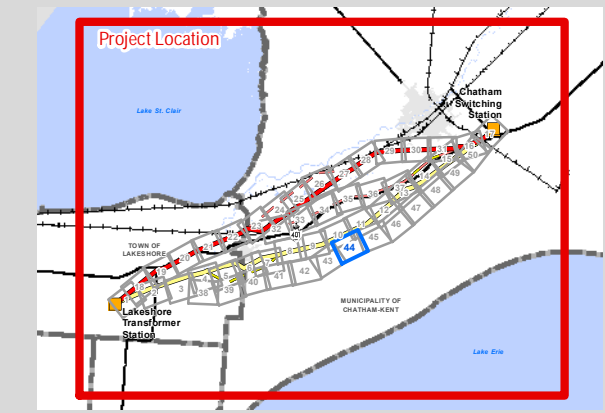
PROJECT: 19-1917
STATUS: INTERNAL DRAFT
DATE: 2020-12-16



**HYDRO ONE NETWORKS INC.
CHATHAM TO LAKESHORE LINE
CLASS ENVIRONMENTAL ASSESSMENT**

**NATURAL HERITAGE FEATURES
FIGURE - 5B-44**

- Alternative 3
- Project Study Area (120m)
- Parcel
- Base Data**
- Road
- Watercourse



SCALE 1:10,000
0 0.075 0.15 0.3 km

MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR, IMAGERY SWOOP 2015

MAP CREATED BY: SFG/LMM
MAP CHECKED BY: -
MAP PROJECTION: NAD 1983 UTM Zone 17N

Natural Heritage Features		Species At Risk Habitat	
▲ Survey Locations		 Potential Habitat for Eastern Foxsnake (Pantherophis gloydi, Endangered)	



PROJECT: 19-1917
STATUS: INTERNAL DRAFT
DATE: 2020-12-16



Potential Habitat for Eastern Foxsnake (*Pantherophis gloydi*, Endangered)

Natural Heritage Features

- Significant Woodland

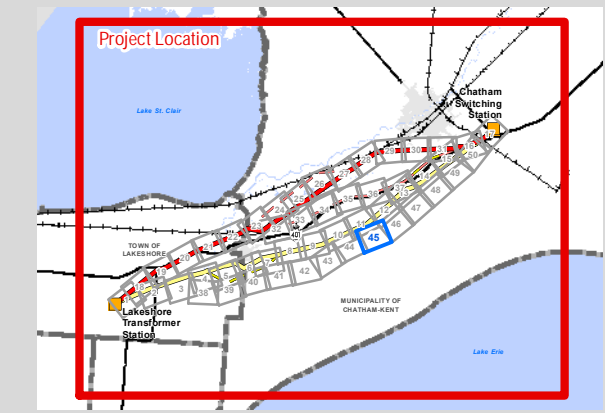
Species At Risk Habitat

- Potential Habitat for Eastern Foxsnake (*Pantherophis gloydi*, Endangered)

**HYDRO ONE NETWORKS INC.
CHATHAM TO LAKESHORE LINE
CLASS ENVIRONMENTAL ASSESSMENT**

**NATURAL HERITAGE FEATURES
FIGURE - 5B-45**

- Alternative 3
 - Project Study Area (120m)
 - Parcel
- Base Data**
- Road
 - Watercourse



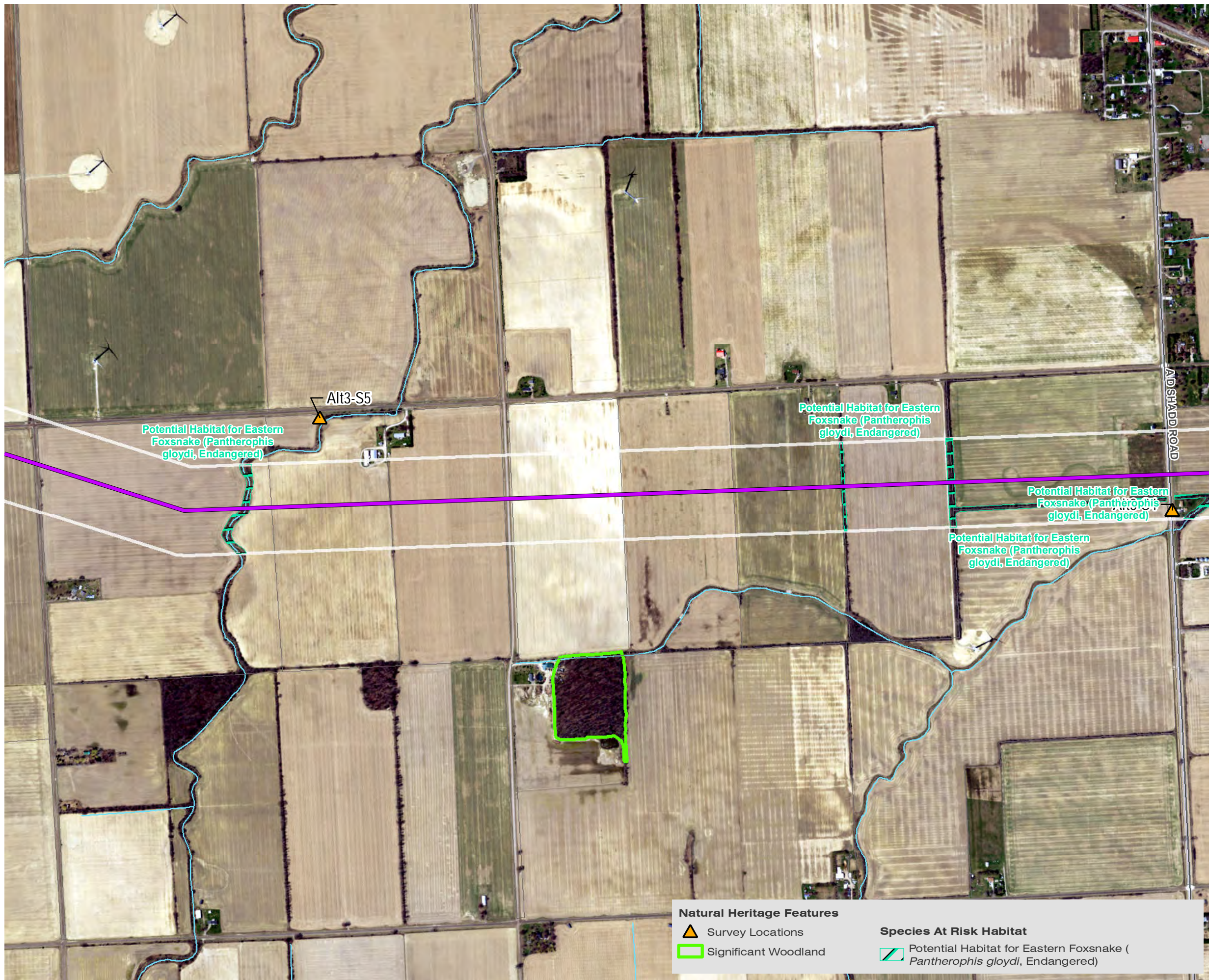
SCALE 1:10,000
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MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR, IMAGERY SWOOP 2015

MAP CREATED BY: SFG/LMM
MAP CHECKED BY: -
MAP PROJECTION: NAD 1983 UTM Zone 17N



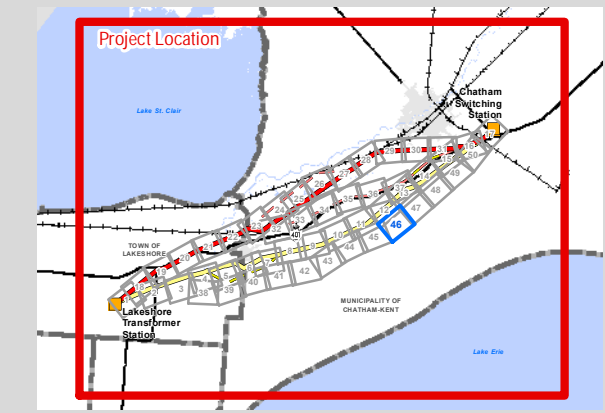
PROJECT: 19-1917
STATUS: INTERNAL DRAFT
DATE: 2020-12-16



**HYDRO ONE NETWORKS INC.
CHATHAM TO LAKESHORE LINE
CLASS ENVIRONMENTAL ASSESSMENT**

**NATURAL HERITAGE FEATURES
FIGURE - 5B-46**

- Alternative 3
- Project Study Area (120m)
- Parcel
- Base Data**
- Road
- Watercourse



SCALE 1:10,000
0 0.075 0.15 0.3 km

MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR, IMAGERY SWOOP 2015

MAP CREATED BY: SFG/LMM
MAP CHECKED BY: -
MAP PROJECTION: NAD 1983 UTM Zone 17N






Natural Heritage Features		Species At Risk Habitat	
▲ Survey Locations	 Significant Woodland	 Potential Habitat for Eastern Foxsnake (<i>Pantherophis gloydi</i> , Endangered)	

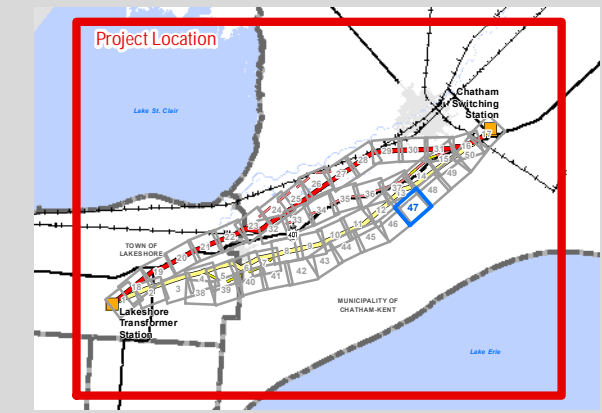
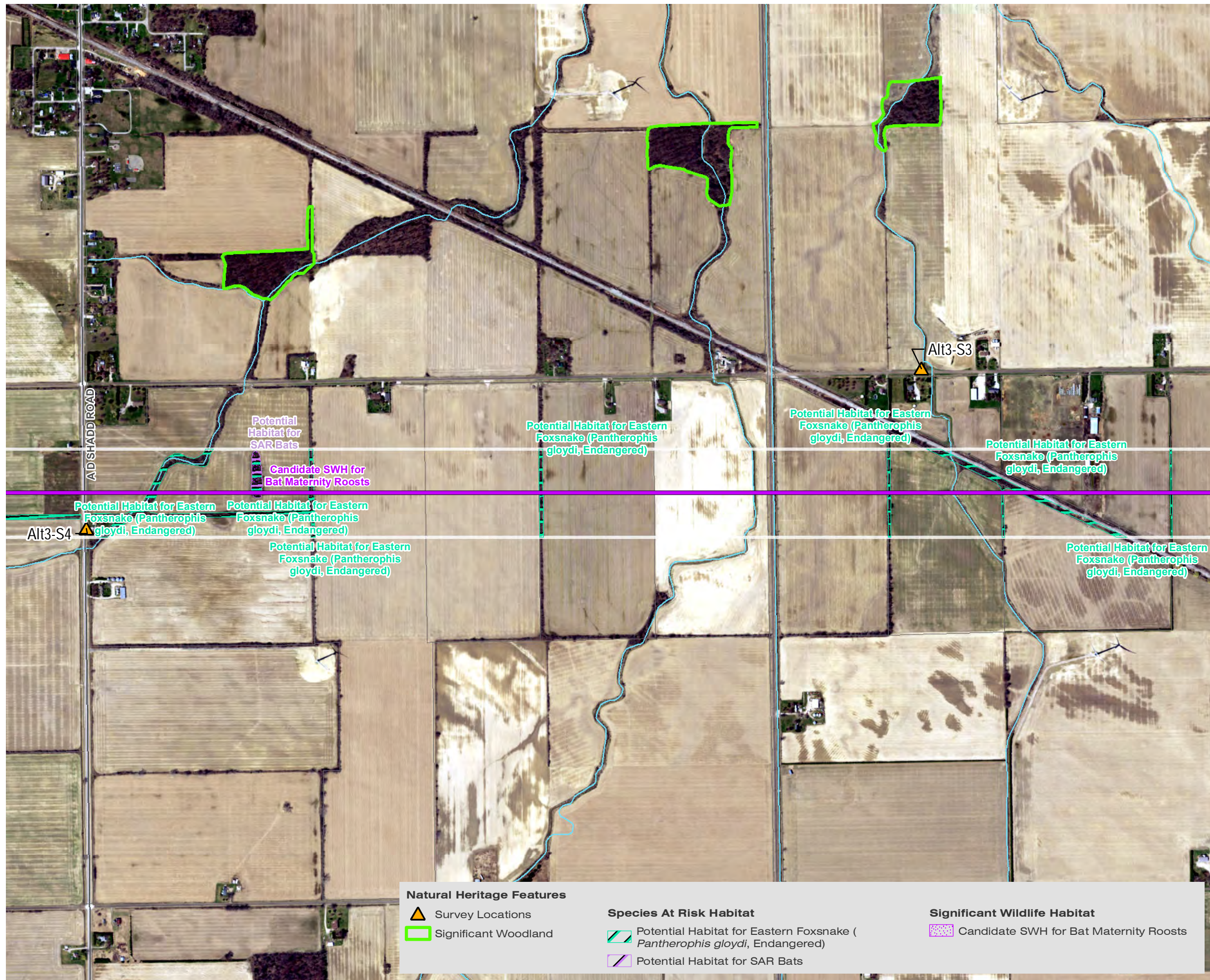


PROJECT: 19-1917
STATUS: INTERNAL DRAFT
DATE: 2020-12-16

**HYDRO ONE NETWORKS INC.
CHATHAM TO LAKESHORE LINE
CLASS ENVIRONMENTAL ASSESSMENT**

**NATURAL HERITAGE FEATURES
FIGURE - 5B-47**

-  Alternative 3
-  Project Study Area (120m)
-  Parcel
- Base Data**
-  Road
-  Watercourse



SCALE 1:10,000
0 0.075 0.15 0.3 km

MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR, IMAGERY SWOOP 2015
MAP CREATED BY: SFG/LMM
MAP CHECKED BY: -
MAP PROJECTION: NAD 1983 UTM Zone 17N






Natural Heritage Features		
 Survey Locations		
 Significant Woodland		
Species At Risk Habitat		
 Potential Habitat for Eastern Foxsnake (<i>Pantherophis gloydi</i> , Endangered)		
 Potential Habitat for SAR Bats		
Significant Wildlife Habitat		
 Candidate SWH for Bat Maternity Roosts		

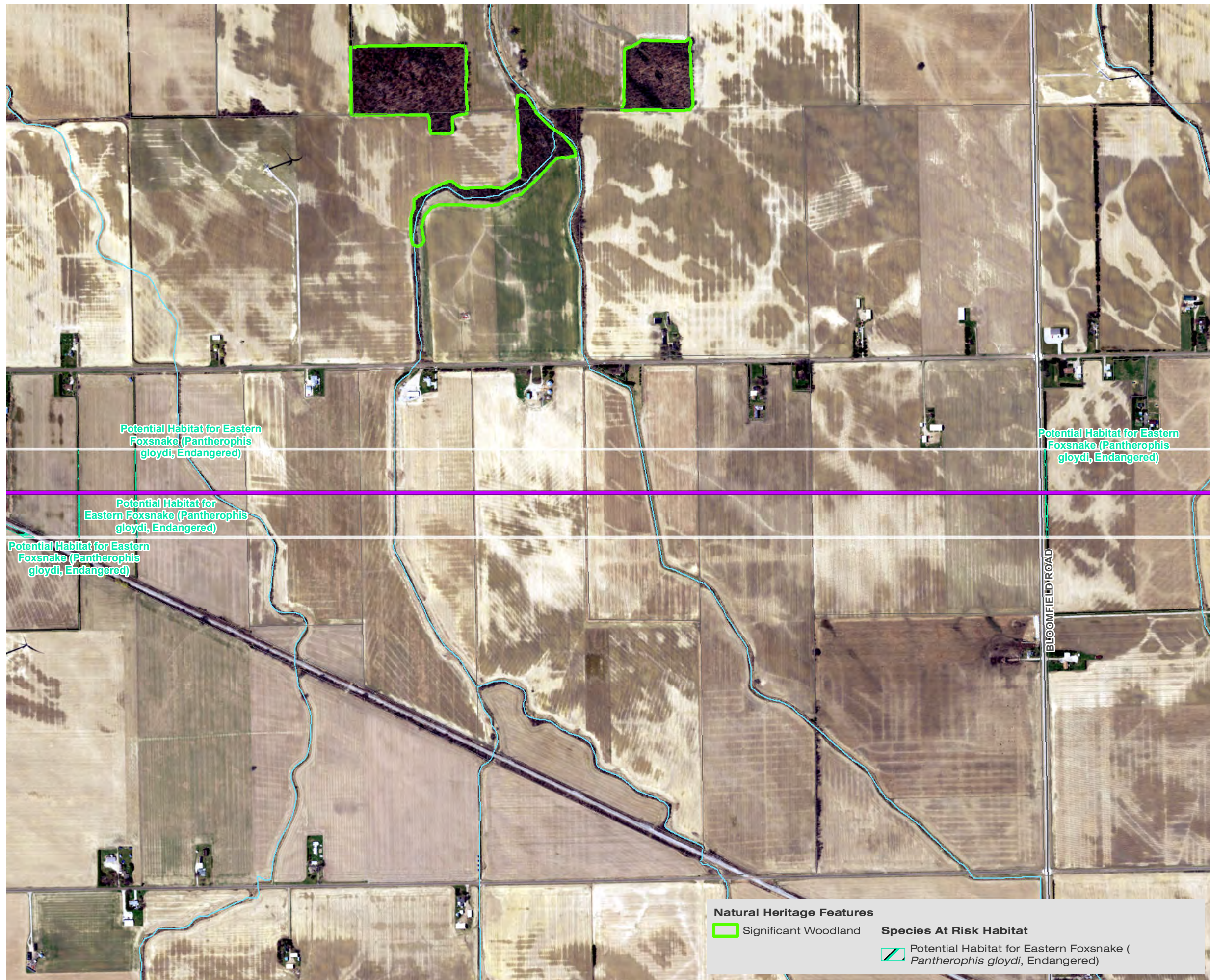




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STATUS: INTERNAL DRAFT
DATE: 2020-12-16

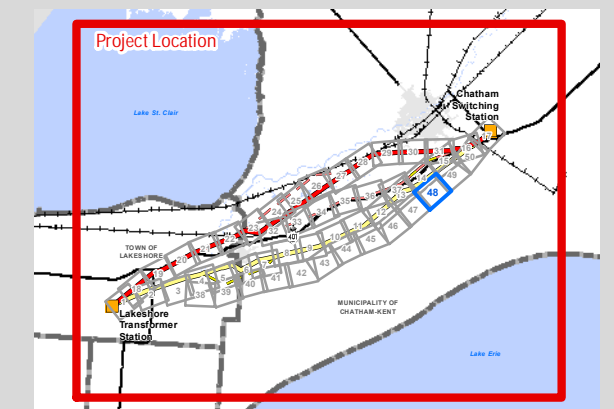
**HYDRO ONE NETWORKS INC.
CHATHAM TO LAKESHORE LINE
CLASS ENVIRONMENTAL ASSESSMENT**

**NATURAL HERITAGE FEATURES
FIGURE - 5B-48**

-  Alternative 3
-  Project Study Area (120m)
-  Parcel
- Base Data**
-  Road
-  Watercourse



- Natural Heritage Features**
-  Significant Woodland
- Species At Risk Habitat**
-  Potential Habitat for Eastern Foxsnake (*Pantherophis gloydi*, Endangered)

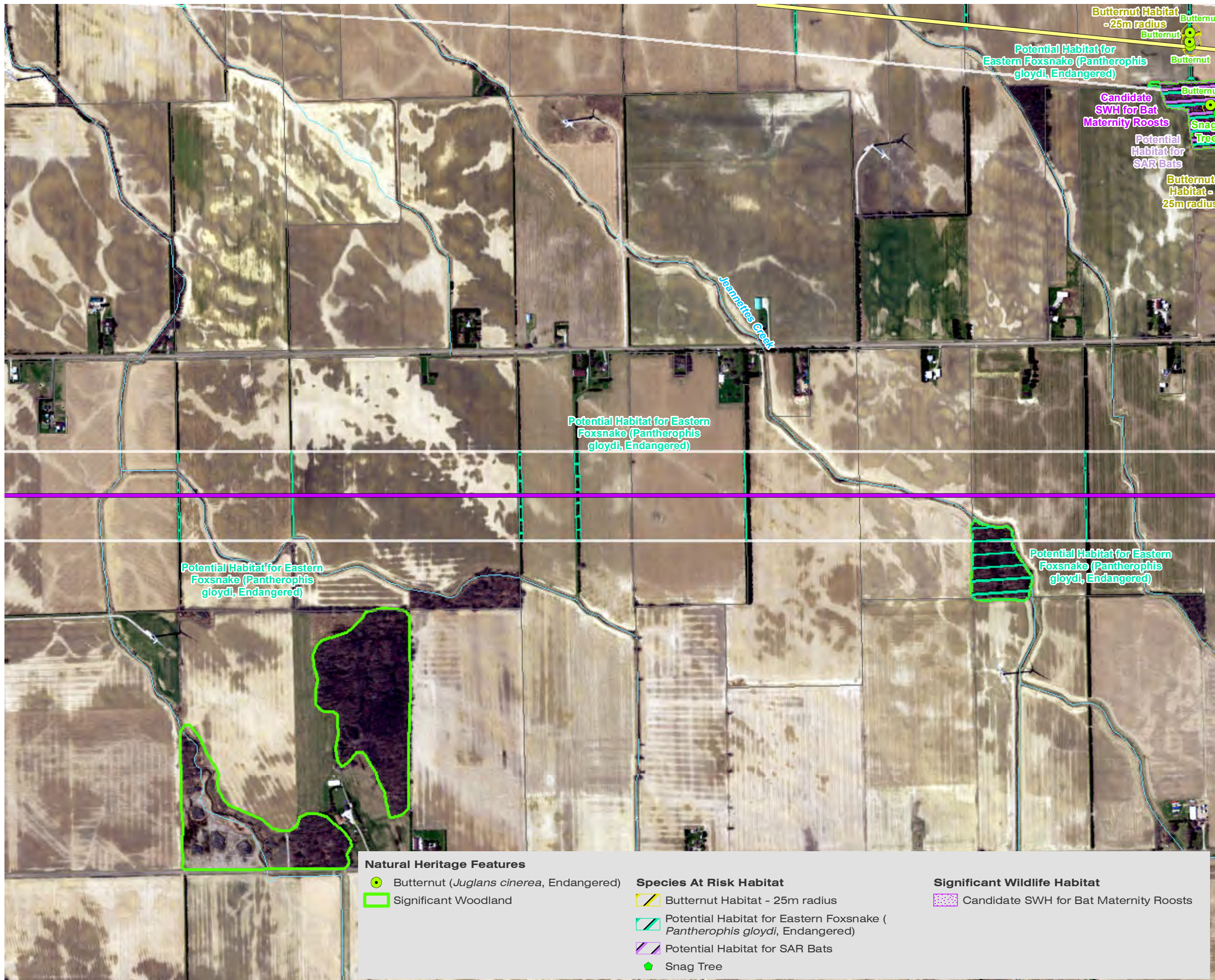


SCALE 1:10,000
0 0.075 0.15 0.3 km

MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR, IMAGERY SWOOP 2015
MAP CREATED BY: SFG/LMM
MAP CHECKED BY: -
MAP PROJECTION: NAD 1983 UTM Zone 17N



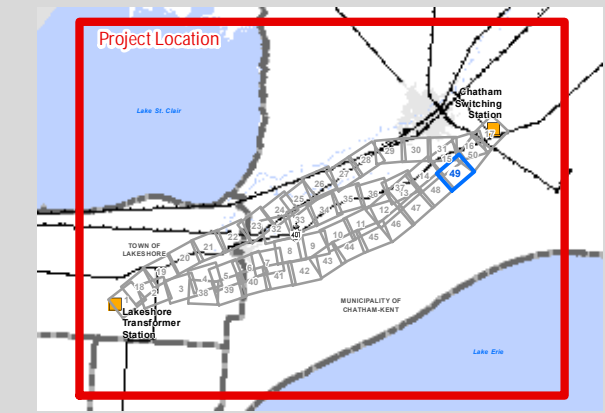
PROJECT: 19-1917
STATUS: INTERNAL DRAFT
DATE: 2020-12-16



HYDRO ONE NETWORKS INC.
CHATHAM TO LAKESHORE LINE
 CLASS ENVIRONMENTAL ASSESSMENT

NATURAL HERITAGE FEATURES
 FIGURE - 5B-49

- Alternative 1
- - - Variation
- Alternative 3
- Project Study Area (120m)
- Parcel
- Base Data**
- Watercourse

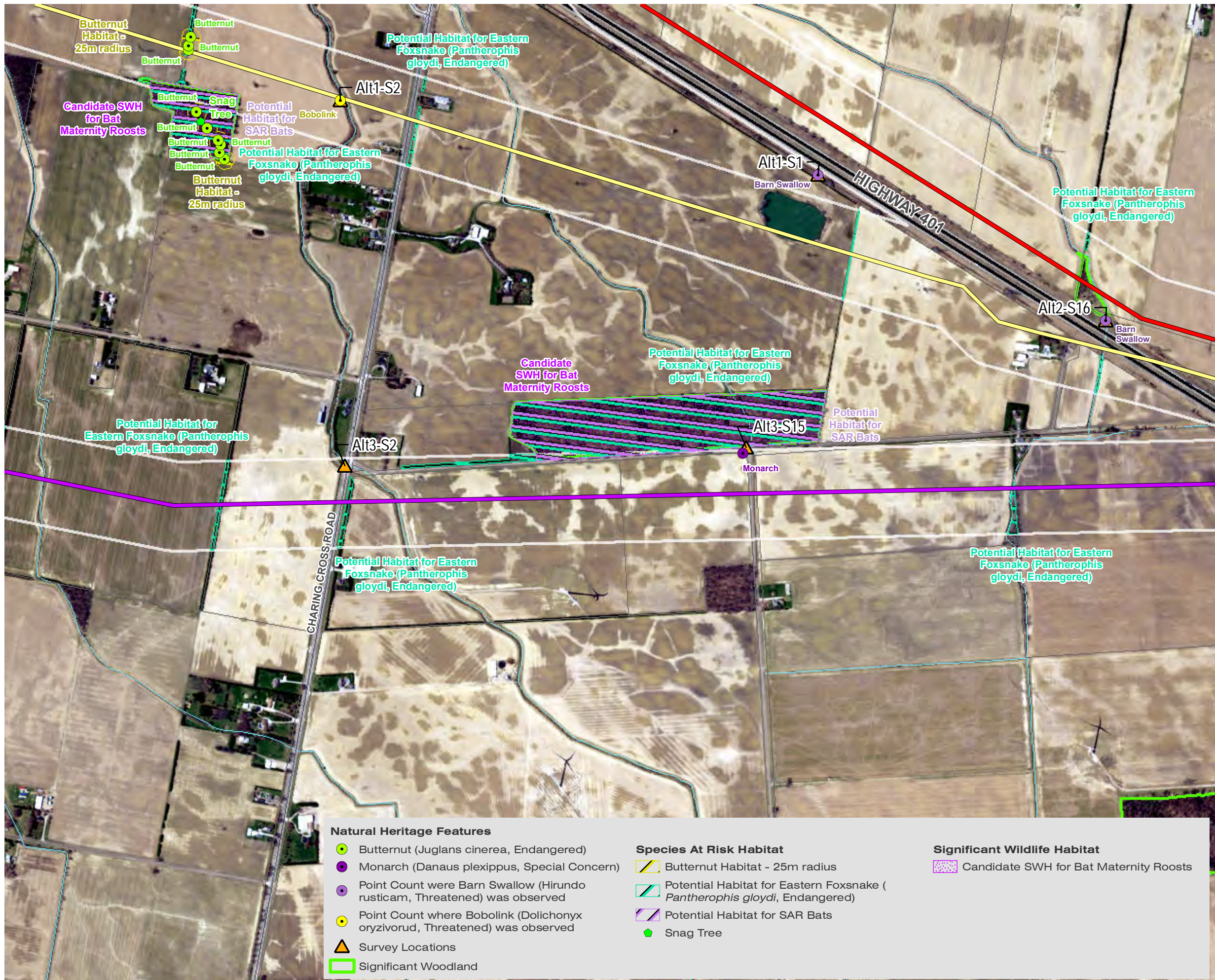


SCALE 1:10,000
 0 0.075 0.15 0.3 km

MAP DRAWING INFORMATION:
 DATA PROVIDED BY MNR, IMAGERY SWOOP 2015
 MAP CREATED BY: SFG/LMM
 MAP CHECKED BY: -
 MAP PROJECTION: NAD 1983 UTM Zone 17N



PROJECT: 19-1917
 STATUS: INTERNAL DRAFT
 DATE: 2020-12-16



**HYDRO ONE NETWORKS INC.
CHATHAM TO LAKESHORE LINE
CLASS ENVIRONMENTAL ASSESSMENT**

**NATURAL HERITAGE FEATURES
FIGURE - 5B-50**

- Alternative 1
- Variation
- Alternative 2
- Variation
- Alternative 3
- Project Study Area (120m)
- Parcel
- Base Data**
- Highway
- Road
- Watercourse



SCALE 1:10,000
0 0.075 0.15 0.3 km

MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR, IMAGERY SWOOP 2015

MAP CREATED BY: SFG/LMM
MAP CHECKED BY: -
MAP PROJECTION: NAD 1983 UTM Zone 17N

Natural Heritage Features

- Butternut (*Juglans cinerea*, Endangered)
- Monarch (*Danaus plexippus*, Special Concern)
- Point Count where Barn Swallow (*Hirundo rustica*, Threatened) was observed
- Point Count where Bobolink (*Dolichonyx oryzivorus*, Threatened) was observed
- Survey Locations
- Significant Woodland

Species At Risk Habitat

- Butternut Habitat - 25m radius
- Potential Habitat for Eastern Foxsnake (*Pantherophis gloydi*, Endangered)
- Potential Habitat for SAR Bats
- Snag Tree

Significant Wildlife Habitat

- Candidate SWH for Bat Maternity Roosts



PROJECT: 19-1917
STATUS: INTERNAL DRAFT
DATE: 2020-12-16

Appendix B

*Natural Environment Field Program
Terms of Reference*



DILLON
CONSULTING

HYDRO ONE NETWORKS INC.

Chatham X Lakeshore 230 kV Transmission Line Project

Natural Environment Field Program – Terms of Reference (DRAFT)

DRAFT

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Table of Contents

1.0	Project Overview	1
1.1	Project Driver	1
2.0	The Proponent	2
3.0	Study Area	2
4.0	Natural Environment Existing Conditions	2
4.1	Natural Heritage Features	3
4.1.1	Terrestrial Features	3
4.1.2	Aquatic Features	4
4.2	Fish Habitat	5
4.3	Species of Conservation Concern and Significant Wildlife Habitat	5
4.4	Species at Risk	8
4.5	Invasive Species	11
5.0	Approach	12
5.1	Early Access Requirements	12
5.2	Natural Environment Survey Methods	12
5.2.1	Ecological Land Classification and Botanical Assessment	15
5.2.1.1	Invasive Species	15
5.2.2	Aquatic Assessment	15
5.2.3	Wildlife and Wildlife Habitat	16
5.2.3.1	Breeding Bird Survey	16
5.2.3.2	Amphibian Call Count Survey	16
5.2.4	Species at Risk	17
5.2.4.1	Eastern Foxsnake	17
5.2.4.2	Butternut Surveys and Butternut Health Assessments	18
5.2.4.3	SAR Bats	18
6.0	Project Schedule	19
Appendices		
A	Figures	

Project Overview

Hydro One Networks Inc. (Hydro One) is proposing to construct a new double-circuit 230 kilovolt (kV) transmission line (the Project) in southwestern Ontario. The Project is anticipated to be between 46 – 49 kilometers (km) in length, and will connect the Chatham Switching Station (SS) in the Municipality of Chatham-Kent to the planned Lakeshore Transformer Station (TS) and SS in the Town of Lakeshore. In support of the Project, Hydro One has identified three Route Alternatives, including route variations (**Appendix A** - Figure 1). Alternative 1 consists of a main route, as well as three additional variations (1A, 1B and 1C). Variations 1A and 1B contain single deviations from the main route, whereas Variation 1C is considered a combination of 1A and 1B. Similarly, Alternative 2 consists of a main route and two possible variations (2A and 2B); each variation provides a single deviation from the main route. No variations are proposed for Alternative 3.

This Project is being conducted in accordance with Hydro One's *Class Environmental Assessment (EA) Process for Minor Transmission Facilities* (2016), in accordance with the Ontario *Environmental Assessment Act*. The Class EA is a streamlined planning process that has proven effective in ensuring minor transmission projects with a predictable range of effects have feasible environmental mitigation and/or protection measures in place. The Project will also require Ontario Energy Board (OEB) approval under Section 92 (Leave to Construct) of the OEB Act.

Key activities for this Project will include environmental baseline field studies, identifying required permits and approvals, on-going consultation with stakeholders, issues identification and mitigation requirements. The results of the aforementioned will be documented in the draft Environmental Study Report (ESR) which will be made available to the public for review and comment for a 30-day period.

The purpose of this Terms of Reference (ToR) is to summarize results of the background review, and to confirm the natural environment field program approach prior to the commencement of work to facilitate a stream-lined and timely review process.

1.1 Project Driver

In June 2019, Hydro One received direction from the Independent Electricity Systems Operator (IESO) to initiate work on development activities, including seeking relevant approvals for the Project. The Project is needed to help ensure the transmission system remains adequate to meet electricity demand, which is expected to increase significantly over the next decade due to strong agricultural growth in the Windsor-Essex area. The required in-service date for the Project is prior to the winter of 2025/2026 to address the specified bulk system electricity needs.

2.0

The Proponent

Hydro One Networks Inc. is a fully owned subsidiary of Hydro One Limited and Ontario's largest electricity transmission and distribution provider with more than 1.3 million valued customers, \$25 billion in assets and annual revenues of over \$6.5 billion. A team of 5,500 skilled and dedicated employees proudly and safely serve suburban, rural and remote communities across Ontario through a 30,000 km circuit high-voltage transmission and 123,000 km circuit primary distribution networks. Hydro One is committed to the communities they serve, and has been rated as the top utility in Canada for its corporate citizenship, sustainability, and diversity initiatives. Hydro One is one of only five utility companies in Canada to achieve the Canadian Electricity Association's Sustainable Electricity Company™ designation. In addition, Hydro One also provides advanced broadband telecommunications services on a wholesale basis utilizing an extensive fibre optic network.

3.0

Study Area

As illustrated in **Appendix A** - Figures 2A-2E, lands within 120 m of each Route Alternative center line, including the Chatham and Lakeshore TS, are considered the "Project Study Area." For the purposes of the desktop review, and to assist in the selection of the preferred Route Alternative, the existing natural environment conditions of the Project Study Area were assessed in support of the proposed field program identified herein.

4.0

Natural Environment Existing Conditions

At this time, a preliminary desktop records review has been undertaken to identify the potential presence of natural features, significant wildlife habitat (SWH), and Species at Risk (SAR) within the Project Study Area. This information is to be used as baseline data and will be confirmed and revised after field surveys are completed during the 2020 field season.

Various readily available online resources were used to determine the presence or absence of the natural features outlined in **Section 4.1**. Policies, wildlife atlases, databases and maps from the following resources were assessed in support of the background review (**Table 1**).

Table 1: Policies, Legislation and Background Resources Searched

Source	Record Reviewed/Requested
Federal Government of Canada	
Species at Risk Act, 2002	<ul style="list-style-type: none"> • Schedule 1 list of Species at Risk. • Species at Risk Public Registry.
Oceans and Fisheries Canada	<ul style="list-style-type: none"> • Aquatic Species at Risk Interactive Mapping (2019).
Province of Ontario	
Endangered Species Act, 2007	<ul style="list-style-type: none"> • Species at Risk in Ontario (SARO) List (Ontario Regulation 230/08).
Invasive Species Act, 2015	<ul style="list-style-type: none"> • Ontario Regulation 354/16 (General)
Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA)	<ul style="list-style-type: none"> • OMAFRA Agricultural Information Atlas (OMAFRA, 2020)
Ministry of Natural Resources and Forestry (MNRF)	<ul style="list-style-type: none"> • MNRF Natural Heritage Information Centre (NHIC) database. • MNRF Make a Map: Natural Heritage Areas (MNRF 2018). • Natural Heritage Reference Manual (MNRF 2010). • MNRF Significant Wildlife Habitat Technical Guide (MNRF 2000). • Significant Wildlife Habitat Ecoregion 7E Criterion Schedules (MNRF 2015).
Municipality of Chatham-Kent	<ul style="list-style-type: none"> • Chatham-Kent Official Plan (Consolidated: November 19, 2018). • Schedules C5 and C7: Natural Heritage and Hazard Features.
Town of Lakeshore	<ul style="list-style-type: none"> • Town of Lakeshore Official Plan (November 22, 2010). • Schedule B2: Natural Heritage Features.
Essex Region Conservation Authority	<ul style="list-style-type: none"> • Ontario Regulation 158/06.
Lower Thames Valley Conservation Authority	<ul style="list-style-type: none"> • Ontario Regulation 152/06.
Wildlife Atlases	<ul style="list-style-type: none"> • Ontario Breeding Bird Atlas (Cadman et al. 2007). • Christmas Bird Count (National Audubon Society 2017). • Ontario Butterfly Atlas (Toronto Entomologists Association 2017). • Ontario Reptile and Amphibian Atlas (Ontario Nature 2017). • Mammals of the Western Hemisphere (NatureServe 2017).

Results of the background review are provided in the following subsections. Detailed mapping of natural features present within the Project Study Area are illustrated in **Appendix A** - Figures 2A-2E.

4.1 Natural Heritage Features

4.1.1 Terrestrial Features

Through the background review, the presence of terrestrial features (i.e., woodlands, wetlands, valleylands, and Areas of Natural and Scientific Interest (ANSI)) were assessed within the Project Study Area. The number of each terrestrial feature identified within the Project Study Area per Route Alternative is provided in **Table 2**.

Table 2: Number of Natural Heritage Features Identified Within the Project Study Area

Route Alternatives	Woodlands ^{1,2}	Wetlands ³	Valleylands ⁴	Areas of Natural and Scientific Interest ⁵
Alternative 1	29 (23-25)	0	0	0
Alternative 2	19 (12-15)	0	0	0
Alternative 3	21	0	0	0

¹ Number located outside of brackets indicates total number of features within Route Alternative and Variations. Numbers identified within brackets indicate the range of features present within Variations of the Route Alternatives.

² Woodlands identified through aerial photograph review, Official Plan mapping, and NHIC and LIO data.

³ Wetlands identified through LIO and NHIC data.

⁴ Valleylands identified through NHIC data and Official Plan mapping.

⁵ Areas of Natural and Scientific Interest identified through NHIC data.

A total of 69 woodland features were identified within the Project Study Area; the majority of which are considered linear treed fencerows. Of the 69 woodlands, 14 were identified as significant in the Town of Lakeshore (2010) and the Municipality of Chatham-Kent (2014) Official Plans, respectively. Nine of the 14 significant woodlands were identified by the Town of Lakeshore (Schedule B.2, 2010), while the remaining five significant woodlands were identified by the Municipality of Chatham-Kent (Schedule C5 and C7; 2018) (**Appendix A** - Figures 2A – 2E). No woodlands within the Project Study Area were identified as significant by the County of Essex (Schedule B1; 2014). A total of six significant woodlands are associated with Route Alternative 1, while four are associated with each Route Alternative 2 and 3, respectively. The remaining woodlands are located along the periphery of the Project Study Area.

No wetlands (Provincially Significant Wetlands (PSW) or unevaluated), valleylands, or ANSI were identified within the Project Study Area during the background review.

4.1.2 Aquatic Features

Through the background review, the presence of aquatic features (i.e., watercourses, waterbodies and constructed drains) were assessed within the Project Study Area. The majority of these features appear to be surrounded by agricultural fields or manicured properties with limited natural vegetation. For the purposes of this ToR aquatic features are defined using two categories: 1. water crossings, and 2. waterbodies. Water crossings are considered rivers, watercourses, and constructed drains, while waterbodies are considered natural or man-made ponds or pools that are land-locked within the landscape.

The number of aquatic features identified as water crossings and waterbodies within the Project Study Area are provided in **Table 3** per Route Alternative.

Table 3: Aquatic Features within the Project Study Area

Route Alternative	Water Crossings^{1,2}	Waterbodies^{1,3}
Alternative 1	61 (42-46)	8 (5 - 7)
Alternative 2	68 (34 - 44)	8 (5 - 7)
Alternative 3	53	2

¹ Number located outside of brackets indicates total number of features within the Route Alternative and all Variations. Numbers identified within brackets indicate the range of features present within Variations of Route Alternatives.

² Water crossings: rivers, watercourses, or constructed drains.

³ Waterbodies: natural or man-made ponds or pools that are land-locked within the landscape.

The number of water crossings presented for each Route Alternative is representative of the number of times the Route Alternative has intersected a water crossing (i.e., a water crossing may have been counted multiple times for a Route Alternative/variation in instances where it intersected the Route Alternative/variation on more than one occasion). The number of waterbodies is representative of the number of man-made or natural ponds or pools located entirely within or bordering the Project Study Area.

4.2 Fish Habitat

The Project Study Area is located in the Southwestern Ontario and Lake Simcoe Fisheries Management Zone 16 (FMZ 16) (MNRF, 2020a), and intersects the Lakeshore Watershed and the Lower Thames Valley Tertiary Watershed. There are four large aquatic features that intersect the Project Study Area; Jeannette's Creek, Baptiste Creek, Tilbury Creek and Big Creek. These aquatic features flow into the Thames River and eventually into Lake St Clair.

As mentioned previously in **Section 4.1.2**, aquatic features within the general area are a mix of natural features as well as constructed or altered drains along the straight edges of agricultural fields. A large portion of constructed drains within the Project Study Area have not been rated by the DFO (OMAFRA, 2019). Of drains that have been rated, classifications range predominantly between either C (permanent flow, no sensitive species present), E (permanent flow, sensitive species present) and F (intermittent flow), (Kavanagh et al., 2017). Based on the aforementioned drain ratings, there is the potential for fish habitat to exist within the Project Study Area. Critical habitat for species at risk (SAR) was not identified within the Project Study Area based on the in DFO SAR Mapping (2019).

4.3 Species of Conservation Concern and Significant Wildlife Habitat

Species of Conservation Concern (SCC) are defined as species listed as *Special Concern*, *Threatened*, or *Endangered* under the federal Species at Risk Act (SARA) but not *Threatened* or *Endangered* under the Endangered Species Act (ESA, 2007) and/or species that are provincially rare/tracked (i.e., have a Sub-national (provincial) Rank of S1-Critically imperiled, S2 – Imperiled, or S3 – Vulnerable) or are designated

as *Special Concern* under the ESA. The habitats of SCC may be considered significant wildlife habitat (SWH).

In total, 36 SCC were identified as having the potential to occur within the Project Study Area (**Table 4**). Twenty-nine (29) of the species identified are listed as either Critically Imperiled (SRank of S1), Imperiled (SRank of S2) or Rare (SRank of S3) by the Province. The remaining 7 species were considered Secure (SRank of S5) or Apparently Secure (SRank of S4) in Ontario.

Of the 36 species listed in **Table 4**, 11 were identified as having potential habitat based on the natural features present within the Project Study Area.

Table 4: SCC with the Potential to Occur within the Project Study Area

Scientific Name	Common Name	SARA Status ¹	ESA Status ²	SRank ³	Information Source ⁴	Potential Habitat Available ⁵
Botanicals						
<i>Carex albicans</i> var. <i>albicans</i>	White-tinged Sedge	---	---	S3	NHIC	No
<i>Carex crus-corvi</i>	Ravenfoot Sedge	---	---	S1	NHIC	No
<i>Carex muskingumensis</i>	Muskingum Sedge	---	---	S3	NHIC	No
<i>Carex squarrosa</i>	Squarrose Sedge	---	---	S2	NHIC	No
<i>Carex typhina</i>	Cattail Sedge	---	---	S2	NHIC	No
<i>Carya glabra</i>	Pignut Hickory	---	---	S3	NHIC	No
<i>Carya laciniosa</i>	Shellbark Hickory	---	---	S3	NHIC	No
<i>Fraxinus profunda</i>	Pumpkin Ash	---	---	S2?	NHIC	No
<i>Lythrum alatum</i>	Winged Loosestrife	---	---	S3	NHIC	No
<i>Oxypolis rigidior</i>	Stiff Cowbane	---	---	S2	NHIC	No
<i>Quercus shumardii</i>	Shumard Oak	---	SC	S3	NHIC	Yes
<i>Ratibida pinnata</i>	Gray-headed Prairie Coneflower	---	---	S3	NHIC	No
<i>Rosa setigera</i>	Climbing Prairie Rose	SC	SC	S3	NHIC	Yes
<i>Silphium perfoliatum</i>	Cup Plant	---	---	S2	NHIC	No
<i>Smilax ecirrata</i>	Upright Carrionflower	---	---	S3?	NHIC	No
<i>Vernonia gigantea</i>	Giant Ironweed	---	---	S1?	NHIC	Yes
Birds						
<i>Cardellina canadensis</i>	Canada Warbler	THR	SC	S4B	OBBA	No
<i>Chordeiles minor</i>	Common Nighthawk	THR	SC	S4B	OBBA	No
<i>Contopus virens</i>	Eastern Wood-pewee	SC	SC	S4B	OBBA	Yes

Scientific Name	Common Name	SARA Status ¹	ESA Status ²	SRank ³	Information Source ⁴	Potential Habitat Available ⁵
<i>Chlidonias niger</i>	Black Tern	---	SC	S3B	OBBA	No
<i>Haliaeetus leucocephalus</i>	Bald Eagle	---	SC	S2N,S4B	OBBA	No
<i>Hylocichla mustelina</i>	Wood Thrush	END	SC	S4B	OBBA	No
<i>Melanerpes erythrocephalus</i>	Red-headed Woodpecker	THR	SC	S4B	OBBA	Yes
Mammals						
<i>Microtus pinetorum</i>	Woodland Vole	SC	SC	S3?	MWH	No
<i>Scalopus aquaticus</i>	Eastern Mole	SC	SC	S2	MWH	No
Herptofauna						
<i>Chelydra serpentina</i>	Snapping Turtle	SC	SC	S3	NHIC, OHA	Yes
<i>Graptemys geographica</i>	Northern Map Turtle	SC	SC	S3	OHA	No
<i>Nerodia sipedon insularum</i>	Lake Erie Watersnake	END	SC	S2	OHA	No
<i>Sternotherus odoratus</i>	Eastern Musk Turtle	SC	SC	S3	OHA	No
<i>Thamnophis sauritus</i>	Eastern Ribbonsnake (Great Lakes population)	SC	SC	S3	OHA	No
Fish and Molluscs						
<i>Ichthyomyzon unicuspis</i> pop. 1	Silver Lamprey (Great Lakes - Upper St. Lawrence populations)	---	SC	S3	DFO	Yes
<i>Minytrema melanops</i>	Spotted Sucker	SC	SC	S2	DFO	Yes
<i>Quadrula quadrula</i>	Mapleleaf Mussel (Great Lakes - Upper St. Lawrence population)	SC	SC	S2	DFO	Yes
<i>Villosa iris</i>	Rainbow	SC	SC	S2S3	DFO	Yes
Lepidoptera						
<i>Danaus plexippus</i>	Monarch	SC	SC	S4	NHIC	Yes
<i>Pieris virginienensis</i>	West Virginia White	---	SC	S3	OBA	No

¹ Federal Species at Risk Act, 2002.

² Provincial Endangered Species Act, 2007.

³ Provincial Conservation Ranking (SRank) where S3=Vulnerable, S2 = Imperiled, S1 = Critically Imperiled.

⁴ NHIC = Natural Heritage Information Centre (MNRF, 2018), OBBA – Ontario Breeding Bird Atlas (Bird Studies Canada, 2017), OHA – Ontario Reptile and Amphibian Atlas (Ontario Nature, 2013), DFO – Fisheries and Oceans Canada SAR Mapping (DFO, 2019).

⁵ Availability of potential suitable habitat based on the presence of natural features identified within the Project Study Area.

The Project is located in Ecoregion 7E (the Carolinian Zone). The Ontario Significant Wildlife Habitat Criteria Schedules for Ecoregion 7E (MNRF, 2015a) and the Significant Wildlife Habitat Technical Guide (MNR, 2000) were reviewed to assess candidate significant wildlife habitat (SWH) within the Project Study Area. Based on the background review results there is potential for candidate SWH to occur within the Project Study Area.

The habitat throughout the landscape is sparse given the lack of natural features and the existing land uses (i.e., active agriculture) within the Project Study Area. The following candidate SWH have the potential to occur within the Project Study Area:

Seasonal Concentration Areas of Animals

- Bat Maternity Colonies; and
- Turtle Wintering Areas.

Specialized Habitat for Wildlife

- Bald Eagle and Osprey nesting, Foraging and Perching Habitat; and
- Amphibian Breeding Habitat (woodland).

Habitat for Species of Conservation Concern

- Special Concern and Rare Wildlife Species:
 - Shumard Oak (*Quercus shumardii*);
 - Climbing Prairie Rose (*Rosa setigera*);
 - Giant Ironweed (*Vernonia gigantea*);
 - Eastern Wood-pewee (*Contopus virens*);
 - Red-Headed Woodpecker (*Melanerpes erythrocephalus*);
 - Mapleleaf (*Quadrula quadrula*);
 - Rainbow (*Villosa iris*);
 - Silver Lamprey (*Ichthyomyzon unicuspis population*); and
 - Spotted Sucker (*Minytrema melanops*).

4.4 Species at Risk

SAR are defined as those listed as Endangered or Threatened under the Endangered Species Act (ESA, 2007). Based on the results of the background review, a total of 36 SAR were identified as having the potential to occur within the general vicinity of the Project Study Area (**Table 5**). Of the 36 species, 27 were listed as either Critically Imperiled (SRank of S1), Imperiled (SRank of S2) and Rare (SRank of S3) by the Province. Seven species were listed as Secure (SRank of S5) or Apparently Secure (SRank of S4) in Ontario. One species (Henslow's Sparrow, *Ammodramus henslowii*) was listed as possibly extirpated within Ontario (SRank of SHB); the last species (American Badger; *Taxidea taxus jacksoni*) was not provided with a SRank status at this time.

Table 5: SAR with the Potential to Occur within the Project Study Area

Scientific Name	Common Name	SARA Status ¹	ESA Status ²	SRank ³	Information Source ⁴	Potential Habitat Available ⁵
Botanicals						
<i>Cornus florida</i>	Eastern Flowering Dogwood	END	END	S2?	NHIC	Yes
<i>Eleocharis geniculata</i>	Bent Spike-rush (Great Lakes Plains population)	END	END	S1	NHIC	No
<i>Gymnocladus dioicus</i>	Kentucky Coffee-tree	THR	THR	S2	NHIC	No
<i>Juglans cinerea</i>	Butternut	END	END	S3?	NHIC	Yes
<i>Platanthera leucophaea</i>	Eastern Prairie Fringed-orchid	END	END	S2	NHIC	No
Birds						
<i>Chaetura pelagica</i>	Chimney Swift	THR	THR	S4B,S4N	OBBA	No
<i>Ixobrychus exilis</i>	Least Bittern	THR	THR	S4B	OBBA, NHIC	No
<i>Ammodramus henslowii</i>	Henslow's Sparrow	END	END	SHB	NHIC	No
<i>Hirundo rustica</i>	Barn Swallow	THR	THR	S4B	OBBA	Yes
<i>Riparia riparia</i>	Bank Swallow	THR	THR	S4B	OBBA	No
<i>Dolichonyx oryzivorus</i>	Bobolink	THR	THR	S4B	OBBA, NHIC	Yes
<i>Sturnella magna</i>	Eastern Meadowlark	THR	THR	S4B	OBBA, NHIC	Yes
<i>Tyto alba</i>	Barn Owl	END	END	S1	OBBA	No
Mammals						
<i>Urocyon cinereoargenteus</i>	Gray Fox	THR	THR	S1	MWH	No
<i>Taxidea taxus jacksoni</i>	American Badger (Southwestern Ontario population)	END	END	---	MWH	No
<i>Myotis leibii</i>	Eastern Small-footed Myotis	---	END	S2S3	MWH	Yes
<i>Myotis lucifugus</i>	Little Brown Myotis	END	END	S4	MWH	Yes
<i>Myotis septentrionalis</i>	Northern Myotis	END	END	S3	MWH	Yes
<i>Pipistrellus subflavus</i>	Tri-colored Bat	END	END	S3?	MWH	Yes
Herptofauna						
<i>Anaxyrus fowleri</i>	Fowler's Toad	END	END	S2	OHA, MNRF	No
<i>Ambystoma texanum</i>	Small-mouthed Salamander	END	END	S1	OHA	No
<i>Coluber constrictor foxii</i>	Blue Racer	END	END	S1	OHA	No

Scientific Name	Common Name	SARA Status ¹	ESA Status ²	SRank ³	Information Source ⁴	Potential Habitat Available ⁵
<i>Emydoidea blandingii</i>	Blanding's Turtle	THR	THR	S3	OHA	No
<i>Heterodon platirhinos</i>	Eastern Hog-nosed Snake	THR	THR	S3	OHA	No
<i>Pantherophis gloydi</i> pop. 2	Eastern Foxsnake (Carolinian population)	END	END	S2	OHA	Yes
<i>Pantherophis spiloides</i> pop. 2	Gray Ratsnake (Carolinian population)	END	END	S1	OHA	No
<i>Plestiodon fasciatus</i> pop. 1	Common Five-lined Skink (Carolinian population)	END	END	S2	OHA	No
<i>Regina septemvittata</i>	Queensnake	END	END	S2	OHA	No
<i>Sistrurus catenatus</i> pop. 2	Massasauga (Carolinian population)	END	END	S1	OHA	No
<i>Thamnophis butleri</i>	Butler's Gartersnake	END	END	S2	OHA	No
Fish and Molluscs						
<i>Erimyzon sucetta</i>	Lake Chubsucker	END	THR	S2	DFO	Yes
<i>Lampsilis fasciola</i>	Wavy-rayed Lampmussel	SC	THR	S1	NHIC	Yes
<i>Obovaria subrotunda</i>	Round Hickorynut	END	END	S1	DFO	Yes
<i>Opsopoeodus emiliae</i>	Pugnose Minnow	SC	THR	S2	DFO	Yes
<i>Pleurobema sintoxia</i>	Round Pigtoe	END	END	S1	DFO	Yes
<i>Toxolasma parvus</i>	Lilliput	---	THR	S1	DFO	Yes

¹ Federal Species at Risk Act, 2002.

² Provincial Endangered Species Act, 2007.

³ Provincial Conservation Ranking (SRank) where S4 = Apparently Secure, S3=Vulnerable, S2 = Imperiled, S1 = Critically Imperiled, B = Breeding Habitat, ? = Some uncertainty with the classification due to insufficient information; SH = Possibly Extirpated; --- = species is known to occur in this nation or state/province.

⁴ NHIC = Natural Heritage Information Centre (MNRF, 2018), OBBA – Ontario Breeding Bird Atlas (Bird Studies Canada, 2017), MWH = Mammals of the Western Hemisphere (Patterson et al, 2007), OHA – Ontario Reptile and Amphibian Atlas (Ontario Nature, 2013), DFO – Fisheries and Oceans Canada SAR Mapping (DFO, 2019).

⁵ Availability of potential suitable habitat based on the presence of natural features identified within the Project Study Area

Of the 36 species in **Table 5**, 16 were identified as having potential habitat based on the natural features present within the Project Study Area.

4.5 Invasive Species

The Ontario list of regulated species under *Ontario Regulation 354/16 (General)* of the *Ontario Invasive Species Act (2015b)* was reviewed in support of the background review. Based on our knowledge and project experience within southwestern Ontario, the following four restricted species were identified as having the potential to occur within the Project Study Area:

- Common Buckthorn (*Rhamnus cathartica*);
- Dog Strangling Vine (*Cynanchum rossicum*);
- Japanese Knotweed (*Fallopia japonica*); and
- Phragmites (*Phragmites australis subsp. australis*).

5.0

Approach

The following approach has been developed to assess the three Route Alternatives as well as to identify potential impacts associated with the Project. The results from the work outlined below will assist in meeting requirements of the Class EA process.

5.1 Early Access Requirements

In order to commence field assessments within the Project Study Area in the spring of 2020, Hydro One is making attempts to obtain Early Access Agreements with directly impacted property owners whom existing land rights do not allow for access to initiate the necessary natural environment studies and assessments. Currently, Hydro One's Real Estate rights for existing transmission corridors allows for these studies to take place on the existing transmission corridor lands only.

5.2 Natural Environment Survey Methods

The Project Study Area is geographically large, is dominated by active agriculture, and covers both private and public properties. Where private property access is granted in advance of spring 2020, field studies as part of the 2020 field program will occur within or directly adjacent to natural features. Where private property access has not been granted and the property is associated with a natural feature, field data will be collected from road right-of-way's (ROW), Hydro One's existing transmission corridor and/or from property limits where access is granted; field data collected in this way will be supplemented with information collected through aerial imagery interpretation and secondary sources.

Table 6 outlines the various field studies proposed within the Project Study Area during the 2020 field season. Refer to **Appendix A** - Figures 3A – 3E for proposed survey stations locations.

Detailed methodology for the surveys identified as part of the field program are provided below.

Table 6: Proposed Survey Stations and Corresponding Field Surveys for the 2020 Field Program

Survey Location ¹	Figure Reference ²	Ecological Land Classification	Botanical Assessment	Aquatic Assessment	Diurnal Breeding Bird Survey	Amphibian Breeding Survey
Alternative Route 1 (Alt1)						
Survey Station 1*	Alt1-S1	●	●	---	●	●
Survey Station 2	Alt1-S2	●	●	●	●	---
Survey Station 3*	Alt1-S3	●	●	●	●	---
Survey Station 4*	Alt1-S4	●	●	●	●	---
Survey Station 5	Alt1-S5	●	●	●	●	●
Survey Station 6*	Alt1-S6	●	●	●	●	---
Survey Station 7	Alt1-S7	●	●	●	●	---
Survey Station 8*	Alt1-S8	●	●	●	---	---
Survey Station 9*	Alt1-S9	●	●	●	●	---
Survey Station 10*	Alt1-S10	●	●	●	●	●
Survey Station 11*	Alt1-S11	●	●	●	●	---
Survey Station 12	Alt1-S12	●	●	●	●	---
Survey Station 13	Alt1-S13	●	●	●	---	---
Survey Station 14	Alt1-S14	●	●	---	●	●
Survey Station 15	Alt1-S15	●	●	---	●	●
Survey Station 16	Alt1-S16	●	●	---	●	●
Alternative Route 2 (Alt2)						
Survey Station 1*	Alt2-S1	●	●	●	---	---
Survey Station 2	Alt2-S2	●	●	●	---	---
Survey Station 3*	Alt2-S3	●	●	●	---	---
Survey Station 4	Alt2-S4	●	●	---	●	●
Survey Station 5*	Alt2-S5	●	●	●	---	---
Survey Station 6	Alt2-S6	●	●	●	---	---
Survey Station 7*	Alt2-S7	●	●	●	---	---
Survey Station 8	Alt2-S8	●	●	●	●	●
Survey Station 9*	Alt2-S9	●	●	●	●	●
Survey Station 10*	Alt2-S10	●	●	---	●	---
Survey Station 11*	Alt2-S11	●	●	●	●	---
Survey Station 12*	Alt2-12	●	●	---	●	---
Survey Station 13	Alt2-S13	●	●	●	●	---

Survey Location ¹	Figure Reference ²	Ecological Land Classification	Botanical Assessment	Aquatic Assessment	Diurnal Breeding Bird Survey	Amphibian Breeding Survey
Survey Station 14*	Alt2-S14	●	●	●	---	---
Survey Station 15*	Alt2-S15	●	●	●	---	●
Survey Station 16*	Alt2-S16	●	●	●	●	---
Survey Station 17*	Alt2-S17	●	●	●	---	---
Survey Station 18*	Alt2-S18	●	●	●	●	---
Survey Station 19*	Alt2-S19	●	●	●	---	---
Survey Station 20	Alt2-S20	●	●	●	●	---
Survey Station 21	Alt2-S21	●	●	●	●	---
Alternative Route 3 (Alt 3)						
Survey Station 1*	Alt3-S1	●	●	---	●	●
Survey Station 2*	Alt3-S2	●	●	●	●	---
Survey Station 3*	Alt3-S3	●	●	●	---	---
Survey Station 4*	Alt3-S4	●	●	●	●	---
Survey Station 5	Alt3-S5	●	●	●	---	---
Survey Station 6*	Alt3-S7	●	●	●	---	---
Survey Station 7*	Alt3-S7	●	●	---	---	●
Survey Station 8*	Alt3-S8	●	●	●	---	---
Survey Station 9	Alt3-S9	●	●	●	●	---
Survey Station 10	Alt3-S10	●	●	●	●	---
Survey Station 11	Alt3-S11	●	●	●	●	---
Survey Station 12	Alt3_S12	●	●	●	●	---
Survey Station 13	Alt3-S13	●	●	---	●	---
Survey Station 14	Alt3-S14	●	●	●	●	---
Survey Station 15	Alt3-S15	●	●	●	●	---

¹ Asterisk (*) designates proposed road side survey

² Identifier for proposed survey locations as shown on Figures 3A – 3E.

5.2.1 Ecological Land Classification and Botanical Assessment

To map vegetation within the Project Study Area, ecological communities will be assessed using a combination of aerial photograph review and targeted field studies.

Initial aerial mapping of ecological communities within the Project Study Area will be confirmed in the field following methods outlined in Ecological Land Classification (ELC) for Southern Ontario (Lee et al., 1998; Lee, 2008). The ELC results will provide a baseline dataset and will be used to determine the presence of natural features, candidate significant wildlife habitat, and potential habitat for SAR and/or SCC. We note that the majority of the Project Study Area will be represented as anthropogenic communities, such as annual row crop and developed lands reflecting the dominant agricultural land use. Given the existing land uses, soil classification surveys will not be completed as part of ELC surveys.

ELC surveys and botanical assessments for the majority of lands within the Project Study Area will be performed as roadside surveys. Where private property access is permitted, assessment of vegetation communities will occur from within property boundaries (i.e., within natural features).

While conducting ELC surveys, the dominant species for each ecosite or community type will be identified in the field and visual estimates of species abundance will be recorded. Where appropriate, additional factors such as the level of disturbance will be documented. A single season botanical assessment will occur concurrently with the ELC field survey. If encountered, the location and abundance of floral SCC or SAR will be documented and GPS co-ordinates will be recorded.

5.2.1.1 Invasive Species

Where encountered, the presence and location of invasive species infestation(s) will be documented and GPS co-ordinates recorded. This will be completed concurrent with ELC and botanical assessment surveys. In addition to the species identified in **Section 4.5**, incidental observations of other invasive species (e.g. Emerald Ash Borer (*Agilus planipennis*), Gypsy Moth (*Lymantria dispar dispar*), etc.) will also be documented.

5.2.2 Aquatic Assessment

The primary purpose of the aquatic field program will be to characterize aquatic habitat that could potentially be affected by the Project in order to support the EA process and identify potential effects and mitigation.

Site-specific information collected will focus on the physical characteristics including aquatic feature type (water crossing, waterbody,) permanence, channel size (bankfull width, bankfull depth, wetted width and wetted depth), adjacent land uses and potential risks of pollution. Fish habitat quality will be assessed by classifying in-stream and riparian vegetation, the sediment type, bank stability, as well as the presence of groundwater seeps contributing to base flow. Specific observations of fish will also be

noted. General information gathered during aquatic assessments will also include the date of sampling, UTM co-ordinates, weather conditions and digital photographs.

Numerous water crossings were identified within the Project Study Area (**Table 3**). It is assumed that impacts to the majority of water crossings can be avoided through avoidance and/or mitigation measures (i.e., tower locations) during the detailed design phase. In an effort to scope down survey requirements for the 2020 field program, aquatic surveys are proposed within a subset of aquatic features with the potential to provide fish habitat, as well as potential habitat for aquatic SAR.

Refer to **Appendix A** - Figures 3A – 3E for proposed aquatic assessment locations.

5.2.3 **Wildlife and Wildlife Habitat**

Incidental observations of wildlife and the presence of candidate SWH will be recorded during field investigations. Wildlife observations, including dens, tracks and scats, and other wildlife evidence will be documented.

SWH identified within the Project Study Area will be identified using criteria outlined in the Ontario Significant Wildlife Habitat Criteria Schedules for Ecoregion 7E (MNRF, 2015a), habitat mapping reviewed from aerial imagery, and information collected during field studies. The following sections describe the methods proposed to evaluate SWH within the Project Study Area.

5.2.3.1 **Breeding Bird Survey**

Natural and anthropogenic features within the Project Study Area provide potential habitat to a number of breeding birds. As a result, breeding bird surveys are proposed to evaluate the potential impacts of the Project on birds.

Diurnal breeding bird surveys will follow methods outlined in the Ontario Breeding Bird Atlas Guide for Participants (Cadman et al. 2007). Two surveys will be conducted between late-May and early-July to document both early-season and late-season breeders.

Specifically, surveys will consist of 10 minute point-counts generally conducted between dawn and five hours after sunrise to establish quantitative estimates of bird abundance in suitable habitat types within the Project Study Area. A total of 35 point counts are proposed throughout the Project Study Area. Evidence of breeding behaviour will be recorded during the surveys, which generally includes but is not limited to, males singing, nest building, egg incubation, territorial defence, carrying food, and feeding young.

5.2.3.2 **Amphibian Call Count Survey**

While wetlands were not identified within the Project Study Area, the desktop review indicated the presence of several waterbodies along each of the Route Alternatives (**Table 3**).

Nocturnal acoustic amphibian surveys will follow methods of the Marsh Monitoring Protocol (Bird Studies Canada, 1995). Three surveys will be conducted between late-April and early-June in 2019 to document early, mid, and late-season breeders with a minimum of 15 days separating each survey. Surveys will consist of 3-minute point-counts conducted no earlier than thirty-minutes after sunset, during evenings with little wind and minimum night temperature of 5°C, 10°C and 17°C for each of the three respective survey periods. Information collected during surveys will include documentation of species observed, as well as estimations of population size and density. As a supplement to the nocturnal acoustic surveys, incidental amphibian observations, which included individual species sightings, as well as evidence of breeding behaviour (i.e., the presence of eggs, tadpoles and pollywogs) within the Project Study Area will be documented (if observed).

5.2.4 Species at Risk

Several SAR were identified as having the potential to occur within the general vicinity of the Project. As occurrences for SAR birds (including grassland species such as Eastern Meadowlark and Bobolink) are generally captured during breeding bird surveys, targeted surveys for these species are not proposed given the landscape is dominated by active agriculture (i.e., annual row-crops). Incidental observations of wildlife, including SAR, and the presence of suitable habitat for SAR, will be recorded during the 2020 field program. Targeted surveys for SAR identified previously in Section 4.4 are available in the following subsections.

5.2.4.1 Eastern Foxsnake

Woodlands, as well as riparian vegetation associated with aquatic features within the Project Study Area have the potential to support Regulated Habitat for Eastern Foxsnake under *Ontario Regulation 242/08*. As a result, woodlands and water crossings with associated riparian vegetation identified within the Project Study Area are assumed to provide Regulated Habitat for Eastern Foxsnake. It is also assumed that impacts to Eastern Foxsnake and Eastern Foxsnake Regulated Habitat can be avoided during the detailed design phase through avoidance and/or mitigation measures (i.e., tower locations). Due to the large geographical size, as well as the potential for Regulated Habitat for Eastern Foxsnake to occur within the Project Study Area in accordance to *Ontario Regulation 242/08*, Visual Encounter Surveys for Eastern Foxsnake are not proposed for the Project. As such, the following scoped methodology has been proposed to assess the presence of potential Regulated Habitat for Eastern Foxsnake within the Project Study Area.

Regulated Habitat for Eastern Foxsnake will be identified within the Project Study Area through a review of aerial imagery and data acquired from ELC surveys and aquatic habitat assessments. Aerial imagery as well as data collected from the 2020 field program will aid mapping exercises performed after the 2020 field season. Special focus will be given during desktop mapping exercise to assess linear treed features connected to adjacent natural features, as well as riparian habitats associated with aquatic features with the potential to be impacted by the project.

5.2.4.2 **Butternut Surveys and Butternut Health Assessments**

Given the forest communities and treed fencerows identified within the Project Study Area, there is potential to encounter Butternut. The need to undertake a Butternut Health Assessment (BHA) will be required only if a Butternut tree is observed and has the potential to be impacted as a result of the Project. No additional effort is required to accommodate Butternut surveys as they will be completed concurrently during ELC and botanical assessments. In the event a potential Butternut tree is observed it will be photographed and its GPS location recorded. Potential Butternut trees will be assessed in the field to determine purity/hybridity. In the event purity/hybridity cannot be adequately determined in the field, DNA testing may be required.

5.2.4.3 **SAR Bats**

Deciduous, coniferous and/or mixed wooded vegetation communities with trees ≥ 10 cm at diameter breast height (DBH) are considered suitable maternity roosting habitat for SAR bats. As such, woodlands identified within the Project Study Area have the potential to provide habitat for SAR bats. Potential habitat will be identified within the Project Study Area through a review of aerial imagery and data acquired from ELC surveys and botanical assessments. It is also assumed that impacts to SAR bats and SAR bat habitat can be avoided during the detailed design phase through avoidance and/or mitigation measures (i.e., tower placement). As such, the following scoped methods are proposed to assess the potential for SAR bat habitat within the Project Study Area.

Where access is permitted, field staff will identify snag/cavity trees concurrently during ELC surveys and botanical assessments. Where potential snag/cavity trees are identified, field staff will record the DBH, tree species, tree height, and approximate location and height of cavities and/or cracks. GPS coordinates will be recorded for each snag/cavity tree assessed. In addition, if potential bat hibernacula (e.g. buildings) are observed during field surveys, details and locations for these features will be documented in the field as well.

6.0 Project Schedule

Table 7 below provides a brief overview of the anticipated project schedule. While this schedule is subject to change, major delays are not anticipated.

Table 7: Anticipated Project Schedule

Date	Project Phase
April – September 2020	<ul style="list-style-type: none"> • Environmental Surveys
Spring 2020	<ul style="list-style-type: none"> • Community Information Centre #1 • Stakeholder Workshops #1
Late-summer 2020	<ul style="list-style-type: none"> • Stakeholder Workshop #2
Late-fall 2020	<ul style="list-style-type: none"> • Stakeholder Workshop #3
Winter 2020/2021	<ul style="list-style-type: none"> • Stakeholder Workshop #4 • Community Information Centre #2 • Selection of Preferred Alternative.
Spring 2021	<ul style="list-style-type: none"> • Draft Environmental Study Report Release
Summer 2021	<ul style="list-style-type: none"> • Final Environmental Study Report Filed (assuming no Part II Order Requests are received)
2025/2026	<ul style="list-style-type: none"> • Project In-service Date

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
Appendix A

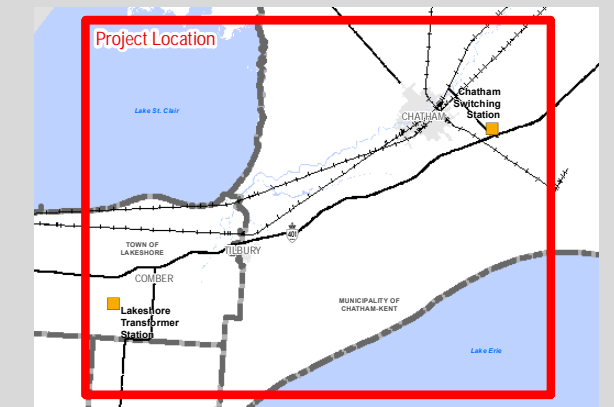
Figures

DRAFT

HYDRO ONE NETWORKS INC.
CHATHAM x LAKESHORE
 CLASS ENVIRONMENTAL ASSESSMENT

ROUTE ALTERNATIVES
 FIGURE 1

-  Switching Station
 -  Alternative 1
 -  Variation
 -  Alternative 2
 -  Variation
 -  Alternative 3
- Base Data**
-  Existing Electrical Transmission Line
 -  Highway
 -  Road
 -  Railway
 -  Municipality Boundary



SCALE 1:160,000

0 1 2 4 km

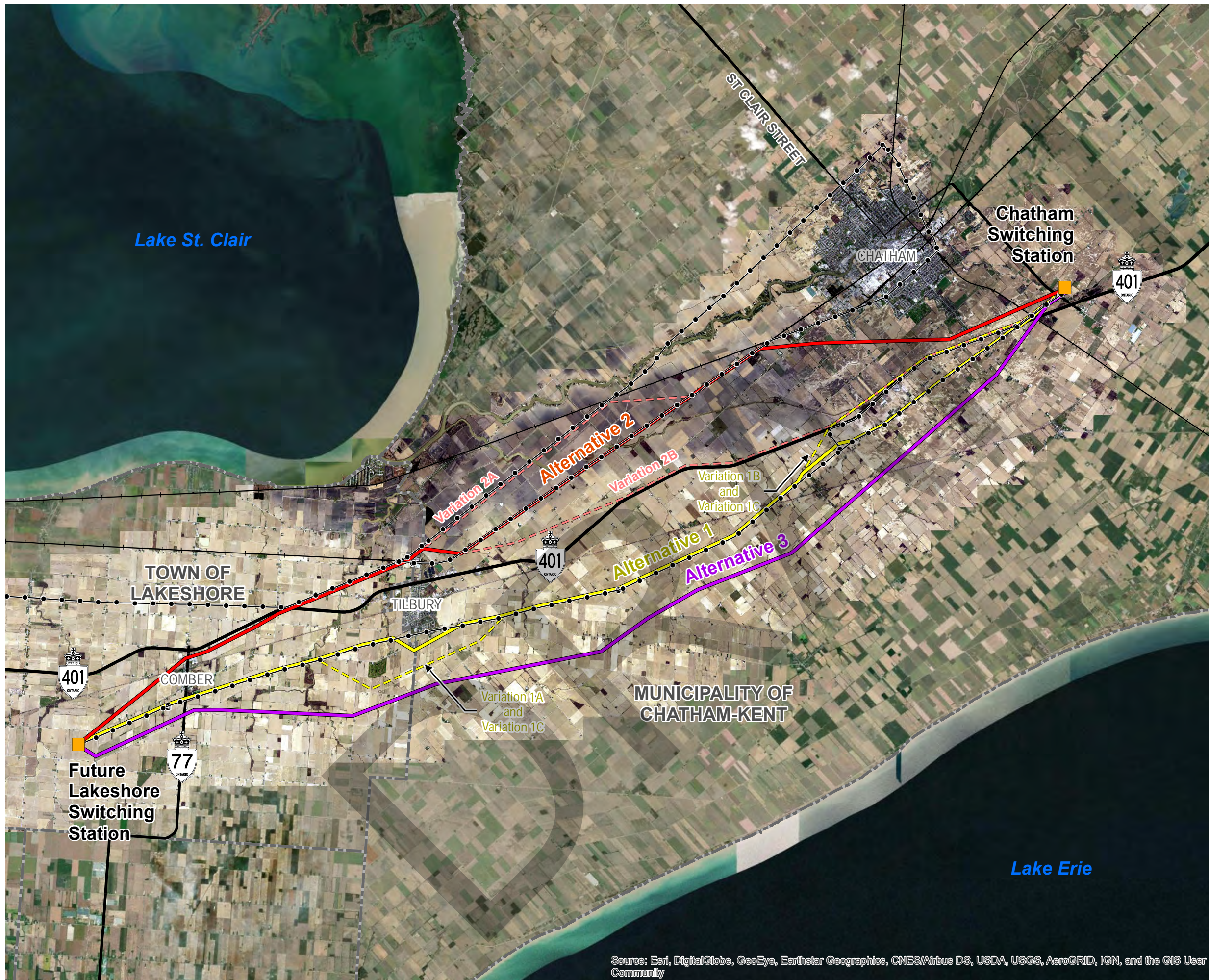


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 DATA PROVIDED BY MNR, IMAGERY SWOOP 2015

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 MAP CHECKED BY: -
 MAP PROJECTION: NAD 1983 UTM Zone 17N
















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 STATUS: INTERNAL DRAFT
 DATE: 2020-02-06

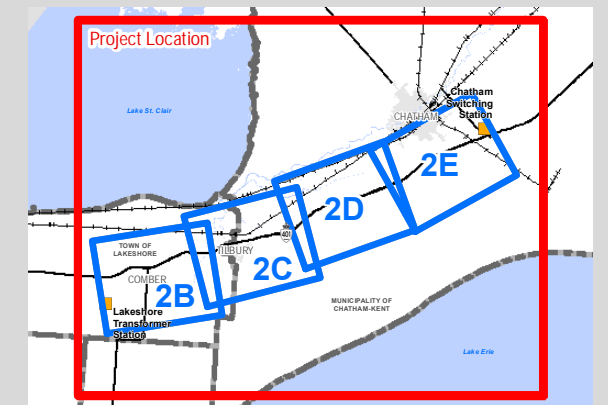


Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

HYDRO ONE NETWORKS INC.
CHATHAM x LAKESHORE
 CLASS ENVIRONMENTAL ASSESSMENT

NATURAL HERITAGE FEATURES
 FIGURE 2A

-  Switching Station
 -  Alternative 1
 -  Variation
 -  Alternative 2
 -  Variation
 -  Alternative 3
 -  Project Study Area (120m)
 -  Parcel Identified for Early Access
- Base Data**
-  Existing Electrical Transmission Line
 -  Highway
 -  Road
 -  Railway
 -  Municipality Boundary



SCALE 1:160,000

0 1 2 4 km



MAP DRAWING INFORMATION:
 DATA PROVIDED BY MNR, IMAGERY SWOOP 2015

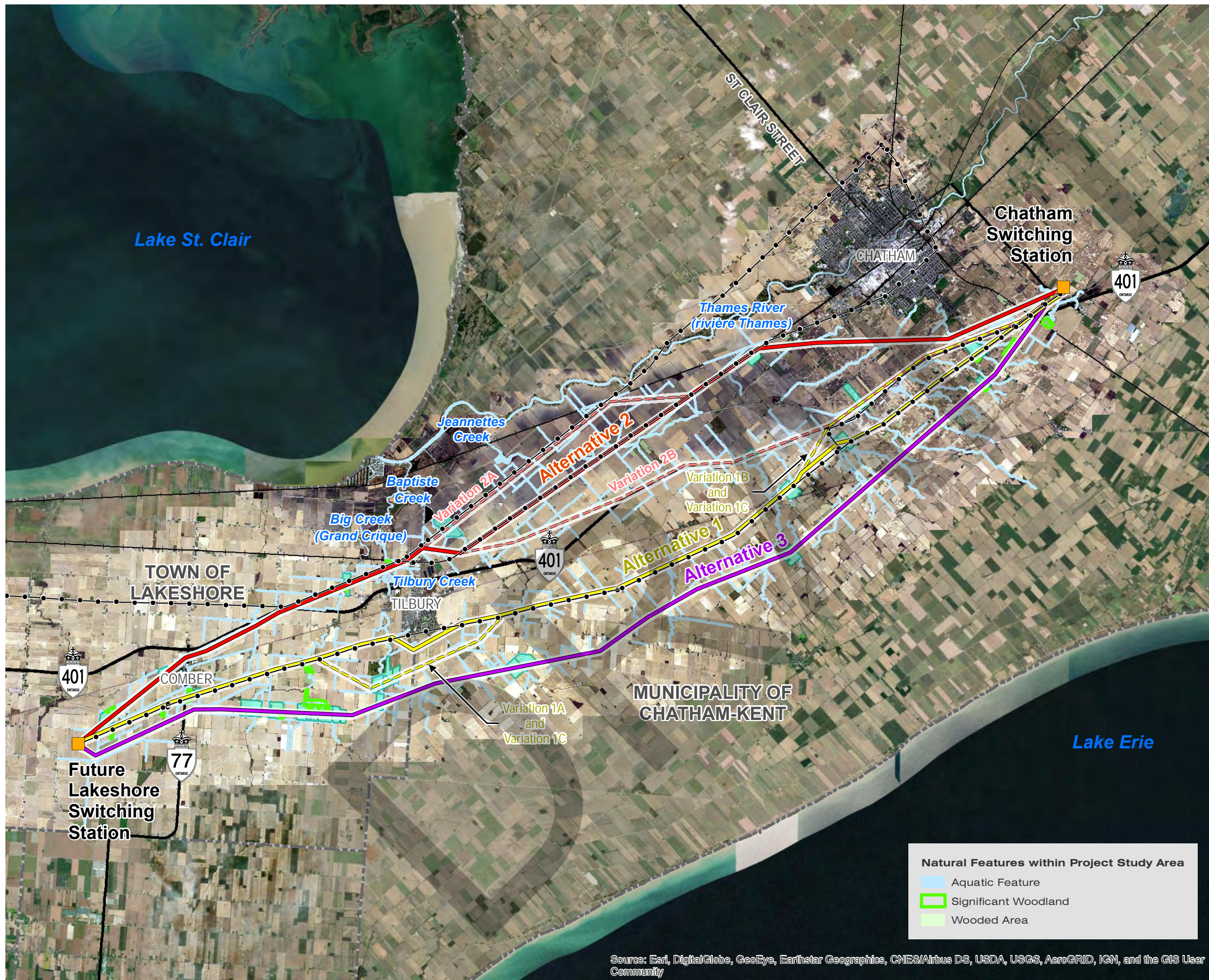
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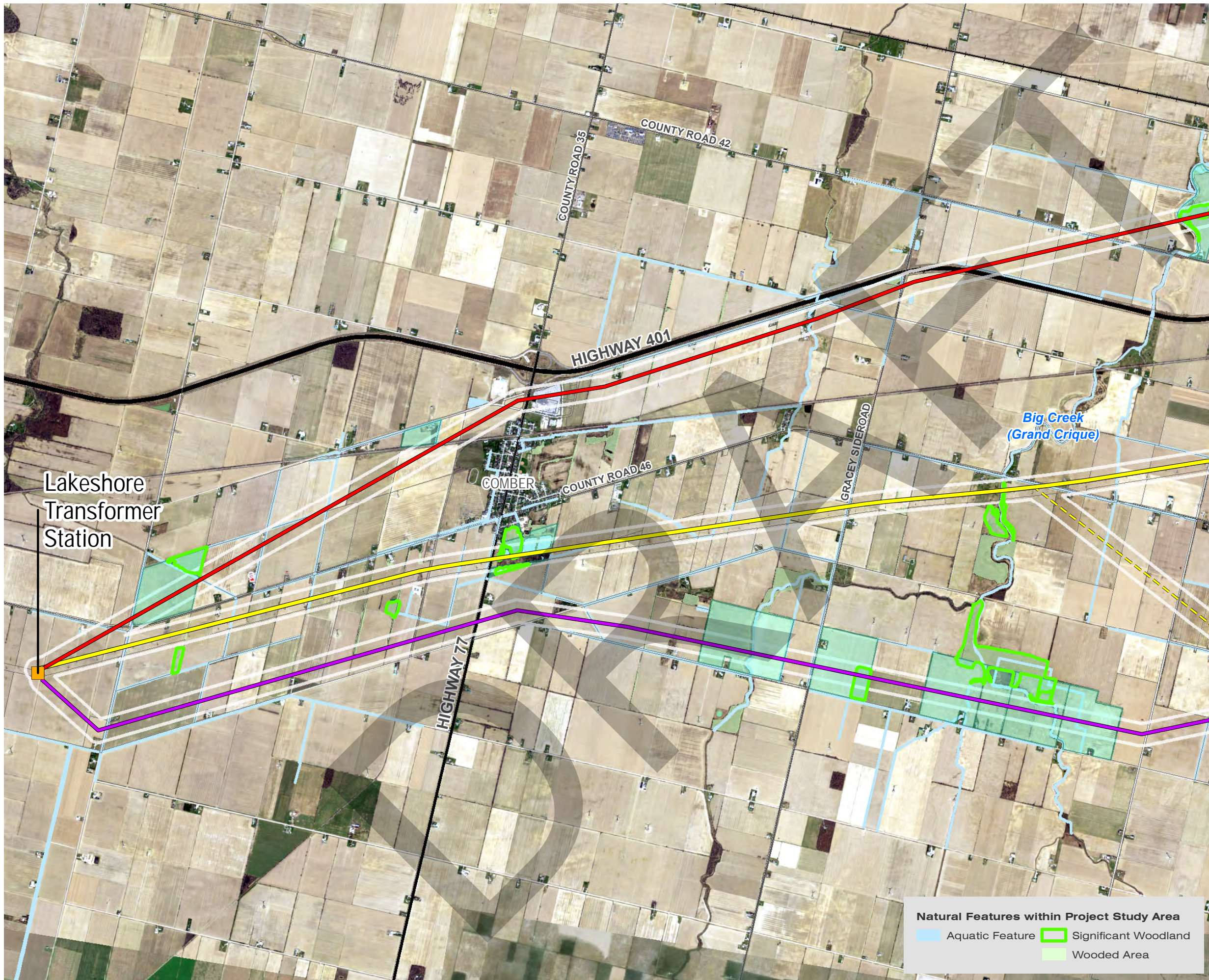
- Natural Features within Project Study Area**
-  Aquatic Feature
 -  Significant Woodland
 -  Wooded Area

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



PROJECT: 19-1917
 STATUS: INTERNAL DRAFT
 DATE: 2020-02-06

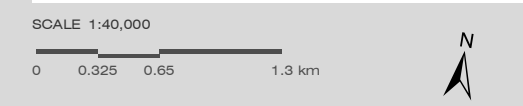
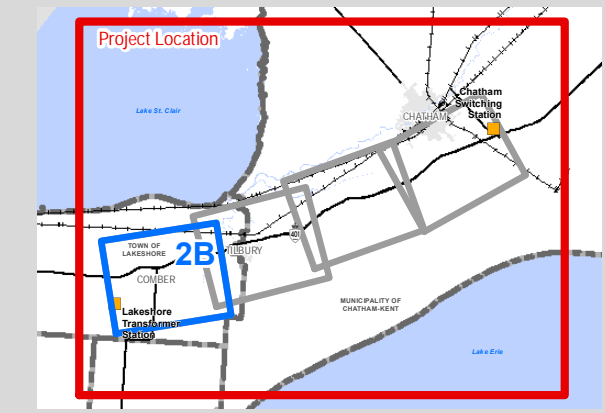




**HYDRO ONE NETWORKS INC.
CHATHAM X LAKESHORE**
CLASS ENVIRONMENTAL ASSESSMENT

NATURAL HERITAGE FEATURES
FIGURE - 2B

- Project Transmission Stations
- Alternative 1
- - - Variation
- Alternative 2
- - - Variation
- Alternative 3
- Project Study Area (120m)
- Parcel Identified for Early Access
- Parcel
- Base Data**
- Highway
- Road
- + — Railway



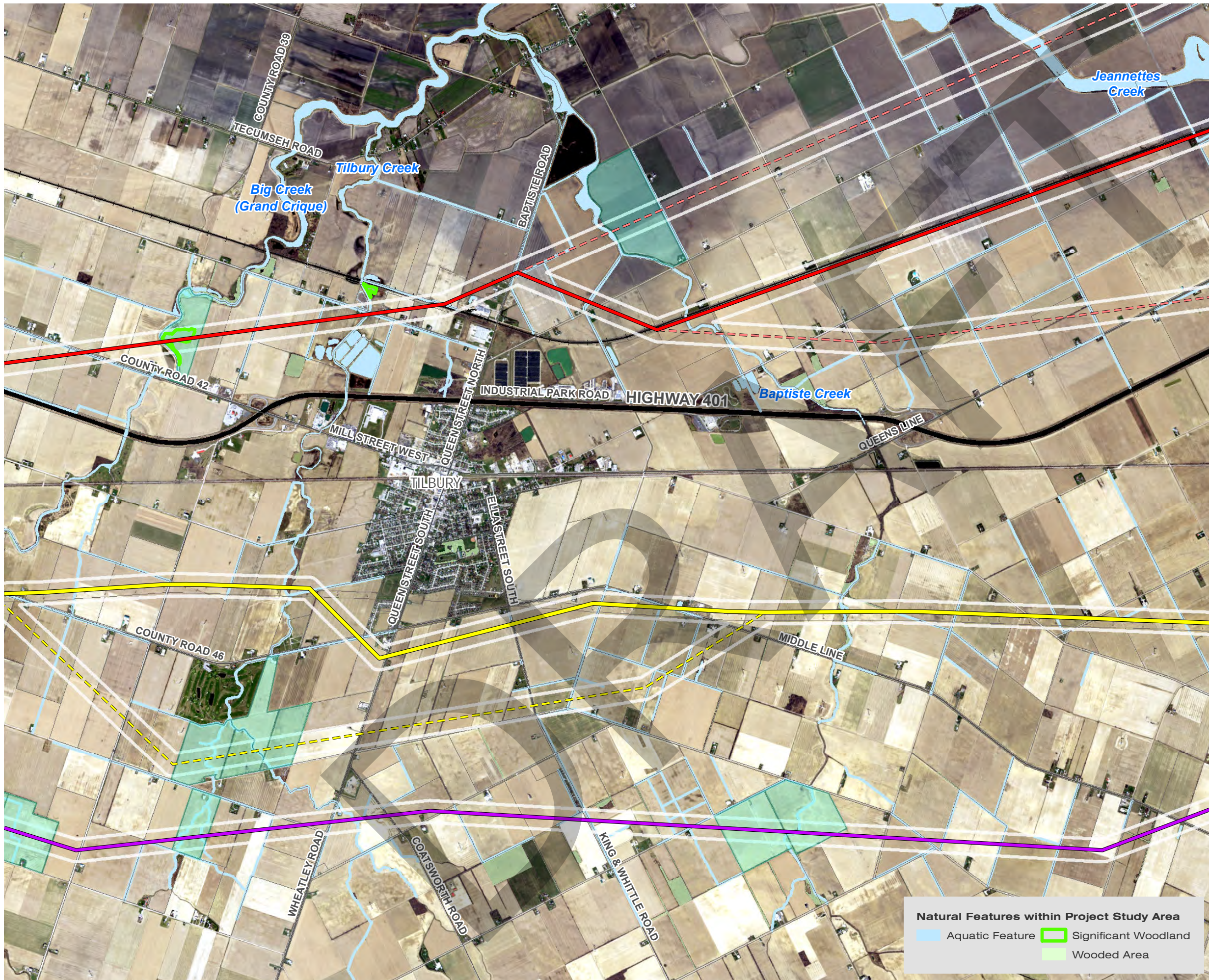
MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR, IMAGERY SWOOP 2015

MAP CREATED BY: SFG/LMM
MAP CHECKED BY: -
MAP PROJECTION: NAD 1983 UTM Zone 17N

- Natural Features within Project Study Area**
- Aquatic Feature
 - Significant Woodland
 - Wooded Area



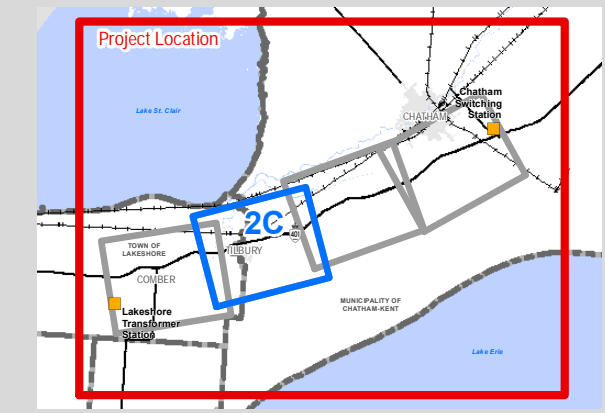
PROJECT: 19-1917
STATUS: INTERNAL DRAFT
DATE: 2020-02-05



**HYDRO ONE NETWORKS INC.
CHATHAM X LAKESHORE**
CLASS ENVIRONMENTAL ASSESSMENT

NATURAL HERITAGE FEATURES
FIGURE - 2C

- Alternative 1
 - - - Variation
 - Alternative 2
 - - - Variation
 - Alternative 3
 - Project Study Area (120m)
 - Parcel Identified for Early Access
 - Parcel
- Base Data**
- Highway
 - Road
 - + + + Railway



SCALE 1:40,000
0 0.325 0.65 1.3 km



MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR, IMAGERY SWOOP 2015

MAP CREATED BY: SFG/LMM
MAP CHECKED BY: -
MAP PROJECTION: NAD 1983 UTM Zone 17N

Natural Features within Project Study Area

- Aquatic Feature
- Significant Woodland
- Wooded Area



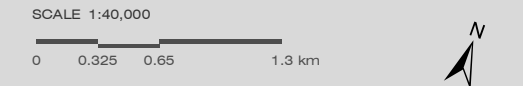
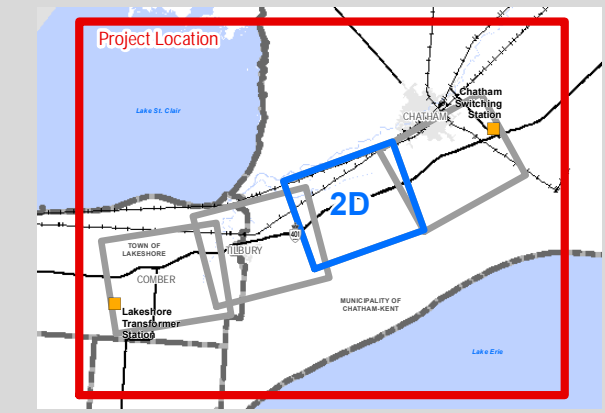
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STATUS: INTERNAL DRAFT
DATE: 2020-02-05



**HYDRO ONE NETWORKS INC.
CHATHAM X LAKESHORE**
CLASS ENVIRONMENTAL ASSESSMENT

NATURAL HERITAGE FEATURES
FIGURE - 2D

- Alternative 1
 - - - Variation
 - Alternative 2
 - - - Variation
 - Alternative 3
 - Project Study Area (120m)
 - Parcel Identified for Early Access
 - Parcel
- Base Data**
- Highway
 - Road
 - + + + Railway



MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR, IMAGERY SWOOP 2015

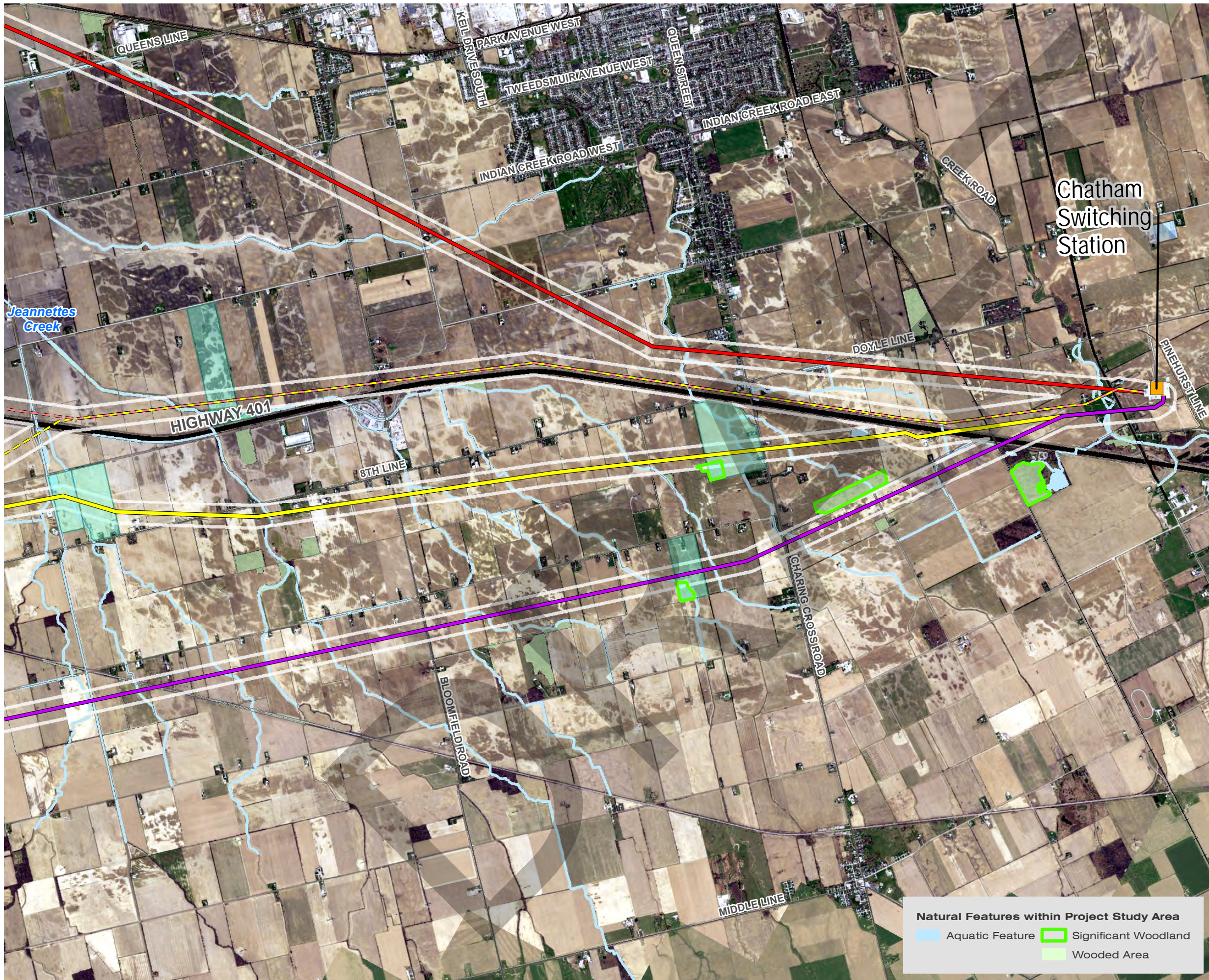
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MAP CHECKED BY: -
MAP PROJECTION: NAD 1983 UTM Zone 17N

Natural Features within Project Study Area

- Aquatic Feature
- Wooded Area



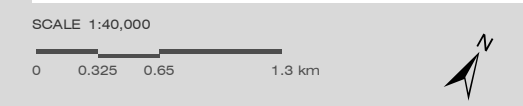
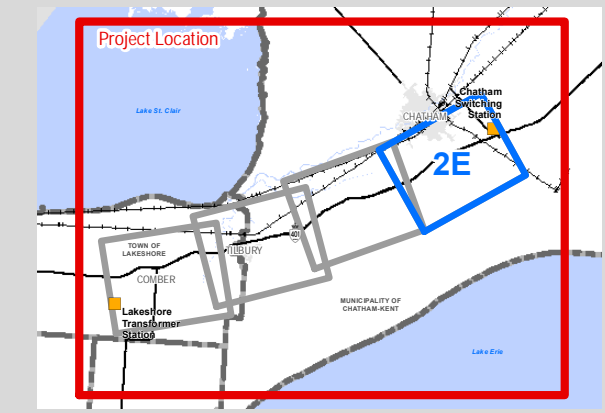
PROJECT: 19-1917
STATUS: INTERNAL DRAFT
DATE: 2020-02-05



**HYDRO ONE NETWORKS INC.
CHATHAM X LAKESHORE**
CLASS ENVIRONMENTAL ASSESSMENT

NATURAL HERITAGE FEATURES
FIGURE - 2E

- Project Transmission Stations
 - Alternative 1
 - Variation
 - Alternative 2
 - Variation
 - Alternative 3
 - Project Study Area (120m)
 - Parcel Identified for Early Access
 - Parcel
- Base Data**
- Highway
 - Road
 - Railway



MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR, IMAGERY SWOOP 2015

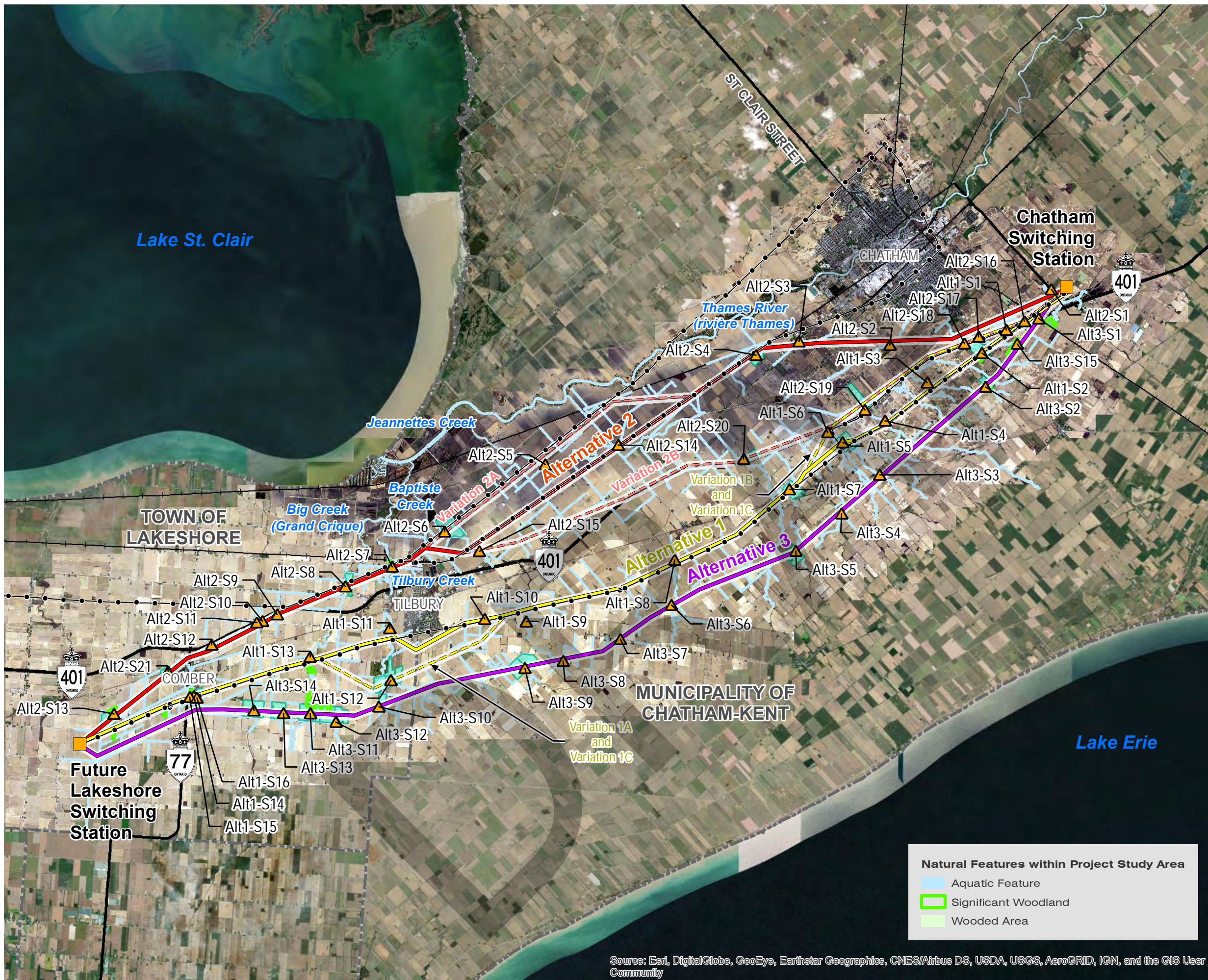
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MAP CHECKED BY: -
MAP PROJECTION: NAD 1983 UTM Zone 17N

Natural Features within Project Study Area

 Aquatic Feature	 Significant Woodland
 Wooded Area	



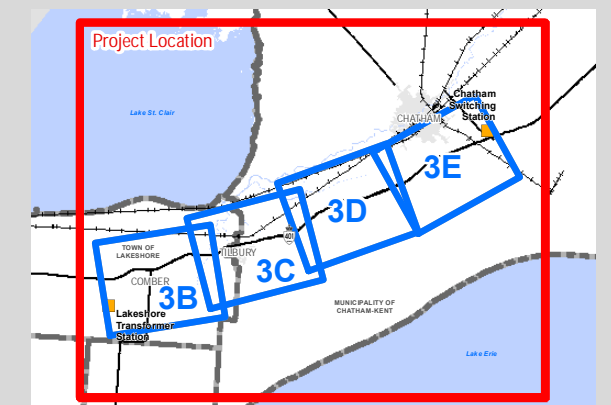
PROJECT: 19-1917
STATUS: INTERNAL DRAFT
DATE: 2020-02-05



**HYDRO ONE NETWORKS INC.
CHATHAM x LAKESHORE**
CLASS ENVIRONMENTAL ASSESSMENT

PROPOSED SURVEY LOCATIONS
FIGURE 3A

- Switching Station
 - Alternative 1
 - - - Variation
 - Alternative 2
 - - - Variation
 - Alternative 3
 - Project Study Area (120m)
 - ▲ Proposed Survey Locations
 - Parcel Identified for Early Access
- Base Data**
- Existing Electrical Transmission Line
 - Highway
 - Road
 - +— Railway
 - Municipality Boundary



SCALE 1:160,000

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MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR, IMAGERY SWOOP 2015

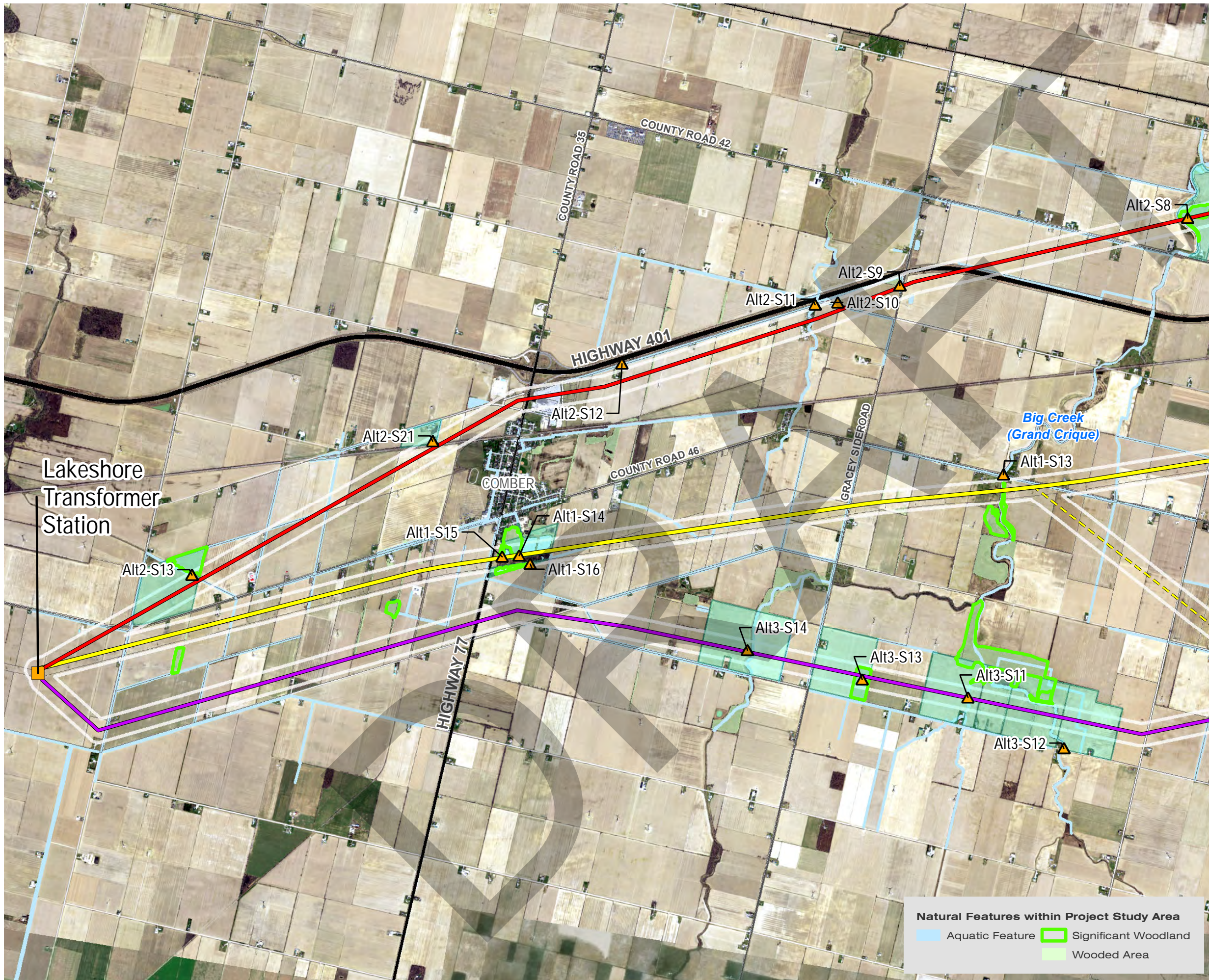
MAP CREATED BY: SFG/LMM
MAP CHECKED BY: -
MAP PROJECTION: NAD 1983 UTM Zone 17N

- Natural Features within Project Study Area**
- Aquatic Feature
 - Significant Woodland
 - Wooded Area

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



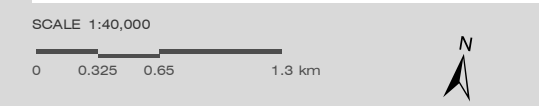
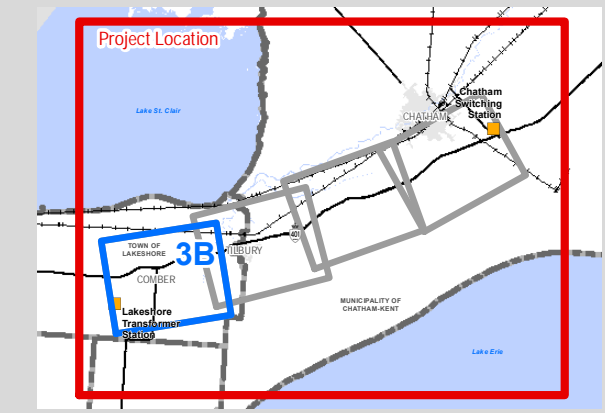
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STATUS: INTERNAL DRAFT
DATE: 2020-02-06



**HYDRO ONE NETWORKS INC.
CHATHAM X LAKESHORE
CLASS ENVIRONMENTAL ASSESSMENT**

**PROPOSED SURVEY LOCATIONS
FIGURE - 3B**

- Project Transmission Stations
 - Alternative 1
 - - - Variation
 - Alternative 2
 - - - Variation
 - Alternative 3
 - Project Study Area (120m)
 - ▲ Proposed Survey Locations
 - Parcel Identified for Early Access
 - Parcel
- Base Data**
- Highway
 - Road
 - +— Railway



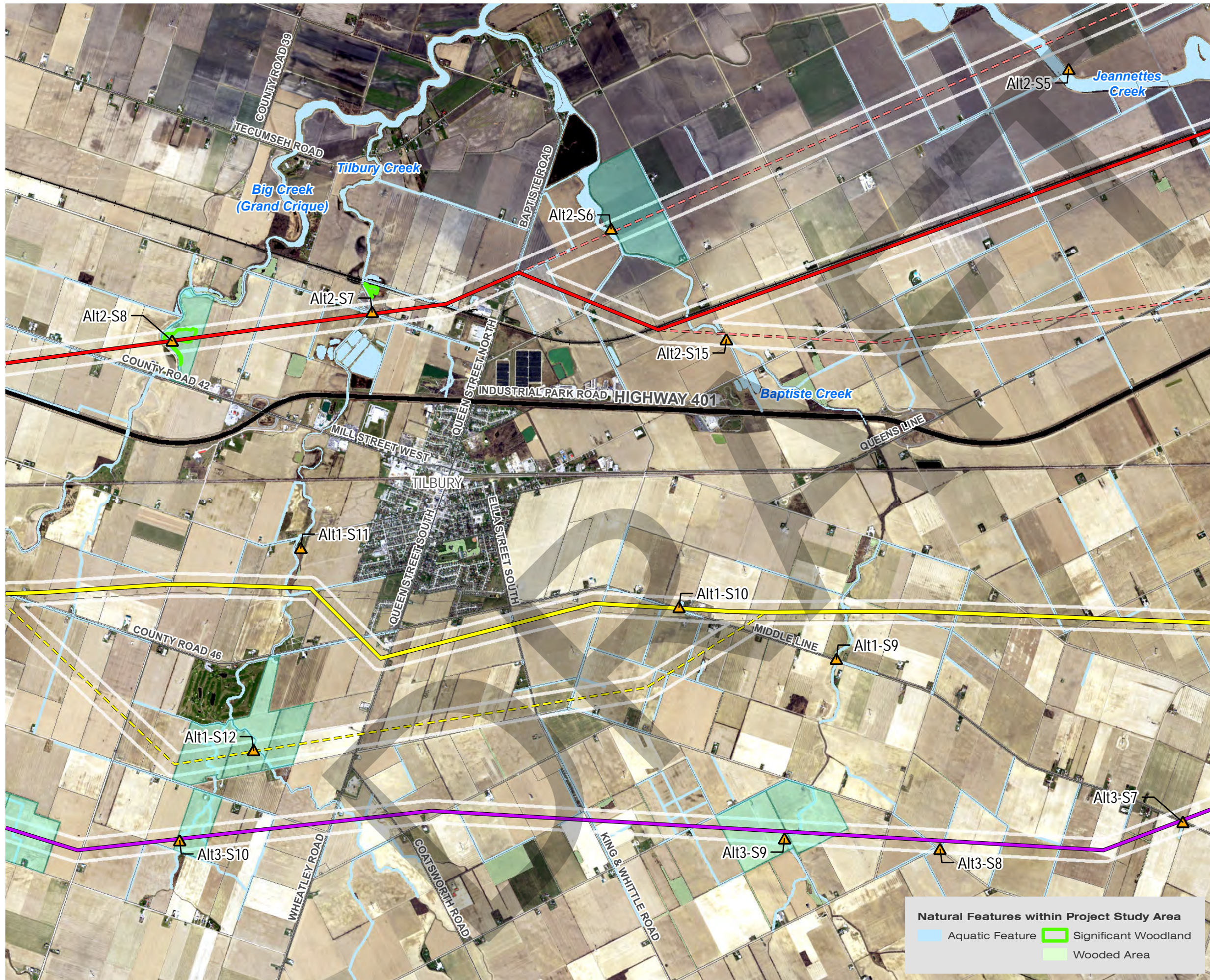
MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR, IMAGERY SWOOP 2015

MAP CREATED BY: SFG/LMM
MAP CHECKED BY: -
MAP PROJECTION: NAD 1983 UTM Zone 17N

- Natural Features within Project Study Area**
- Aquatic Feature
 - Significant Woodland
 - Wooded Area



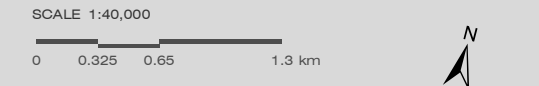
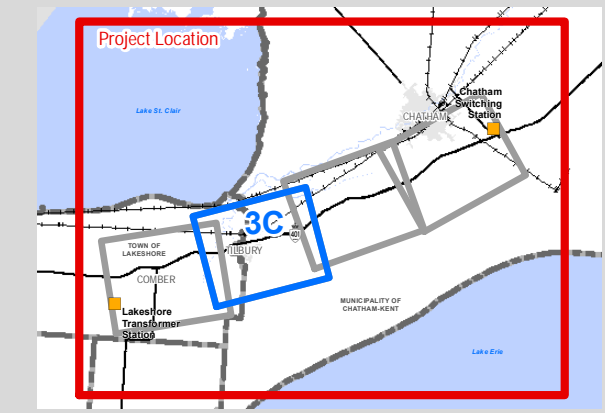
PROJECT: 19-1917
STATUS: INTERNAL DRAFT
DATE: 2020-02-05



**HYDRO ONE NETWORKS INC.
CHATHAM X LAKESHORE**
CLASS ENVIRONMENTAL ASSESSMENT

PROPOSED SURVEY LOCATIONS
FIGURE - 3C

- Alternative 1
 - - - Variation
 - Alternative 2
 - - - Variation
 - Alternative 3
 - Project Study Area (120m)
 - ▲ Proposed Survey Locations
 - Parcel Identified for Early Access
 - Parcel
- Base Data**
- Highway
 - Road
 - +— Railway



MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR, IMAGERY SWOOP 2015

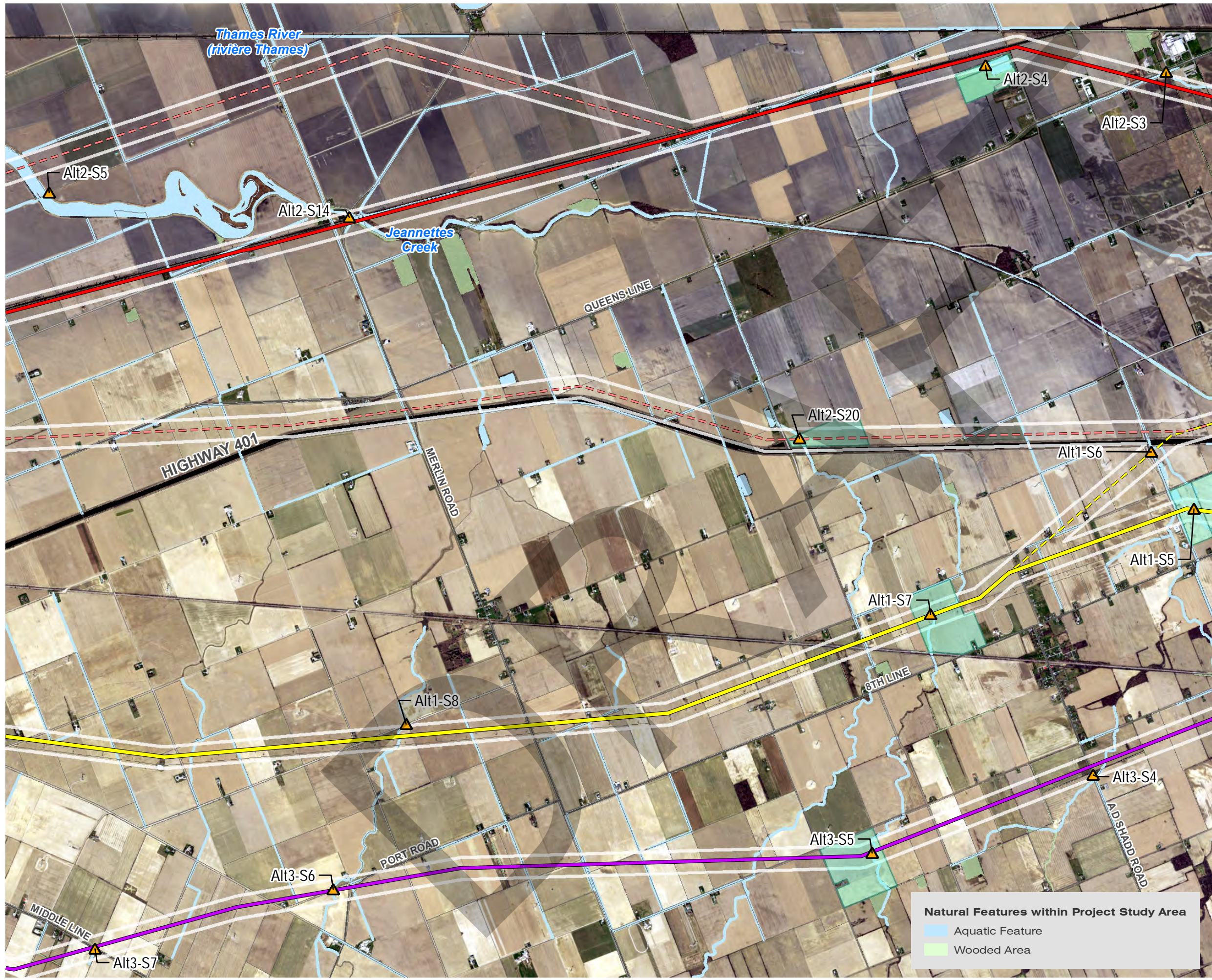
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MAP CHECKED BY: -
MAP PROJECTION: NAD 1983 UTM Zone 17N

Natural Features within Project Study Area

- Aquatic Feature
- Significant Woodland
- Wooded Area



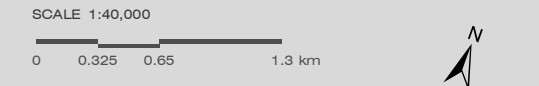
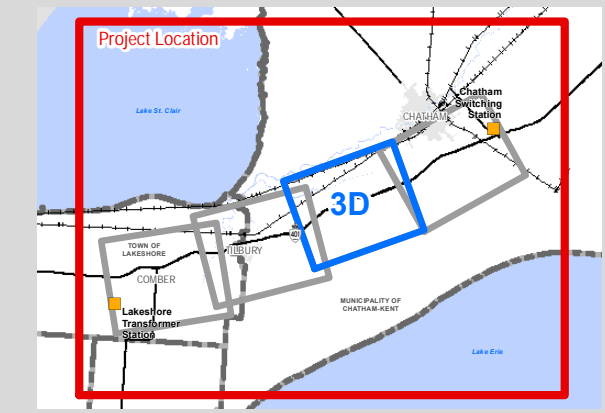
PROJECT: 19-1917
STATUS: INTERNAL DRAFT
DATE: 2020-02-05



**HYDRO ONE NETWORKS INC.
CHATHAM X LAKESHORE**
CLASS ENVIRONMENTAL ASSESSMENT

PROPOSED SURVEY LOCATIONS
FIGURE - 3D

- Alternative 1
 - - - Variation
 - Alternative 2
 - - - Variation
 - Alternative 3
 - Project Study Area (120m)
 - ▲ Proposed Survey Locations
 - Parcel Identified for Early Access
 - Parcel
- Base Data**
- Highway
 - Road
 - +— Railway



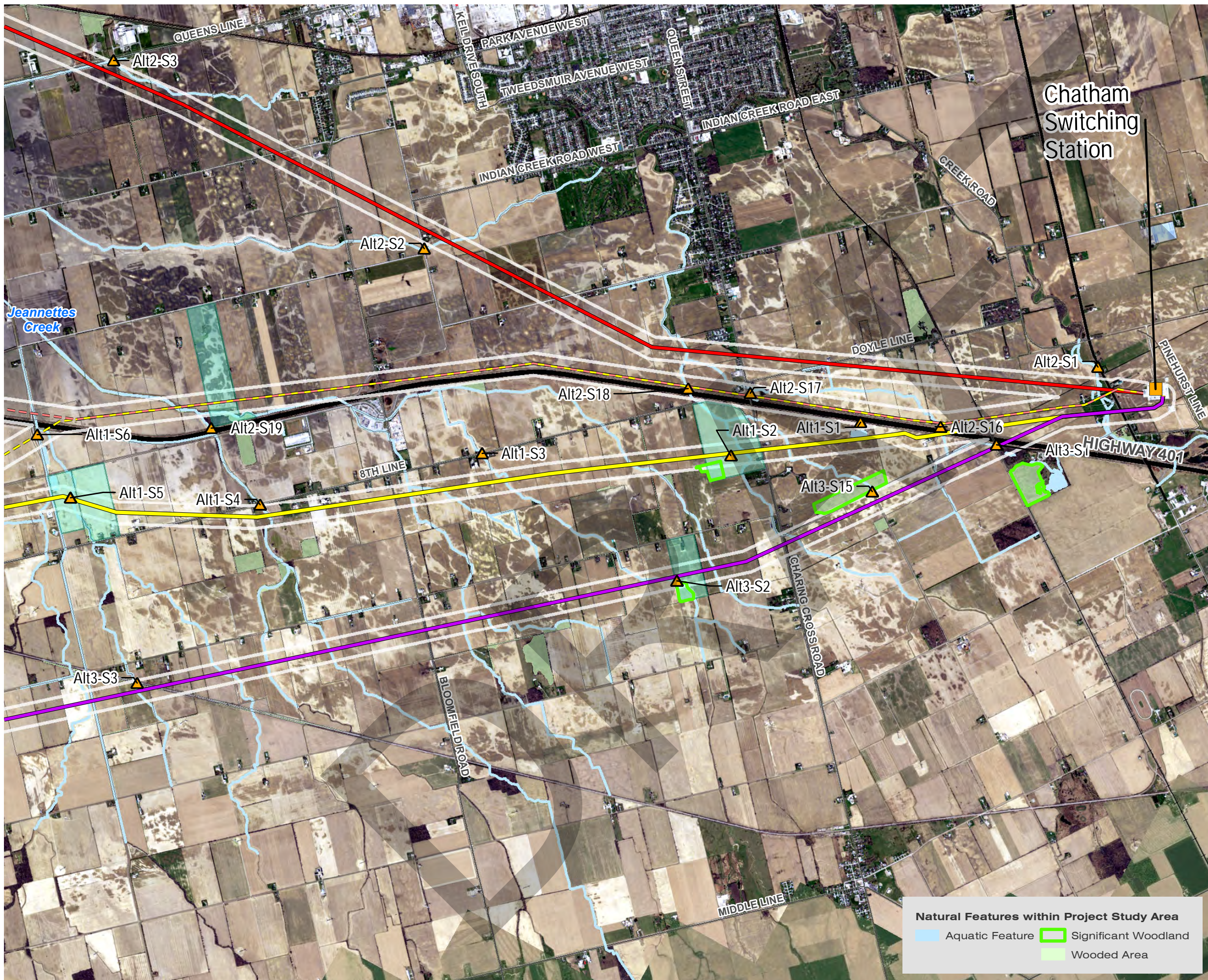
MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR, IMAGERY SWOOP 2015

MAP CREATED BY: SFG/LMM
MAP CHECKED BY: -
MAP PROJECTION: NAD 1983 UTM Zone 17N

- Natural Features within Project Study Area**
- Aquatic Feature
 - Wooded Area



PROJECT: 19-1917
STATUS: INTERNAL DRAFT
DATE: 2020-02-05

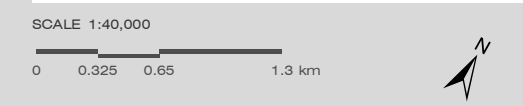
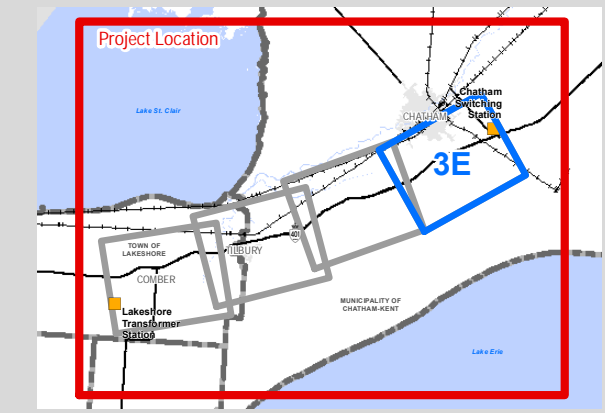


Chatham
Switching
Station

**HYDRO ONE NETWORKS INC.
CHATHAM X LAKESHORE**
CLASS ENVIRONMENTAL ASSESSMENT

PROPOSED SURVEY LOCATIONS
FIGURE - 3E

- Project Transmission Stations
 - Alternative 1
 - Variation
 - Alternative 2
 - Variation
 - Alternative 3
 - Project Study Area (120m)
 - Proposed Survey Locations
 - Parcel Identified for Early Access
 - Parcel
- Base Data**
- Highway
 - Road
 - Railway



MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR, IMAGERY SWOOP 2015

MAP CREATED BY: SFG/LMM
MAP CHECKED BY: -
MAP PROJECTION: NAD 1983 UTM Zone 17N

Natural Features within Project Study Area

- Aquatic Feature
- Significant Woodland
- Wooded Area



PROJECT: 19-1917
STATUS: INTERNAL DRAFT
DATE: 2020-02-05

Appendix C

Aquatic Data Summary Table

Table C-1: Aquatic Assessment Summary

Station	UTM Coordinates		Waterbody Name	Water Body Type	Substrate Type	Aquatic Assessment Data						Drain Classification		Comments	Fish Habitat	Photos (Appendix D)
	Easting	Northing				Wetted Width (m)	Bankfull Width (m)	Wetted Depth (m)	Instream Cover	Riparian Corridor ²		Drain Type	DFO Classification ³			
										Left Upstream Bank	Right Upstream Bank					
Route Alternative 1 (Alt1)																
Alt1_S2	42.36354	-82.138598	Locke Drain	Municipal Drain	Clay ¹ , Gravel	2.5	20	0.25	Woody Debris, Boulders/Cobble, Macrophytes	M, A	M, A	Open	E	Steep banks with evidence of high flows, run-pool morphology, top predator (Northern Pike or Longnose Gar) observed	Direct – fish observed	1
Alt1_S3	42.350807	-82.168854	Duke Drain (Jeannettes Creek)	Municipal Drain	Clay ¹ , Detritus, Gravel	1.2	15	0.3	Macrophytes	M, A, C	M, C	Open	E	Wide pool under bridge, flow present, moderate instream vegetation, no fish observed	Direct based on DFO classification	2
Alt1_S4	42.33574	-82.190352	Waddick Drain	Municipal Drain	Gravel ¹ , Sand, Cobble	2.9	15	0.55	Macrophytes, Boulders/Cobble, Undercut Banks, Woody Debris	M	M, A	Open	E	Run-flat morphology, turbid conditions, pool underneath bridge, several YOY fish observed	Direct – fish observed	3
Alt1_S5	42.329295	-82.214831	O'Rourke Drain	Municipal Drain	Clay, Detritus	1.2	6	0.25	Macrophytes, Organic Debris	M	M	Open	C	Turbid conditions with no flow, abundant detritus and instream vegetation, no fish observed	Direct based on DFO classification	4
Alt1_S6	42.330526	-82.219741	Government Drain	Municipal Drain	Clay ¹ , Detritus	6	10	1	Undercut Banks, Macrophytes, Woody Debris	M, C	S, A	Open	C	Steep banks, turbid conditions with no flow, too deep to wade	Direct based on DFO classification	5
Alt1_S7	42.313243	-82.238083	Kersey Drain	Municipal Drain	Gravel ¹ , Detritus, Sand	1.6	10	0.1	Macrophytes, Woody Debris, Organic Debris	M	M	Open	E	Clear flow present, abundant algae, culvert pool present, numerous small fish observed	Direct – fish observed	6
Alt1_S8	42.280489	-82.299361	Deary Drain	Municipal Drain	Clay ¹ , Cobble, Gravel, Detritus	4.7	12	0.25	Macrophytes, Woody Debris, Boulders, Cobble, Organic Debris	M, A	M	Open	NR	Turbid, little flow, numerous unidentified large fish observed underneath bridge	Direct – fish observed	7
Alt1_S9	42.25557	-82.376749	Baptiste Creek Drain (Baptiste Creek)	Municipal Drain	Clay ¹ , Detritus, Boulder/Cobble	5	15	1	Woody Debris	C, A	S, A	Open	NR	Turbid, abundant riparian shade downstream, sever erosion upstream, no fish observed	Direct – based on habitat observed	8
Alt1_S10	42.256183	-82.400492	Powell Drain	Municipal Drain	Clay ¹ , Gravel, Detritus	2.5	8	0.15	Macrophytes, Organic Debris, Boulders/Cobble	A	C, A	Open	NR	Channelized roadside drain with abundant emergent and floating aquatic and algae	Direct - based on conditions observed	9
Alt1_S11	42.253039	-82.448624	Tremblay Creek Drain (Tilbury Creek)	Municipal Drain	--	6	14	1+	Macrophytes, Woody Debris, Organic Debris	S, C	C, S	Open	E	Very turbid, wide, deep and not wadeable. Natural channel with abundant overhanging riparian vegetation	Direct based on DFO classification	10
Alt1_S12	43.232048	-82.446818	Tremblay Creek Drain (Tilbury Creek)	Municipal Drain	Clay ¹ , Gravel, Detritus	4	10	1+	Macrophytes, Woody Debris, Organic Debris,	A, S	A, S	Open	F	Turbid, emergent vegetation along shoreline, steep banks with signs of erosion	Seasonal based on DFO classification	11
Alt1_S13	42.24046	-82.489272	Big Creek Drain (Big Creek)	Municipal Drain	--	12	20	2+	Macrophytes, Woody Debris, Organic Debris	S, C, A	C, S	Open	C	Very turbid, wide, deep and not wadeable. Dense overhanging riparian shrubs along both banks	Direct based on DFO classification	12

Station	UTM Coordinates		Waterbody Name	Water Body Type	Substrate Type	Aquatic Assessment Data					Riparian Corridor ²		Drain Classification		Comments	Fish Habitat	Photos (Appendix D)
	Easting	Northing				Wetted Width (m)	Bankfull Width (m)	Wetted Depth (m)	Instream Cover	Left Upstream Bank	Right Upstream Bank	Drain Type	DFO Classification ³				
Route Alternative 2 (Alt2)																	
Alt2_S1	42.387518	-82.104513	McGregor Creek Drain (McGregor Creek)	Municipal Drain	Gravel ¹ , Silt, Clay, Detritus	4.5	12	0.35	Macrophytes	M	M, A	Open	E	Permanent watercourse with tall, steep banks and turbid conditions	Direct based on DFO classification	13	
Alt2_S2	42.365208	-82.188483	Chinnick Drain (Indian Creek)	Municipal Drain	Muck ¹ , Detritus	3.5	20	0.15	Macrophytes	M, A	M, A	Open	E	Stagnant, turbid, no flow, wetland like conditions, abundant instream vegetation and algae, no fish observed	Direct based on DFO classification	14	
Alt2_S3	42.364821	-82.23785	Bullis Creek Drain (Bullis Creek)	Municipal Drain	Clay ¹ , Detritus	5	10	0.32	Macrophytes	C, M	M, A	Open	C	Soft sediment, unsafe to wade, no flow, abundant instream vegetation, no fish observed	Direct based on DFO classification	15	
Alt2_S5	42.316717	-82.367989	Ferguson Drain (Jeanettes Creek)	--	Clay, Detritus, Boulders/Cobble	110	120	2+	Macrophytes, Woody Debris, Boulders/Cobble, Organic Debris	C, A	C, A	Open	E	Very wide, deep, turbid, low gradient section with rip rap along banks, abundant Phragmites along shoreline	Direct based on DFO classification	16	
Alt2_S6	42.287949	-82.410871	Baptiste Creek Drain (Baptiste Creek)	--	--	20	30	2+	Macrophytes, Woody Debris, Boulders/Cobble, Organic Debris	C	A, C	Open	NR	Very wide, deep, turbid, low gradient section with limited riparian shade and flood control berms along both banks	Direct based on conditions observed	17	
Alt2_S7	42.276073	-82.447496	Tremblay Creek Drain (Tilbury Creek)	Municipal Drain	--	17	24	1+	Macrophytes, Woody Debris, Boulders/Cobble, Organic Debris	S, A	C, S	Open	NR	Wide, deep, very turbid, low gradient section, emergent and floating aquatic vegetation observed	Direct based on conditions observed	18	
Alt2_S8	42.26767	-82.471605	Big Creek Drain (Big Creek)	Municipal Drain	--	30	40	2+	Macrophytes, Woody Debris, Organic Debris	F, A	S, A	Open	C	Wide, deep, very turbid, low gradient section, not wadeable, very steep densely vegetated bank with difficult access to watercourse	Direct based on DFO classification	19	
Alt2_S9	42.256484	-82.506868	Unnamed Feature	--	Clay ¹	--	--	--	--	C	A	Open	--	Dry, ill-defined swale along the Gracey Sideroad toe of slope	No	20	
Alt2_S11	42.253453	-82.517464	Little Creek	Municipal Drain	Clay ¹ , Gravel, Detritus	1.5	4	0.2	Macrophytes, Organic Debris	C	C	Open	E	Narrow, shallow channel, flowing clear, abundant Cattails and instream aquatic vegetation	Direct based on DFO classification	21	
Alt2_S13	42.21833	-82.597711	Malden Road Drain Outlet	Municipal Drain	Clay ¹ , Gravel, Detritus	2.2	6	0.3	Macrophytes, Woody Debris, Organic Debris	C, A	S, C	Open	C	Flowing clear with abundant aquatic vegetation, woody debris algae and organic debris	Direct based on DFO classification	22	
Alt2_S14	42.325127	-82.330083	Ferguson Drain (Jeannettes Creek)	--	Clay, Detritus	50	56	2	Macrophytes, Woody Debris	A, S	S, A	Open	E	Wide, deep, turbid, slow-flowing, low-gradient section, too deep to wade	Direct based on DFO classification	23	
Alt2_S15	42.283895	-82.407399	Baptiste Creek Drain (Baptiste Creek)	--	--	20	30	2+	Macrophytes, Woody Debris, Boulders/Cobble, Organic Debris	C, A	C, A	Open	NR	Very wide, deep, turbid, low gradient section with limited riparian shade and flood control berms along both banks	Direct based on conditions observed	24	

Station	UTM Coordinates		Waterbody Name	Water Body Type	Substrate Type	Aquatic Assessment Data						Drain Classification		Comments	Fish Habitat	Photos (Appendix D)
	Easting	Northing				Wetted Width (m)	Bankfull Width (m)	Wetted Depth (m)	Instream Cover	Riparian Corridor ²		Drain Type	DFO Classification ³			
										Left Upstream Bank	Right Upstream Bank					
Alt2_S16	42.375116	-82.118088	Doyle Drain	--	Clay ¹ , Muck, Detritus	1.75	5	0.2	Macrophytes	M	M	Open	NR	Stagnant drain, no flow, many amphibians (tadpoles and frogs) observed, abundant Common Reed along banks	Likely direct	25
Alt2_S17	42.368655	-82.141696	Unnamed (tributary to Doyle Drain)	-	Clay ¹ , Muck, Detritus	--	8	--	Macrophytes, Woody Debris	M, A	M, C	Open	NR	Dry swale with abundant in-stream vegetation	Potential seasonal - dry	26
Alt2_S18	42.366147	-82.149349	Locke Drain	Municipal Drain	Gravel ¹ , Sand ¹ , Clay, Cobble	2.8	9	0.3	Boulders/Cobble, Woody Debris, Macrophytes	M, A	M, A	Open	E	Clear water with flow, steep well vegetated banks, numerous small fish observed	Direct – fish observed	27
Alt2_S19	42.339947	-82.205644	Ferguson Drain (Jeannettes Creek)	--	Muck, Detritus, Clay	20	25	1	Woody Debris, Organic Debris, Macrophytes	F, A	A, F	Open	F	Slow flow, turbid conditions, too deep to wade, abundant riparian shade, numerous YOY fish observed	Direct – fish observed	28
Alt2_S20	42.319989	-82.264179	Finn & Cooper Drain	Municipal Drain	Detritus, Clay	12	40	2	Woody Debris, Organic Debris, Undercut Banks	M	M	Open	E	Wide, deep, no flow, too deep to wade, great than 1 m depth	Direct based on DFO classification	29
Alt2_S21	42.235899	-82.552603	6-7 Sideroad Drain	Municipal Drain	--	--	--	--	--	--	--	Piped	F	No feature present as mapped (assumed piped).	No	30
Route Alternative 3 (Alt3)																
Alt3_S2	42.348992	-82.146989	Duke Drain (Jeannettes Creek)	Municipal Drain	Gravel ¹ , Clay, Silt, Boulder, Cobble	1.8	8	0.15	Boulders/Cobble, Organic Debris, Macrophytes	M, C, A	M, C	Open	E	Very minor flow, culvert pool present, many small fish and crayfish observed	Direct – fish observed	31
Alt3_S3	42.31581	-82.195385	O'Rourke Drain	Municipal Drain	Muck ¹ , Detritus ¹ , Clay	1.6	5	0.15	Woody Debris, Organic Debris, Macrophytes	M, C	M	Open	F	No flow, muck substrate, abundant instream vegetation	Seasonal based on DFO classification	32
Alt3_S4	42.299082	-82.212131	Carter Drain	--	Gravel ¹ , Clay, Detritus, Cobble, Boulder	2	5	0.18	Macrophytes, Undercut Banks, Boulders, Organic Debris	S, C	S, C	Open	NR	No flow, firm substrate, abundant algae, numerous small fish observed	Direct – fish observed	33
Alt3_S5	42.287922	-82.235961	Kersey Drain	Municipal Drain	Gravel ¹ , Clay ¹ , Detritus	2.25	7	0.2	Macrophytes, Woody Debris	M, A	A, M	Open	E	No flow, turbid conditions, abundant algae, no fish observed	Direct based on DFO classification	34
Alt3_S6	42.262798	-82.300757	Deary Drain	Municipal Drain	Clay ¹ , Gravel ¹ , Detritus	6	15	0.2	Boulders, Cobble, Woody Debris, Macrophytes, Organic Debris	M, A	M, A	Open	NR	Wide, slow flow, turbid conditions, abundant algae, no fish observed	Likely direct	35
Alt3_S8	42.240459	-82.356895	Unnamed Drain	Municipal Drain	Clay ¹	--	3	--	Macrophytes	S,A	A	Open	F	Dry, channelized agricultural drain with abundant aquatic vegetation throughout.	Seasonal based on DFO classification	36

Station	UTM Coordinates		Waterbody Name	Water Body Type	Substrate Type	Aquatic Assessment Data						Drain Classification		Comments	Fish Habitat	Photos (Appendix D)
	Easting	Northing				Wetted Width (m)	Bankfull Width (m)	Wetted Depth (m)	Instream Cover	Riparian Corridor ²		Drain Type	DFO Classification ³			
										Left Upstream Bank	Right Upstream Bank					
Alt3_S9	42.237332	-82.376902	Baptiste Creek Drain (Baptiste Creek)	Municipal Drain	Clay, Gravel, Cobble	2.2	8	0.22	Macrophytes, Cobble, Woody Debris	F, A	F, A	Open	NR	Natural channel, riffle-run habitat, minor instream cover, steep banks, well vegetated riparian area providing shade	Direct based on conditions observed	37
Alt3_S10	42.221330	-82.452666	Thibert Drain	Municipal Drain	Clay, Detritus	2	6	0.12	Macrophytes, Organic Debris, Woody Debris	S, A	S, A	Open	F	Natural channel, abundant instream aquatic vegetation, algae and overhanging shrubs	Seasonal based on DFO classification	38
Alt3_S11	42.218311	-82.488867	Robb-Dales Drain (Big Creek)	Municipal Drain	Clay, Gravel, Detritus	3	10	0.3	Woody Debris, Macrophytes	F, A	F, A	Open	F	Natural channel, steep well vegetated banks, abundant riparian shade	Seasonal based on DFO classification	39
Alt3_S12	42.215256	-82.475477	East Branch of Big Creek Drain	Municipal Drain	Boulder, Cobble, Clay	4	20	0.4	Woody Debris, Boulders/Cobble	S,A	C	Open	C	Natural channel, steep well vegetated banks, abundant riparian shade, boulder/cobble riffle at bridge crossing	Direct based on DFO classification	40
Alt3_S14	42.218993	-82.517443	Big Creek Drain – West Branch	Municipal Drain	Clay ¹ , Gravel	3.2	10	0.32	Macrophytes, Woody Debris	S,A	S,A	Open	NR	Natural channel, steep, well vegetated banks with widespread signs of erosion	Direct based on conditions observed	41
Alt3_S15	42.366512	-82.122045	Toomey Drain	--	Detritus, Clay, Muck	1.2	10	0.02	Woody Debris, Organic Debris	F	F	Open	NR	Intermittent drain, dry sections, abundant woody debris	Likely seasonal based on DFO classification and site conditions	42

1=Dominant substrate; 2=Riparian Corridor: A=Agriculture, S=Scrubland, M=Meadow, F=Forest, C=Cultivated, N/A=Not Applicable; 3=DFO Drain classification: C=Permanent flow regime with no sensitive fish species present, E=Permanent flow regime with sensitive species present; F=Intermittent flow regime with no data on fish community; NR=Not Rated (no information regarding flow regime or fish community)

Appendix D

Site Photographs

Description

Photograph

Photograph 1

June 9, 2020

Route
Alternative 1
(Alt1-S2)

Locke Drain,
facing upstream
(southeast) west
of Charing Cross
Road. Top
predator fish
species
(Northern Pike
or Longnose
Gar) observed.



Photograph 2

June 9 2020

Route
Alternative 1
(Alt1-S3)

Duke Drain
(Jeannettes
Creek), facing
downstream
(northwest) at
the 8th Line
crossing.



Description

Photograph

Photograph 3

June 9, 2020

Route
Alternative 1
(Alt1-S4)

Waddick Drain,
facing upstream
(southeast) at
the 8th Line
crossing



Photograph 4

June 10, 2020

Route
Alternative 1
(Alt1-S5)

O'Rourke Drain,
facing
downstream
(northwest), at
the 7th Line
West crossing.



Description

Photograph

Photograph 5

June 10, 2020

Route
Alternative 1
(Alt1-S6)

Government
Drain, facing
upstream
(southeast),
along Dillon
Road.



Photograph 6

June 10, 2020

Route
Alternative 1
(Alt1-S7)

Kersey Drain,
facing upstream
(south) at the 7th
Line West
crossing.



Description

Photograph

Photograph 7

June 10, 2020

Route
Alternative 1
(Alt1-S8)

Deary Drain,
facing upstream
(south) at the
Finn Line
crossing.



Photograph 8

June 11, 2020

Route
Alternative 1
(Alt1-S9)

Baptiste Creek
Drain (Baptiste
Creek), facing
downstream
(north) from the
Middle Line
crossing.



Description

Photograph

Photograph 9

June 11, 2020

Route
Alternative 1
(Alt1-S10)

Powell Drain,
facing
downstream
(east) along
Middle Line.



Photograph 10

June 11, 2020

Route
Alternative 1
(Alt1-S11)

Tremblay Creek
Drain (Tilbury
Creek) facing
downstream
(north).



Description

Photograph

Photograph 11

June 12, 2020

Route
Alternative 1
(Alt1-S12)

Tremblay Creek
Drain (Tilbury
Creek) facing
downstream
(northwest).



Photograph 12

June 12, 2020

Route
Alternative 1
(Alt1-S13)

Big Creek Drain
(Big Creek)
facing upstream
(south) at the
County Road 46
crossing.



Description

Photograph

Photograph 13

June 9, 2020

Route
Alternative 2
(Alt2-S1)

McGregor Creek
Drain, facing
upstream
(southwest)
along
Communication
Road.



Photograph 14

June 9, 2020

Route
Alternative 2
(Alt2-S2)

Chinnick Drain
(Indian Creek),
facing
downstream
(northeast) at
the Howard
Road crossing.



Description

Photograph

Photograph 15

June 11, 2020

Route
Alternative 2
(Alt2-S3)

Bullis Creek
Drain (Bullis
Creek), facing
downstream
(southwest)
along Queens
Line.



Photograph 16

June 11, 2020

Route
Alternative 2
(Alt2-S5)

Ferguson Drain
(Jeanettes
Creek), facing
downstream
(northwest)
at the Loyer Line
dead end (west).



Description

Photograph

Photograph 17

June 11, 2020

Route
Alternative 2
(Alt2-S6)

Baptiste Creek
Drain (Baptiste
Creek), facing
upstream
(southeast) at
the Mint Line
crossing.



Photograph 18

June 11, 2020

Route
Alternative 2
(Alt2-S7)

Tremblay Creek
Drain (Tilbury
Creek), facing
upstream
(south) at the
Concession
Road 3 crossing.



Description

Photograph

Photograph 19

June 11, 2020

Route
Alternative 2
(Alt2-S8)

Big Creek Drain
(Big Creek),
facing upstream
(south) from a
densely wooded
riparian area
and very steep
slope.



Photograph 20

June 12, 2020

Route
Alternative 2
(Alt2-S9)

Unnamed
feature, facing
downstream
(north) along
Gracey
Sideroad.



Description

Photograph

Photograph 21

June 12, 2020

Route
Alternative 2
(Alt2-S11)

Little Creek,
facing upstream
(south) at the
Morris Road
crossing.



Photograph 22

June 12, 2020

Route
Alternative 2
(Alt2-S13)

Malden Road
Drain Outlet,
facing upstream
(east) at the
Tilne Road
Rochester
crossing.



Description

Photograph

Photograph 23
June 11, 2020

Route
Alternative 2
(Alt2-S14)

Ferguson Drain
(Jeannettes
Creek), facing
downstream
(west) at the
Merlin Road
crossing.



Photograph 24
June 11, 2020

Route
Alternative 2
(Alt2-S15)

Baptiste Creek
Drain (Baptiste
Creek), facing
upstream
(southeast)
immediately
south of the
existing railway
crossing west of
Dashwheel
Road.



Description

Photograph

Photograph 25

June 9, 2020

Route
Alternative 2
(Alt2-S16)

Doyle Drain,
facing upstream
(southeast) at
the Highway 401
crossing.



Photograph 26

June 9, 2020

Route
Alternative 2
(Alt2-S17)

Tributary to
Doyle Drain. Dry
vegetated
swale, facing
downstream
(northwest)
southeast of
Doyle Line and
Charing Cross
Road.



Description

Photograph

Photograph 27

June 9, 2020

Route
Alternative 2
(Alt2-S18)

Locke Drain,
facing
downstream
(northwest) at
the Highway 401
crossing.



Photograph 28

June 10, 2020

Route
Alternative 2
(Alt2-S19)

Ferguson Drain
(Jeannettes
Creek), facing
downstream
(west) north of
Highway
401. Photo taken
from an
agricultural
crossing
approximately
120 m upstream
of the potential
corridor
crossing.



Description

Photograph

Photograph 29

June 10, 2020

Route
Alternative 2
(Alt2-S20)

Finn & Cooper
Drain, facing
downstream
(north,
northeast of
Highway 401
and Drake Road.



Photograph 30

June 12, 2020

Route
Alternative 2
(Alt2-S21)

Piped/buried 6-
7 Sideroad
Drain, facing
north along
Highway 77.



Description

Photograph

Photograph 31

June 9, 2020

Route
Alternative 3
(Alt3-S2)

Duke Drain
(Jeannettes
Creek), facing
downstream
(northwest) at
the 9th Line
crossing.



Photograph 32

June 10, 2020

Route
Alternative 3
(Alt3-S3)

O'Rourke Drain,
facing upstream
(southeast), at
the 9th Line
crossing.



Description

Photograph

Photograph 33

June 10, 2020

Route
Alternative 3
(Alt3-S4)

Carter Drain,
facing
downstream
(north), at the
Ad Shadd Road
crossing.



Photograph 34

June 10, 2020

Route
Alternative 3
(Alt3-S5)

Kersey Drain,
facing upstream
(south), along
9th Line.



Description

Photograph

Photograph 35

June 10, 2020

Route
Alternative 3
(Alt3-S6)

Deary Drain,
facing upstream
(south), at the
Girard Line
crossing.



Photograph 36

June 11, 2020

Route
Alternative 3
(Alt3-S8)

Unnamed Drain,
facing upstream
(north) along
Gray Line.



Description

Photograph

Photograph 37

June 11, 2020

Route
Alternative 3
(Alt3-S9)

Baptiste Creek
Drain (Baptiste
Creek) facing
downstream
(north)
approximately
625 m south of
Gray Line.



Photograph 38

June 12, 2020

Route
Alternative 3
(Alt3-S10)

Thibert Drain,
facing upstream
(south)
approximately
600 m south of
Desimpel Road.



Description

Photograph

Photograph 39

June 12, 2020

Route
Alternative 3
(Alt3-S11)

Robb-Dales
Drain (Big
Creek), facing
upstream
(south)
approximately
300 m north of
Lakeshore Road
308.



Photograph 40

June 12, 2020

Route
Alternative 3
(Alt3-S12)

East Branch of
Big Creek Drain,
facing
downstream
(north) at the
Lakeshore Road
308 crossing.



Description

Photograph

Photograph 41

June 12, 2020

Route
Alternative 3
(Alt3-S14)

Big Creek Drain
– West Branch,
facing
downstream
(north)
approximately
250 north of
Lakeshore Road
308.



Photograph 42

June 9, 2020

Route
Alternative 3
(Alt3-S15)

Toomey Drain,
facing
downstream
(northwest)
through a
woodlot at
Lagoon Road
and Gagner Line.



Description

Photograph

Photograph 43

July 13, 2020

Route
Alternative 2
(Alt2-S9)

Looking west
from the
breeding bird
survey

Note: Annual
Row Crops (left
background),
and Thicket
Swamp (right
background).



Photograph 44

June 10, 2020

Route
Alternative 1
(Alt1-S15)

Looking east
from within the
Red-Maple
Organic
Deciduous
Swamp Type



Description

Photograph

Photograph 45

June 11, 2020

Route
Alternative 2
(Alt2-S4)

Looking west
from within the
Maple Organic
Deciduous
Swamp Type.



Photograph 46

June 12, 2020

Route
Alternative 2
(Alt2-S8)

Looking west
from the
breeding bird
survey

Note: White Elm
Mineral
Deciduous
Swamp Type.



Description

Photograph

Photograph 47

June 8, 2020

Route
Alternative 2
(Alt2-S10)

Looking East
towards
Deciduous
Forest Type.



Photograph 48

June 12, 2020

Route
Alternative 2
(Alt2-S8)

Looking east
from east of the
breeding bird
survey

Note: Fresh-
Moist Shagbark
Hickory
Deciduous
Forest Type
(left) and Annual
Row Crops
(right).



Description

Photograph

Photograph 49

July 7, 2020

Route
Alternative 3
(Alt3-S15)

Looking
southwest
towards Fresh-
Moist Sugar
Maple White
Elm Deciduous
Forest Type.



Photograph 50

June 15, 2020

Route
Alternative 1
(Alt1-S2)

Looking north
within Dry-Fresh
Sugar Maple-
Black Cherry
Deciduous
Forest Type.



Description

Photograph

Photograph 51

June 8, 2020

Route
Alternative 2
(Alt2-S12)

Looking southwest towards agricultural fields and Deciduous Woodland Type.



Photograph 52

July 6, 2020

Route
Alternative 2
(Alt2-S16)

Looking northwest towards agricultural fields and Deciduous Woodland Type.



Description

Photograph

Photograph 53

July 6, 2020

Route
Alternative 2
(Alt2-S18)

Looking
northeast
towards Thicket
Community
Type.



Photograph 54

June 8, 2020

Route
Alternative 2
(Alt2-S10)

Looking west
towards Mixed
Thicket
Community
Type.



Description

Photograph

Photograph 55

July 9, 2020

Route
Alternative 2
(Alt2-S7)

Looking north
from Lakeshore
Road 303

Note: Baptise
Creek (Open
water) facing
downstream.



Photograph 56

July 9, 2020

Route
Alternative 2
(Alt2-S5)

Looking
northwest from
the eastern
bank of
Jeannettes
Creek (seen to
the left)

Note: Open
Water (left) with
Annual Row
Crops (right).



Description

Photograph

Photograph 57

June 10, 2020

Route
Alternative 1
(Alt1-S14)

Looking east
towards open
ponds (Shallow
Aquatic).



Photograph 58

July 10, 2020

Route
Alternative 2
(Alt2-S17)

Looking
northeast
towards Forb
Meadow Type.



Description

Photograph

Photograph 59

July 8, 2020

Route
Alternative 1
(Alt1-S8)

Looking south
towards Mixed
Meadow Type
and agricultural
fields.



Photograph 60

July 8, 2020

Route
Alternative 2
(Alt2-S14)

Looking
southwest from
Merlin Road

Note: Dry-Fresh
Mixed Meadow
(foreground)
with Annual
Row Crops
(background).



Description

Photograph

Photograph 61

July 13, 2020

Route
Alternative 1
(Alt1-S1)

Looking east
towards Eastern
White Cedar
Hedgerow.



Photograph 62

June 12, 2020

Route
Alternative 1
(Alt1-S12)

Looking west
towards annual
row crop (soy).



Description

Photograph

Photograph 63

June 12, 2020

Route
Alternative 1
(Alt1-S12)

Looking south
towards mowed
grass of
cemetery lands.



Photograph 64

July 13, 2020

Route
Alternative 2
(Alt2-S2)

Looking north
towards paved
municipal road
(Howard Road).



Description

Photograph

Photograph 65

July 8, 2020

Route
Alternative 2
(Alt2-S15)

Looking
southeast
towards Hydro
One ROW and
transmission
lines.



Photograph 66

July 13, 2020

Route
Alternative 2
(Alt2-S19)

A SCC, Climbing
Prairie Rose
(*Rosa setigera*)
south of the
Deciduous
Forest
community



Description

Photograph

Photograph 67

July 13, 2020

Route
Alternative 3
(Alt3-S14)

A SCC, Honey
Locust (*Gleditsia
triacanthos*;
SRank of S2)
identified along
riparian
hedgerow.



Photograph 68

June 15, 2020

Route
Alternative 1
(Alt1-S2)

Butternut
(*Juglans
cinerea*), A SAR
listed as
Endangered
under the ESA
(2007).



Description

Photograph

Photograph 69

June 15, 2020

Route
Alternative 1
(Alt1-S2)

Butternut
(*Juglans
cinerea*), A SAR
listed as
Endangered
under the ESA
(2007).



Photograph 70

June 15, 2020

Route
Alternative 1
(Alt1-S2)

Butternut
(*Juglans
cinerea*), A SAR
listed as
Endangered
under the ESA
(2007).



Description

Photograph

Photograph 71

June 15, 2020

Route
Alternative 1
(Alt1-S2)

Butternut
(*Juglans
cinerea*), A SAR
listed as
Endangered
under the ESA
(2007).



Photograph 72

June 15, 2020

Route
Alternative 1
(Alt1-S2)

Butternut
(*Juglans
cinerea*), A SAR
listed as
Endangered
under the ESA
(2007).



Description

Photograph

Photograph 73

June 15, 2020

Route
Alternative 1
(Alt1-S2)

Butternut
(*Juglans
cinerea*), A SAR
listed as
Endangered
under the ESA
(2007).



Photograph 74

July 7, 2020

Route
Alternative 3
(Alt3-S1)

Burrow of
unknown animal
species
observed.



Appendix E

Vegetation List

Table E- 1: Vegetation Species identified within the Project Study Area

Family	Scientific Name	Common Name	SARA Status ¹	ESA Status ²	SRank ³	CC ⁴	CW ⁵	Invasive Priority for Control ⁶	Noxious	Route Alternative 1	Route Alternative 2	Route Alternative 3
<i>Equisetaceae</i>	<i>Equisetum arvense</i>	Field Horsetail	---	---	S5	0	0	---	---	---	•	---
<i>Dryopteridaceae</i>	<i>Onoclea sensibilis</i>	Sensitive Fern	---	---	S5	4	-3	---	---	•	---	---
<i>Cupressaceae</i>	<i>Juniperus virginiana</i>	Eastern Red Cedar	---	---	S5	4	3	---	---	•	•	•
<i>Cupressaceae</i>	<i>Thuja occidentalis</i>	Eastern White Cedar	---	---	S5	4	-3	---	---	•	•	•
<i>Pinaceae</i>	<i>Picea abies</i>	Norway Spruce	---	---	SNA	---	5	---	---	---	•	•
<i>Butomaceae</i>	<i>Butomus umbellatus</i>	Flowering-rush	---	---	SNA	---	-5	C3	---	---	•	•
<i>Araceae</i>	<i>Arisaema triphyllum</i>	Jack-in-the-pulpit	---	---	S5	5	-2	---	---	•	---	---
<i>Cyperaceae</i>	<i>Carex bebbii</i>	Bebb's Sedge	---	---	S5	3	-5	---	---	---	•	---
<i>Cyperaceae</i>	<i>Carex intumescens</i>	Bladder Sedge	---	---	S5	6	-4	---	---	•	---	---
<i>Cyperaceae</i>	<i>Carex vulpinoidea</i>	Fox Sedge	---	---	S5	3	-5	---	---	---	•	---
<i>Cyperaceae</i>	<i>Schoenoplectus tabernaemontani</i>	Soft-stemmed Bulrush	---	---	S5	5	-5	---	---	---	•	---
<i>Poaceae</i>	<i>Agrostis gigantea</i>	Redtop	---	---	SNA	---	0	---	---	---	•	---
<i>Poaceae</i>	<i>Dactylis glomerata</i>	Orchard Grass	---	---	SNA	---	3	C3	---	•	---	•
<i>Poaceae</i>	<i>Phragmites australis ssp. australis</i>	European Common Reed	---	---	SNA	---	-4	C1	---	•	•	•
<i>Poaceae</i>	<i>Setaria viridis</i>	Green Foxtail	---	---	SNA	---	5	---	---	•	•	---
<i>Liliaceae</i>	<i>Allium canadense</i>	Canada Garlic	---	---	S5	8	3	---	---	•	---	---
<i>Liliaceae</i>	<i>Asparagus officinalis</i>	Garden Asparagus	---	---	SNA	---	3	---	---	•	•	•
<i>Liliaceae</i>	<i>Hemerocallis fulva</i>	Orange Daylily	---	---	SNA	---	5	C3	---	---	•	•
<i>Smilacaceae</i>	<i>Smilax tamnoides</i>	Hispid Greenbrier	---	---	S4	6	0	---	---	•	---	---
<i>Typhaceae</i>	<i>Typha angustifolia</i>	Narrow-leaved Cattail	---	---	SNA	3	-5	C3	---	•	---	---
<i>Typhaceae</i>	<i>Typha latifolia</i>	Broad-leaved Cattail	---	---	S5	3	-5	---	---	•	---	•
<i>Apiaceae</i>	<i>Daucus carota</i>	Wild Carrot	---	---	SNA	---	5	C4	---	•	•	•
<i>Apiaceae</i>	<i>Pastinaca sativa</i>	Wild Parsnip	---	---	SNA	---	5	C1	Y	•	•	---
<i>Apiaceae</i>	<i>Taenidia integerrima</i>	Yellow Pimpernell	---	---	S4	9	5	---	---	---	•	---
<i>Aristolochiaceae</i>	<i>Asarum canadense</i>	Canada Wild-ginger	---	---	S5	6	5	---	---	---	---	•
<i>Asteraceae</i>	<i>Achillea millefolium</i>	Common Yarrow	---	---	SE	---	3	---	---	•	•	•
<i>Asteraceae</i>	<i>Ambrosia trifida</i>	Great Ragweed	---	---	S5	0	-1	---	Y	•	•	•
<i>Asteraceae</i>	<i>Arctium minus</i>	Common Burdock	---	---	SNA	---	5	---	---	---	---	•
<i>Asteraceae</i>	<i>Cirsium arvense</i>	Canada Thistle	---	---	SNA	---	3	C3	---	•	•	•
<i>Asteraceae</i>	<i>Erigeron philadelphicus</i>	Philadelphia Fleabane	---	---	S5	1	-3	---	---	•	•	---
<i>Asteraceae</i>	<i>Hieracium aurantiacum</i>	Orange Hawkweed	---	---	SNA	---	5	C3	---	•	---	---

Family	Scientific Name	Common Name	SARA Status ¹	ESA Status ²	SRank ³	CC ⁴	CW ⁵	Invasive Priority for Control ⁶	Noxious	Route Alternative 1	Route Alternative 2	Route Alternative 3
Asteraceae	<i>Rudbeckia hirta</i> var. <i>hirta</i>	Black-eyed Susan	---	---	SU	0	3	---	---	•	•	---
Asteraceae	<i>Sonchus arvensis</i> ssp. <i>arvensis</i>	Field Sow-thistle	---	---	SNA	---	1	---	Y	---	•	---
Asteraceae	<i>Tussilago farfara</i>	Colt's-foot	---	---	SNA	---	3	C2	Y	•	---	---
Brassicaceae	<i>Alliaria petiolata</i>	Garlic Mustard	---	---	SNA	---	0	C1	---	•	---	•
Brassicaceae	<i>Brassica rapa</i>	Field Mustard/Turnip	---	---	SNA	---	5	---	---	•	---	---
Brassicaceae	<i>Hesperis matronalis</i>	Dame's Rocket	---	---	SNA	---	5	C3	---	•	•	•
Brassicaceae	<i>Rorippa palustris</i> ssp. <i>palustris</i>	Marsh Yellowcress	---	---	S5?	3	-5	---	---	•	---	•
Brassicaceae	<i>Thlaspi arvense</i>	Field Penny-cress	---	---	SNA	---	5	---	---	•	•	•
Cornaceae	<i>Cornus racemosa</i>	Gray Dogwood	---	---	S5	2	-2	---	---	•	•	•
Cornaceae	<i>Cornus sericea</i> ssp. <i>sericea</i>	Red-osier Dogwood	---	---	S5	2	-3	---	---	•	---	---
Dipsacaceae	<i>Dipsacus fullonum</i>	Fuller's Teasel	---	---	SE5	---	5	C3	---	•	•	•
Fabaceae	<i>Gleditsia triacanthos</i>	Honey-locust	---	---	S2	3	0	---	---	•	---	•
Fabaceae	<i>Lathyrus latifolius</i>	Everlasting Pea	---	---	SNA	---	5	---	---	---	---	•
Fabaceae	<i>Melilotus albus</i>	White Sweet-clover	---	---	SNA	---	3	C1	---	•	•	---
Fabaceae	<i>Melilotus officinalis</i>	Yellow Sweet-clover	---	---	SNA	---	3	C2	---	•	•	•
Fabaceae	<i>Robinia pseudoacacia</i>	Black Locust	---	---	SNA	---	4	C3	---	---	•	•
Fabaceae	<i>Securigera varia</i>	Common Crown-vetch	---	---	SNA	---	5	C2	---	---	---	•
Fabaceae	<i>Trifolium pratense</i>	Red Clover	---	---	SNA	---	2	---	---	•	---	•
Betulaceae	<i>Betula alleghaniensis</i>	Yellow Birch	---	---	S5	6	0	---	---	•	---	•
Betulaceae	<i>Ostrya virginiana</i>	Eastern Hop-hornbeam	---	---	S5	4	4	---	---	---	---	•
Fagaceae	<i>Fagus grandifolia</i>	American Beech	---	---	S4	6	3	---	---	•	---	•
Fagaceae	<i>Quercus bicolor</i>	Swamp White Oak	---	---	S4	8	-4	---	---	---	---	•
Fagaceae	<i>Quercus macrocarpa</i>	Bur Oak	---	---	S5	5	1	---	---	•	•	•
Fagaceae	<i>Quercus rubra</i>	Northern Red Oak	---	---	S5	6	3	---	---	•	---	•
Apocynaceae	<i>Apocynum cannabinum</i>	Hemp Dogbane	---	---	S5	3	0	---	---	•	•	---
Asclepiadaceae	<i>Asclepias incarnata</i>	Swamp Milkweed	---	---	S5	6	-5	---	---	•	•	---
Asclepiadaceae	<i>Asclepias syriaca</i>	Common Milkweed	---	---	S5	0	5	---	---	•	•	•
Geraniaceae	<i>Geranium maculatum</i>	Spotted Geranium	---	---	S5	6	3	---	---	•	---	•
Oxalidaceae	<i>Oxalis stricta</i>	European Wood-sorrel	---	---	S5	0	3	---	---	---	•	---
Juglandaceae	<i>Carya cordiformis</i>	Bitternut Hickory	---	---	S5	6	0	---	---	---	---	•
Juglandaceae	<i>Carya ovata</i>	Shagbark Hickory	---	---	S5	6	3	---	---	---	•	•
Juglandaceae	<i>Juglans cinerea</i>	Butternut	END	END	S3?	6	2	---	---	•	---	---

Family	Scientific Name	Common Name	SARA Status ¹	ESA Status ²	SRank ³	CC ⁴	CW ⁵	Invasive Priority for Control ⁶	Noxious	Route Alternative 1	Route Alternative 2	Route Alternative 3
Juglandaceae	<i>Juglans nigra</i>	Black Walnut	---	---	S4	5	3	---	---	•	•	•
Boraginaceae	<i>Echium vulgare</i>	Common Viper's-bugloss	---	---	SNA	---	5	---	---	---	•	---
Lamiaceae	<i>Lycopus americanus</i>	American Water-horehound	---	---	S5	4	-5	---	---	•	•	---
Lamiaceae	<i>Monarda fistulosa var. fistulosa</i>	Wild Bergamot	---	---	S5	6	3	---	---	---	•	---
Lamiaceae	<i>Nepeta cataria</i>	Catnip	---	---	SNA	---	1	---	---	---	•	---
Lauraceae	<i>Lindera benzoin</i>	Spicebush	---	---	S5	6	-2	---	---	•	---	---
Malvaceae	<i>Abutilon theophrasti</i>	Velvetleaf	---	---	SNA	---	4	---	---	---	---	•
Tiliaceae	<i>Tilia americana</i>	American Basswood	---	---	S5	4	3	---	---	•	---	•
Lythraceae	<i>Lythrum salicaria</i>	Purple Loosestrife	---	---	SNA	---	-5	C1	---	---	•	---
Onagraceae	<i>Circaea canadensis</i>	Broad-leaved Enchanter's Nightshade	---	---	S5	3	3	---	---	•	•	•
Onagraceae	<i>Oenothera biennis</i>	Common Evening Primrose	---	---	S5	0	3	---	---	---	•	---
Plantaginaceae	<i>Plantago lanceolata</i>	English Plantain	---	---	SNA	---	0	---	---	---	•	---
Polygonaceae	<i>Rumex crispus</i>	Curly Dock	---	---	SNA	---	-1	---	---	•	•	•
Primulaceae	<i>Lysimachia nummularia</i>	Creeping Jennie	---	---	SNA	---	-4	C3	---	---	•	---
Elaeagnaceae	<i>Elaeagnus angustifolia</i>	Russian Olive	---	---	SNA	---	4	C3	---	---	•	---
Berberidaceae	<i>Podophyllum peltatum</i>	May-apple	---	---	S5	5	3	---	---	•	---	---
Menispermaceae	<i>Menispermum canadense</i>	Canada Moonseed	---	---	S4	7	0	---	---	•	---	---
Vitaceae	<i>Parthenocissus quinquefolia</i>	Virginia Creeper	---	---	S4?	6	1	---	---	•	•	•
Vitaceae	<i>Vitis riparia</i>	Riverbank Grape	---	---	S5	0	-2	---	---	•	•	•
Rosaceae	<i>Agrimonia parviflora</i>	Swamp Agrimony	---	---	S4	4	-1	---	---	•	---	---
Rosaceae	<i>Geum aleppicum</i>	Yellow Avens	---	---	S5	2	-1	---	---	---	---	•
Rosaceae	<i>Geum canadense</i>	White Avens	---	---	S5	3	0	---	---	---	•	---
Rosaceae	<i>Prunus serotina</i>	Wild Black Cherry	---	---	S5	3	3	---	---	•	---	---
Rosaceae	<i>Prunus virginiana</i>	Choke Cherry	---	---	S5	2	1	---	---	•	---	•
Rosaceae	<i>Rosa multiflora</i>	Multiflora Rose	---	---	SNA	---	3	C2	---	---	---	•
Rosaceae	<i>Rosa rubingosa var. rubingosa</i>	Briar Rose	---	---	SNA	---	5	---	---	---	---	•
Rosaceae	<i>Rosa setigera</i>	Climbing Prairie Rose	SC	SC	S3	5	2	---	---	•	•	---
Rosaceae	<i>Rosa virginiana</i>	Virginia Rose	---	---	SU	---	---	---	---	---	•	•
Rosaceae	<i>Rubus allegheniensis</i>	Alleghany Blackberry or Common Blackberry	---	---	S5	2	2	---	---	---	•	•
Rosaceae	<i>Rubus idaeus ssp. idaeus</i>	Common Red Raspberry	---	---	SNA	---	5	---	---	•	•	•
Rubiaceae	<i>Galium aparine</i>	Cleavers	---	---	S5	4	3	---	---	•	---	•
Salicaceae	<i>Populus deltoides ssp. deltoides</i>	Eastern Cottonwood	---	---	S5	4	-1	---	---	•	•	•

Family	Scientific Name	Common Name	SARA Status ¹	ESA Status ²	SRank ³	CC ⁴	CW ⁵	Invasive Priority for Control ⁶	Noxious	Route Alternative 1	Route Alternative 2	Route Alternative 3
Salicaceae	<i>Populus grandidentata</i>	Large-tooth Aspen	---	---	S5	5	3	---	---	---	•	---
Aceraceae	<i>Acer negundo</i>	Manitoba Maple	---	---	S5	0	-2	C2	---	•	•	•
Aceraceae	<i>Acer rubrum</i>	Red Maple	---	---	S5	4	0	---	---	---	•	---
Aceraceae	<i>Acer saccharinum</i>	Silver Maple	---	---	S5	5	-3	---	---	•	•	•
Aceraceae	<i>Acer saccharum</i>	Sugar Maple	---	---	S5	4	3	---	---	•	•	•
Aceraceae	<i>Acer x freemanii</i>	Freeman's Maple	---	---	SNA	---	---	---	---	•	---	•
Anacardiaceae	<i>Rhus hirta</i>	Staghorn Sumac	---	---	S5	1	5	---	---	•	•	•
Anacardiaceae	<i>Toxicodendron radicans</i>	Climbing Poison Ivy	---	---	S5	5	-1	---	Y	•	•	•
Rutaceae	<i>Zanthoxylum americanum</i>	Northern Prickley Ash	---	---	S5	3	5	---	---	•	•	•
Oleaceae	<i>Fraxinus pennsylvanica</i>	Green Ash	---	---	S4	3	-3	---	---	•	•	•
Scrophulariaceae	<i>Verbascum thapsus</i>	Common Mullein	---	---	SNA	---	5	---	---	•	•	---
Convolvulaceae	<i>Convolvulus arvensis</i>	Field Bindweed	---	---	SNA	---	5	---	---	---	•	---
Solanaceae	<i>Solanum dulcamara</i>	Climbing Nightshade or Bittersweet Nightshade	---	---	SNA	---	0	C3	---	•	---	---
Clusiaceae	<i>Hypericum perforatum</i>	Common St. John's-wort	---	---	SNA	---	5	---	---	•	---	---
Moraceae	<i>Morus alba</i>	White Mulberry	---	---	SNA	---	0	C1	---	•	•	•
Ulmaceae	<i>Ulmus americana</i>	American Elm	---	---	S5	3	-2	---	---	•	•	•

¹ Status identified by the Committee on the Status of Endangered Wildlife in Canada under the federal Species at Risk Act, 2002;

² Species at Risk in Ontario List under the provincial Endangered Species Act, 2007;

³ Provincial Conservation Ranking (SRank) where S5 = secure, S4 = apparently secure, S3 = vulnerable, S2 = imperiled, S1 = critically imperiled, SX = extirpated, SH = possibly extirpated, SNA = A conservation status rank is not applicable because the species is not a suitable target for conservation activities, SE = exotic, SU = unranked, B = breeding, N = non-breeding, and ? = some uncertainty with the classification due to insufficient information;

⁴ Coefficient of Conservatism (CC) (Floristic Quality Assessment System for Southern Ontario 1995). Each native taxon is assigned a rank of 0 to 10 ("coefficient of conservatism") based on its degree of fidelity to a range of synecological parameters. Species found in a wide variety of plant communities, including disturbed sites, are assigned ranks of 0 to 3. Species that are typically associated with a specific plant community, but tolerate moderate disturbance, are assigned ranks of 4 to 6. Rankings of 7 to 8 were applied to those species associated with a plant community in an advanced successional stage that has undergone minor disturbance. Those species with high degrees of fidelity to a narrow range of synecological parameters are assigned a value of 9 to 10;

⁵ Coefficient of Wetness (CW) (Floristic Quality Assessment System for Southern Ontario 1995). The wetness index gives an indication of where plant species are typically found. A wetness value (coefficient of wetness) between -5 and 5. A value of -5 was assigned to Obligate Wetland (OBL) species and a value of 5 to Obligate Upland species (UPL), with intermediate values assigned to the remaining categories. The wetland categories and their corresponding values are as follows:

- OBL (-5) Obligate Wetland - Occurs almost always in wetlands under natural conditions (estimated > 99% probability).
- FACW+ (-4) Facultative Wetland - Usually occurs in wetlands, but occasionally found in non-wetlands (estimated 67-99% probability).
- FACW (-3)
- FACW- (-2)
- FAC + (-1) Facultative - Equally likely to occur in wetlands or non-wetlands (estimated 34-66% probability).
- FAC 0
- FAC- (1)
- FACU+ (2) Facultative Upland - Occasionally occurs in wetlands, but usually occurs in non-wetlands (estimated 1-33 % probability).
- FACU (3)
- FACU- (4)
- UPL (5) Obligate Upland - Occurs almost never in wetlands under natural conditions (estimated <1 % probability).

⁶ Invasive Exotic Plant Species Rankings for Southern Ontario (Draft - Urban Forest Associates/MNRF 2014), where:

Category 1 (C1) - Top Priority: Widespread invasive species that exclude most other species and dominate sites indefinitely. Some are an imminent threat to human health. They are the top priority for control but control may be difficult and some are beyond control at present. Biocontrols may be the only affective long-term control option. Plants in this category are a threat to natural area wherever they occur because they disperse widely and benefit from human disturbances. Control where possible and do not plant. *Note: Species may have native Ontario populations or perform important ecosystem functions despite being exotic species and this should be considered before removing.

Category 2 (C2) - Medium Priority: Less widespread or localized invasive but a serious concern because they have a large or permanent effect once they become dominant and they will spread more widely. They may dominate the niche so the native plants that would be present are excluded or they prevent a natural process that maintains the habitat from occurring. Some are capable of becoming Category 1 species if given time so are a priority for removal. These species disperse widely and so are a threat to biodiversity wherever they occur. Control where possible and do not plant. *Note: Species may have native Ontario populations or perform important ecosystem functions despite being exotic species and this should be considered before removing.

Category 3 (C3) - Local Priority: Species that spread locally or persist and reproduce from initial introductions, but may have a negligible effect on biodiversity over the long-term because they eventually become integrated into natural systems or dominated by native species, die out or are only found on highly disturbed habitats and don't persist when habitat quality improves. They take up space that could be occupied by native species and do not provide the same natural functions as the natives they replace. Some may be Category 2 in some parts of Ontario or in particular vegetation community types. Replace with native species whenever possible and do not plant if possible. *Note: Species may have native Ontario populations or perform important ecosystem functions despite being exotic species and this should be considered before removing.

Category 4 (C4) - Species to Watch: Species that have spread locally or regionally but currently appear to have minimal effects on biodiversity. These species should be monitored over the long-term to assess potential impacts.

Category 5 (C5) - Potential Invasive Species: These species have been identified as a potential threat to Ontario. They are on lists for Canada, U.S.A states near Ontario, or have been recently detected in the province. These are a priority for early detection programs.

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Appendix C.1.1 eDNA Results

Memo



To: Paul Dalmazzi, Hydro One Networks Inc.
From: Dan Bourassa, Dillon Consulting Limited
Date: April 20, 2022
Subject: Chatham to Lakeshore 230 kV Transmission Line Class Environmental Assessment
2021 eDNA Sampling Program Results
Our File: 191917

The purpose of this memo is to provide Hydro One Networks Inc. (Hydro One) with a summary of the laboratory analysis results from the July 27 and 28, 2021 aquatic eDNA sampling program implemented along preferred route 2A in support of the Chatham to Lakeshore 230 kV Transmission Line Class Environment Assessment (EA).

METHODS

As part of the 2021 eDNA program, eight (8) watercourses which intersect preferred alternative route 2A were targeted using best management practices for eDNA sampling and analysis to supplement the 2020 aquatic survey data. Watercourses assessed as part of the eDNA program included McGregor Creek, Chinnick Drain, Bullis Drain, Jeanettes Creek, Baptiste Creek, Tilbury Creek, Locke Drain and Big Creek.

With exception to Big Creek, two eDNA water samples were collected from each watercourse (i.e. upstream and downstream samples to represent a sample reach). For each watercourse, an attempt was made to collect one of the samples at the preferred alternative route 2A crossing location, where possible. For health and safety reasons, only one sample was collected along Big Creek; for a total of 15 eDNA samples. Refer to Figure 1A-1C in **Attachment A** for an illustration of eDNA survey locations.

The table below provides a summary of the watercourse survey dates, the volume of water collected per sample location, as well as filter sizes employed for eDNA extraction.

Extraction ID	Watercourse ID	Date (2021)	Volume (L)	Filter Size (μm) ¹
D1	CONTROL	July 28	0.96	1.2
D2	CONTROL	July 27	0.93	1.2
D3	McGregor Creek	July 27	0.71	1.2
D4	McGregor Creek	July 27	0.97	1.2
D5	Chinnick Drain	July 27	1.06	1.2
D6	Chinnick Drain	July 27	0.69	1.2
D7	Bullis Drain	July 27	0.65	1.2
D8	Bullis Drain	July 27	0.70	1.2
D9	Jeanettes Creek	July 28	0.80	5
D10	Jeanettes Creek	July 27	0.80	1.2
D11	Baptiste Creek	July 28	0.90	5
D12	Baptiste Creek	July 27	0.35	1.2
D13	Tilbury Creek	July 28	0.58	5

Extraction ID	Watercourse ID	Date (2021)	Volume (L)	Filter Size (µm) ¹
D14	Tilbury Creek	July 28	0.94	5
D15	Big Creek	July 28	0.81	5
D16	Locke Drain	July 27	0.69	1.2
D17	Locke Drain	July 27	0.33	1.2

¹Given the turbidity of the water, 5µm filters were utilized during the July 28 surveys based on recommendations from Precision Biomonitoring Inc. In all cases, self-preserving filters were utilized.

Samples on July 27 were collected in situ using a Smith-Root battery powered eDNA pack frame water sampler paired with a telescoping sampling pole. Self-preserving filters were attached to the eDNA water sampler via tubing while the eDNA water sampler filtered a targeted volume of water (i.e. 1 L). In some instances, the water was too turbid to achieve the targeted volume of 1 L. Based on recommendations provided by Precision Biomonitoring Inc. following the July 27 sampling event, 1 L grab samples were collected on July 28 with sterile glass bottles and subsequently processed on site at Precision Biomonitoring Inc. laboratories using 5µm self-preserving filters and the eDNA water sampler. Representatives from Caldwell First Nation and Chippewas of Kettle and Stoney Point First Nation participated in the eDNA sampling program.

Analysis

Laboratory analysis was completed by Precision Biomonitoring Inc. through the application of dual locus metabarcoding for fishes (12S rRNA and COI; markers). In addition to metabarcoding, samples were also analyzed using qPCR for detection/non-detection of Lake Chubsucker (*Erimyzon sucetta*); a species listed federally as Endangered under the *Species at Risk Act, 2002* (SARA) and provincially as Threatened under the *Endangered Species Act, 2007* (ESA).

Results

Metabarcoding

When combining both markers (12S rRNA and COI) 34 unique taxa were identified to species level when aggregately combined across all samples, representing nine unique family of fishes (i.e. Cyprinidae [*n*= 11] species, Centrarchidae [*n*= 7 species], Ictaluridae [*n*= 5 species], Percidae [*n*= 3 species], Catostomidae [*n*= 3 species], Esocidae [*n*= 2 species], Amiida [*n*=1 species], , Clupeidae [*n*= 1 species], Gasteerosteidae [*n*= 1 species]). In some instances the DNA could only be identified to the genus (e.g. *Carpoides sp.*, *Cyprinid sp.*, etc.). The list of species detected during the eDNA program per watercourse is summarized in **Attachment B**.

qPCR

Targeted qPCR analysis for each sample did not yield detection of Lake Chubsucker.

Should you have any questions as it relates to the eDNA data results, please do not hesitate to contact me.

ATTACHMENTS

Attachment A – Figures

Attachment B – Species Summary Tables

ATTACHMENT A

FIGURES

HYDRO ONE NETWORKS INC.
CHATHAM TO LAKESHORE LINE
CLASS ENVIRONMENTAL ASSESSMENT

2021 eDNA SURVEY LOCATIONS
FIGURE 1A



- ▲ eDNA Survey Location
- Station
- Preferred Route 2A
- Page Extent
- Base Data
- Existing Electrical Transmission Line
- Highway
- Road
- +— Railway
- Water Body
- Municipality Boundary

SCALE 1:160,000

0 1 2 4 km



MAP DRAWING INFORMATION:
Data provided by LIO, MNR, CanVec, Project data provided by Hydro One Networks and refined by Dillon Consulting Limited. SWOOP 2015 Imagery and ESRI BaseMap Imagery

MAP CREATED BY: SFG\LMM
MAP CHECKED BY: DB
MAP PROJECTION: NAD 1983 UTM Zone 17N

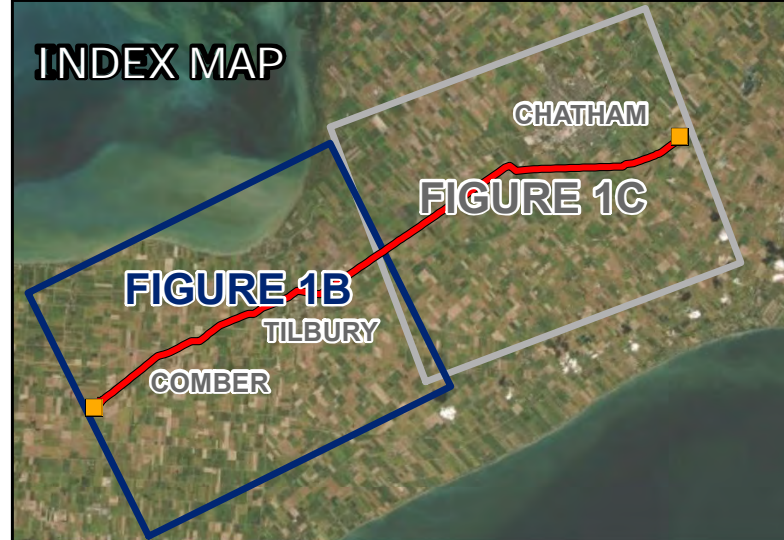


PROJECT: 19-1917
STATUS: DRAFT
DATE: 2021-12-09

2021 eDNA SURVEY LOCATIONS
 FIGURE 1B



- ▲ eDNA Survey Location
- Station
- Constructed Drain
- Preferred Route 2A
- Base Data
- Existing Electrical Transmission Line
- Highway
- Road
- Railway
- Constructed Drain
- Watercourse
- Water Body
- Municipality Boundary



SCALE 1:75,000

0 0.5 1 2 km



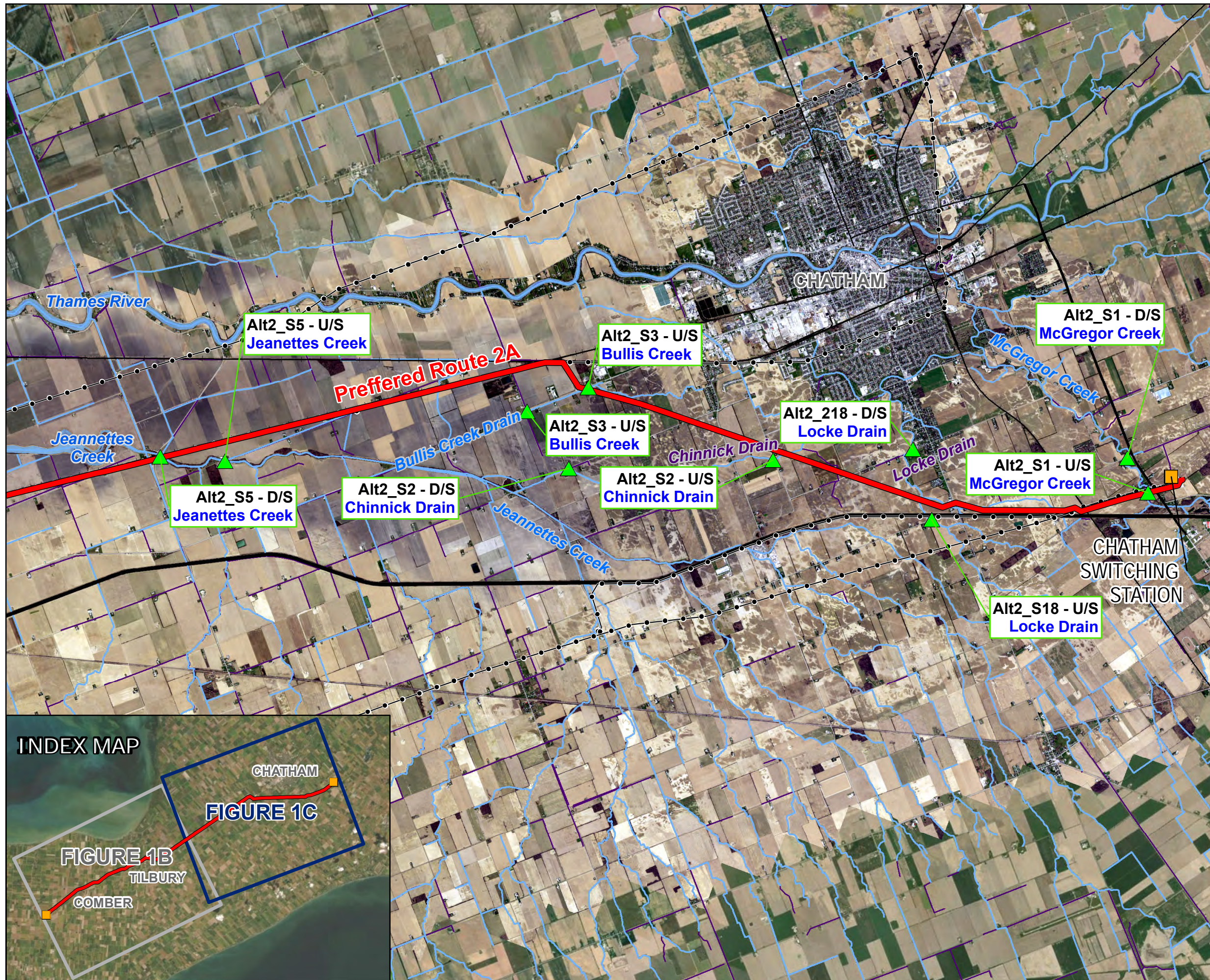
MAP DRAWING INFORMATION:
 Data provided by LIO, MNR, CanVec, Project data provided by Hydro One Networks and refined by Dillon Consulting Limited. SWOOP 2015 Imagery and ESRI BaseMap Imagery

MAP CREATED BY: SFG\LMM
 MAP CHECKED BY: DB
 MAP PROJECTION: NAD 1983 CSRS UTM Zone 17N

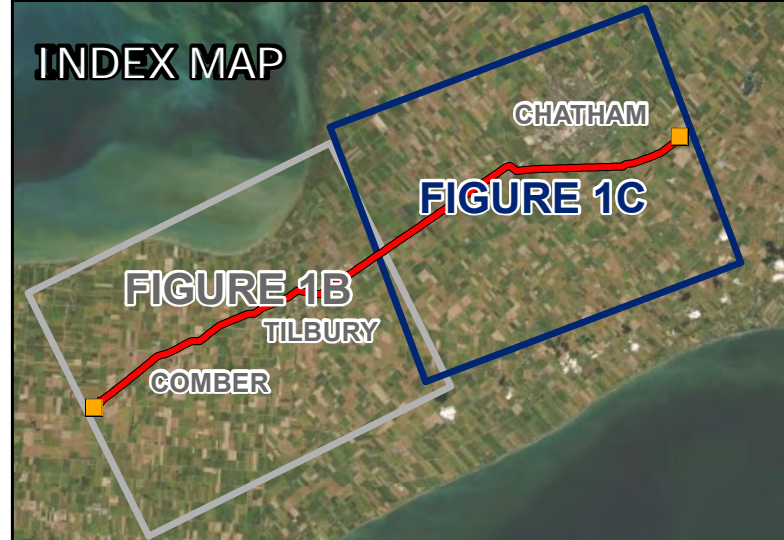


PROJECT: 19-1917
 STATUS: DRAFT
 DATE: 2021-12-09

2021 eDNA SURVEY LOCATIONS
 FIGURE 1C



- ▲ eDNA Survey Location
 - Station
 - Constructed Drain
 - Preferred Route 2A
- Base Data
- Existing Electrical Transmission Line
 - Highway
 - Road
 - + Railway
 - Constructed Drain
 - Watercourse
 - Water Body
 - Municipality Boundary



SCALE 1:75,000

0 0.5 1 2 km

MAP DRAWING INFORMATION:
 Data provided by LIO, MNR, CanVec, Project data provided by Hydro One Networks and refined by Dillon Consulting Limited. SWOOP 2015 Imagery and ESRI BaseMap Imagery

MAP CREATED BY: SFG\LMM
 MAP CHECKED BY: DB
 MAP PROJECTION: NAD 1983 CSRS UTM Zone 17N



PROJECT: 19-1917
 STATUS: DRAFT
 DATE: 2021-12-09

ATTACHMENT B
SPECIES SUMMARY TABLES

McGregor Creek	
Scientific Name	Common Name
<i>Ambloplites rupestris</i>	Rock bass
<i>Ameiurus natalis</i>	Yellow bullhead
<i>Bos sp.</i>	Cattle
<i>Carassius gibelio</i>	Prussian carp
<i>Carpodes sp.</i>	NA
<i>Castor Canadensis</i>	North American Beaver
<i>Catostomus commersonii</i>	White sucker
<i>Culaea inconstans</i>	Brook stickleback
<i>Cyprinella spiloptera</i>	Spotfin shiner
<i>Cyprinid sp.</i>	NA
<i>Esox Lucius</i>	Northern pike
<i>Esox sp.</i>	NA *likely northern pike
<i>Etheostoma nigrum</i>	Johnny darter
<i>Ictalurus punctatus</i>	Channel catfish
<i>Lepomis cyanellus</i>	Green sunfish
<i>Lepomis gibbosus</i>	Pumpkinseed
<i>Lepomis macrochirus</i>	Bluegill
<i>Luxilus cornutus</i>	Common shiner
<i>Micropterus salmoides</i>	Largemouth bass
<i>Moxostoma sp.</i>	NA
<i>Noturus gyrinus</i>	Tadpole madtom
<i>Perca flavescens</i>	Yellow Perch
<i>Percina sp.</i>	NA
<i>Pimephales promelas</i>	Fathead minnow
<i>Pimephales sp</i>	NA
<i>Pylodictis olivaris</i>	Flathead catfish
<i>Semotilus atromaculatus</i>	Creek chub

Chinnick Drain	
Scientific Name	Common Name
<i>Carassius gibelio</i>	Prussian carp
<i>Cyprinid sp.</i>	NA
<i>Ameiurus melas</i>	Black bullhead
<i>Ameiurus natalis</i>	Yellow bullhead
<i>Ameiurus nebulosus</i>	Brown Bullhead
<i>Bos sp.</i>	Cattle
<i>Carassius auratus</i>	Goldfish
<i>Carassius gibelio</i>	Prussian carp
<i>Carassius sp.</i>	NA
<i>Cyprinid sp.</i>	NA
<i>Cyprinus carpio</i>	Common Carp
<i>Dorosoma cepedianum</i>	American gizzard shad
<i>Homo sapiens</i>	Human
<i>Lepomis cyanellus</i>	Green sunfish
<i>Lepomis gibbosus</i>	Pumpkinseed
<i>Mus musculus</i>	House mouse
<i>Semotilus atromaculatus</i>	Creek chub

Bullis Drain	
Scientific Name	Common Name
<i>Anatidae sp.</i>	NA
<i>Canis sp.</i>	NA
<i>Carassius auratus</i>	Goldfish
<i>Carassius gibelio</i>	Prussian carp
<i>Carassius sp.</i>	NA
<i>Culaea inconstans</i>	Brook stickleback
<i>Esox lucius</i>	Northern pike
<i>Homo sapiens</i>	Human
<i>Lepomis cyanellus</i>	Green sunfish
<i>Mus musculus</i>	House mouse
<i>Umbra limi</i>	Central mudminnow

Jeanettes Creek	
Scientific Name	Common Name
<i>Amia calva</i>	Bow fin
<i>Carassius gibelio</i>	Prussian carp
<i>Carpiodes sp</i>	NA
<i>Cyprinid sp.</i>	NA
<i>Dorosoma cepedianum</i>	American gizzard shad
<i>Esox Lucius</i>	Northern pike
<i>Homo sapiens</i>	Human
<i>Ictiobus cyprinellus</i>	Bigmouth buffalo
<i>Lepisosteus sp.</i>	NA
<i>Lepomis cyanellus</i>	Green sunfish
<i>Lepomis gibbosus</i>	Pumpkinseed
<i>Lepomis macrochirus</i>	Bluegill
<i>Micropterus salmoides</i>	Largemouth bass
<i>Minytrema melanops</i>	Spotted sucker
<i>Mus musculus</i>	House mouse
<i>Notropis sp.</i>	Shiner sp.
<i>Perca flavescens</i>	Yellow Perch
<i>Pomoxis nigromaculatus</i>	Black Crappie
<i>Sus scrofa</i>	Pig
<i>Trachemys scripta</i>	Red-eared slider

Baptiste Creek	
Scientific Name	Common Name
<i>Canis sp.</i>	NA
<i>Carassius auratus</i>	Goldfish
<i>Carassius gibelio</i>	Prussian carp
<i>Carassius sp</i>	NA
<i>Cyprinid sp.</i>	NA
<i>Dorosoma cepedianum</i>	American gizzard shad
<i>Esox lucius</i>	Northern pike
<i>Homo sapiens</i>	Human
<i>Ictalurus punctatus</i>	Channel catfish
<i>Lepisosteus sp.</i>	NA
<i>Lepomis macrochirus</i>	Bluegill
<i>Micropterus salmoides</i>	Largemouth bass
<i>Minytrema melanops</i>	Spotted sucker
<i>Notemigonus crysoleucas</i>	Golden shiner
<i>Noturus gyrinus</i>	Tadpole madtom
<i>Sus scrofa</i>	Pig
<i>Trachemys scripta</i>	Red-eared slider

Tilbury Creek	
Scientific Name	Common Name
<i>Cyprinid sp.</i>	NA
<i>Amia calva</i>	Bow fin
<i>Carassius gibelio</i>	Prussian carp
<i>Carassius sp.</i>	NA
<i>Chrysemys picta</i>	Painted turtle
<i>Cyprinid sp.</i>	NA
<i>Dorosoma cepedianum</i>	American gizzard shad
<i>Homo sapiens</i>	Human
<i>Ictiobus cyprinellus</i>	Bigmouth buffalo
<i>Lepisosteus sp.</i>	NA
<i>Lepomis cyanellus</i>	Green sunfish
<i>Lepomis macrochirus</i>	Bluegill
<i>Micropterus salmoides</i>	Largemouth bass
<i>Notropis sp.</i>	NA
<i>Nycticorax nycticorax</i>	Black-crowned night heron
<i>Percina sp.</i>	NA
<i>Rhinichthys obtusus</i>	Western blacknose dace
<i>Sus scrofa</i>	Pig

Big Creek	
Scientific Name	Common Name
<i>Ardea sp.</i>	NA
<i>Bos sp.</i>	Cattle
<i>Chrysemys picta</i>	Painted turtle
<i>Dorosoma cepedianum</i>	American gizzard shad
<i>Lepomis macrochirus</i>	Bluegill
<i>Procyon lotor</i>	Raccoon
<i>Trachemys scripta</i>	Red eared slider

Locke Drain	
Scientific Name	Common Name
<i>Ameiurus natalis</i>	Yellow bullhead
<i>Bos sp.</i>	Cattle
<i>Camptostoma anomalum</i>	Central stoneroller
<i>Canis latrans</i>	Coyote
<i>Carpiodes sp.</i>	NA
<i>Catostomus commersonii</i>	White sucker
<i>Culaea inconstans</i>	Brook stickleback
<i>Cyprinella spiloptera</i>	Spotfin shiner
<i>Cyprinid sp.</i>	NA
<i>Dorosoma cepedianum</i>	American gizzard shad
<i>Esox lucius</i>	Northern pike
<i>Ictalurus punctatus</i>	Channel catfish
<i>Lepomis cyanellus</i>	Green sunfish
<i>Lepomis gibbosus</i>	Pumpkinseed
<i>Lepomis macrochirus</i>	Bluegill
<i>Luxilus cornutus</i>	Common shiner
<i>Micropterus salmoides</i>	Largemouth bass
<i>Moxostoma anisurum</i>	Silver redhorse
<i>Mus musculus</i>	House mouse
<i>Notropis heterolepis</i>	Blacknose shiner
<i>Perca flavescens</i>	Yellow Perch
<i>Pimephales sp</i>	NA
<i>Semotilus atromaculatus</i>	Creek chub
<i>Sus scrofa</i>	Pig
<i>Umbra limi</i>	Central mudminnow

Appendix C2 Cultural Heritage Reports

**Stage 1 Archaeological Assessment
Class EA for Minor Transmission Facilities
Hydro One Networks Inc. (HONI)
Chatham x Lakeshore New 230kV TL Project**

**Lots 1-22, Middle Rd SS, Lots 1-12, 16-22, Middle Rd NS, Lots 20-22, Conc. 2, Lots 16-20, Conc. 3,
Lots 12-16, Conc. 4, Lot 22, Conc. 6, Lots 8-22, Conc. 7, Geog. Twp. of Tilbury West
Lots 15-17, Middle Rd SS, Lot 17, Middle Rd NS, Geog. Twp. of Rochester
Now in the Town of Lakeshore, County of Essex**

**Lots 14-18, 22-28 Middle Rd SS, Lots 11-14, 17-23, Middle Rd NS, Lots 1-15, Conc. 3, Lots 2-14,
Conc. 4, Lots 1-2, 5-11, Conc. 5, Lots 1-5, 21-23, Conc. 6, Lots 9-10, 17-21, Conc. 7, Lots 3-9, 13-17,
Conc. 8, Lots 1-3, 5-6, Conc. 9, Lots 1-5, Conc. 10, Geog. Twp. of Tilbury East**

**Lots 1-15, Conc. A W. Bndry FTR, Lot 20-24, Conc. A E. Bndry FTR, Lots 4-25, Conc. 9, W. Bndry
FTR, Lots 1-4, 15-25, Conc. 8 W. Bndry FTR, Lots 1-2, 9-19, Conc. 7, W. Bndry FTR, Lots 5-10,
18-19, Conc. 6, W. Bndry FTR, Lots 1-5, 14-17, Conc. 5, W. Bndry FTR, Lots 8-15, Conc. 4, W. Bndry
FTR, Lots 1-8, Conc. 3, W. Bndry FTR, Lots 1-4, Conc. 2, W. Bndry FTR, Geog. Twp. of Raleigh**

**Lots 1-5, Conc. 5 FRT, Lots 1-2, Conc. 4 FRT, Lot 27, Conc. 3 W. of Communication Rd, Lot 27,
Conc. 2 W. of Communication Rd, Lots 27-28, Conc. 1, W. of Communication Rd, Lot 27, Conc. 1,
East of Communication Rd, Geog. Twp. Of Harwich
Former County of Kent, now in the Municipality of Chatham-Kent**

Submitted to

Hydro One Networks Inc.
483 Bay Street | TCT14
Toronto, ON | M5G 2P5
Tel: 416.345.1306

And

The Ontario Ministry of Heritage, Sport, Tourism & Culture Industries

Prepared by



**Timmins Martelle
Heritage Consultants Inc.**

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Licensee: Matthew Beaudoin, Ph.D., P324
Our File: 2019-049 PIF Number: P324-0514-2020

November 2020 - Original report
Submitted to the Ministry of Heritage, Sport, Tourism and Cultural Industries
xx November 2020

Executive Summary

Timmins Martelle Heritage Consultants Inc. (TMHC) was contracted by Hydro One Networks Inc. (HONI) to conduct a Stage 1 archaeological assessment for the proposed Chatham x Lakeshore New 230 kV TL Project. HONI wishes to construct a new double-circuit 230kV transmission line from the existing Chatham Switching Station (SS) in the Municipality of Chatham-Kent to the future Lakeshore Switching Station (SS), which will be located in the Town of Lakeshore. Three major route alternatives have been proposed for evaluation within a Class Environmental Assessment (EA) process. Two of these partially follow existing transmission corridors and have minor route variations that are also under consideration. The need for archaeological assessment work was determined through HONI's internal environmental review of the project lands, as per the Class Environmental Assessment for Minor Transmission Facilities (HONI 2016).

As noted in Section 2.1 of the 2011 *Standards and Guidelines for Consultant Archaeologists*, the Province of Ontario has identified numerous factors that signal the potential of a property to contain archaeological resources. The Stage 1 background study included a review of current land use, historic and modern maps, registered archaeological sites and previous archaeological studies, past settlement history for the area and a consideration of topographic and physiographic features, soils and drainage. According to the map-based review and background research, the majority of the Project Area exhibits potential for the discovery of archaeological sites due to proximity (within 300 m) to:

- a) registered archaeological sites;
- b) watercourses and wetlands (including McGregor Creek, Jeannettes Creek, Baptiste Creek, Tilbury Creek, Tremblay Creek, Big Creek);
- c) glacial shorelines (Late-Algonquin Equivalent);
- d) mapped 19th century structures in Harwich, Raleigh, East Tilbury, West Tilbury and Rochester Townships;
- e) known cemeteries (Mallott, Shadd Family Farm);
- f) historic 19th century transportation routes (including the early settlement roads of Communication Road and Middle Road and Indigenous trails, Huron & Erie Railway, Canadian Southern Railway); and,
- g) 19th century settlement areas (including Bridgend or Kent Centre, Buxton, Valetta, Tilbury, Trudell, and Comber).

A map-based review of the proposed route alternatives for the HONI Chatham x Lakeshore New 230kV TL Project was undertaken and the archaeological potential evaluated based on proximity of features signaling the likelihood for archaeological resources to exist. This established the majority of lands within the Project Area and proposed route alternatives had potential for the discovery of archaeological resources, as depicted on Map 34, noting that a detailed field review should be conducted as part of the Stage 2 assessment, once the preferred alternative is chosen. Based on this investigation the following recommendations are made:



1) Previously Assessed Areas

For the lands within the Project Area and route alternatives that were previously subject to Stage 2 assessment using methodologies in keeping with the 2011 *Standards and Guidelines for Consultant Archaeologists* and for which there are no outstanding archaeological concerns, no further assessment is required.

2) Areas of Low Archaeological Potential

Areas of previous disturbance (e.g., building footprints and existing roads or laneways), as well as low-lying and wet areas are considered to have low archaeological potential. As a field inspection was not conducted as part of this study, areas of low archaeological potential within the preferred route alternative will need to be confirmed and photo-documented at the time of Stage 2 survey (MTC 2011:28; Section 2.1.2).

3) Stage 2 Methodologies

Once the preferred route alternative is determined, a more detailed review of existing conditions should be undertaken, alongside a comparison to archaeological potential mapping provided in Map 34. In keeping with provincial standards, the agricultural fields should be ploughed for pedestrian survey; however, for any impact areas that are linear corridors less than 10 m wide, test pit survey can be undertaken (as per Section 2.1.2 Standard 1.f.). The non-ploughable areas must be subject to test pit assessment. In both cases, a 5 m transect interval is recommended to achieve the provincial standard.

4) Changes to Extent of Project Area

If the extent of the Project Area or route alternatives change to incorporate lands not addressed in this study, further assessment will be required.

These recommendations are subject to the conditions laid out in Section 6.0 of this report and to the Ministry of Heritage, Sport, Tourism, and Culture Industries's review and acceptance of this report into the provincial register.



Table of Contents

Executive Summary	ii
Table of Contents	iv
List of Maps	v
List of Supplementary Documentation Maps	vii
List of Tables	vii
TMHC Personnel	viii
Acknowledgements	viii
1.0 PROJECT CONTEXT	1
1.1 Development Context.....	1
1.1.1 Introduction.....	1
1.1.2 Purpose and Legislative Context	1
2.0 STAGE 1 BACKGROUND STUDY	2
2.1 Research Methods and Sources.....	2
2.2 Project Context: Archaeological Context.....	6
2.2.1 Overview of the Project Area.....	6
2.2.2 Physiography	7
2.2.3 Soils.....	8
2.2.4 Drainage	8
2.2.5 Natural Vegetation.....	9
2.2.6 Summary of Registered or Known Archaeological Sites	10
2.2.7 Summary of Past Archaeological Investigations within 50 Metres	13
2.3 Project Context: Historical Context	21
2.3.1 Indigenous Settlement in Southern Ontario.....	21
2.3.2 19 th Century Municipal Formation	27
2.3.3 19 th Century Mapped Features	36
2.3.4 Current Land Use	44
3.0 ANALYSIS AND CONCLUSIONS	44
4.0 RECOMMENDATIONS	45
5.0 SUMMARY	47
6.0 ADVICE ON COMPLIANCE WITH LEGISLATION	47
7.0 BIBLIOGRAPHY	48
8.0 MAPS	57
SUPPLEMENTARY DOCUMENTATION	110



List of Maps

Map 1: Location of the Project Area in the County of Essex and Municipality of Chatham-Kent, ON	58
Map 2: Proponent Mapping for the Hydro One Inc. Chatham x Lakeshore Class Environmental Assessment.....	59
Map 3: Topographic Map Showing the Location of the Project Area in the County of Essex and Municipality of Chatham-Kent.....	62
Map 4: Physiography Within the Vicinity of the Project Area.....	66
Map 5: Soils Within the Vicinity of the Project Area.....	67
Map 6: Drainage Within the Vicinity of the Project Area	68
Map 7: D.R. Poulton (2007) Stage 1 Assessment Area for the Gosfield Comber Wind Energy Project.....	70
Map 8: ARA (2010) Key Plan of Stage 2 Assessment Areas for the Comber Wind Limited Partnership Project	71
Map 9: TMHC (2008) Stage 1 Map for the HONI Supply to Essex Project	72
Map 10: AMEC (2016) Relevant Stage 2 Mapping for the HONI Supply to Essex Project	73
Map 11: NDA (2012) Stage 1 Map for the Union Gas Leamington Expansion Project ..	74
Map 12: TMHC (2013) Stage 2 Map for Relevant Section of Union Gas Leamington Expansion Project	75
Map 13: TMHC (2006) Stage 1 Assessment Area for the Port Alma Wind Power Project	76
Map 14: TMHC (2007) Stage 2 Assessment Area for the Port Alma Wind Power Project Switchyard.....	77
Map 15: TMHC (2007) Stage 1 Assessment Area for the Tilbury Solar Farm.....	78
Map 16: TMHC (2009) Stage 2 Assessment Area for the Tilbury Solar Farm.....	79
Map 17: ASI (2011) Stage 1 and Stage 2 Assessment Map for the South Kent Wind Project	80
Map 18: Golder (2014) Stage 1 Assessment Map for the Belle River Wind Project	81
Map 19: Stantec (2016) Relevant Portion of Stage 1 Map for the Victor Wind Project ..	82
Map 20: ARA (2017) Stage 1 Assessment Area (North Portion) for the Romney Wind Energy Centre	83
Map 21: ARA (2017) Relevant Stage 2 Assessment Area for the Romney Wind Energy Centre.....	84
Map 22: Stantec (2019) Relevant Stage 1 Assessment Area for the Union Gas Windsor Line Replacement	85
Map 23: Wood (2019) Stage 1 Assessment Map for the HONI Lakeshore Transformer Station	86
Map 24: Wood (2020) Stage 2 Assessment Map for the HONI Lakeshore Transformer Station	87
Map 25: CRM Group (2009a) Stage 1 & 2 Assessment Map for the Raleigh Wind Farm Project.....	88



Map 26: Adaptation of McNiff's 1791 Survey Map Noting Poor Conditions Away from the Thames River (R. La Tranché) in Tilbury East and Tilbury West Townships	89
Map 27: Proposed Route Alternatives Shown on 1881 Illustrated Historical Atlas Maps of Essex and Kent Counties	90
Map 28: Plan of Buxton (The Elgin Settlement)	94
Map 29: Schematic Showing the Historic Core of Tilbury	95
Map 30: Schematic of Henderson (Tilbury), Trudell & the Middle Road Settlement	96
Map 31: Proposed Route Alternatives Shown on Patent and Survey Maps of Harwich, Raleigh, East Tilbury, West Tilbury and Rochester Townships.....	97
Map 32: Proposed Route Alternatives Shown on the 1876 Map of Kent County and 1877 Map of Essex County.....	101
Map 33: Early Roads in Harwich, Raleigh, Tilbury East, Tilbury West and Rochester Townships	105
Map 34: Map of Archaeological Potential.....	106



List of Supplementary Documentation Maps

SD Map 1: Registered Archaeological Sites - East	111
SD Map 2: Registered Archaeological Sites – East-Central.....	112
SD Map 3: Registered Archaeological Sites – West-Central	113
SD Map 4: Registered Archaeological Sites - West	114
SD Map 5: ARA (2008) Stage 2 Map of Highway 40 Improvements.....	115

List of Tables

Table 1: Soils within the Project Area	8
Table 2: Archaeological Sites Registered within 1 km of the Project Area	11
Table 3: Cultural Chronology for Indigenous Settlement in Essex and Kent Counties ...	21
Table 4: The Four Phases of the Western Basin Tradition	26
Table 5: Mapped 19 th Century Buildings in Proximity to the Project Area as Shown on the 1876, 1877 Maps of Harwich, Raleigh, East Tilbury, West Tilbury and Rochester Townships	39
Table 6: Mapped 19 th Century Buildings in Proximity to the Project Area as Shown on the 1881 Maps of Harwich, Raleigh, East Tilbury, West Tilbury and Rochester Townships	42



TMHC Personnel

Project Coordinators:	Matthew Beaudoin, Ph.D. (P324) Holly Martelle, Ph.D. (P064)
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GIS Technicians:	John Moody, Ph.D. David Gostick, B.A.

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Paul Dalmazzi *Hydro One Networks Inc.*
Environmental Planner

Brandon Fox *Associate*
Dillon Consulting Ltd.

Daniel Bourassa *Associate*
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Sarah Galloway *GIS Specialist*
Dillon Consulting Ltd.



**Stage 1 Archaeological Assessment
Class EA for Minor Transmission Facilities
Hydro One Networks Inc. (HONI)
Chatham x Lakeshore New 230kV TL Project
Essex County
Municipality of Chatham-Kent**

1.0 PROJECT CONTEXT

1.1 Development Context

1.1.1 Introduction

Timmins Martelle Heritage Consultants Inc. (TMHC) was contracted by Hydro One Networks Inc. (HONI) to conduct a Stage 1 archaeological assessment for the proposed Chatham x Lakeshore New 230 kV TL Project. HONI wishes to construct a new double-circuit 230kV transmission line from the existing Chatham Switching Station (SS) in the Municipality of Chatham-Kent to the future Lakeshore Switching Station (SS), which will be located in the Town of Lakeshore. Three major route alternatives have been proposed for evaluation within a Class Environmental Assessment (EA) process (Maps 1 and 2). Two of these partially follow existing transmission corridors and have minor route variations that are also under consideration. The need for archaeological assessment work was determined through HONI's internal environmental review of the project lands, as per the Class Environmental Assessment for Minor Transmission Facilities (HONI 2016).

All archaeological consulting activities were performed under the Professional Archaeological License of Matthew Beaudoin, Ph.D. (P324) and in accordance with the *Standards and Guidelines for Consultant Archaeologists* (MTC 2011). Permission to commence the study was given by Paul Dalmazzi of HONI.

1.1.2 Purpose and Legislative Context

The Ontario Heritage Act makes provisions for the protection and conservation of heritage resources in the Province of Ontario. Our archaeological assessment work is part of an environmental review which is intended to identify areas of environmental interest as specified in the Provincial Policy Statement (2020). Heritage concerns are recognized as a matter of provincial interest in Section 2.6.2 of the Provincial Policy Statement (PPS) which states:

development and site alteration shall not be permitted on lands containing archaeological resources or areas of archaeological potential unless significant archaeological resources have been conserved.

In the PPS the term *Conserved* means:

the identification, protection, management and use of *built heritage resources, cultural heritage landscapes and archaeological resources in a manner that ensures their cultural heritage value or interest is retained*. This may be achieved by the implementation of recommendations set out in a conservation plan, archaeological assessment and/or heritage impact assessment that has been approved, accepted or adopted by the relevant planning authority and/or decision-maker. Mitigative measures and/or alternative development approaches can be included in these plans and assessments.

The Environmental Assessment Act provides for the protection and conservation of the environment. In this case, the environment is widely defined to cover “cultural heritage” resources. Section 5(3)(c) of the *Act* stipulates that heritage resources to be affected by a proposed undertaking be identified during the environmental screening process. Within the EA process, the purpose of a Stage 1 background study is to determine if there are known cultural resources within the proposed study area, or potential for such resources to exist. Subsequently, it can act as a planning tool by identifying areas of concern that, where possible, could be avoided to minimize environmental impact. It is also used to determine the need for a Stage 2 field assessment involving the search for archaeological sites.

The Class EA for Minor Transmission Facilities document was developed as a streamlined process to ensure minor transmission projects that have a predictable range of effects are carried out in an environmentally acceptable manner. The Class EA Process is required to meet the terms of Section 3.0 of the Class EA for Minor Transmission Facilities. The project is also subject to Section 92 of the *Ontario Energy Board Act, 1998* which requires transmitters and distributors to obtain approval from the OEB for the construction, expansion, or reinforcement of electricity transmission and distribution lines or interconnections. HONI contracted TMHC to carry out a Stage 1 archaeological assessment and develop plans for Stage 2 assessment once the Class EA is complete.

2.0 STAGE 1 BACKGROUND STUDY

2.1 Research Methods and Sources

A Stage 1 overview and background study was conducted to gather information about known and potential cultural heritage resources within the study area. According to the 2011 *Standards and Guidelines for Consultant Archaeologists*, a Stage 1 background study must include a review of:

- an up-to-date listing of sites from the Ontario’s Past Portal for 1 km around the property;
- reports of previous archaeological fieldwork within a radius of 50 m around the Project Area;



- topographic maps at 1:10,000 (recent and historical) or the most detailed scale available;
- historic settlement maps (e.g., historical atlas, surveys);
- archaeological management plans or other archaeological potential mapping (when available); and
- commemorative plaques or monuments on or near the Project Area.

For this project, the following activities were carried out to satisfy or exceed the above requirements:

- a database search was completed through the Ministry of Heritage, Sport, Tourism and Culture Industries (MHSTCI) PastPortal (PastPort) system that compiled a list of registered archaeological sites within 1 km of the Project Area (received May 9, 2020);
- a review of known prior archaeological reports for the property and adjacent lands (note: the Ministry of Heritage, Sport, Tourism, and Culture Industries currently does not keep a publicly accessible record of archaeological assessments carried out in the Province of Ontario, so a complete inventory of prior assessment work nearby is not available);
- Ontario Base Mapping (1:10,000) was reviewed through ArcGIS and mapping layers provided by geographynetwork.ca; detailed mapping provided by the client was also reviewed;
- a series of historic maps and photographs was reviewed related to post-1800 land settlement;
- commemorative plaques and listed or designated heritage buildings on or in the vicinity of the Project Area were inventoried; and
- additional sources of information were also consulted, including modern aerial photographs, local history accounts, soils and physiography data provided by the Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA), and both 1:50,000 (Natural Resources Canada) and finer scale topographic mapping.

The Project Area does not fall within an area for which an archaeological management plan has been undertaken.

Additional sources of information were also consulted, including modern aerial photographs, local history accounts, soils and physiographic data provided by the Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA), and both 1:50,000 (Natural Resources Canada) and finer scale topographic mapping.

When compiled, this information was used to create a summary of the characteristics of the Project Area and route alternatives in an effort to evaluate their archaeological potential. The Province (MTC 2011 – Section 1.3.1) has recently defined the criteria that identify archaeological potential as:



- previously identified archaeological sites;
- water sources:
 - primary water sources (lakes, rivers, streams, creeks);
 - secondary water courses (intermittent streams and creeks, springs, marshes, swamps);
 - features indicating past water sources (e.g., glacial lake shorelines indicated by the presence of raised sand or gravel beach ridges, relic river or stream channels indicated by clear dip or swale in topography, shorelines of drained lakes or marshes, cobble beaches);
 - accessible or inaccessible shoreline (e.g., high bluffs, swamp or marsh fields by the edge of a lake, sandbars stretching into marsh);
- elevated topography (e.g., eskers, drumlins, large knolls, plateaux);
- pockets of well-drained sandy soil, especially near areas of heavy soil or rocky ground;
- distinctive land formations that might have been special or spiritual places, such as waterfalls, rock outcrops, caverns, mounds, and promontories and their bases; there may be physical indicators of their use, such as burials, structures, offerings, rock paintings or carvings;
- resource areas, including:
 - food or medicinal plants (e.g., migratory routes, spawning areas, prairie);
 - scarce raw materials (e.g., quartz, copper, ochre or outcrops of chert);
 - early Euro-Canadian industry (e.g., fur trade, logging, prospecting, mining);
- areas of early-19th century settlement. These include places of early military or pioneer settlement (e.g., pioneer homesteads, isolated cabins, farmstead complexes), early wharf or dock complexes, pioneer churches and early cemeteries. There may be commemorative markers of their history, such as local, provincial, or federal monuments or heritage parks;
- early historical transportation routes (e.g., trails, passes, roads, railways, portage routes);
- property listed on a municipal register or designated under the *Ontario Heritage Act* or that is a federal, provincial, or municipal historic landmark or site; and
- property that local histories or informants have identified with possible archaeological sites, historical events, activities or occupations.

In Southern Ontario (south of the Canadian Shield), any lands within 300 m of any of the features listed above are considered to have potential for the discovery of archaeological resources.

Typically, a Stage 1 assessment will determine potential for Indigenous and historic era sites independently. This is because lifeways varied considerably during these eras so that criteria used to evaluate potential for each type of site also vary.



It should be noted that some factors can also negate the potential for discovery of intact archaeological deposits. Subsection 1.3.2 of the 2011 *Standards and Guidelines for Consultant Archaeologists* indicates that archaeological potential can be removed in instances where land has been subject to extensive and deep land alterations that have severely damaged the integrity of any archaeological resources. Major disturbances indicating removal of archaeological potential include, but are not limited to:

- quarrying;
- major landscaping involving grading below topsoil;
- building footprints; and
- sewage and infrastructure development.

Some activities (agricultural cultivation, surface landscaping, installation of gravel trails, etc.) may result in minor alterations to the surface topsoil but do not necessarily affect or remove archaeological potential. It is not uncommon for archaeological sites, including structural foundations, subsurface features and burials, to be found intact beneath major surface features such as roadways and parking lots. Archaeological potential is, therefore, not removed in cases where there is a chance of deeply buried deposits, as in a developed or urban context or floodplain where modern features or alluvial soils can effectively cap and preserve archaeological resources.



2.2 Project Context: Archaeological Context

2.2.1 Overview of the Project Area

HONI is planning for the construction of a new 230 kV transmission line between the existing Chatham Switching Station (SS) located east of Communication Road southeast of Chatham and a future switching station located southwest of the intersection of Townline Road (Rochester) and Essex County Road 46 (Middle Road) southwest of Comber (Maps 2 and 3). Three route alternatives have been proposed for consideration during the Class EA process: 1) Alternative 1 - a central route alternative; 2) Alternative 2 - a northern route alternative; and 3) Alternative 3 - a southern route alternative. All three alternatives extend westward from Chatham SS (Maps 2 and 3). An eastward expansion to the Chatham SS is also proposed and encompasses approximately 0.9 ha. Collectively, the route alternatives and Chatham SS expansion zone comprise the Project Area.

Alternative 1, the most central of the route alternatives (shown in yellow in Map 2), measures 48.3 km in length follows existing transmission corridors for much of its route, veering off slightly to the north at a point northeast of North Buxton and to the south near Tilbury. Two route variations encompassing additional lands are also under consideration. The first is a roughly 14.1 km segment representing a more northerly route from just west of Chatham S.S. and North Buxton area and crossing over Highway 401. The second route variation (measuring 9.36 km) is in the western portion of the Project Area and represents a more southerly route around the community of Tilbury.

Alternative 2, the most northerly of the route alternatives (shown in red in Map 2), measures 48.5 km and begins just west of the railway north of Highway 401 west of Communication Line. It travels northwestward as it crosses Charing Cross Road. Near Dillon Road it turns west to follow the existing Kent TS x Tilbury West JCT (K2Z) transmission corridor to just east of Tilbury, where it then turns north to route around the north end of the latter community. East of Tilbury and Davidson Road the route turns northwest again to meet and follow the Tilbury JCT x STR168 (K2Z) transmission corridor to the west. It crosses Highway 401 east of Gracey Sideroad and runs north of Comber before it angles south towards Townline Road of Rochester and the future Lakeshore SS site. Two route variations encompassing additional lands are also being considered as part of this route alternative. The first is 28.79 km long and takes a more southerly path between Chatham SS and Tilbury, following the C23Z and C21J transmission corridor and the north side of Highway 401. The second is a 13.71 km segment travelling further north east of Tilbury between Drake Road and Baptiste Road.

Alternative 3, the most southerly of the route alternatives (shown in purple in Map 2), is 49.0 km long and extends south/southwest of Chatham SS and crosses Highway 401 just east of Fargo Road. After crossing Charing Cross Road it runs southwestward, paralleling and just south of 9th Line. The route turns westward just east of Wellwood Road, crossing south of the community of Valetta and south of Tilbury before angling slightly



northwestward to parallel Lakeshore Road 308. South of Comber the route turns west to parallel the north side of South Middle Road, which it follows until crossing Townline Road Rochester, after which it angles northwestward to the future Lakeshore SS site. No route variations are proposed for this route alternative.

The easternmost portions of the proposed route alternatives fall within the Geographic Townships of Harwich, Raleigh and East Tilbury in the R.M of Chatham-Kent. The westernmost portions of the proposed route alternatives fall within the Geographic Townships of West Tilbury and Rochester, now within the Town of Lakeshore, in Essex County.

2.2.2 *Physiography*

The proposed route alternatives and route variations fall primarily within the St. Clair Clay Plains physiographic region, as defined by Chapman and Putnam (1984:147-151) (Map 4). The region consists of an extensive system of clay plains covering some 2,270 square miles east of the St. Clair River and south of the Lake Huron shoreline (Chapman and Putnam 1984:147). The plain shows very little notable relief yet minor elevation changes have a marked effect on soils and vegetation. The St. Clair Clay Plain was formerly the bed of glacial lakes Whittlesey and Warren and the former shorelines of these ancient water bodies have been documented along the eastern edge of the plain, near Alvinston and Watford. Kelly (1995:35) also reports a Lake Algonquin or equivalent shoreline associated with a 184 m surface elevation extending from south of North Buxton west to Tilbury.

The Essex Clay Plain, a subregion of the St. Clair Clay Plains, encompasses Essex County and the southwestern part of Kent County. In Essex, a deep layer of clay overburden overlies limestone bedrock (Chapman and Putnam 1984:147); most of the county consists of till plains that have been smoothed by shallow deposits of lacustrine clay which settled in lake bottom depressions (Chapman and Putnam 1984:147). Because of its flat topography, drainage within the region is sometimes poor, with most surface water draining northward to Lake St. Clair (Chapman and Putnam 1984:149). In many areas, agricultural productivity is only permitted by deeply dredged ditches and tile installation, both of which have served to greatly improve surface drainage (Chapman and Putnam 1984:149).

The easternmost portion of the Project Area falls within the Bothwell Sand Plain, a large delta created by the Thames River during the period of glacial Lake Warren (Chapman and Putnam 1984). The sandy soils of the sand plain stand in stark contrast to the heavy soils of the St. Clair Clay Plain.

The northeasterly portions of the route alternatives fall within clay and sand plains that surround the Lower Thames River. Their southwesterly portions extend across bevelled till plains. The Charing Cross Moraine is present roughly 3 km from the most southerly of the route alternatives. The topography of the area is generally flat although



there are slight but notable knolls in some areas. These would have been ideal locales for ancient habitation as they would have been drier than the surrounding swampier zones.

2.2.3 Soils

Given the fact that much of the Project Area was former lake bed, the soils within the vicinity of the route alternatives are primarily imperfectly- to poorly-draining types that have developed on lacustrine deposits (Map 5; Table 1). Finer sediments are present in the eastern portion of the routes in the vicinity of Chatham and the Thames River spillway. In the majority of the routes, in their central and western sections, Brookston Clay is the predominant soil type. Brookston Clay is a dark grey gleisolic soil derived from lucustro-morainic materials and limestone parent material with some shale (Richards et al. 1949:24). Caistor Clay and Clyde Clay occur along the Ruscom River, Big Creek and Tremblay Creek. Both Clyde and Brookston soils are poorly drained clay soils with high organic content and intermittent sandy knolls. Artificial drainage is essential given the flat topography of the area and the clay soils. Massive ditches have been cut across and alongside properties to allow suitable drainage for agriculture. The organic content of the soils derives from their origin beneath swamp forests of elm, black and white ash and silver maple). The underlying bedrock is limestone.

Table 1: Soils within the Project Area

Compiled from Richards et al. 1949, Ontario Agricultural College 1930

Soil	Parent Material	Drainage
Normandale Loamy Very Fine Sand	lacustrine deposits with wind modified surface material	imperfect
Colwood Silt Loam	lacustrine deposits	poor
Rivard Silty Clay	lacustrine deposits	poor
Parkhill Loam	limestone till	poor
Toledo Silt Loam	heavy textured lacustrine materials	poor
Brookston Clay	water-washed till	poor
Tuscola Silt Loam	lacustrine deposits	imperfect
Caistor Clay	shaley limestone, lucustro-morainic materials	poor
Clyde Clay	heavy textured lacustrine materials	poor
Clyde Silty Clay	lacustrine deposits	poor
Toledo Silt Clay Loam	heavy textured lacustrine materials	poor

2.2.4 Drainage

The Project Area is drained by watercourses, tributaries and subsidiary artificial drains that flow generally north and westward into the main branch of the Thames River (Map 6). The easternmost portion of Project Area is drained by McGregor Creek and associated natural and artificial drainage channels. The main branch of McGregor Creek empties into the Thames in downtown Chatham and crosses all route alternatives just west of Highway 40 (Communication Road). Indian Creek, a larger tributary, crosses Alternative 2 southwest of Chatham. Also crossing the eastern portion of the route



alternatives are several tributaries of Jeannette Creek, including the Doyle, Toomey, Locke, Ferguson, Duke, Lewis, Towl, Moody & Early and Waddick drains. The main branch of Jeannette Creek crosses Alternative 2 near the Merlin Road. Several smaller branches of that creek (Waddick, Doyle, O'Rourke, Symon, Carter, Kersey, Finn & Cooper, and Deary drains) flow north into the main branch from further south; many of these retain relatively natural courses, while some have been subject to varying degrees of modification through ditching. Jeannette Creek empties into the Thames River near Pain Court.

The central portion of the Project Area is drained largely by Baptiste Creek, one of the largest tributaries of the Thames River in this portion of southern Ontario. Baptiste Creek empties into the Thames near Lighthouse Cove, roughly 1 km east of Lake St. Clair. Three major branches of the creek cross the route alternatives. The most easterly of these (Baptiste Creek/Baptist Drain) travels east of Tilbury, crossing Route Alternative 3 south of Gray Line, Alternative 1 north of Middle Line and Alternative 2 and its variations west of Dashwheel Road. A second branch of Baptiste Creek (Tilbury Creek/Tremblay Creek Drain/Burgess/Drain, Thibert Drain) travels west of the community of Tilbury, crossing Route Alternative 2 near Concession Road 3 and its variation north of Gray Line, Alternative 1 north of County Road 46 and its variation north of South Middle Road, and Route 3 south of Gray Line. The Project Area slightly further west of Tilbury is drained by the third branch of Baptiste Creek, known as Big Creek. Segments of Big Creek/Big Creek/Drain cross Route Alternative 1 south of County Road 6, Alternative 2 north of County Road 42, and Alternative 3 north of Lakeshore Road 308.

Finally, the western portion of the Project Area is drained by Tremblay Creek/Little Creek, east of Comber, and the Ruscom River and associated drains west of the same community. Tremblay Creek crosses Route Alternative 2 south of Highway 401 and modified drains at its source near South Middle Road cross Alternative 1. No mapped natural watercourses cross the routes west of Comber. The Ruscom River, one of the largest in Essex County, rests nearly a kilometre west of the future Lakeshore SS.

Overall, the heavy soils and flat topography throughout this part of Essex and Kent counties, derived from its origin as a glacial lake bed, encourage relatively poor drainage conditions. Artificial drains, dredge cuts and deep, open ditches are common features on the landscape as a result and significantly supplement the natural drainage provided by existing watercourses. Alongside the installation of tile drains, these drainage improvements have been imperative for enhancing the agricultural productivity of farmland (Richards et al. 1949:14).

2.2.5 Natural Vegetation

Prior to land clearing, the natural vegetation in Essex County and some parts of Kent County was deciduous forest, with variation in species related to soil. In general, an association of broad-leaved trees consisting primarily of beech, sugar maple, together with basswood, red maple and (Northern) red, white and bur oak was common. In heavy soils,



elm (American and Rock) intermixed with ash, oak, hickory, sycamore and soft maple were present. Where sandy and lighter soils were present, maples, oak, cherry and beech species were common. Due to a slightly warmer climate, several tree and plant species exist in Essex that cannot thrive in the northern portions of the province, including chestnut, tulip tree, mockernut and pignut hickories, scarlet, black and pin oaks, black gum, blue ash, magnolia, pawpaw, Kentucky coffee tree, redbud, red mulberry and sassafras. Black walnut, sycamore, swamp white oak and shagbark history are also common (Richards et. al. 1949:17).

2.2.6 Summary of Registered or Known Archaeological Sites

According to the Ontario's Past Portal maintained by the MHSTCI, there are 35 registered archaeological sites within 1 km of the Project Area (Table 2). These are largely concentrated along McGregor's Creek and tributaries of Jeannette's Creek, within the eastern and central portions of the Project Area. Supplementary Documentation (SD) Maps 1 to 4 illustrate the location of these sites in relation to the proposed route alternatives.

There are no registered archaeological sites within or in immediate proximity to the Project Area. It should be noted that three sites reported during archaeological assessments for the Raleigh Wind Project, namely AbHn-19, AbHn-20, and AbHn-27, are shown in the provincial database as being within 300 m of the Project Area. However, a comparison of the site locations in the database with the report mapping show that the actual site locations are further distant.

Another two sites are mapped in the provincial database as within 50 m of Route alternatives:

- AbHo-3 – an isolated Indigenous artifact with no further CHVI, situated north of Route Alternative 1; based on the information provided, this site does not pose a planning concern for this project;
- AcHm-53 – an early-20th century site of no further CHVI that does not pose a planning concern for this project. It is noted that the location of the site in the provincial database is depicted north of Route Alternative 1; however, mapping of the site in the associated report and in relation to well defined geographic markers place the site a significant distance to the south of Route Alternative 1.



Table 2: Archaeological Sites Registered within 1 km of the Project Area

Borden Number	Site Name	Time Period	Affinity	Site Type	Reported By
AbHn-10	Smoulder's 1	Late Archaic, Middle Archaic	Indigenous	Scatter	Drew (1997)
AbHn-11	Smoulder's 2	Late Woodland	Indigenous	Unknown	Drew (1997)
AbHn-12	Smoulder's 3	Late Archaic, Early Woodland	Indigenous	Unknown	Drew (1997)
AbHn-13	Smoulder's 4	Early Woodland, Middle Woodland	Indigenous	Unknown	Drew (1997)
AbHn-19	Raleigh Substation Precontact	Late Archaic	Indigenous	Camp/campsite	CRM Group (2009a)
AbHn-20	T25 Turbine Precontact	Pre-Contact	Indigenous	Camp/campsite	CRM Group (2009a)
AbHn-21	Summerville	Post-Contact	Euro-Canadian	Farmstead	CRM Group (2009a)
AbHn-26	T24 Precontact	Late Archaic	Indigenous	Find spot	CRM Group (2009a)
AbHn-27	T26 Precontact IF	Pre-Contact	Indigenous	Find spot	CRM Group (2009a)
AbHn-30		Archaic	Indigenous	Find spot	ASI (2011a)
AbHn-31		Post-Contact	Euro-Canadian	Dump	ASI (2011a)
AbHn-32		Post-Contact	Early Black settler ¹	Dump/scatter/house	ASI (2011a, 2013a,b, 2015a)
AbHo-2		Middle Archaic	Indigenous	Unknown	ASI (2011a)
AbHo-3		Woodland	Indigenous	Find spot	ASI (2011a)
AbHo-4		Middle Woodland	Indigenous	Find spot	ASI (2011a)
AbHo-5		Post-Contact	Euro-Canadian	Dump	ASI (2011a)
AbHo-6		Pre-Contact	Indigenous	Unknown	ASI (2011a)
AbHp-4		Post-Contact	Late	Barn/house	CRM Group (2001)
AcHm-19	Loews 1				Foster (1980)
AcHm-20	Loews 2				Foster (1980)
AcHm-21	Richardson				Foster (1980)
AcHm-22	Durfy 1	Early, Middle, Late Archaic	Indigenous	Camp/campsite	Foster (1980)
AcHm-23	Durfy 2	Early Archaic, Late Archaic	Indigenous	Camp/campsite	Foster (1980)
AcHm-24	Durfy 3	Other		Camp/campsite	Foster (1980)
AcHm-26	Hellerman				Foster (1980)
AcHm-51		Post-Contact	Euro-Canadian	Burial	ARA (2008)
AcHm-52		Post-Contact	Euro-Canadian	Scatter	ARA (2008)
AcHm-53		Post-Contact	Euro-Canadian	Unknown	ARA (2008)
AcHm-60		Pre-Contact	Indigenous	Find spot	ASI (2011a)
AcHm-61		Post-Contact	Euro-Canadian		ASI (2011a)
AcHm-64		Post-Contact	Euro-Canadian	Dump/midden	ASI (2013d, 2014b, 2015b)
AcHm-65		Late Archaic	Indigenous		ASI (2011b)
AcHm-66		Pre-Contact			ASI (2011b, 2013c, 2014a)
AcHn-77	Bloomfield 2	Pre-Contact	Indigenous	Find spot	Golder (2016)
AcHn-78	Bloomfield 3	Late Archaic	Indigenous	Find spot	Golder (2016)

¹ Note that the MHSTCI database utilizes the term “Euro-Canadian;” however, the background research related to this site identifies the occupation as that of at least two early Black settler families, making the term “Euro-Canadian” inappropriate.



AbHo-3 is an Indigenous find spot consisting of a Late Woodland Glen Meyer projectile point that was discovered during the Stage 2 survey for the South Kent Wind Project (ASI 2011a); given the isolated nature of this find spot, it was determined that AbHo-3 does not retain CHVI and no further work was recommended.

AcHm-53 was discovered during a Stage 2 survey for proposed road improvements to Highway 40 in the R.M. of Chatham-Kent. AcHm-53 is an early-20th century site represented by 14 artifacts from four positive test pits; no further work was recommended for the site (ARA 2008).

An additional six sites are within 300 m of route alternatives but do not pose a planning concern for the project, based on existing information: AcHm-21; AcHm-52; AcHm-65; AcHm-66; AbHn-32; and AbHp-4. The first four in this list are located in the eastern portion of the Project Area, along McGregor Creek. AbHp-4 is in the vicinity of Comber and AbHn-32 is associated with the community of North Buxton.

AcHm-21 is Woodland Period Indigenous site identified by avocational archaeologist Gary Foster in 1980. It is situated roughly 200 m north of Route Alternative 1. The site form for AcHm-21 describes it as situated in a ploughed field and containing 15 waste flakes, a scraper, a Middleport Triangular projectile point, and a notched uniface covering 25 square metres.

AcHm-52 is a 20th century site of no further CHVI located near Communications Road and was identified during an archaeological survey for the Highway 40 improvements project (ARA 2008).

AcHm-65, AcHm-66 and AbHn-32 were discovered during the Stage 2 survey for the South Kent Wind Project (ASI 2011a and ASI 2011b). AcHm-65 is an isolated find spot consisting of a Late Archaic projectile point and a piece of shatter; no further work was recommended (ASI 2011b). AcHm-66 is an Indigenous lithic scatter consisting of 24 artifacts over a 30 m by 30 m area and was recommended for Stage 3 assessment (ASI 2011b). The Stage 3 assessment determined that the portion of the site subject to Stage 3 assessment did not retain CHVI and no further work was recommended for that portion of the site (ASI 2013c). However, as the remainder of AcHm-66 was considered to retain CHVI, Stage 4 construction monitoring was conducted (ASI 2014a). Based on MHSTCI database information and terminology, AbHn-32 is a mid-19th century EuroCanadian site. However, the detailed historical research in the accompanying report identifies the site as related to potential occupations by at least two early Black settler families, that of William Stephens and Robert Harding [Harden]. It was recommended for further assessment (ASI 2011a); the only portion of the site subject to Stage 3 and Stage 4 investigations was that which would be impacted by a proposed access road (ASI 2013a and b, 2015a).



AbHp-4, is a 19th century site of no further CHVI located in the community of Comber discovered during an assessment for the Ontario International Speedway (CRM Group 2001).

2.2.7 Summary of Past Archaeological Investigations within 50 Metres

During the course of this study it was established that several previous archaeological assessment projects have been undertaken within or immediately adjacent to the proposed route alternatives. However, as the Province currently does not maintain an accessible database of archaeological assessment areas *per se*, it is not known if this is a complete list of all archaeological activity undertaken within 50 m of the Project Area. The previous studies are summarized below, alongside their implications for the current project, if any.

Gosfield Comber Wind Energy Project (later Comber Wind Limited Partnership Project) – D.R. Poulton 2007 and Archaeological Research Associates (ARA) 2010
(Maps 7 and 8)

In 2007, D.R. Poulton & Associates carried out a Stage 1 assessment for a proposed windfarm incorporating portions of the Geographic Townships of Gosfield, Mersea, Maidstone, Rochester and West Tilbury (Map 7). The detailed background review indicated that the study area had archaeological potential and recommended Stage 2 assessment be undertaken. The easternmost portion of the 2007 study area overlaps the westernmost portion of the current Project Area around Comber. This work was reported in *The 2007 Stage 1 Archaeological Assessment of the Gosfield Comber Wind Energy Project, Town of Kingsville & Town of Comber, Essex County, Ontario* (DRP 2007; PIF P116-161-2006; Licensee Christine Dodd).

In 2010, ARA undertook follow up Stage 2 assessment for associated turbine locations and facilities. No archaeological material was discovered during the course of that work (Map 8). Many of the Stage 2 work areas, east and west of Comber, are in proximity to the current Project Area. This was reported in *Stage 2 Archaeological Assessments, Comber Wind Limited Partnership Project, (Comber East FIT-FSUTXQ9 and Comber West FIT-F14DYH9), Town of Lakeshore (Former Townships of Rochester and Tilbury West), Essex County, Ontario* (ARA 2008; PIF P007-269-2010; Licensee Paul Racher).

Highway 40 Road Improvements – Archaeological Research Associates 2008
(SD Map 5)

In 2007, Archaeological Research Associates Limited (ARA) was contracted to conduct a Stage 1 and 2 archaeological assessment for proposed improvements to Highway 40 (Communication Road), between Longwoods Road and Pinehurst Line in the R.M. of Chatham-Kent (ARA 2008) (SD Map 5). The Stage 2 survey involved both pedestrian and



test pit survey and resulted in the identification of three archaeological locations along Highway 40. Two of these, AcHm-53 (Find Spot 3) and AcHm-52 (Find Spot 2) are scatters of early-20th century artifacts that were not recommended for further investigation and have no further CHVI under the provincial framework. The results of the Stage 1 and 2 assessment are presented in a report entitled *Stage 1-2 Archaeological Assessment, Highway 40 Improvements from Highway 401 to Longwoods Road, Municipality of Chatham-Kent, Ontario*. GWP-52-00-00 (ARA 2008; Licensee, Paul Racher; PIF P007-136-2007). As the work areas for this project were assessed via methodologies that meet current provincial standards, any following within or near to the current Project Area will not require additional Stage 2 survey.

Hydro One Networks Inc. (HONI) Supply to Essex Project – TMHC 2008, AMEC 2016 (Maps 9 and 10)

In 2008 Timmins Martelle Heritage Consultants Inc. (TMHC) undertook a Stage 1 archaeological assessment for a 7.25 by 19 km study area established for a proposed new hydro transmission station and line extending between Leamington and Comber (Map 9). The study area extended north from the north end of the urban boundary of the Town of Leamington to just south of Comber, in the vicinity of the new Lakeshore SS. The Stage 1 assessment included a background study and roadside visual assessment of the general area. The Stage 1 background study determined that the majority of the study area retained archaeological potential; as such, Stage 2 assessment was recommended pending final design. This work was detailed in a report entitled *Stage 1 Archaeological Assessment, Hydro One, Supply to Essex – Leamington Study Area, Essex County, Ontario* (TMHC 2008; Licensee, Holly Martelle; PIF: P064-184-2008).

In 2016, Amec Foster Wheeler (AMEC) was contracted to conduct a follow up Stage 2 archaeological assessment for the selected impact areas (AMEC 2016) (Map 10). The Stage 2 study area encompassed a 40 m wide corridor with a length of 13 km and involved both a pedestrian and test pit survey. A portion of this corridor runs through the study area for the Lakeshore SS site and the near to the current project. The Stage 2 assessment resulted in the discovery of six archaeological locations, only one of which was recommended for Stage 3 assessment; the remainder of the locations were isolated find spots. None of the six sites are in or within 1 km of the current route alternatives. The results of the Stage 2 assessment are presented in a report entitled *Stage 2 Archaeological Assessment of the Supply to Essex County Transmission Reinforcement Project (SECTR) Archaeological Study Corridor, Historic Townships of Mersea and Rochester, Essex County, Ontario* (AMEC 2016; Licensee Luke Fischer; PIF P219-0009-2016).



Union Gas Limited Leamington Expansion Project – NDA 2012, TMHC 2013
(Maps 11 and 12)

In 2012, New Directions Archaeology Limited (NDA) conducted a Stage 1 assessment for the proposed Union Gas Leamington Expansion Project (NDA 2012) (Map 11). The Stage 1 assessment consisted of a background study and property inspection of the proposed and alternative routes. The study area and some route alternatives are within or near to the current Project Area, in the vicinity of the Lakeshore SS site. The Stage 1 assessment determined that the alternative routes, which were largely within road rights-of-way, were previously disturbed and no further work was recommended. However, portions of the preferred route were located in agricultural fields and these were recommended for Stage 2 assessment. The results of the Stage 1 assessment are detailed in a report entitled *Stage 1 Archaeological Assessment of the Union Gas Pipeline, Lots 13-17 and 25-29, Concession 7, Lots 17 and 25-30, Concession 8, Lots 1 and 2, Concession 10, Lots 1 and 2, Concession 11, Lakeshore Township, Lots 1-5, Concession 10, Lots 1-6, Concession 11, Municipality of Leamington, County of Essex* (NDA 2012; Licensee, P. Woodley; PIF P018-398-2012).

In the fall of 2012, TMHC was contracted by Union Gas Limited to conduct the Stage 2 survey of the preferred route for the proposed Leamington Expansion Project (TMHC 2013) (Map 12). The Stage 2 assessment involved three main survey segments, as well as six separate small parcels of land designated for temporary land use during construction. The assessment involved both pedestrian and test pit survey. Survey Segment 1 crossed through the planning area for the Lakeshore SS site and crosses through the current Project Area. The Stage 2 assessment did not result in the discovery of any archaeological sites or materials. As such, the project area was considered free of archaeological concern and no further work was recommended. The results of the Stage 2 assessment are presented in a report entitled *Stage 2 Archaeological Assessment, Union Gas Leamington Expansion Project, Part of Lots 76, Concession 6, Lot 77, Concession 7, Lots 25 to 30, Concession 7 & 8, Geog. Twp. of Rochester, now Town of Lakeshore; and Part of Lots 5, Concession 9-11, Geog. Twp. of Mersea, now the Municipality of Leamington, Essex County, Ontario* (TMHC 2013; Licensee, John Sweeney; PIF P349-054-2012).

Kruger Energy Port Alma Wind Power Project – TMHC 2006, 2007 (Maps 13 and 14)

In 2006, TMHC undertook a Stage 1 archaeological assessment for a large study area relating to the Port Alma Wind Power Project (Map 13). The study area stretched from south of the Highway 401 to the Lake Erie shoreline, from east of Tilbury to east of South Buxton and Dealtown. While an extensive study area was examined for the study, potential turbine locations were concentrated on lots closer to the lake. The northern portion of the Stage 1 study area encompasses portions of Route Alternatives 1 and 2 for the current project. The results of this assessment are reported in *Stage 1 Archaeological Assessment, Port Alma Wind Power Project, Romney Township, East Tilbury Township, and Raleigh*



Township, Municipality of Chatham Kent (TMHC 2006; Licensee, Peter Timmins; PIF P118-054-2006).

Stage 2 was subsequently undertaken in 2007 for 44 wind turbines and associated facilities. Only one survey is in the vicinity of the current Project Area. That was a Stage 2 assessment of a switchyard near Sloan Line and Fine Lines on the C21/C22Z transmission lines, falling in immediate proximity to Route Alternative 1 (Map 14). A pedestrian survey at a 4-5 m interval did not result in any archaeological resources being discovered. This work is reported in *Stage 2 Archaeological Assessment, Kruger Energy Port Alma Wind Power Project, Municipality of Chatham Kent* (TMHC 2007a; Licensee, Holly Martelle; PIF P064-122-2006).

Subsequent assessments were undertaken for the Kruger Energy Port Alma Wind Power Project but none were focussed on lands within 50 m of the current Project Area.

OptiSolar Farms Canada Inc. Tilbury Solar Farm – TMHC 2007, 2009 (Maps 15 and 16)

In 2007, TMHC completed a Stage 1 archaeological assessment for a proposed solar farm located north of the Town of Tilbury (Map 15). The study area included eight properties located between Highway 401 and Baptiste Creek, east of Baptiste Road. Portions of Route Alternative 2 and an associated route variation fall within the northern set of properties for the solar farm project. The Stage 1 study area was largely found to have potential for the discovery of archaeological resources and therefore Stage 2 assessment was recommended. The findings of this study were reported in *Stage 1 Archaeological Assessment, Tilbury Solar Farm, Geographic Township of Tilbury East, R.M. of Chatham-Kent* (TMHC 2007; Licensee Holly Martelle, PIF P064-155-2007).

Stage 2 assessment was subsequently undertaken by TMHC in 2009 but focussed on a smaller area, based on the final design (Map 16). Three properties located south of the Canadian Pacific Railway were assessed via pedestrian survey and one archaeological location (Property 2 Location 1) consisting of late-19th to early-20th century artifacts was discovered. Due to the late date of the site it was not subject to further investigation and not registered in the provincial database. No further work was recommended for the project. This work is reported in *Stage 2 Archaeological Assessment, Tilbury Solar Farm, Geographic Township of Tilbury East, R.M. of Chatham-Kent* (TMHC 2009; Licensee Holly Martelle, PIF P064-238-2008). The properties subject to Stage 2 assessment fall immediately south of Route Alternative 2.

Hatch Limited South Kent Wind Project – ASI 2010, 2011, 2013, 2014, 2015 (Map 17)

In 2010, Archaeological Services Inc. (ASI) was contracted by Hatch Ltd. to conduct a Stage 1 archaeological assessment for the proposed South Kent Wind Project (ASI 2010) (Map 17). The project encompassed 127 wind turbine locations with their associated access roads and related electrical infrastructure. In addition to the background



research, a field review was also conducted as part of the assessment. The Stage 1 background study and field review determined that the majority of the project area retained archaeological potential. Areas determined to be previously disturbed included existing road rights-of-way and an existing rail bed where some of the proposed electrical circuits were to be installed. The areas determined to be previously disturbed were not recommended for further work. However, the remainder of the project areas were recommended for Stage 2 assessment. The results of the Stage 1 assessment are presented in a report entitled *Stage 1 Archaeological Assessment (Background Study and Property Inspection) South Kent Wind Project, Municipality of Chatham Kent, Ontario* (ASI 2010; Licensee, Kathryn Bryant; PIF P264-120-2010).

In 2011, ASI was contracted by Hatch Ltd. to conduct the Stage 2 archaeological assessment for the project (ASI 2011a). The Stage 2 assessment involved 137 infrastructure survey areas, inclusive of 134 ploughed areas for the turbines, substation and meteorological tower sites, and three areas for circuit layout. Map 17 shows a key plan for the Stage 2 assessment areas. The Stage 2 survey consisted of both pedestrian and test pit methods and resulted in the identification of 85 archaeological sites. Of those, 42 were determined to have no further CHVI and no further assessment was recommended. The remaining 43 sites met provincial criteria for Stage 3 assessment. Only one of the sites AbHo-3 (an isolated Glen Meyer projectile point dating to ca. A.D. 900 to 1250-1300) is within 50 m of the current Project Area. The site was not deemed to be of further archaeological concern. The results of the Stage 2 assessment are presented in a report entitled *Stage 2 Property Assessment, South Kent Wind Project, Romney, East Tilbury, Raleigh, Harwich and Howard Townships, Former Kent County, Municipality of Chatham-Kent, Ontario* (ASI 2011a; Licensee, Andrew Riddle; PIF P347-001-2011).

Following the initial Stage 2 assessment for the South Kent Wind Project, the proponent revised portions of the project area in order to avoid some of the archaeological sites discovered. The new revised project area would include 28 infrastructure survey areas: 14 turbines and access roads; one substation sites; and 13 areas for electrical connection layout, transmission lines and junction boxes. A total of 19 new archaeological sites were discovered during the Stage 2 survey, of which, 11 were determined to meet the criteria for Stage 3 assessment. The results of the Stage 2 assessment are presented in a report entitled *Additional Stage 2 Property Assessment, South Kent Wind Project, Romney, East Tilbury, Raleigh, Harwich and Howard Townships, Former Kent County, Municipality of Chatham-Kent, Ontario* (ASI 2011b; Licensee, Andrew Riddle; PIF P347-102-2011).

Belle River Wind Project - Golder Associates Ltd. (2014) (Map 18)

In 2014, Golder Associates carried out a Stage 1 archaeological assessment for a 18,600 ha study area associated with the Belle River Wind Project (Map 18). The easternmost portion of the study area falls within and in proximity to Route Alternative 2 for the current project. The background study established that virtually all of the study area had either medium or high potential for the discovery of archaeological resources. As such,



Stage 2 assessment was recommended. The Stage 2 assessment areas for the project are all well distant from the route alternatives being considered for the current project. Golder's study is entitled *SP Belle River Wind LP, Belle River Wind Project, Various Lots and Concessions, Geographic Townships of Maidstone, Rochester and Tilbury West, Essex County, Ontario* (Golder 2014; PIFs P311-0277-2014, P311-0291-2014, P311-0298-2014, P311-0300-2014; Licensee Bradley Drouin).

Victor Wind Project – Stantec 2016 (Map 19)

In 2016, Stantec Consulting undertook a Stage 1 archaeological assessment for a large study area associated with the Victor Wind Project. The northeast corner of the study area encompassed lands within Tilbury that are west of Queen Street South and south of Highway 401. The study area encompasses the western portions of all of the route alternatives for the current project. Stantec identified all of the lands within the current study area as having archaeological potential, with the exception of waterways (deemed low and wet) and roads. As a field inspection was not undertaken, this represented high level mapping of archaeological potential and did not eliminate urban lands or consider proximity to features of potential, as defined by MHSTCI criteria. This work was summarized in a report entitled *Stage 1 Archaeological Assessment: Victor Wind Project, Geographic Townships of Rochester and Tilbury West, Municipality of Lakeshore, County of Essex, Ontario* (Stantec 2016; PIF P256-0394-2016; Parker Dickson, licensee December 13, 2016).

Romney Wind Energy Centre – Archaeological Research Associates (ARA) 2017 (Maps 20 and 21)

In 2017, ARA undertook a Stage 1 and 2 archaeological assessment for the Romney Wind Energy Centre, falling within the Town of Lakeshore and Municipality of Chatham-Kent, within the Geographic Townships of West Tilbury and Romney. The Stage 1 assessment area focussed on 29 parcel groups (Map 20), whereas the Stage 2 fieldwork affected only 12 parcel groups. The majority of the work areas for this project fall well south of the current Project Area. However, a substation and grid tap site, alongside association transmission line routes, including one along Richardson Side Road to the west of Tilbury, fall within or within 50 m of the current Project Area (Map 21). No archaeological material was discovered in these areas during the course of Stage 2 assessment. Two reports summarize this work: 1) *Stage 1 and 2 Archaeological Assessments, Romney Wind Energy Centre, L-006356-WIN-001-060, 2016 Season, Town of Lakeshore and Municipality of Chatham-Kent, Multiple Lots and Concessions, Geographic Townships of Tilbury West and Romney, Essex County and Former Kent County, Ontario* (ARA 2017a; PIF P007-0783-2016, Paul Racher, licensee); and 2) *Stage 1, 2 and 3 Archaeological Assessments, Romney Wind Energy Centre, L-006356-WIN-001-060, 2017 Season, Town of Lakeshore and Municipality of Chatham-Kent, Multiple Lots and Concessions, Geographic Townships of Tilbury West and Romney, Essex County and*



Former Kent County, Ontario (ARA2017b; PIFs P007-0802-2017 and P007-0837-2017, Licensee Paul Racher).

Union Gas Windsor Line Replacement – Stantec 2019 (Map 22)

In 2019, Stantec Consulting undertook a Stage 1 archaeological assessment for the Union Gas Windsor Line Replacement project, focussing on a 687 ha study area falling within the Geographic Townships of East Sandwich, Rochester, and Tilbury West in Essex County and the Geographic Townships of East Tilbury and Romney in the Municipality of Chatham-Kent. The study formed part of the planning for a replacement natural gas pipeline extending between the existing Union Gas Sandwich Station on Concession Road 8 (between North Talbot Road and Highway 401, southeast of the City of Windsor) and the existing Union Gas Port Alma Transmission Station (at the intersection of Port Road and Talbot Trail, west of the town of Port Alma on Lake Erie). The Stage 1 background review and property inspection established that much of the study area retained potential for archaeological resources and recommended Stage 2 assessment. Only a small portion of the project area, near Townline Road (Rochester) and County Road 46 is within or within 50 m of the Project Area for the current study, namely the immediate vicinity of Lakeshore SS. This work is summarized in a report entitled *Stage 1 Archaeological Assessment, Union Gas Windsor Line Replacement, Parts of Various Lots and Concessions, Multiple Lower Tier Municipalities, Essex County and the Municipality of Chatham-Kent, Ontario* (Stantec 2019; PIF P256-0552-2018, Licensee Parker Dickson).

Hydro One Lakeshore Transformer Station Class Environmental Assessment – Wood 2019, 2020 (Maps 23 and 24)

In 2019, Wood carried out a Stage 1 archaeological assessment for the proposed Lakeshore Transformer Station within Lots 15, 16 and 17, Middle Road N.S. within the Geographic Township of Rochester in Essex County (Map 23). The background study focussed on a 211 ha study area and revealed that portions of the study area had potential for the discovery of archaeological resources due to the proximity of historic watercourses and transportation routes. A preliminary field review indicated that some portions of the study area were disturbed and of low archaeological potential, whereas others retained potential for the discovery of archaeological resources. As such, Stage 2 assessment was recommended. The results of the Stage 1 archaeological assessment are reported in *Original Report, Stage 1 Archaeological Assessment, Lakeshore Transformer Station Class Environmental Assessment, Lots 15, 16 and 17, Concession Middle Road South Side, Geographic Township of Rochester, Essex County, Now in the Town of Lakeshore, Ontario* (Wood 2019; PIF P066-0325-2019; Kristy O’Neal, licensee).

In 2020, Wood conducted a Stage 2 assessment of a 75 ha portion of the Stage 1 assessment area involving the pedestrian survey of the agricultural field and test pit survey of unploughed lands associated with a farmstead site off County Road 46 (Middle Road) (Map 24). Portions of the study area were also deemed to be disturbed and of low



archaeological potential. No archaeological material was discovered and the assessed area was considered free of archaeological concern. This work is summarized in a report entitled *Original Report, Stage 2 Archaeological Assessment, Lakeshore Transformer Station Class Environmental Assessment, Lots 15, 16 and 17, Concession Middle Road South Side, Geographic Township of Rochester, Essex County, Now in the Town of Lakeshore, Ontario* (Wood 2020; PIF P348-0098-2020; Barbara Slim, licensee).

Raleigh Wind Farm Project – CRM Group 2009 (Map 25)

In 2008, CRM Group initiated a Stage 1 archaeological assessment, including a background study and field reconnaissance, for a large study area including and east of Merlin associated with Invenergy's Raleigh Wind Farm Project in Raleigh and East Tilbury townships. The Stage 2 assessment was undertaken in June of 2009, with the Stage 1 and 2 assessment results reported in *Stages 1 & 2: Archaeological Assessment Report, Raleigh Wind Farm Project, Municipality of Chatham-Kent* (CRM 2009a; PIFs P109-024-2008, P109-030-2009; W. Bruce Stewart, licensee). Two turbine sites (T23, T24) on the south side of 9th Line (Raleigh Twp.), alongside a Sub-Station site and feeder line impact areas along Dillon Road fall within 50 m of the current Project Area. The Sub-station falls within 50 m of Route Alternative 1 whereas the access roads for the turbine locations are in proximity to Route Alternative 3. No archaeological material was found in relation to the areas surveyed for Turbine 23. An Indigenous flake scatter of further CHVI was identified in the original location of Turbine 25 and registered as AbHn-20. This site is over 200 m from the current Project Area. No archaeological resources were identified in the majority of the Sub-station parcel. However, a late dating historic scatter was identified in the south-central portion of the property but did not warrant further investigation. An Indigenous site (AbHn-19) of further CHVI was also identified in the southern portion of the Sub-station parcel; the project layout was redesigned to avoid the site. AbHn-19 is approximately 360 m south of Route Alternative 1, as shown in the report mapping.

Following the completion of the original assessment work, the project layout changed, primarily to accommodate wider turning radii for construction vehicles off adjacent roadways. A separate Stage 1 archaeological assessment was subsequently completed, involving a background study and documentation of existing conditions. For the layout changes for proposed turbine locations (T23 and T25) in proximity to the current Project Area, no further Stage 2 assessment was recommended for the turning radii. This study is summarized in *Stage 1: Archaeological Assessment Report, Raleigh Wind Farm Project – Turning Radii, Municipality of Chatham-Kent* (CRM Group 2009b; PIF P109-036-2009; W. Bruce Stewart, licensee). An additional Stage 2 assessment was undertaken for revised and outstanding work areas, as summarized in *Stage 2: Archaeological Assessment Report, Raleigh Wind Farm Project – Expanded Scope of Work, Municipality of Chatham-Kent* (CRM Group 2009c; PIF P109-035-2009; W. Bruce Stewart, licensee). For Turbine 23 an expanded survey was undertaken and no archaeological resources were identified. New areas associated with Turbine 25 were also assessed, with no further cultural material identified.



2.3 Project Context: Historical Context

2.3.1 Indigenous Settlement in Southern Ontario

While numerous archaeological surveys have been undertaken for portions of Essex and Kent counties in advance of wind and other energy projects, little systematic archaeological assessment has taken place within the immediate environs of the Project Area. As such, our knowledge of the Indigenous occupation in the general area is incomplete. Nevertheless, using province-wide and region-specific data, a generalized cultural chronology for Indigenous settlement in Essex and Kent counties can be proposed (Table 3). A summary of the themes and temporal periods of Indigenous occupation is provided below.

Table 3: Cultural Chronology for Indigenous Settlement in Essex and Kent Counties

Period		Time Range (circa)	Diagnostic Features	Complexes	
Paleoindian	Early	9000 - 8400 B.C.	fluted projectile points	Gainey, Barnes, Crowfield	
	Late	8400 - 8000 B.C.	non-fluted and lanceolate points	Holcombe, Hi-Lo, Lanceolate	
Archaic	Early	8000 - 6000 B.C.	serrated, notched, bifurcate base points	Nettling, Bifurcate Base Horizon	
	Middle	6000 - 2500 B.C.	stemmed, side & corner notched points	Brewerton, Otter Creek, Stanly/Neville	
	Late	2000 - 1800 B.C.	narrow points	Lamoka	
		1800 - 1500 B.C.	broad points	Genesee, Adder Orchard, Perkiomen	
		1500 - 1100 B.C.	small points	Crawford Knoll	
	Terminal	1100 - 850 B.C.	first true cemeteries	Hind	
Woodland	Early	800 - 400 B.C.	expanding stemmed points, Vinette pottery	Meadowood	
	Middle	400 B.C. - A.D. 600	thick coiled pottery, notched rims; cord marked	Couture	
	Late	A.D. 600 - 900	Wayne ware, vertical cord marked ceramics	Riviere au Vase-Algonquin	
		A.D. 900 - 1200	first corn; ceramics with multiple band impressions	Young- Algonquin	
		A.D. 1200 - 1400	longhouses; bag shaped pots, ribbed paddle	Springwells-Algonquin	
		A.D. 1400-1600	villages with earthworks; Parker Festoon pots	Wolf- Algonquin	
Contact		Indigenous	A.D. 1600 - 1700	early historic Indigenous settlements	Three Fires Confederacy, Attawandaron, Wendat, Odawa, Wenro
		Euro-Canadian	A.D. 1700-1760	fur trade, missionization, early military establishments	French
			A.D. 1760-1900	Military establishments, pioneer settlement	British colonials, UELs, early Black settlement



Paleoindian Period

The first human populations to inhabit Southern Ontario arrived between 12,000 and 10,000 years ago, coincident with the end of the last period of glaciation. Climate and environmental conditions were significantly different then they are today; local environs would not have been welcoming to anything but short-term settlement. Termed Paleoindians by archaeologists, Ontario's first peoples would have crossed the landscape in small groups (i.e., bands or family units) searching for food, particularly migratory game species. In this area, caribou may have provided the staple of Paleoindian diet, supplemented by wild plants, small game, birds and fish.

Given the low density of populations on the landscape at this time and their mobile nature, Paleoindian sites are small and ephemeral. They are sometimes identified by the presence of fluted projectile points manufactured on high quality raw materials. Sites or find spots are frequently located adjacent to the strandlines of large glacial lakes. This settlement pattern has been attributed to the strategic placement of camps in high, dry areas and at logistical points for the interception of migrating caribou herds.

No Paleoindian archaeological sites are registered within 1 km of the Project Area.

Archaic Period

The archaeological record of early native life in Southern Ontario indicates a change in lifeways beginning circa 8,000 B.C. at the start of what archaeologists call the Archaic Period. The Ontario populations are better known than their Paleoindian predecessors, with numerous sites found throughout the area. The characteristic projectile points of early Archaic populations appear similar in some respects to early varieties and are likely a continuation of early trends. Archaic populations continued to rely heavily on game, particularly caribou, but diversified their diet and exploitation patterns with changing environmental conditions.

A seasonal pattern of warm season river or lakeshore settlements and interior cold weather occupations has been documented in the archaeological record. Since the large cold weather mammal species that formed the basis of the Paleoindian subsistence pattern became extinct or moved northward with the onset of warmer climate, Archaic populations had a more varied diet, exploiting a range of plant, bird, mammal and fish species. Reliance on specific food resources like fish, deer and nuts becomes more pronounced through time and the presence of more hospitable environs and resource abundance led to the expansion of band and family sizes. In the archaeological record, this is evident in the presence of larger sites and aggregation camps, where several families or bands would come together in times of resource abundance. The coniferous forests of earlier times were replaced by stands of mixed coniferous and deciduous trees by about 4,000 B.C. The transition to more productive environmental circumstances led to a rise in population density. As a result, Archaic sites become more abundant over time. Artifacts typical of these occupations



include a variety of stemmed and notched projectile points, chipped stone scrapers, ground stone tools (e.g., celts, adzes) and ornaments (e.g., bannerstones, gorgets), bifaces or tool blanks, animal bone and waste flakes, a by-product of the tool making process.

Archaic Period sites are relatively well represented within 1 km of the Project Area (n = 13). Two sites in the provincial database listing have Early Archaic components (AcHm-22, AcHm-23), three sites have Middle Archaic components (AbHn-10, AbHo-, AcHm-22) and eight sites have Late Archaic components (AbHn-10, AbHn-12, AbHn-19, AbHn-26, AcHm-22, AcHm-23, AcHm-65, AcHn-78). AbHn-30 is attributed to the Archaic Period more generally.

Early, Middle and Transitional Woodland Periods

Significant changes in cultural and environmental patterns are witnessed in the Early, Middle and Transitional Woodland periods (ca. 950 B.C. to A.D. 1000). Occupations became increasingly more permanent in this period, culminating in major semi-permanent villages by roughly 1,000 years ago. Archaeologically, the most significant changes by Woodland peoples are the appearance of artifacts manufactured from modeled clay and the emergence of more sedentary villages. The earliest pottery was crudely made by the coiling method and early house structures were simple oval enclosures. The Early and Middle Woodland periods are also characterized by extensive trade in raw materials, objects and finished tools, with sites in Ontario containing trade items with origins in the Mississippi and Ohio River valleys. A rise in mortuary ceremonialism is also evident, culminating in the construction of large burial mounds.

Two sites in the provincial database listing for this project have Early Woodland components (AbHn-12, AbHn-13). Middle Woodland components have been documented at two sites (AbHn-13 and AbHo-4), whereas AbHo-3 is attributed to the Woodland Period more generally.

Late Woodland Period

By the Late Woodland period there was a distinctive cultural occupation of the western portion of Ontario, including Essex, Kent and Lambton counties plus some portions of neighbouring ones as well. The primary Late Woodland occupants of the Windsor are assigned by archaeologists to the Western Basin Tradition. Murphy and Ferris (1990:189) indicate that these people had ties with people in southeastern Michigan and northwestern Ohio, and represented an *in situ* cultural development from the earlier Middle Woodland peoples. The Western Basin Tradition seems to have been centred in the territory of the eastern drainage basin of Lake Erie, Lake St. Clair, and the southern end of Lake Huron. Murphy and Ferris (1990) refute an Iroquoian affiliation for Western Basin, and instead favour an Algonquian designation. The Western Basin Tradition is divided up into four phases based on differences in settlement and subsistence strategies and pottery attributes. The four phases are: Riviere au Vase, Younge, Springwells, and Wolf. Table 4



below is extracted from the Windsor Archaeological Master Plan (CRM Group Ltd. et al. 2005:2-13).

Late Woodland Period sites are known within 1 km of the Project Area, including AbHn-11 and AcHm-66.

Contact Period Indigenous Settlement

Although records are poor, it is thought that both the Lake Erie, Lake St. Clair and Thames River shorelines in Kent County were travelled during early exploratory and missionization ventures by Europeans. Jesuit missionary Brebeuf is reported to have traveled along the Lower Thames in 1640-41 in hopes of establishing the "Mission of the Angels." Seventeenth and early-18th century historic accounts describe the presence of several historic-era Indigenous villages in Kent County, with at least two known in the Chatham area. One such village, named St. Joseph's in the Jesuit records, is reported to have stood near the forks on McGregor Creek, with another near what is now Maple Leaf Cemetery (Hamil 1951; McKeough 1919). Local Indigenous groups had long hunted and farmed the land along the banks of the Thames River, or the *Aus Kunsabee* or Antlered River, as it was called (Coutts 1915).

There are also numerous early historical references to Indigenous villages in Essex County, most notably the Windsor area, drawn from the accounts of mid-17th century French explorers. According to early travelers, there was an Attawandaron (Neutral) village (Skenchioe) in the Windsor area, and a mixed Attawandaron and Wenro Village. This same village "Khioetoo" is also historically described as being occupied by the Awenrehronon (Wenro) (Lajeunesse 1960:4) but may have also included Attawandaron families. Generally, in 1640, Jesuit missionaries reported Indigenous village sites and corn fields along the Detroit River. Early historic accounts also describe the village as the Mission of St. Michael. In 1651 there was a temporary dispersal of Wendat and Attawandaron populations from their historic homelands by Five Nations Iroquois. Following this, many Wendat families eventually travelled to the Windsor area where they established villages as early as 1679, with the traditional territory of the Three Fires Confederacy (namely the Ojibwa, Odawa and Potawatomi nations). In fleeing from their historic homeland near Lake Simcoe, the Huron-Wendat sought refuge in the territory of their Anishnaabe allies and trading partners, the Odawa, at Michilimackinac. Shortly after 1700, Sieur de Cadillac moved French forces from Michilimackinac to a new fort on the right bank of the Detroit River. Odawa and Huron-Wendat from Michilimackinac followed and settled in an existing Potawatomi village nearby. While the Huron-Wendat settled temporarily in the Detroit River, many moved on to Ohio and elsewhere in the mid-18th century.

Land surveyors' records also mention extensive settlements by the Ojibway and Pottawatomi along the Lake Erie shoreline in Harwich and Raleigh Townships and near Jeannette's Creek. A prominent Indigenous trail connected Rondeau Bay and a settlement



near Shrewsbury to Chatham and the Thames River; it laid the footprint for what would later become Communication Road (Hamil 1951:7). Another trail ran along the south bank of the Thames River, with yet another extending north-south through what is now Essex County along the west bank of the Ruscom River.

In May of 1790 the British Crown signed the McKee treaty with the “Chiefs and Principle men” of the Chippewa (Ojibwa), Ottawa (Odawa), Potawatomi and Huron-Wendat Nations. As part of negotiations and with consent of the Three Fires Confederacy who remained proprietors of the land, two tracts of land were set apart as “reserves” for the Huron-Wendat (the Huron Church Reserve, the Anderdon Reserve).²

No archaeological sites within 1 km of the Project Area have been specifically recorded as Indigenous “Post-contact.”

² This historical summary is extracted from the *Statement of Respect for Three Fires Territory: Backgrounder for the University of Windsor’s Land Acknowledgement* (Bkejwanon Territory; Nin.Da.Waab.Jig 2018). A full historical summary of the history of the Three Fires Confederacy in the Windsor area occurs in that document.



Table 4: The Four Phases of the Western Basin Tradition

Phase	Date	Settlement and Subsistence	Pottery
Riviere au Vase	A.D. 600-900	<ul style="list-style-type: none"> - developed directly from the Middle Woodland Couture complex - seasonal mobility geared toward resource availability - summer base camps by lakeshores, fall/winter in interior - no corn or beans present 	<ul style="list-style-type: none"> - Wayne ware: small, thin walled, vertical cord-marking - later wares are tool impressed
Younge	A.D. 900-1200	<ul style="list-style-type: none"> - corn and beans present - settlement & subsistence continues as before with focus on warm season gathering of groups and winter dispersals 	<ul style="list-style-type: none"> - pottery is larger, more elaborately decorated - body of vessels are corded, coarsely & irregularly - multiple bands of tool impression
Springwells	A.D. 1200-1400	<ul style="list-style-type: none"> - larger more permanent warm season settlements - longhouses & palisades present - more intensive horticulture - locations near arable lands, and along the shorelines of marshes, river and lakes - possible use wattle & daub 	<ul style="list-style-type: none"> - ceramics large & bag-shaped - collars & castellated rims decorated with horizontal bands of incised or impressed decoration - roughened, self slip & ribbed paddle surfaces first appear
Wolf	A.D. 1400-1600	<ul style="list-style-type: none"> - few examples of sites known - distribution limited to around Lake St. Clair, St. Clair River - large warm weather villages, often fortified by earthworks - nature of these sites is attributed to the westward expansion of Ontario Iroquoians that resulted in abandonment by the Western Basin peoples in the early 1600 	<ul style="list-style-type: none"> - diagnostic characteristic of Wolf phase is Parker Festooned pottery - undulating bands of dentate stamped impressions or stamped applique strips on vessel necks - after A.D. 1500 most vessels with strap handles & notched lips or notched horizontal rim strips, plus shell temper

* Table information from the Windsor Archaeological Master Plan (CRM Group Ltd. et al. 2005: 2-13)



2.3.2 19th Century Municipal Formation

The easternmost portions of the proposed route alternatives fall within the Geographic Townships of Harwich, Raleigh and East Tilbury in Kent County. The westernmost portions of the proposed route alternatives fall within the Geographic Townships of West Tilbury and Rochester, in Essex County. A brief discussion of early 19th century and municipal settlement in these places is provided below and provides the context for evaluating historic era archaeological potential.

The earliest non-Indigenous settlement in this portion of Essex and Kent counties focussed on the northern shores of Lake Erie, Lake St. Clair, and the Thames River. The Lake Erie environs, alongside most of southwestern Ontario, were claimed by the King of France on March 23, 1670 (Lajeunesse 1960:xxxiii). French missionaries and fur traders were some of the first Europeans to travel through what is now southern Ontario and their knowledge facilitated French military and economic efforts, including the establishment of fortifications on the Detroit River. The earliest formal land surveys in the counties were along the lakeshore and employed the French system of establishing long lots with narrow water frontages. Following the establishment of British control over the land, the Crown recognized Indigenous title to the land by way of proclamation in 1764 (Lajeunesse 1960:cix).

One of the first recorded settlers in Kent County and in the vicinity of Chatham was “Sally” (Sarah) Ainse (Hands), an active trader and diplomat (Dictionary of Canadian Biography Online 2012). She is thought to be of Oneida origin, although some references also note she once declared to be Shawnee. Regardless, Ainse came to the Thames River from Detroit, although she was born and raised in the Susquehanna River valley. In 1787 Ainse came to Kent County and by 1788 she had negotiated with the local Ojibwa groups the purchase of 150 square miles of land from the mouth of the Thames to the forks in what is now the City of Chatham (at Tecumseh Park). Through this, she became the municipality’s first major landholder. She constructed a house on Lot 10, Concession 1 of Dover East Township. Ainse was once the wife of British “Indian interpreter” Andrew Montour and later John Willson, a prominent trader. Before coming to the Thames River, Sally had established herself as an active trader in the Western District, having operated out of Detroit.

Ainse’s arrival in the area was concurrent with concerted early efforts by the British Crown to acquire lands and encourage settlement along the river (H. Belden & Co. 1880:45). In 1790, representatives of many local Indigenous groups, including Chippewa and Mississauga, were summoned by the King of England to Detroit to discuss the King’s desire to purchase lands along the Thames River. A large tract of land along Lake Erie, between Long Point and Lake St. Clair, was ceded to the English for a bargain price of “trade goods to the value of 1,200 pounds of Quebec currency” (Lajeunesse 1960:cix). On May 19, 1790, the McKee Purchase (Treaty No. 2) was signed between the Deputy Agent of Indian Affairs—Alexander McKee, and 27 chiefs of local Ojibwa, Odawa, Potawatomi,



and Wendat nations (Canada 1891; Surtees 1984; Jacobs 1979). The treaty covered a significant area including what became Elgin, Kent, and Essex counties along the north shore of Lake Erie including the entirety of West Tilbury in Essex County and East Tilbury in Kent County. At the time of signing, only two reserves were created. What became known as the Huron and the Huron Church Reserves near Windsor were the domain of all signatories (Surtees 1984). Today the study area falls within the traditional territories of several contemporary Anishinaabe First Nations, including Aamjiwnaang First Nation, Chippewas of the Thames First Nation, Walpole Island First Nation (Bkejwanong) and Caldwell First Nation.

The transfer was not without problems, as the ownership of many land parcels came under immediate dispute due to previous agreements made between First Nations representatives, early settlers and land speculators (Hamil 1951; Jacobs 1983). Sally Ainse's prior land purchase was one such parcel under dispute. In 1890 she had petitioned to Governor Lord Dorchester to obtain legal title to her property; however, the lands fell squarely within the area covered under the McKee Treaty despite claims from herself and local chiefs that her property was exempt from the treaty provisions. Ainse's appeal was originally denied, likely due to the fact that hers was some of the most valuable and productive land in the area. However, an order was later made for her to be given clear title to some 1, 673 acres (only a fraction of her initial parcel) after influential lobbying by Sir John Johnson (Superintendent General of Indian Affairs), Joseph Brant (*Thayendanegea* Mohawk Chief), and Lieutenant Governor John Graves Simcoe. The Executive Council denounced the order and Ainse was never given title or compensation.

Following the McKee Treaty, land grants were made, primarily to discharged British soldiers and other United Empire Loyalists who fled the American colonies following the war of independence (H. Belden & Co. 1880:45). The majority of early settlement in this area focussed on the lakeshore and along the Thames River, so named by Lieutenant-Governor John Graves Simcoe in 1792. Early on, the river provided one of the only means of travel and transport through the uncleared forests. Its hinterlands were desirable for habitation as they were generally elevated and drier than the swampy, uncleared interior and former lake bed between the river and the lakeshore. The first major Crown-commissioned survey in Kent County was conducted by Patrick McNiff, who established lots and concessions along the Thames River in 1790 and 1791. McNiff's survey notes recorded 28 settler families along the river below present-day Chatham. He noted that in the area of the forks the woodland extended no more than 30 acres, often less, with the plains and marshes beyond being largely uninhabitable (Map 26).

Township of Harwich

Upon the arrival of early land surveyors in Harwich and Raleigh, Ojibway and Potawatomi populations had established significant settlements along the Lake Erie shoreline (Lauriston 1952:268). The earliest survey of Harwich Township used the Lake Erie shore as a baseline (L.E. – Lake Erie survey). Heading north, the survey ran into



difficulties given the alignment of the baseline with the Thames River. Separate surveys were made adjacent to Communication Road (ECR – East of Communication Road and WCR – west of Communication Road) and the river (River Thames Survey - RT). Communication Road was an important military road early on, connecting the Thames River at Chatham with Rondeau Bay along Lake Erie. The section of the road between Chatham and what is now Blenheim was opened by 1844 (Armstrong 1985:7).

Generally speaking, the earlier settled areas away from Communication Road and other early transportation routes and apart from the Lake Erie shoreline in Harwich were those centred on the prominent southwest-northeast trending ridge, which offered sandier and loamier soils than the hard clays of the former glacial lake bottom. One of the earliest settler families in Harwich near to the Project Area were the McGarvins, who homesteaded on Lot 5, Concession 4 west of Communication Road. The portion of Harwich Township between Bridgend (or Kent Centre) and the Howard-Harwich townline was not settled until c. 1837. The portion of Harwich falling along the Raleigh Township boundary was one of the last portions of the township to be settled (Lauriston 1952:268), largely due to a lack of well-established roads in this area.

As with other early Kent and Essex County townships, lumbering was a focal point of early Harwich industry as many centres developed first as milling sites along major watercourses. One such milling site was on McGregor Creek west of Communication Road, on Lot 27, Concession 1 west of Communication Road, on property owned by W.J. Richardson in 1876. It was the impetus for the development of a small community that would come to be known as Bridgend (or Bridge End or Kent Centre), where the McLeans, McGarvins and Smiths would establish homesteads. The community had a post office by 1866 with Ann Warner as postmaster (McEvoy & Co. 1866-67). The 1881 map of the township shows a hotel on the east side of Communication Road, alongside McMahons store (Map 27). The inn was a strategic stopping point for travellers at the junction of Communication Road and an early trail that travelled east along McGregor's Creek (now Pinehurst Line) (Armstrong 1985:19).

Township of Raleigh

The first European settlers in Raleigh were recorded as Thomas McCrae and his family, who are credited with having built the first brick house in Kent County. Thomas was both an innkeeper and parliamentary representative. His brother, William, ran a post-office along the Thames River, established in 1816. A War of 1812 associated skirmish took place at the McCrae homestead on December 25, 1813 (Stott 1985:64-65). Both the Thames River and Lake Erie shorelines were the focal points of the earliest settlement in Raleigh. The official survey of the township was not completed until 1828, when Colonel Burwell took over the project from Abraham Iredell and Patrick McNiff who had initiated the survey but never saw it through to completion. Once the lands adjacent to the shoreline had been surveyed, settlement intensified but was still relatively slow (Johnson 1974:29).



Settlers in Raleigh Township experienced the same hardships as pioneers in East Tilbury, including absentee landowners and speculators, impassable and limited transportation routes, as well as poor drainage. South of the Thames River and north of an ancient beach ridge that parallels the shoreline of Lake Erie, the soils were heavy, nonporous clay that flooded extensively, often to a depth of nearly two feet (Lauriston 1952:294). Land clearing and agriculture were inhibited by the presence of standing water for much of the year, with homesteading in this part of Raleigh also made more difficult by the presence of relatively few springs through the heavy clay plains. These “Raleigh plains” would eventually be reclaimed for settlement through extensive drainage works by the turn of the 20th century, but until that time settlement was largely confined to locales nearer to the Thames River, Lake Erie shoreline and the Middle Road, the latter of which facilitated the movement of people and goods throughout Kent and Essex counties. The first Raleigh Township settler on Middle Road was Englishman William White, who set up residence on Lot 24, Concessions 11 and 12 around 1829 (Lauriston 1952:294).

The most significant 19th century settlement to emerge in the portion of Raleigh Township near the Project Area was that of Buxton, a planned early Black settlement community (Map 28). In the early- and mid-19th century, Essex and Kent counties were home to a significant Black population, amongst them freed persons and former slaves who fled to Canada West from the United States prior to emancipation and following the passing of the *Fugitive Slave Act* of 1850. This legislation established that the fugitive enslaved could be returned to their owners if they were apprehended, even within a free state. Fearing for their safety, many fled to Canada in the hope of gaining or maintaining their freedom. Several major centres of early Black settlement emerged in Essex, including Sandwich, Amherstburg and Puce, and in Kent, most notably Buxton and Chatham.

The Buxton Settlement, also known as the Elgin Settlement, was the plan of a Presbyterian Minister William King. King was a Scot who immigrated to the United States and married the daughter of a wealthy plantation owner in Louisiana (Hill 1981:77). Upon the death of his wife and her father, King inherited a number of enslaved persons. As a Presbyterian and active abolitionist, this fell contrary to his religious and social beliefs. Thus, he decided that those who were enslaved and under his care should be brought to Canada, where slavery was prohibited. With the assistance of Lord Elgin and the Presbyterian Church, as well as James Price (Commissioner of Crown Lands), King established the “Elgin Association” and purchased 9,000 acres of Clergy Reserve in Raleigh Township with the understanding that it would be the focus of a new settlement for freed persons and formerly enslaved refugees (Hill 1981:77). The parcel was six miles in length (stretching from the Great Western Railway to Lake Erie) and three miles in width (stretching from Drake Road to Dillon Road). The purchase was made despite avid opposition from some members of the community, particularly Edwin Larwill who was particularly vocal about the issue and supported segregation (BNHSM 2006).

On November 28, 1849, King and fifteen formerly enslaved persons under his care moved to the “Elgin Settlement” and established residence near the intersection of Center



and Middle Road (in what is now South Buxton). King later changed the name of the settlement to Buxton, after F. T. Buxton, a scholar who greatly influenced his education (Hill 1981:80). King and the Elgin Association developed rules by which the community would operate and be developed. Individual plots of fifty acres were established and sold for \$2.50 per acre, to be paid in ten annual installments at 6% interest. Lands could only be purchased by Black families and needed to be improved according to a specific blueprint and schedule. Land had to be retained by the purchaser for at least ten years and could not be rented or sharecropped. Each settler had to erect a log house on their property that was 18 by 12 feet in dimension and at least 12 feet high. The house could contain no fewer than four rooms and was to be placed at a distance of 33 feet from the road. Vegetable and flower gardens were to be planted and a picket fence constructed adjacent to the concession road. Ditches were to be dug along the road to improve drainage. These rules were meant to ensure an orderly development of the settlement and foster a sense of pride in the community (BNHSM 2006).

Other freedom seekers and Black United Empire Loyalists of African descent who had served with the British army during the American Revolution sought refuge and a new home in Buxton. The Buxton settlement thrived early on and by 1852, only three years after its founding, there were 400 settlers in the community. Businesses were established, including saw and grist mills, a potash and pearlash factory, brick yard, hotel, blacksmith and dry goods store. Early settlers also benefited from wages earned during the construction of the Great Western Railroad (BNHSM 2006). In its heyday, Buxton was a thriving centre and a focus of education. The Buxton Mission School became well known as one of the finest learning institutions in the province. Several notable and historically significant individuals grew up or served in Buxton, including Anderson Ruffin Abbott, the first Canadian born black doctor; James T Rapier an American Congressman and civil rights activist in the American south, William Parker, a Raleigh Township Councillor; and several members of the Shadd family, who served the Township of Raleigh as doctors, teachers, and public servants (Hill 1981:86). As a stopping point on the Underground Railroad, Buxton continued to welcome freedom seekers throughout the mid-19th century. At its peak, the community had a population of between 1200 and 2000 individuals (BNHSM 2006).

Following the American Civil War and the abolition of slavery in the United States, Buxton's population began to decline. Many returned to the United States to seek out family members who still resided there. Many of the 50-acre settlement lots were sold or abandoned. In 1873, the Elgin Association dissolved and many of the properties within the settlement had been purchased by settlers of European descent (Middleton et al. n.d.:57).

Physical and celebrated traces of Buxton's ground-breaking past are still evident in the communities of North and South Buxton. In North and South Buxton, the most notable landmarks are the old Buxton school (c. 1861), St. Andrews Church and the North Buxton cemetery (c. 1857). The original Mission church on William King's property stood at the crossroads in South Buxton but was later replaced. The Buxton settlement area is a



designated a National Historic Site of Canada and its museum is housed in North Buxton, adjacent to the schoolhouse.

Townships of Tilbury East and Tilbury West

Although they currently fall within two separate counties, the townships of Tilbury West and Tilbury East have similar settlement histories, dictated in part by physiography and environment, in addition to areas of initial land survey.

Settlement in the two Tilbury townships would not open in the interior until the formal survey and construction of the Middle Road, a major east-west thoroughfare bisecting the interior of Essex and Kent counties. Although surveyed by M. Burwell in 1823, Middle Road would not be significantly cleared until after 1840 (H. Belden & Co. 1881:12). Middle Road was constructed on an old Indigenous trail and War of 1812 supply route (Duquette et al. 1987:11; Percy n.d.:10). Some of the earliest to settle along the Middle Road included the Dodd and Nicholson families and Samuel Taylor who settled in what is now Comber in 1842 (H. Belden & Co. 1881:12). Early on, settlement in the interior of Tilbury East and Tilbury West was considerably hindered by the presence of hundreds of acres of marsh land and a lack of passable roads therein. Further, significant lands were set aside as clergy reserves or were the property of the Canada Company (Lauriston 1983:307) and absentee landowners. It was not until sufficient municipal organization had taken place and major public works projects had been initiated that drainage and transportation had improved enough to open the interior lands to settlement. For some time, the interior lands between the lakeshore and Middle Road settlements were uncleared until they drew the attention of lumbermen John Allister and John Whiteman (H. Belden & Co. 1881:14). Settlement by French and English families followed thereafter. Nonetheless, settlement along the Middle Road was primarily restricted to its north side by well into the mid-19th century (Duquette et al. 1987:11).

The Township of Tilbury East was first settled by a few French families who squatted on the lowlands of the Thames River and near Lake St. Clair, as well as on the Talbot Road (old Hwy 3 along the Lake Erie shoreline) (Percy n.d.:9). They included John Reaume who arrived in 1784 and was one of several pioneers from Detroit and elsewhere who came following the American Revolution and before the new British colony of Upper Canada had even been established (Duquette et al. 1987:1). Although settlement along the river and Lake Erie shoreline was early, it was considerably slower in the central, marshy portion of the township. Many families who established homesteads in the interior were forced to abandon them due to the rising waters of the nearby creeks and marshes. By 1819, a small settlement had emerged along the shore of Lake Erie, with Peter Simpson, Thomas Askew and Robert Shanks establishing homesteads on the Talbot Road, an early thoroughfare along the lakeshore (Duquette et al. 1987:1).

Subsequent settlement was assisted by Colonel Thomas Talbot who led an organized effort to attract families to the township. In the early- to mid-1800s, grants of



100 acres were offered provided appropriate improvements (including the clearing of a roadway) could be made in a designated time frame (Duquette et al. 1987:1). By 1834, the township saw a new wave of immigration by families of English, Irish and Scottish descent. By 1836, a number of small villages had emerged in the township including what is now Tilbury (population 300), Fletcher, Valetta (population 200), Tilbury East (now Stewart) and Edgeworth (Percy n.d.:9). The interior of the township was largely settled by Scots and families from northern Ireland (Duquette et al. 1987:11). Most came following the construction of the Middle Road following the MacKenzie Rebellion in 1839. Until the arrival of the railroad there were few established communities in the township. A small settlement had emerged at Stewart on the Middle Road, with a school, hotel, post office and store. Today only a cemetery remains (Duquette et al. 1987:2).

The 1861 census enumerated 1,267 persons in East Tilbury (McEvoy & Co. 1866). By 1866, the township could boast only 345 families, with most settlement still concentrated along the lakeshore and Middle Road. In that year, the Canada Company still held some 6,400 acres in Tilbury East (McEvoy & Co. 1866:24). Again, the population of the township would swell with the construction of both the Great Western Railway and Canadian Southern Railway.

Some of the earliest settlement areas in East Tilbury Township emerged on the Middle Road and included Stewart (also referred to as Tilbury East), Valetta (the principal village of the Township), and Edgeworth. All had post offices by 1881. By 1881, Valetta's population numbered 200. Coming to Valetta from Scotland via Montreal, Kingston, York, Niagara, Port Stanley and Dealtown, Robert Smith and family settled on Lot 10 on the north side of Middle Road during the early 1830s. John and Daniel Kerr arrived in 1834, with several others following in the late-1830s and early-1840s. Many of the early Valetta families were of Scottish or Irish descent. Valetta emerged as a crossroads community at the intersection of the Middle Road and what is now the Valetta Road. The Smith family erected a grist mill, saw mill and planing factory, representing some of the community's earliest industries. Other buildings would be erected at the intersection, including a school, hotel, store and post office (see Map 27). A drill hall was also built and became a training centre for the 21st Regiment militia. A second wave of EuroCanadian settlers arrived in the early 1850s, including James Stewart, Alex Ainslie, John Laing and John Richardson and families. At the same time a new industry emerged in Valetta, focussed on the production of pearlsh. A church, town hall, cider mill, cheese factories, paint, cooperate, carriage and sleigh shops would be established.

A small community also emerged at what would become known as Edgeworth, also on the Middle Road, east of the Wheatley Road. Its post office was established in 1857, with John Ainslie as the first postmaster. By 1863 it boasted a store, saw mill and post office, none of which are standing today (Duquette et al. 1987:17). The settlement waned by the end of the 19th century, with the closing of the post office in 1895.



The building of the Canadian Southern Railway in 1872 would change settlement patterns in East Tilbury Township significantly. Many of the early communities were bypassed by the rail line and both families and businesses soon relocated to railway centres, including Fletcher and what is now the community of Tilbury. For example, Valetta's population significantly declined and only the general store remained (Duquette et al. 1987:15-17). The community of Fletcher grew at a railway crossing at the boundary of Tilbury East and Raleigh Townships. John Fletcher, after whom the community was named, donated 17 acres for the erection of a railway depot at the site and a village subsequently developed around it (Duquette 1987:12). The village of Fletcher centred around the lumber industry and numerous saw mills that were constructed to convert huge hardwood stands into merchantable lumber. With the decline in the lumber industry in the mid-19th century, Fletcher declined in its importance and Merlin (located on the Tilbury town line and Middle Road junction) grew more prominent as a commercial centre (Lauriston 1952:296) and boasted stores, steam, saw and grist mills, several churches, and a good temperance hotel (H. Belden 1881:61).

The northern portion of the Township of Tilbury West was surveyed by A. Iredell in 1799, with remaining portions of the township surveyed over 20 years later. The first Euro-Canadian settlers in the Township of Tilbury West were a number of French families who established farms along the shore of Lake St. Clair, to the north of the Project Area. Until sometime following the McKenzie Rebellion and further clearing of the Middle Road around 1840, few others came to the township. By 1844 the township had a population of only 437 individuals (Smith 1846), with the majority claiming French ancestry, and less than 10 % of its land had been cleared. Tilbury West experienced a significant boom in population with the construction of the Great Western Railway in 1854, connecting Niagara Falls to Windsor via Hamilton and London. Subsequently, by 1861 the township's population had grown to 1,190 (McEvoy & Co. 1866). Further expansion came with the building of the Canadian Southern Railway in 1872.

The Town of Tilbury, originally known by the name of Henderson or Henderson P.O., was given a considerable impetus for growth with the construction of the Canada Southern Railway in the early 1870s (Duquette et al. 1987:12-13). The community was initially named after one of its first settlers and postmaster, William Henderson. The town's post office was housed in a brick general store that stood northeast of the railway crossing in the current town on what is now Queen Street North. The building later burned to the ground (Duquette et al. 1987:22). Other early settlers in the town included Pierre Tremblay, Antoine Thibert, J. Jardine, P. Kenny, R.F. Dolson, J. Palmer, H. Morris, M. Johnson, Edward Tremblay and S. Taylor (Duquette et al. 1987:13). At the time of James Stewart's survey of a portion of the town in 1878 several farms were already established in the heart of what would become Tilbury, including the J.B. Dupuis farm (est. 1845) in the southwest corner of Middle Road and Queen Street, the Dupuis farm in the southwest corner of Canal Street and Queen Street, and the Coulson farm on the east side of Queen, between Canal Street and Middle Road (Map 29). As lumbering was an important early industry for the area, saw mills were some of the earliest industries in the town, with lumber shipped to



Windsor and Detroit via the Canadian Southern Railway. The Kidd Brothers erected the first grist mill in 1875 (Duquette et al. 1987:23). Many wood-related industries emerged, including the Wilson Brothers saw mill, J.H. Still's handle factory and Pike and Richardson's stave mill, all of which took up residence adjacent to the railroad on Young Street (Duquette 1987:23).

By 1881 Tilbury had a population of close to 300 people and contained large mills and a "complement of stores, shops, hotels and churches" (H. Belden & Co. 1881:62). The 1895 directory for Essex, Kent and Lambton notes a population of about 1,400 and a range of businesses and services, including hardware, grocery and furniture stores, a planning mill, two newspapers and iron works, the Commercial Hotel and Grand Central Hotel (Union Publishing Co. 1895:77-78). The Canadian Hotel, operated by J.B. Dupuis stood in the southwest corner of Middle Road and Queen Street, south and east of Trudell Post Office. Trudell was another small settlement area that emerged in the late-19th century near Queen Street and Middle Road, incorporating a blacksmith's shop, inn, carriage shop and several farms just east of St. Francis Church and cemetery (Duquette et al. 1987:24) (Map 30).

The late-1880s witnessed an interest in the area's buried oil resources. A short-lived oil boom led to a swell in the population of the Town of Tilbury Centre and adjacent townships. The Canadian Pacific Railway came to Tilbury around the same time, with a station established in the settlement core. This solidified the success of this emergent community, especially following failed efforts to build a canal connecting Lake St. Clair and Lake Erie through the town (Duquette et al. 1987:34). While the community of Henderson originated as a railway stop, it achieved village status by 1887 and was renamed Tilbury Centre. By 1910, the community was incorporated into a town. During the 20th century, Tilbury's economic focus was manufacturing, which still continues today.

The community of Comber was an early postal town, established about 1843 (H. Belden & Co. 1881:14). By 1851 Comber was one of only two postal offices situated in the township's interior (Morrison 1954:27) and by 1857 had a population of only 40. In 1846 Henry Richenbach opened the town's first store. For many years, it was essentially a cross roads and postal community, that is, until the construction of the Canadian Southern Railway. The town's position on the railway opened up new opportunities for industry. By 1895 Comber had amassed a population of 1,000.

Township of Rochester

Rochester Township was surveyed first by Abraham Iredell in 1796 (Clarke 2001:67). As with other Kent and Essex County townships, the first permanent Euro-Canadian settlers in Rochester were of French descent, with a notable settlement being that at Belle River along the Lake St. Clair shoreline. The Middle Road was the focus of the first significant interior settlement in Rochester. Notable among the Middle Road settlers were the Simon brothers, whose farms formed the centre of what would be subsequently



called the German Settlement, in the central portion of the township (H. Belden & Co. 1881:11). The interior of Rochester was settled by many families of German, Irish and English descent, with many arriving after the Rebellion of 1837 (Wallace 1978). Prior to the opening of the Great Western Railway in 1854, the township had a population of only 474 people (Smith 1846:161). That swelled to 1,349 by 1861 (Sutherland & Co. 1866:6) and almost doubled again by 1881.

2.3.3 19th Century Mapped Features

Early maps and historical textual sources illustrate and describe late-18th and 19th century features within the Project Area that reflect archaeological potential. These are inventoried below. Three major sets of maps were considered during the compilation of 19th century features of archaeological potential:

- Land survey and patent maps (and notebooks) (Map 31);
- Shackleton & McIntosh's 1876 *Map of the County of Kent* (Map 32);
- Walling's 1877 *Map of Essex County, Ontario* (Map 32); and
- H. Belden & Co.'s *Illustrated Historical Atlas of the Counties of Essex and Kent* (Map 27).

Transportation Routes

Several prominent roads within the Project Area were early settlement and transportation routes in the late-18th and 19th centuries, allowing for the passage of people and supplies between prominent settlement and military centres (Map 33). These include Communication Road (between Chatham and Rondeau Bay), extending east-west through the easternmost portion of the Project Area, and the Middle Road, the early settlement road that opened up settlement on the interior of Raleigh, Tilbury East, Tilbury West and Rochester Townships. Both of the latter municipal roads began as Indigenous trails.

The 1876, 1877 and 1881 historic maps (Maps 27 and 32) showing the Project Area indicate that the majority of municipal roads were open by that time (indicated by black and white dashed lines on the earlier maps and a solid double line on the 1881 map). However, these also indicate that even by the late-19th century some roads were not yet passable, including portions of South Middle Road near the boundary of Rochester and Tilbury West townships and west of Gracey Road, routes in the northern portion of East Tilbury Township north of the modern Coutts Line/Industrial Park Road and roads in the northwest portion of Raleigh Township both north and south of 3rd Line. Based on 19th century records and surveyors' journals, the latter areas were extensively flooded, sometimes year-round.



Mapped Settlement Areas

Nineteenth century maps also depict notable settlement areas within the overall Project Area, many of which have already been described. These include:

- Comber (on Comber Sideroad at Middle Road; Tilbury West Twp.), which grew substantially with the building of the Canadian Southern Railway in 1872;
- Tilbury (at the boundary of East and West Tilbury townships; Mill Street West and Queen Street), which owes its prominence again to the CSR;
- Trudell (on the Middle Road and Queen Street south of Tilbury, Tilbury East and West Twps.), an early centre that emerged on the colonization road;
- Valetta (Middle Road and Depot Road, Tilbury East Twp.), an early centre that emerged on the colonization road;
- Buxton (between Dillon Road and Drake Road, south of 7th Line in Raleigh Twp.), an early Black settlement area; and
- Bridgend or Kent Centre (Communication Road and Pinehurst Line), an early crossroads community centred on a mill site, hotel and store.

Designated Buildings, Cemeteries and Plaques

Municipal and provincial inventories were reviewed to compile a listing of heritage buildings designated under the *Ontario Heritage Act*, known and registered cemeteries, and plaques within 300 m of the Project Area. Although there are municipally-inventoried and other registered buildings in the general area, in Comber, near Paincourt and on Port Road southwest of Fletcher, none of these are immediately near the Project Area. One building at 22062 Port Road (Lot 3, Concession 9, Twp. Of Tilbury East) is within 300 m of Route Alternative 1. No *OHA* designated buildings were identified nearby. Further, no heritage plaques or monuments were identified within 300 m of the route, although it should be noted that these are present within several communities that are in the overall general vicinity. Several plaques are present in North Buxton, including one commemorating the founding of the Buxton Settlement, 1849, erected by the Historic Sites and Monuments Board of Canada.

Only two cemeteries are known within 300 m of the Project Area but are well distant from any of the route alternatives and are not planning concerns for this study:

- the Malott Cemetery (Lot 27, Middle Road S.S., East Tilbury Twp.)
 - approximately 270 m north of the southernmost variation of Route Alternative 1;
 - established in 1874 and in use until 1939;
 - contains an estimated 175 burials (Skakel n.d.).



- Shadd Farm Family Cemetery (Lot 2, Concession A, Raleigh Twp.)
 - approximately 300 – 400 m from Route Alternative 1;
 - Buxton community member, historian and descendant Bryan Prince notes that the cemetery is not currently marked, but was located on the east side of the farm, near a fence row, not quite half way between the 7th and 8th Line;
 - thought to be a small family cemetery (Skakel n.d.).

Mapped Buildings

Table 5 inventories the mapped structures within 300 m of the Project Area, as shown on the 1876 map of Kent County and 1877 map of Essex County (Map 32). It should be noted that, in general, the 1876 map does not depict the location of many buildings, with the exception of non-residential structures. However, names are associated with the majority of lots along the route alternatives, indicating that the properties were likely settled by that time. Also of note is the presence of large estate lots in Raleigh Township, near the north portion of the Project Area. These lots formed the periphery of the Chatham settlement area.

Numerous structures illustrated on the 1870s maps are within 300 m of the route alternatives. Eighteen would appear to fall within 100 m or less from Route Alternatives. Three are shown within or in immediately proximity to a route alternative. The J. Cornwell house on Lot 16 Middle Road North Side in West Tilbury is within or near to Route Alternative 1, whereas the J. Dimand house on Lot MRNS in Rochester Township is within Route Alternative 2. A house associated with A. Halliday is within or in proximity to Route Alternative 3 where it crosses Lot 8, Concession 6.



Table 5: Mapped 19th Century Buildings in Proximity to the Project Area as Shown on the 1876, 1877 Maps of Harwich, Raleigh, East Tilbury, West Tilbury and Rochester Townships

Lot	Con	1876 Shakleton & McIntosh Map (Kent County) and 1877 Walling Map (Essex County)			
		Structure	Name Listed	Part	Comments
<i>Raleigh Township</i>					
19	8 WBFTR	School	(S.H.) Peter Doyle	S	>100 m from Route Alternative 3
6	A WBFTR	House	E. Thompson	E	>100 m from Route Alternative 1
1	A WBFTR	School	(S.H.) T. Soutar	NW	>100m from Route Alternative 1
<i>Township of East Tilbury</i>					
25	MRSS	Post Office	Edgeworth P.O.	NE	<100 m from Route Alternative 1
19	7	School	S. & A. Malott	SE	<100 m from Route Alternative 3
<i>Township of West Tilbury</i>					
19	7	House	Rob' McKeon	S	<100 m from Route Alternative 3
22	MRSS	House	Geo. Kerr	S	>100 m from Route Alternative 1
22	MRSS	House	Geo. Kerr	S	>100 m from Route Alternative 1
21	MRSS	House	M. Lalande	SE	>100 m from Route Alternative 1
21	MRSS	House	T. Lalande	SW	>100 m from Route Alternative 1
22	MRSS	Hotel	None	NE	>100 m from Route Alternative 1
22	MRSS	House	B. Courrier	NW	>100 m from Route Alternative 1
22	MRSS	House	J.B. Marchand	NW	>100 m from Route Alternative 1
22	MRSS	House	P. Duplessis	NW	>100 m from Route Alternative 1
24	MRSS	House	J.B. Lafavre	SE	>100 m from Route Alternative 1
24	MRSS	Houses	J.M. Dupras	SE	>100 m from Route Alternative 1
24	MRSS	House	A.Thibeau	SW	>100m from Route Alternative 1`
25	MRSS	House	D.Dauguette	SE	>100m from Route Alternative 1
22	MRNS	House	M. Sandinach	SE	>100 m from Route Alternative 1
22	MRNS	House	Duguette	SW	>100 m from Route Alternative 1
22	MRNS	House	Duguette	SW	<100 m from Route Alternative 1
22	MRNS	House	J. Duguette	SW	<100 m from Route Alternative 1
21	MRNS	House	M. Champagne	SE	>100 m from Route Alternative 1
27	MRNS	House	J. McDowell	S	>100 m from Route Alternative 1
22	6	House	C.D.	n/a	>100 m from Route Alternative 1
22	6	House	F. Condu	W	>100 m from Route Alternative 1
11	4	House	J.Neal, Gr. Haven Mich.	S	>100 m from Route Alternative 2
11	MRNS	House	Morris	NW	>100 m from Route Alternative 2
10	MRNS	House	Geo. Murray	N	>100 m from Route Alternative 2
8	MRNS	House	Stephen Sebicon	All	>100m from Route Alternative 2
7	6	House	None	NW	>100 m from Route Alternative 2
7	6	House	None	NW	<100 m from Route Alternative 2
6	6	House	S.A. Elliott	N	<100 m from Route Alternative 2
7	MRNS	House	W. Elliott	N	> 100 m from Route Alternative 2
6	MRNS	House	J. Taylor	N	>100 m from Route Alternative 2
5	6	House	C.Frankforth	W	>100 m from Route Alternative 2
5	6	House	C. Frankforth	E	>100 m from Route Alternative 2
5	MRNS	House	J. Appleyard	N	>100m from Route Alternative 2
1	MRNS	House	Phil Hasty	SE	>100 m from Route Alternative 2



					and Route Alternative 1
1	MRNS	House	Phil Hasy	SE	>100 m from Route Alternative 2 and Route Alternative 1
1	MRNS	House	Mg. Reed	NE	>100 m from Route Alternative 1 and Route Alternative 2
1	MRNS	House	Wm. Reed	NW	>100 m from Route Alternative 1 and Route Alternative 2
20	3	House	P. Thibeault	NW	<100 m from Route Alternative 2
20	3	House	D. Dennis	NE	<100 m from Route Alternative 2
18	3	House	L. Toronzo	E	<100 m from Route Alternative 2
17	3	House	Hub ^t Leblanc	SW	>100 m from Route Alternative 2
16	3	House	J. Thomas	SE	>100 m from Route Alternative 2
16	3	House	J. Thomas	SW	<100 m from Route Alternative 2
15	3	House	Claude Labule	SE	<100 m from Route Alternative 2
16	MRNS	House	J. Cornwell	SE	Within/in immediate proximity to Route Alternative 1
17	MRSS	House	N. Trottier	W	>100 m from Route Alternative 1
16	MRSS	House	Mrs. Vaux	NE	>100 m from Route Alternative 1
16	MRNS	Church	T.Cornwell	SW	~100 m from Route Alternative 1
15	MRSS	House	Rob ^t Peel	NE	<100 m from Route Alternative 1
15	MRSS	House	Jas N. Peel	NW	>100 m from Route Alternative 1
15	MRSS	House	Jas N. Peel	NW	>100 m from Route Alternative 1
15	MRNS	House	T. Peel	SW	>100 m from Route Alternative 1
15	MRNS	House	T. Peel	SW	>100 m from Route Alternative 1
15	MRNS	House	T. Peel	SW	>100 m from Route Alternative 1
14	MRNS	School	Wm. Holmes	all	>100 m from Route Alternative 1
14	MRNS	House	Wm. Holmes	all	>100 m from Route Alternative 1
13	MRNS	House	Gilb ^t Keith	W	>100 m from Route Alternative 1
6	MRNS	House	Sam ^t Taylor	SW	>100 m from Route Alternative 1
6	MRSS	House	H. Whaley	W	>100 m from Route Alternative 1
6	MRSS	House	H. Whaley	W	>100 m from Route Alternative 1
6	MRSS	House	Alex Cameron	NE	>100 m from Route Alternative 1
6	MRSS	House	Alex Cameron	NE	>100 m from Route Alternative 1
6	MRSS	House	Alex Cameron	NE	>100 m from Route Alternative 1
6	MRSS	House	Alex Cameron	NE	>100 m from Route Alternative 1
5	MRSS	House	August Buchanan	E	>100 m from Route Alternative 1
5	MRSS	House	J. Buchanan	NW	>100 m from Route Alternative 1
5	MRNS	House	J. Fenner	S	>100 m from Route Alternative 1
4	MRSS	House	Wm. Rowe	N	>100 m from Route Alternative 1
3	MRSS	House	J. Turnbull	NE	>100 m from Route Alternative 1
3	MRSS	House	Benj. Galerno	NW	>100 m from Route Alternative 1
19	7	House	Hub ^t St. Denis	S	>100 m from Route Alternative 3
19	7	House	N. Marchand	S	>100 m from Route Alternative 3
18	7	House	Geo. Hillman	SW	>100 m from Route Alternative 3
16	7	House	Rob ^t Wilson	SE	>100 m from Route Alternative 3
16	7	House	Nat ^t Hiliman	SW	>100 m from Route Alternative 3
15	7	House	Sam Palmer	S	>100 m from Route Alternative 3
15	6	House	P. Ploof	NW	>100 m from Route Alternative 3
14	6	House	F.X. Gauthier	E	>100 m from Route Alternative 3
15	6	House	A.Hunt	NE	>100 m from Route Alternative 3



13	6	House	R.P.T.	NW	>100 m from Route Alternative 3
13	6	House	R.P.T.	NW	>100 m from Route Alternative 3
10	7	House	H. Brown	SE	> 100 m from Route Alternative 3
8	6	House	Hillman	NW	>100 m from Route Alternative 3
8	6	House	A. Halliday	NW	Within/in immediate proximity to Route Alternative 3
8	7	House	W.H. Bright	SE	~100 m from Route Alternative 3
7	MRSS	House	D. McAllister	S	>100 m from Route Alternative 3
3	MRSS	House	Alex Cameron	S	>100 m from Route Alternative 3
<i>Rochester Township</i>					
17	MRNS	House	J. Dimand	All	Within/in immediate proximity to Route Alternative 2; >100 m from Route Alternative 1

Table 6 inventories the mapped structures within 300 m of the Project Area, as shown on the 1881 historical atlas map of Kent County and Essex County (Map 27). It should be noted that, in general, the 1881 maps do not depict the location of many buildings, with the exception of non-residential structures. Nor are landowners' names associated with the majority of properties, largely due to the fact that owners had to pay a subscriber's fee to be inventoried in the atlas.

A number of structures illustrated on the 1881 maps are within 300 m of the route alternatives. Eight of these fall within or in immediate proximity to route alternatives. One of these is the Smyth house on Lot 27, Concession 1 West Side of Communication Road, Harwich Township, within or immediately adjacent to the easternmost portion of Route Alternative 1. One other building is within or in immediate proximity to Route Alternative 2, namely a house associated with L. Howard on Lot 20, Concession 3 EBFTR, Raleigh Township. Five additional buildings are within or in immediate proximity of Route Alternative 1. These include: a Club House (S.E. Merrill Proprietor) on Lot 1, Concession 5 FTR, Harwich Township; a house owned by R.H. Wadell on Lot 24 Middle Road SS of the Township of East Tilbury; a house owned by Arnold Wilson on Lot 26 Middle Road SS of the Township of East Tilbury; a building marked only as B.S. on Lot 22 Middle Road SS of the Township of West Tilbury; a house owned by Thomas Cornwell on Lot 16 Middle Road NS of the Township of West Tilbury. A house owned by Hy Wilson on Lot 21, Concession 6 of the Township of East Tilbury falls within or in immediate proximity to Route Alternative 3.



Table 6: Mapped 19th Century Buildings in Proximity to the Project Area as Shown on the 1881 Maps of Harwich, Raleigh, East Tilbury, West Tilbury and Rochester Townships

Lot	Con	1881 Historical Atlas Map			
		Structure	Name Listed	Part	Comments
<i>Harwich Township</i>					
27	1 WSCR	House	And. Smyth	n/a	Within/in immediate proximity to Route Alternative 1, near existing farmstead
26	1 ESCR	Store	D.M. McMahon's Store	n/a	<100 m south of Route Alternative 1; near AcHm-52
1	5 FTTR	Club House	Club House; S.E. Merrill Prop ^r .	n/a	Within/in immediate proximity to Route Alternative 1
<i>Raleigh Township</i>					
22	8 WBFTR	House	G.H. Brown	N	>100 m from Route Alternative 1
21	8 WBFTR	School	None	N	>100 m from Route Alternative 1
20	8 WBFTR	Church	None	N	>100 m from Route Alternative 1
21	9 WBFTR	House	M. Toomey	N	>100 m from Route Alternative 3
19	9 WBFTR	House	John Doyle	N	>100 m from Route Alternative 3
19	A BFTR	House	C. Keil	n/a	>100 m from Route Alternative 1
18	A BFTR	House	Emma Moack	n/a	>100 m from Route Alternative 1
17	A BFTR	House	Wm Lowrne	n/a	>100 m from Route Alternative 1
20	3 EBFTR	House	L. Howard	n/a	Within/in immediate proximity to Route Alternative 2
12	7 WBFTR	House	Geo. J. Charleston	n/a	>100 m from Route Alternative 1
10	7 WBFTR	House	Sol. Zibbs	S	<100 m from Route Alternative 1
		House	Wm. Bell	N	>100 m of Route Alternative 2
9	7 WBFTR	Church	None	S	>100 m from Route Alternative 1
4	7 WBFTR	House	Jno. N. Bond	S	>100 m from Route Alternative 1
3	7 WBFTR	House	Pat ^k Rice	S	>100 m from Route Alternative 1
10	8 WBFTR	House	Green Doo	S	>100 m from Route Alternative 3
19	6 WBFTR	House	Jas. Chinnick	n/a	>100 m from Route Alternative 2
10	6 WBTR	House	Wm. Doston	S	<100 m from Route Alternative 2
9	6 WBFTR	House	Jno. Suitor	S	>100 m from Route Alternative 1
8	6 WBFTR	House	Wm. Rhue	S	>100 m from Route Alternative 1
14	5 WBFTR	House	Peter J. Newkirk	n/a	>100 m from Route Alternative 2
1	A WBFTR	School	None	n/a	>100 m from Route Alternative 1
6	A WBFTR	School	None	N	~100m from Route Alternative 1
7	A WBFTR	Church	None	N	~100m from Route Alternative 1
15	A WBFTR	House	Jas. R. Rhodes	n/a	~100 m from Route Alternative 1
8	8 WBFTR	House	E. Cooper	S	>100 m from Route Alternative 3
8	9 WBFTR	House	Geo. W. Burkley	N	~100 m from Route Alternative 3
7	9 WBFTR	House	C. Martin	N	~100 m from Route Alternative 3
5	9 WBFTR	House	Martin Dillon	N	>100 m from Route Alternative 3
<i>Township of East Tilbury</i>					
2	8	House	David Fletcher	S	>100 m from Route Alternative 1



4	9	House	Jas. Campbell	N	>100 m from Route Alternative 1
4	9	House	Matthew Martin	S	~ 100 m from Route Alternative 3
9	5	House	Wm. McIntosh	N	>100 m from Route Alternative 2
10	5	House	Alex. ^r Coutts	N	>100 m from Route Alternative 2
8	7	House	Robt Pirie	S	>100 m from Route Alternative 1
18	7	House	Jno. Beno Jr.	S	~100 m from Route Alternative 3
21	7	House	Jno. Beno Sr.	N	~100 m from Route Alternative 3
21	6	House	Hy Wilson	n/a	Within/in immediate proximity to Route Alternative 3
14	8	House	Jno. Struthers	n/a	~100 m from Route Alternative 3
16	8	House	Pat. ^k Burgoyne	N	>100 m from Route Alternative 3
12	MRNS	House	Geo. Hope	S	>100 m from Route Alternative 3
17	MRNS	None	Thos. Taylor (tenant)	N	>100 m from Route Alternative 1
20	MRNS	House	John Wilson	S	>100 m from Route Alternative 1
23	MRNS	House	Jos. Funston	S	~100 m from Route Alternative 1
		House	Jos. Funston Jr.	S	~100 m from Route Alternative 1
15	MRSS	Town Hall	Town H.	N	>100 m from Route Alternative 3
23	MRSS	House	Henry Powell	N	>100 m from Route Alternative 1
		House	M. Phillip	S	>100 m from Route Alternative 1
24	MRSS	House	R.H. Wadell	N	Within or in immediate proximity to Route Alternative 1
		House	Hy Magee	S	~100 m from Route Alternative 1
26	MRSS	House	Arnold Wilson	S	Within or in immediate proximity to Route Alternative 1
		House	None	N	~100 m from Route Alternative 1
<i>Township of West Tilbury</i>					
22	MRNS	Store	Store	S	>100 m from Route Alternative 1
22	MRSS	Hotel	Canadian Hotel J.B. Dupuis Prop.	N	~100 m from Route Alternative 1
		Building	B.S.	N	Within or in immediate proximity to Route Alternative 1
20	MRSS	House	Antoine Thibert	SW	~100 m from Route Alternative 1
15	7	House	Sam ^l Palmer	S	~100 m from Route Alternative 3
12	4	House	Alfred Vinter	N	>100 m from Route Alternative 2
		House	None	S	>100 m from Route Alternative 2
16	MRNS	House	Thomas Cornwell	S	Within or in immediate proximity to Route Alternative 1
		Church	None	S	~100 m from Route Alternative 1
7	MRNS	Station	Sta.	N	>100 m from Route Alternative 2
5	MRNS	House	John Fenner	S	>100 m from Route Alternative 1
12	MRSS	House	Chas. Lickman	S	>100 m from Route Alternative 1
6	MRSS	Hotel	Hotel	N	>100 m from Route Alternative 1
		House	J.W. Whatley	N	>100 m from Route Alternative 1
3	MRSS	House	B. Gallerno	N	~100 m from Route Alternative 1
1	MRSS	House	F. Shafer	N	~100 m from Route Alternative 1
<i>Rochester Township</i>					
16	MRNS	House	Rob ^l . Fleming	S ½	>100 m from Route Alternative 2



2.3.4 Current Land Use

Due to the large size of the Project Area a field review was not undertaken for this study. However, based on prior knowledge of existing conditions and existing aerial photography, the proposed route alternatives largely fall within rural lands and bypass the urban centres of Chatham, Buxton, Tilbury and Comber.

3.0 ANALYSIS AND CONCLUSIONS

As noted in Section 2.1 of the 2011 *Standards and Guidelines for Consultant Archaeologists*, the Province of Ontario has identified numerous factors that signal the potential of a property to contain archaeological resources. The Stage 1 background study included a review of current land use, historic and modern maps, registered archaeological sites and previous archaeological studies, past settlement history for the area and a consideration of topographic and physiographic features, soils and drainage. According to the map-based review and background research, the majority of the Project Area exhibits potential for the discovery of archaeological sites due to proximity (within 300 m) to:

- a) registered archaeological sites;
- b) watercourses and wetlands (including McGregor Creek, Jeannettes Creek, Baptiste Creek, Tilbury Creek, Tremblay Creek, Big Creek);
- c) glacial shorelines (Late-Algonquin Equivalent);
- d) mapped 19th century structures in Harwich, Raleigh, East Tilbury, West Tilbury and Rochester Townships;
- e) known cemeteries (Mallott, Shadd Family Farm);
- f) historic 19th century transportation routes (including the early settlement roads of Communication Road and Middle Road and Indigenous trails, Huron & Erie Railway, Canadian Southern Railway); and,
- g) 19th century settlement areas (including Bridgend or Kent Centre, Buxton, Valetta, Tilbury, Trudell, and Comber).

There are numerous areas of low archaeological potential identified with the Project Area (e.g., roadways, low-lying and wet areas, standing structures); however, they have not been directly observed and photo-documented as part of this study. As this report was generated for planning purposes to help evaluate route alternatives, a site inspection was not conducted at this time. Once the preferred route alternative is selected, a more detailed review of existing conditions and assessment areas will be undertaken as part of the Stage 2 assessment planning. Any areas of low-archaeological potential within the preferred route alternative will need to be photo-documented as part of the Stage 2 assessment.

With respect to the individual route alternatives, all contain significant areas with the potential for the discovery of archaeological resources due to proximity to past and present water bodies and watercourses, 19th century transportation routes, mapped buildings and registered archaeological sites.



Map 34 illustrates features of and lands exhibiting archaeological potential within 300 m of each route alternative and variation. Apart from the illustration of the proposed route alternatives shown in Map 2, no detailed proponent mapping was provided for this study. Instead, the information was provided as a GIS shape file. For that reason, our Stage 1 findings are not illustrated on a proponent map *per se*.

4.0 RECOMMENDATIONS

A map-based review of the proposed route alternatives for the HONI Chatham x Lakeshore New 230kV TL Project was undertaken and the archaeological potential evaluated based on proximity of features signaling the likelihood for archaeological resources to exist. This established the majority of lands within the Project Area and proposed route alternatives had potential for the discovery of archaeological resources, as depicted on Map 34, noting that a detailed field review should be conducted as part of the Stage 2 assessment, once the preferred alternative is chosen. Based on this investigation the following recommendations are made:

1) *Previously Assessed Areas*

For the lands within the Project Area and route alternatives that were previously subject to Stage 2 assessment using methodologies in keeping with the 2011 *Standards and Guidelines for Consultant Archaeologists* and for which there are no outstanding archaeological concerns, no further assessment is required.

2) *Areas of Low Archaeological Potential*

Areas of previous disturbance (e.g., building footprints and existing roads or laneways), as well as low-lying and wet areas are considered to have low archaeological potential. As a field inspection was not conducted as part of this study, areas of low archaeological potential within the preferred route alternative will need to be confirmed and photo-documented at the time of Stage 2 survey (MTC 2011:28; Section 2.1.2).

3) *Stage 2 Methodologies*

Once the preferred route alternative is determined, a more detailed review of existing conditions should be undertaken, alongside a comparison to archaeological potential mapping provided in Map 34. In keeping with provincial standards, the agricultural fields should be ploughed for pedestrian survey; however, for any impact areas that are linear corridors less than 10 m wide, test pit survey can be undertaken (as per Section 2.1.2 Standard 1.f.). The non-ploughable areas must be subject to test pit assessment. In both cases, a 5 m transect interval is recommended to achieve the provincial standard.



4) *Changes to Extent of Project Area*

If the extent of the Project Area or route alternatives change to incorporate lands not addressed in this study, further assessment will be required.

These recommendations are subject to the conditions laid out in Section 6.0 of this report and to the Ministry of Heritage, Sport, Tourism, and Culture Industries's review and acceptance of this report into the provincial register.



5.0 SUMMARY

A Stage 1 archaeological assessment was conducted for the proposed Chatham x Lakeshore New 230 kV TL Project in Essex County and the Municipality of Chatham-Kent. A map based review established that the majority of lands within the Project Area and proposed route alternatives have archaeological potential due to the proximity of 19th century transportation routes, settlement areas and structures, registered archaeological sites, as well as ancient and current watercourses and wetlands. Stage 2 survey is recommended for all lands exhibiting archaeological potential and that have not been previously assessed. More detailed review of the preferred route alternative will be undertaken once chosen.

6.0 ADVICE ON COMPLIANCE WITH LEGISLATION

This report is submitted to the Ministry of Heritage, Sport, Tourism, and Culture Industries as a condition of licensing in accordance with Part VI of the *Ontario Heritage Act*, R.S.O 1990, c 0.18. The report is reviewed to ensure that it complies with the standards and guidelines that are issued by the Minister, and that the archaeological fieldwork and report recommendations ensure the conservation, protection and preservation of the cultural heritage of Ontario. When all matters relating to archaeological sites within the Project Area of a development proposal have been addressed to the satisfaction of the Ministry of Heritage, Sport, Tourism and Culture Industries, a letter will be issued by the ministry stating that there are no further concerns with regard to alterations to archaeological sites by the proposed development.

It is an offence under Sections 48 and 69 of the *Ontario Heritage Act* for any party other than a licensed archaeologist to make any alteration to a known archaeological site or to remove any artifact or other physical evidence of past human use or activity from the site, until such time as a licensed archaeologist has completed archaeological fieldwork on the site, submitted a report to the minister stating that the site has no further cultural heritage value or interest, and the report has been filed in the Ontario Public Register of Archaeology Reports referred to in Section 65.1 of the *Ontario Heritage Act*.

Should previously undocumented (i.e., unknown or deeply buried) archaeological resources be discovered, they may be a new archaeological site and therefore subject to Section 48(1) of the *Ontario Heritage Act*. The proponent or person discovering the archaeological resources must cease alteration of the site immediately and engage a licensed consultant archaeologist to carry out archaeological fieldwork, in compliance with Section 48(1) of the *Ontario Heritage Act*.

The Funeral, Burial and Cremation Services Act, 2002, S.O. 2002, c.33 requires that any person discovering human remains must notify the police or coroner and the Registrar of Burial Sites, War Graves, Abandoned Cemeteries and Cemetery Closures, Ontario Ministry of Government and Consumer Services. Effective as of January 16, 2016,



Nancy Watkins, Senior Policy Analyst, is the new Registrar. Her telephone number is 416 212-7499 and her e-mail address is Nancy.Watkins@ontario.ca.

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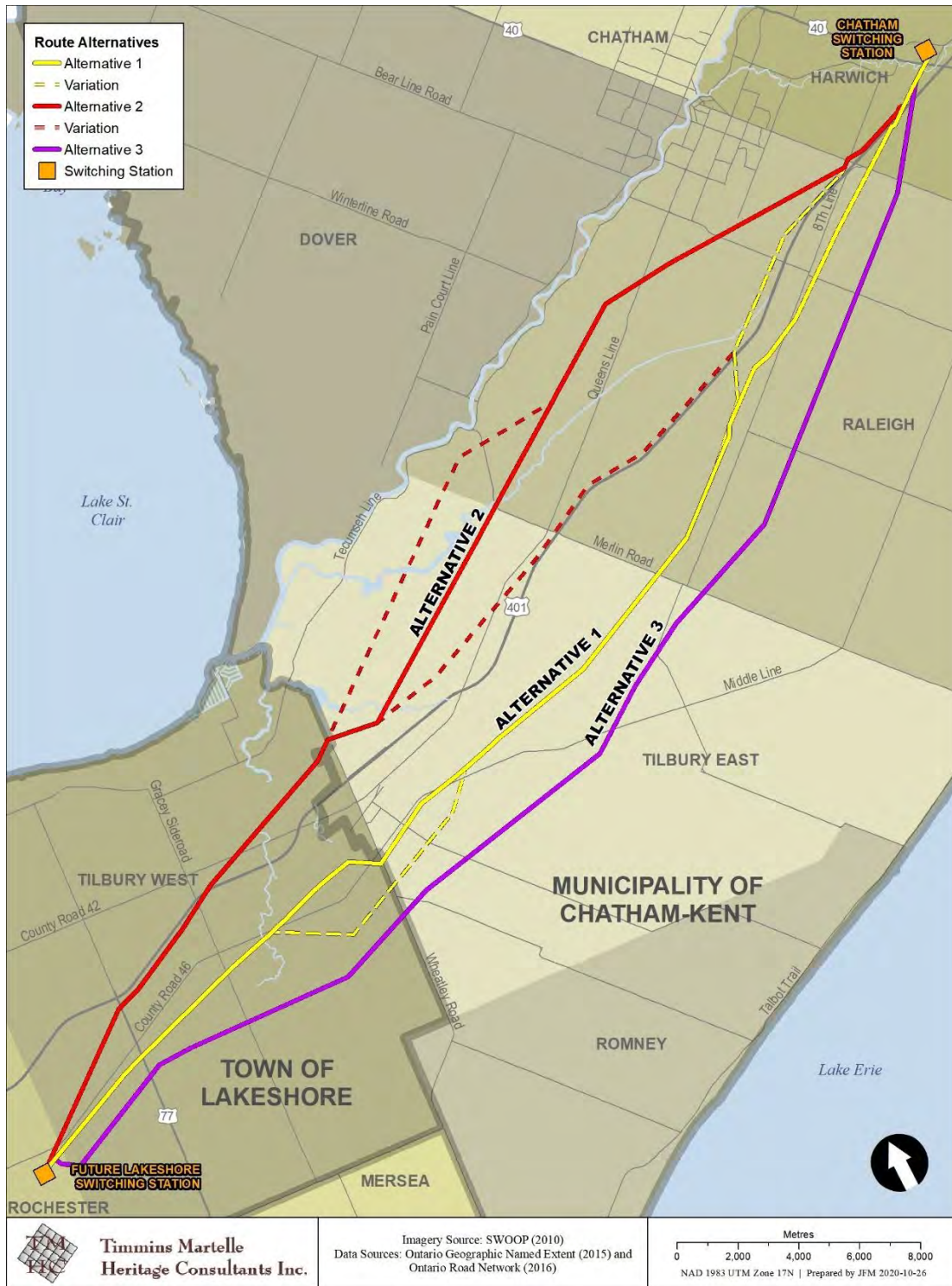
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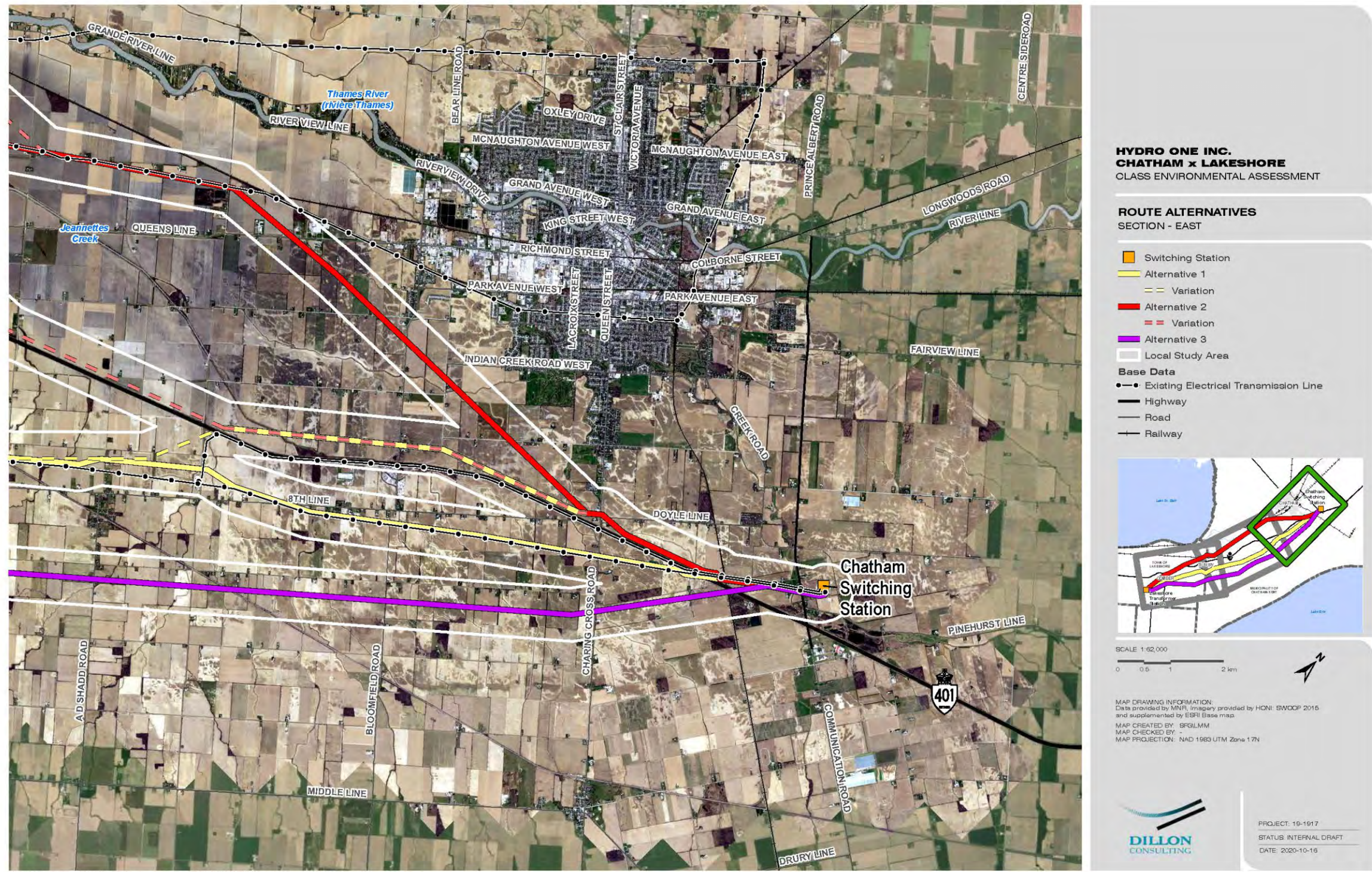


8.0 MAPS

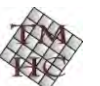




Map 1: Location of the Project Area in the County of Essex and Municipality of Chatham-Kent, ON



Map 2 a: Proponent Mapping for the Hydro One Inc. Chatham x Lakeshore Class Environmental Assessment - East Portion





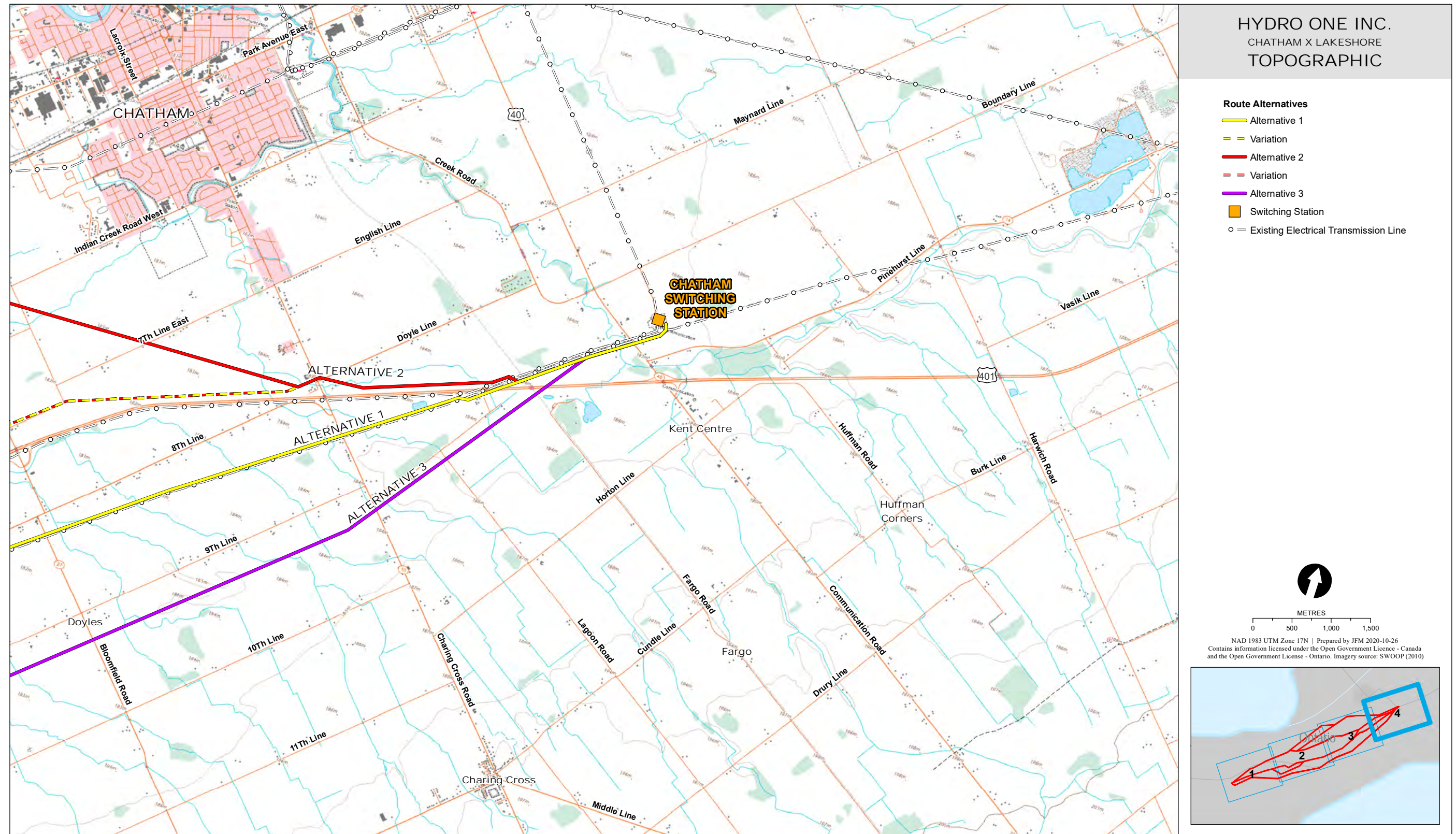
Map 2 b: Proponent Mapping for the Hydro One Inc. Chatham x Lakeshore Class Environmental Assessment - Central Portion





Map 2 c: Proponent Mapping for the Hydro One Inc. Chatham x Lakeshore Class Environmental Assessment - West Portion

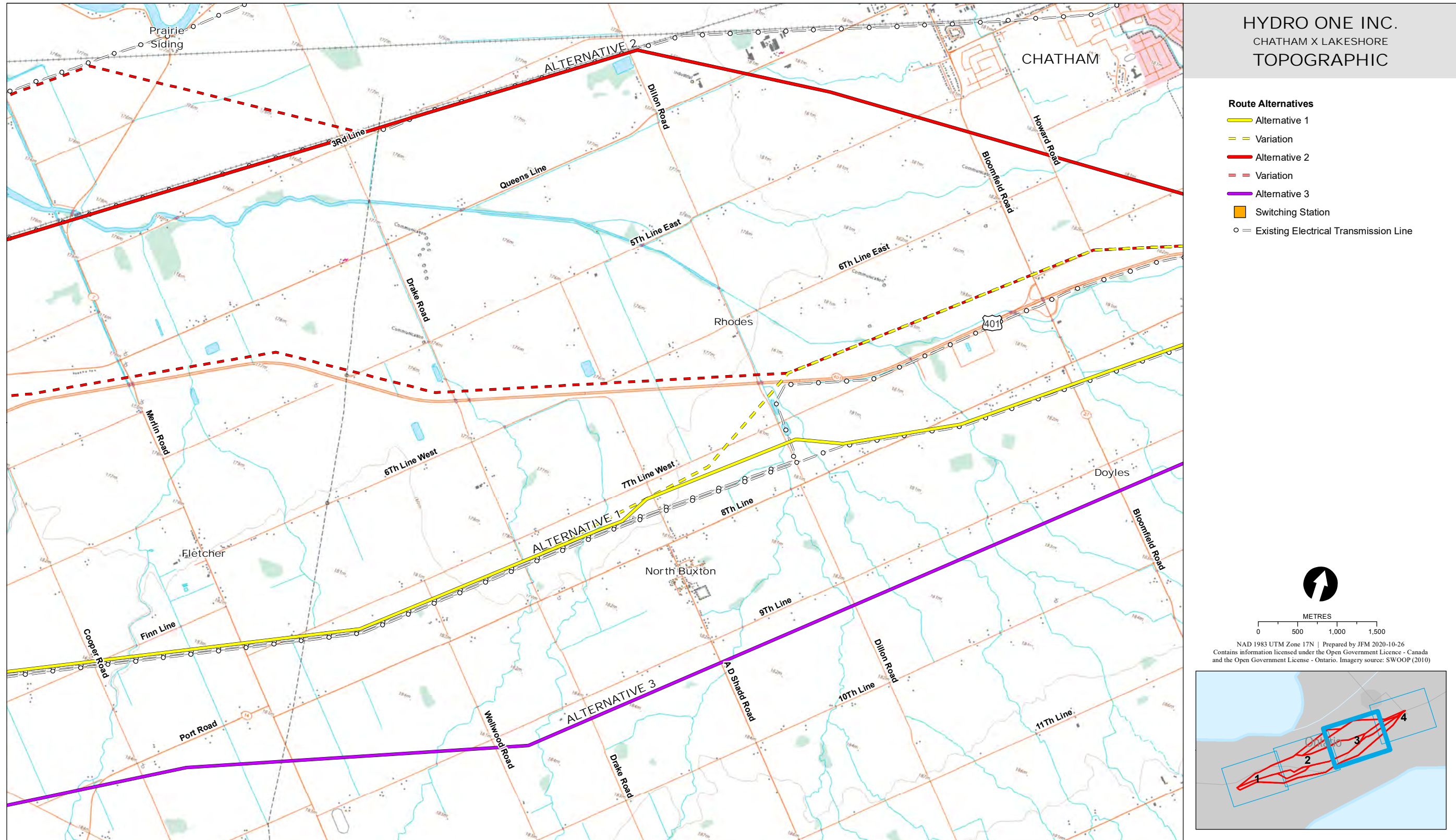




Map 3a: Topographic Map Showing the Location of the Project Area in the County of Essex and Municipality of Chatham-Kent - Eastern Portion

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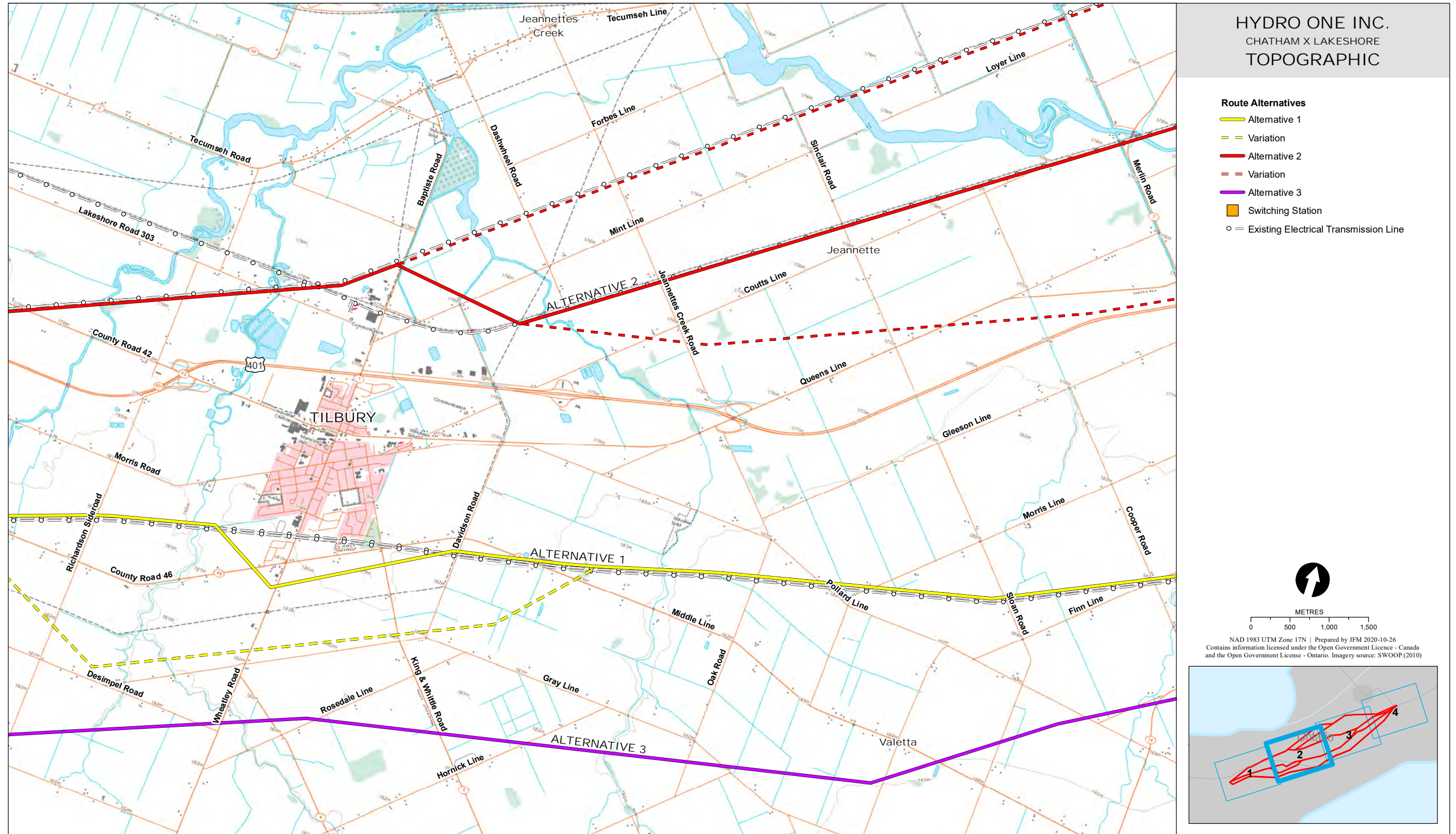




Map 3b: Topographic Map Showing the Location of the Project Area in the County of Essex and Municipality of Chatham-Kent - East-Central Portion

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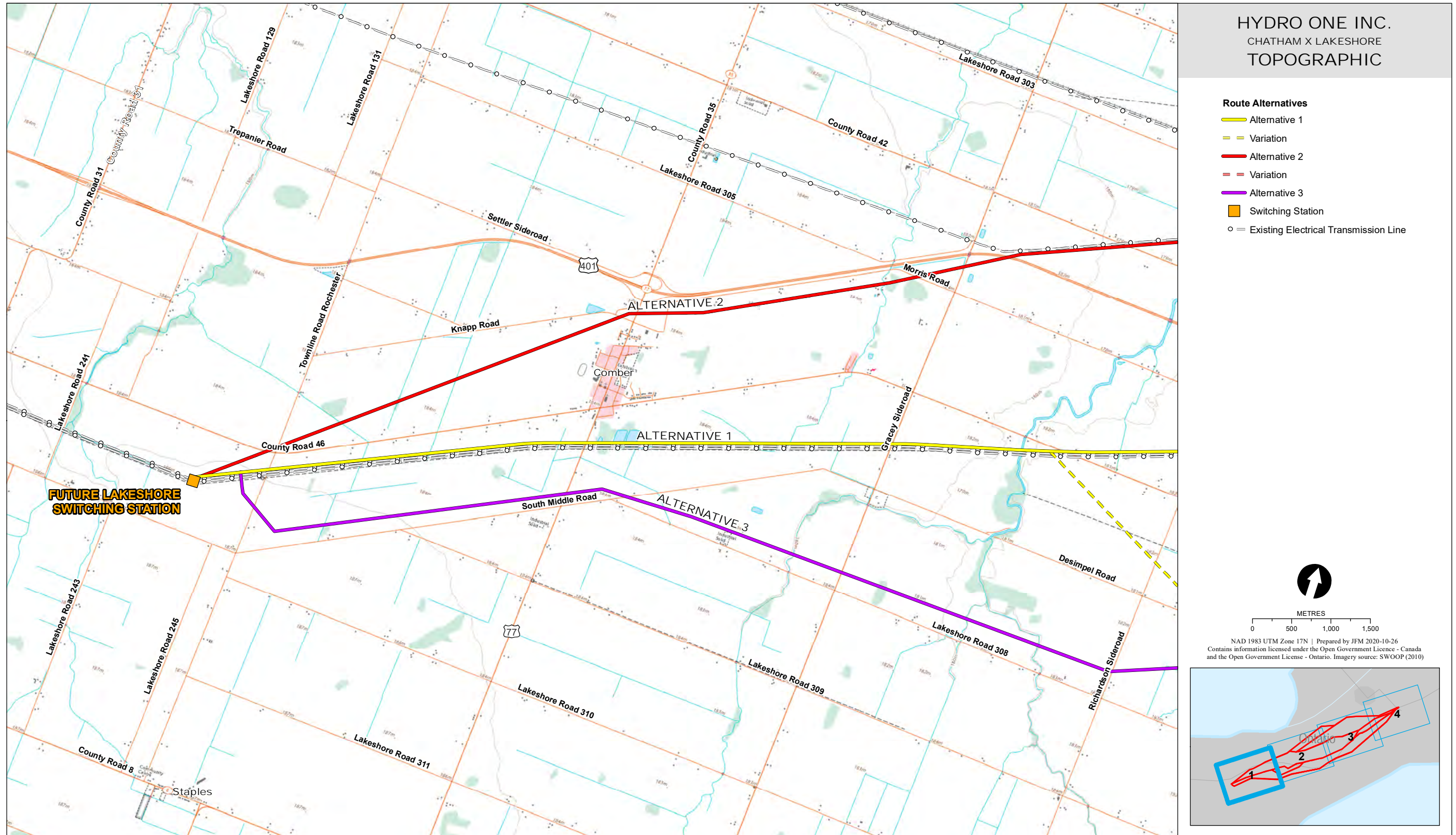




Map 3c: Topographic Map Showing the Location of the Project Area in the County of Essex and Municipality of Chatham-Kent - West-Central Portion

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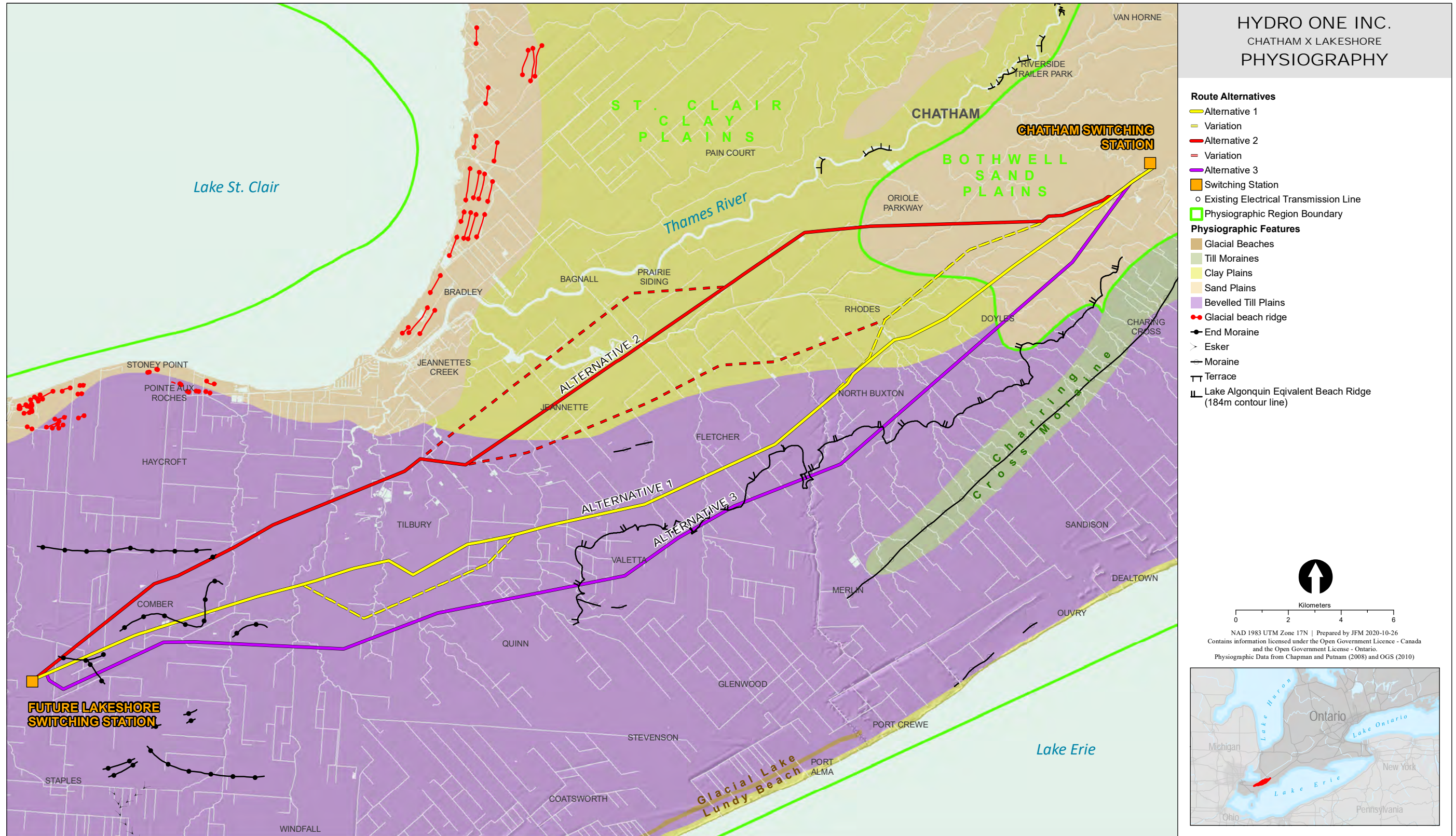




Map 3d: Topographic Map Showing the Location of the Project Area in the County of Essex and Municipality of Chatham-Kent - Western Portion

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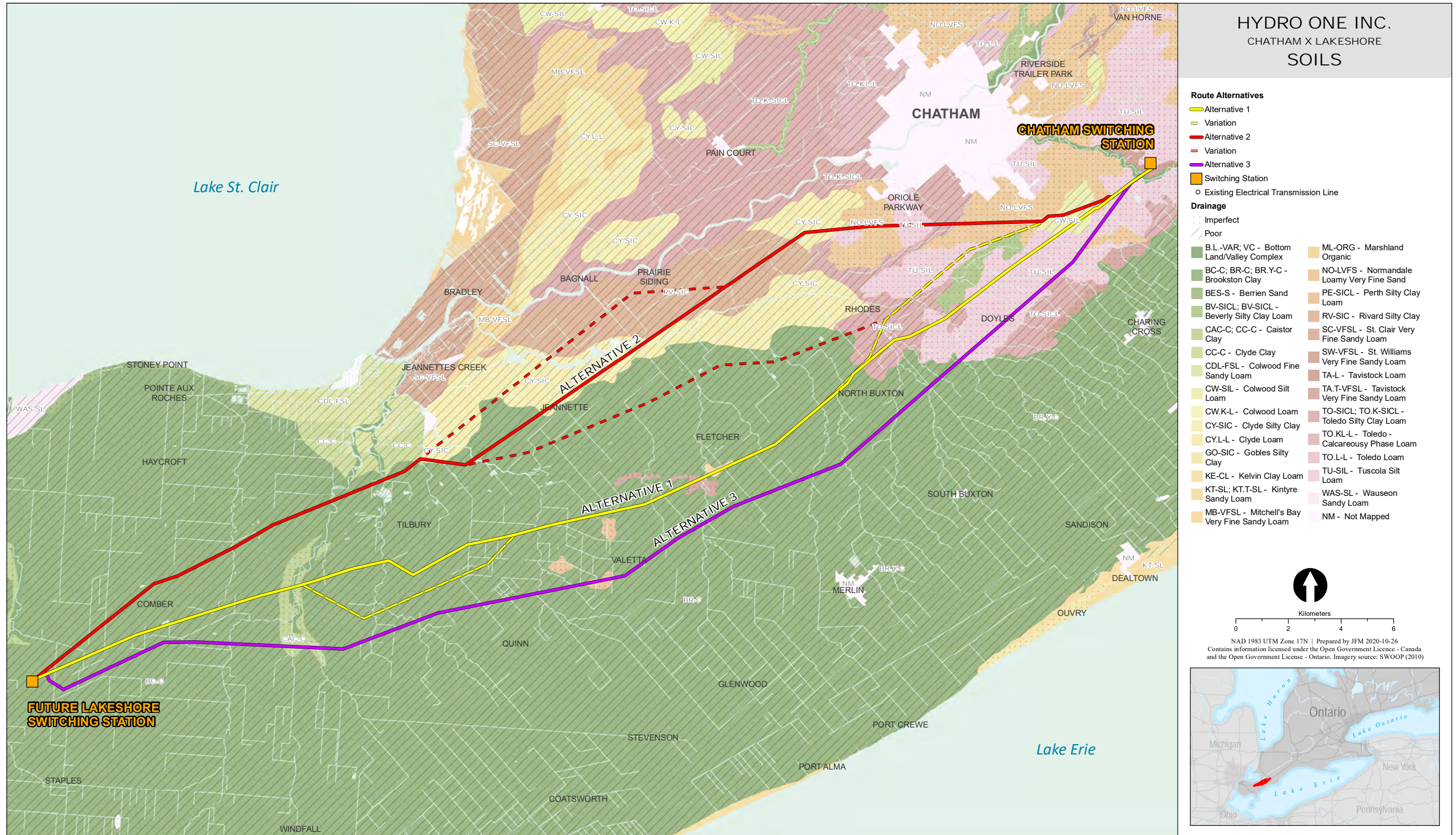




Map 4: Physiography Within the Vicinity of the Project Area

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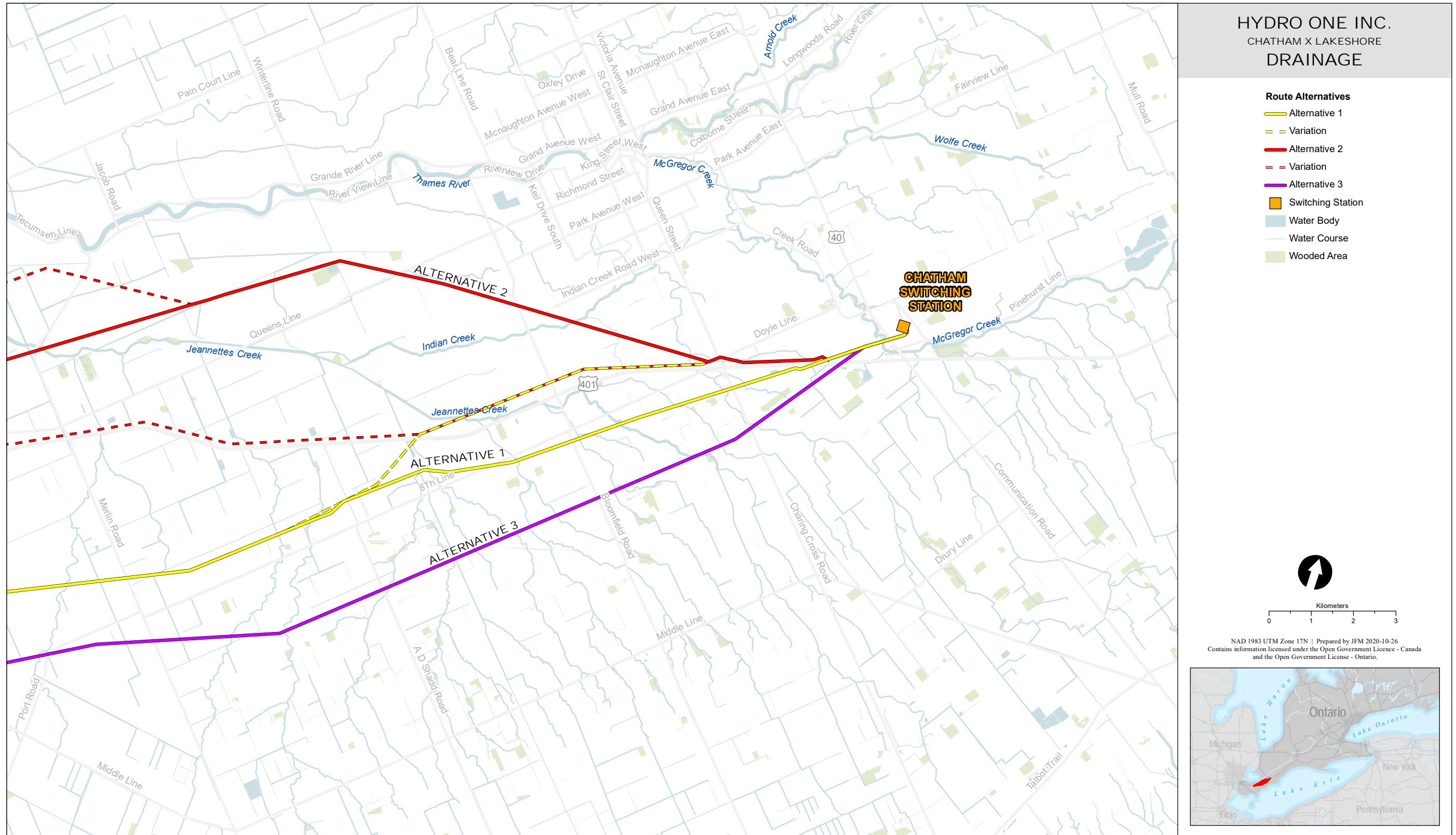




Map 5: Soils Within the Vicinity of the Project Area

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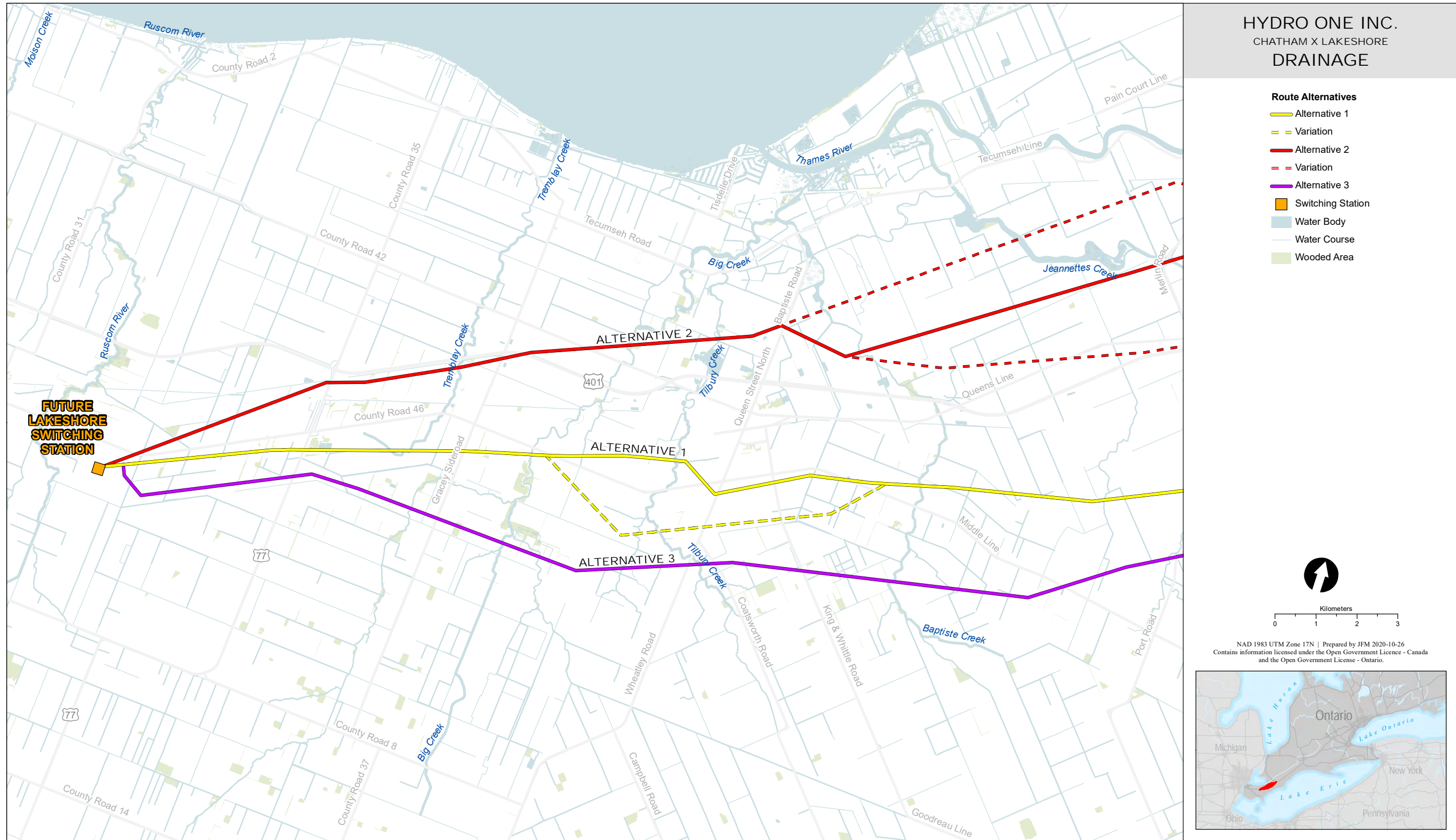




Map 6 a: Drainage Within the Vicinity of the Project Area - Eastern Portion

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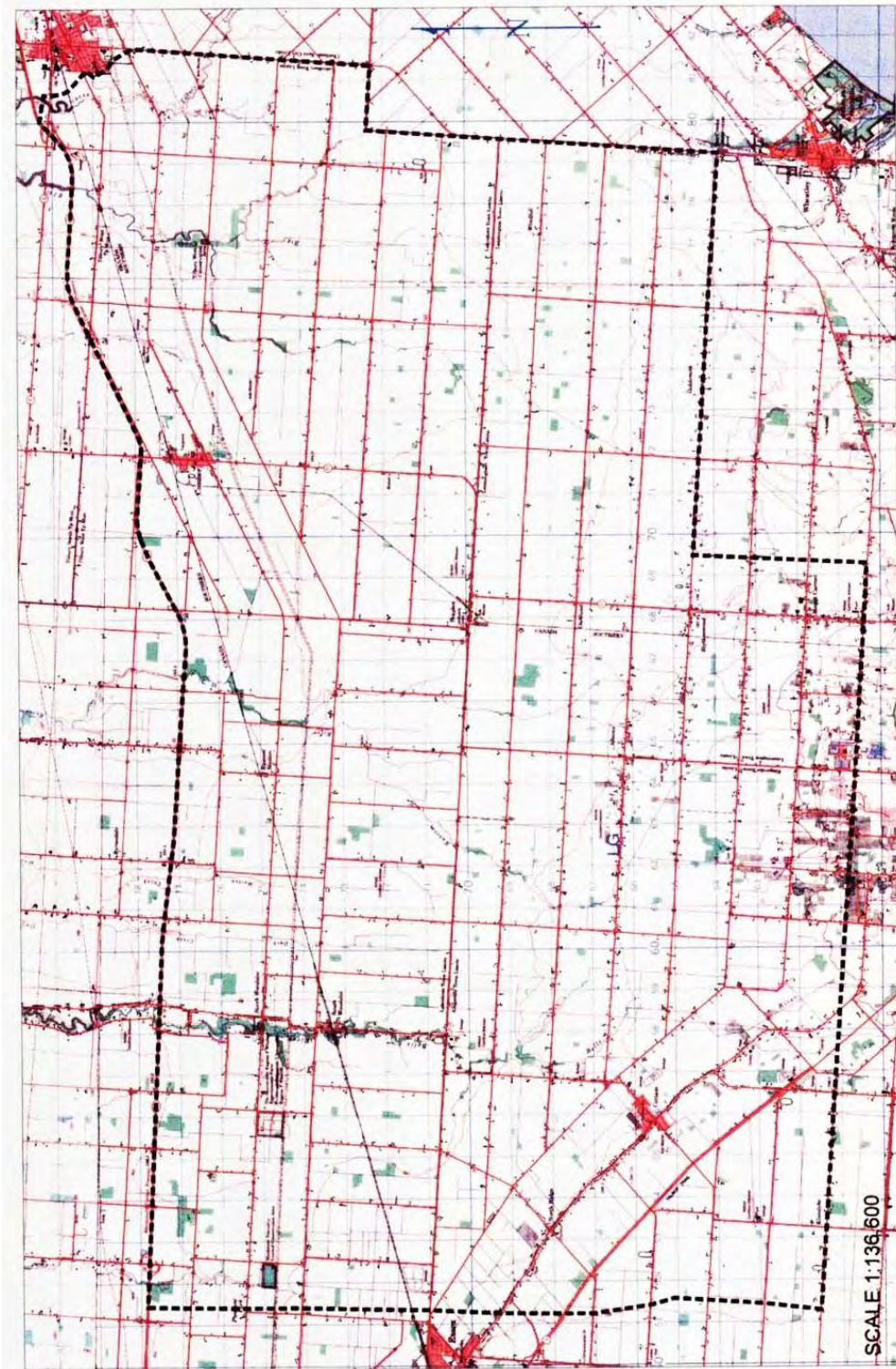




Map 6 b: Drainage Within the Vicinity of the Project Area - Western Portion

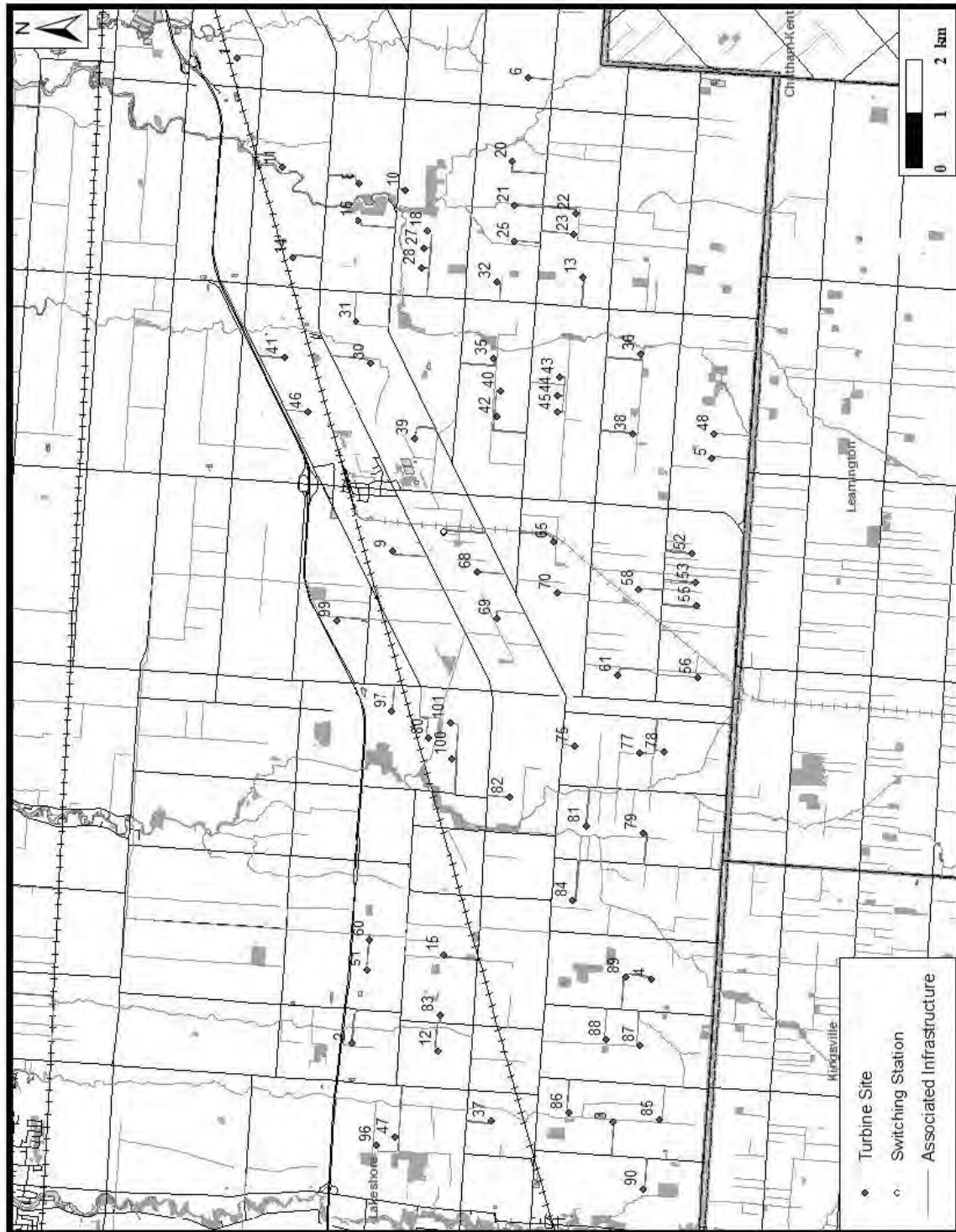
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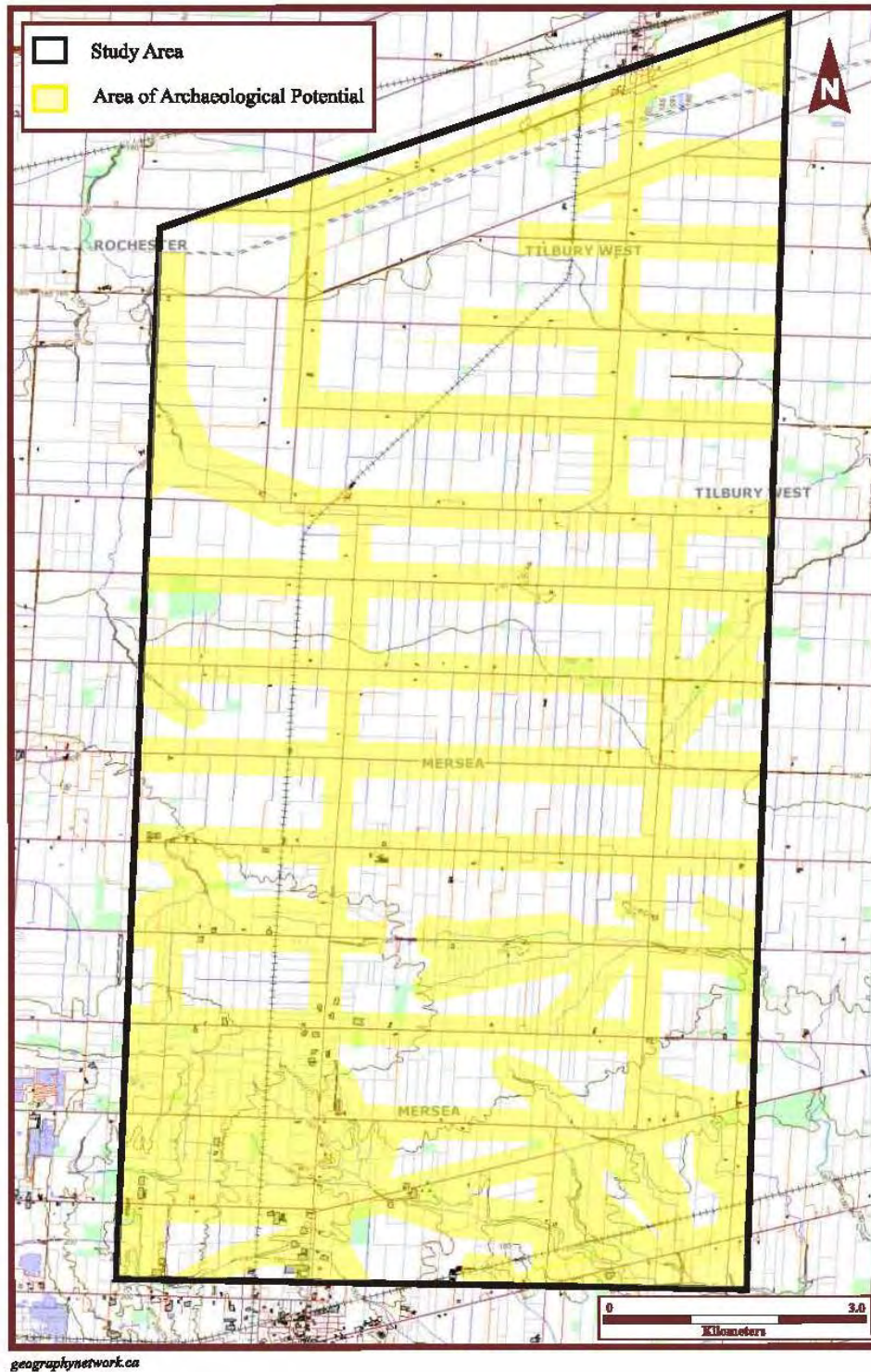
Map 7: D.R. Poulton (2007) Stage 1 Assessment Area for the Gosfield Comber Wind Energy Project



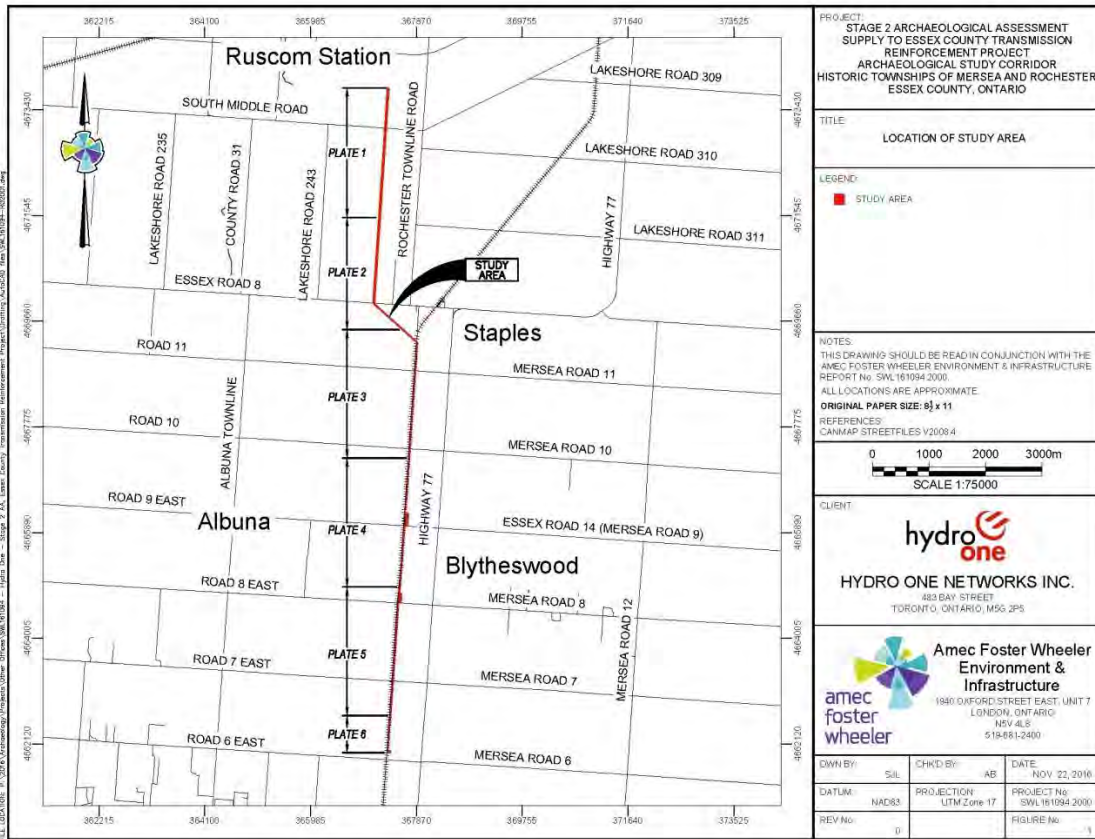


Map 8: ARA (2010) Key Plan of Stage 2 Assessment Areas for the Comber Wind Limited Partnership Project





Map 9: TMHC (2008) Stage 1 Map for the HONI Supply to Essex Project



Map 10: AMEC (2016) Relevant Stage 2 Mapping for the HONI Supply to Essex Project





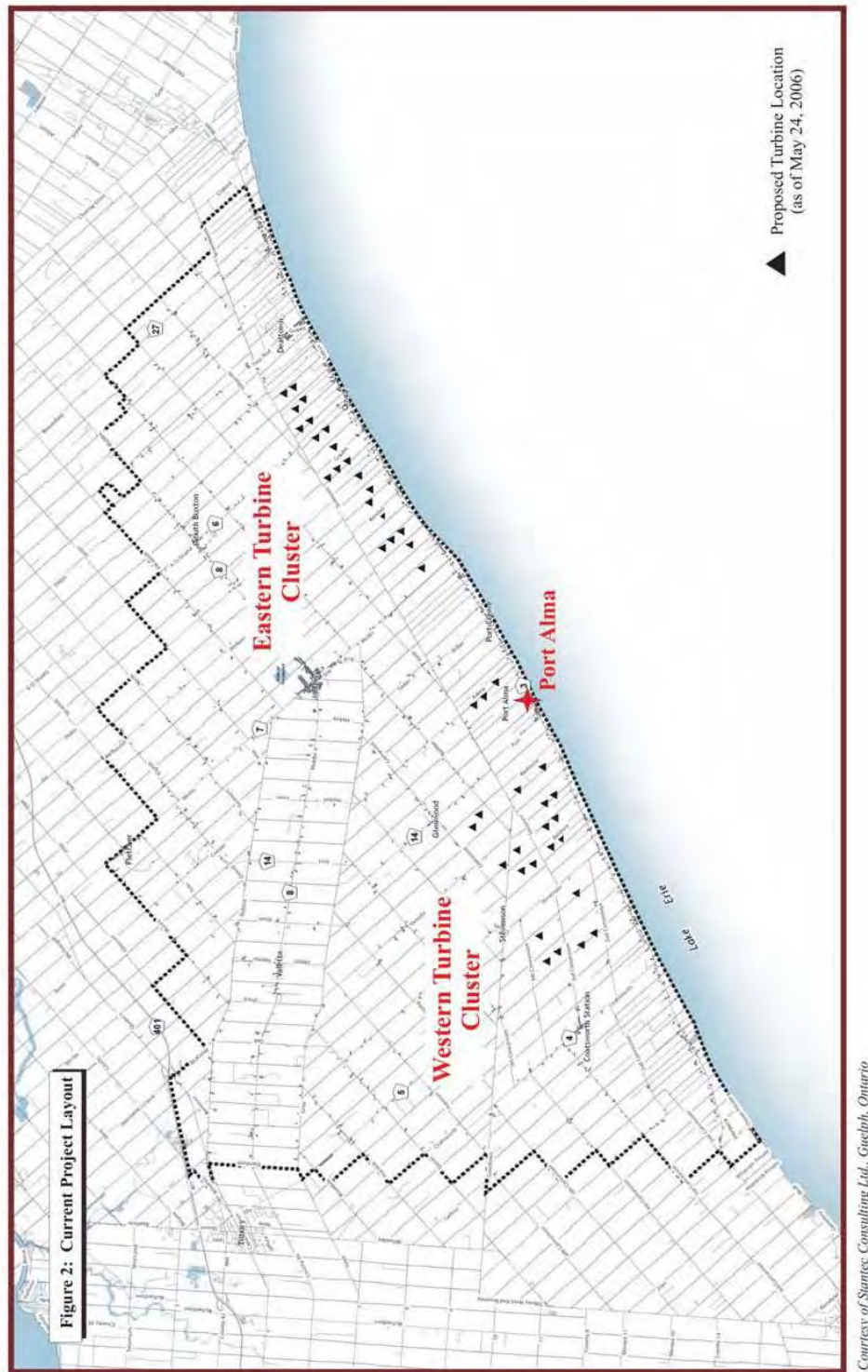
Map 11: NDA (2012) Stage 1 Map for the Union Gas Leamington Expansion Project





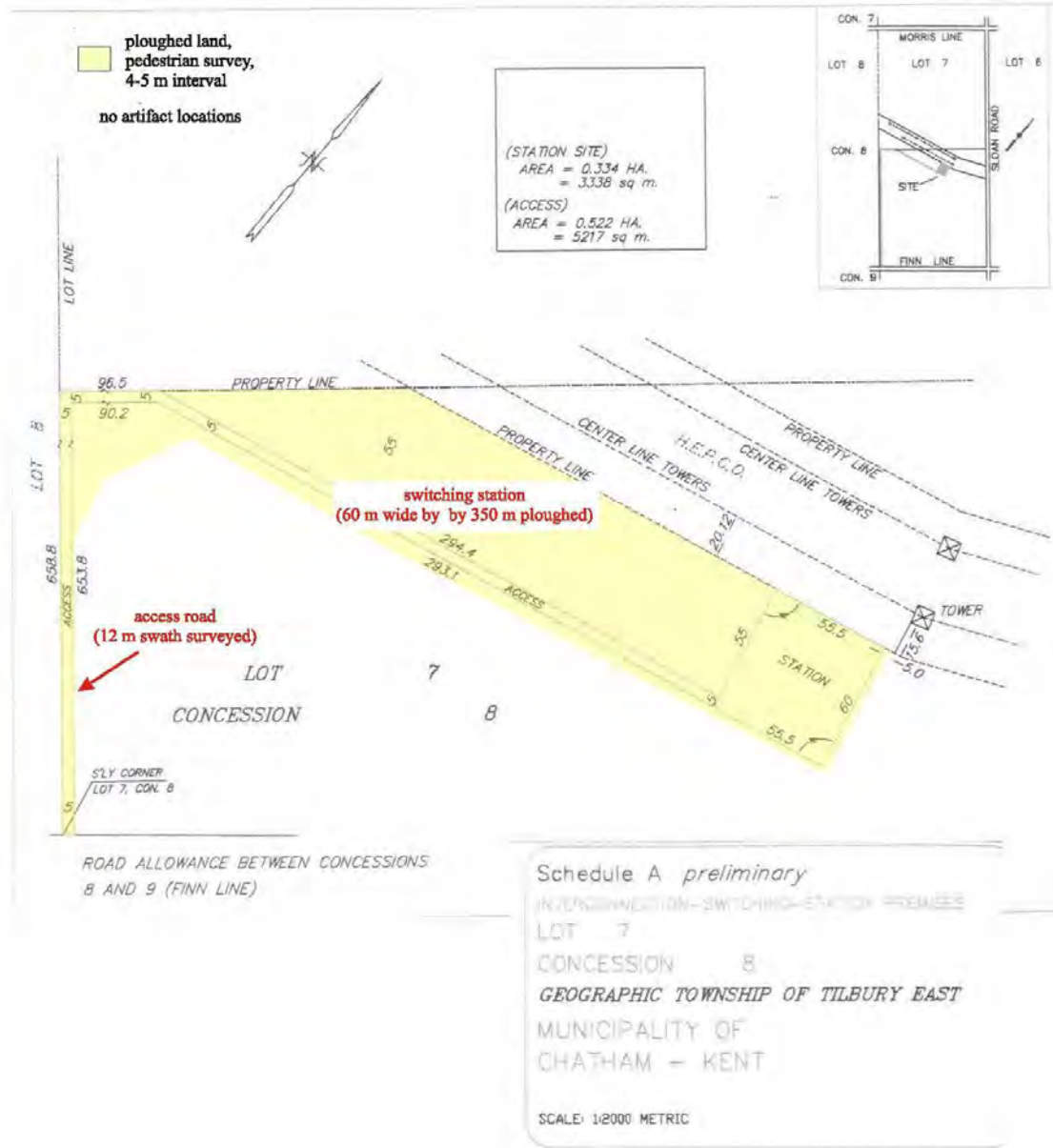
Map 12: TMHC (2013) Stage 2 Map for Relevant Section of Union Gas Leamington Expansion Project





Map 13: TMHC (2006) Stage 1 Assessment Area for the Port Alma Wind Power Project





Map 14: TMHC (2007) Stage 2 Assessment Area for the Port Alma Wind Power Project Switchyard





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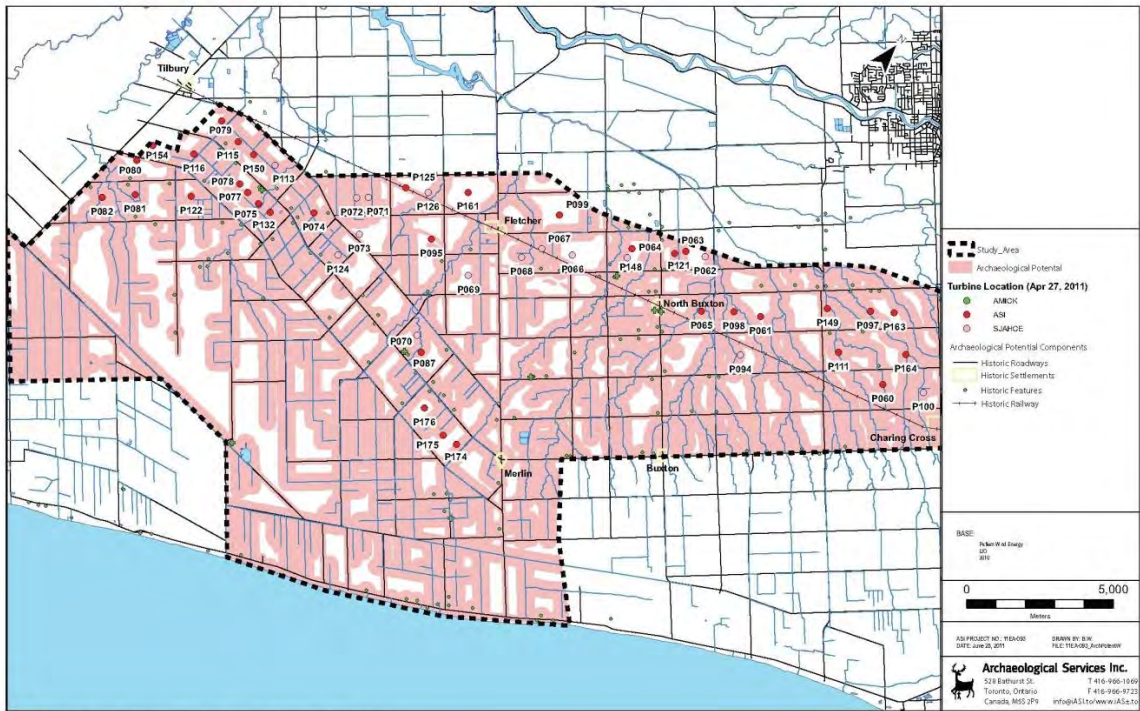
Map 15: TMHC (2007) Stage 1 Assessment Area for the Tilbury Solar Farm



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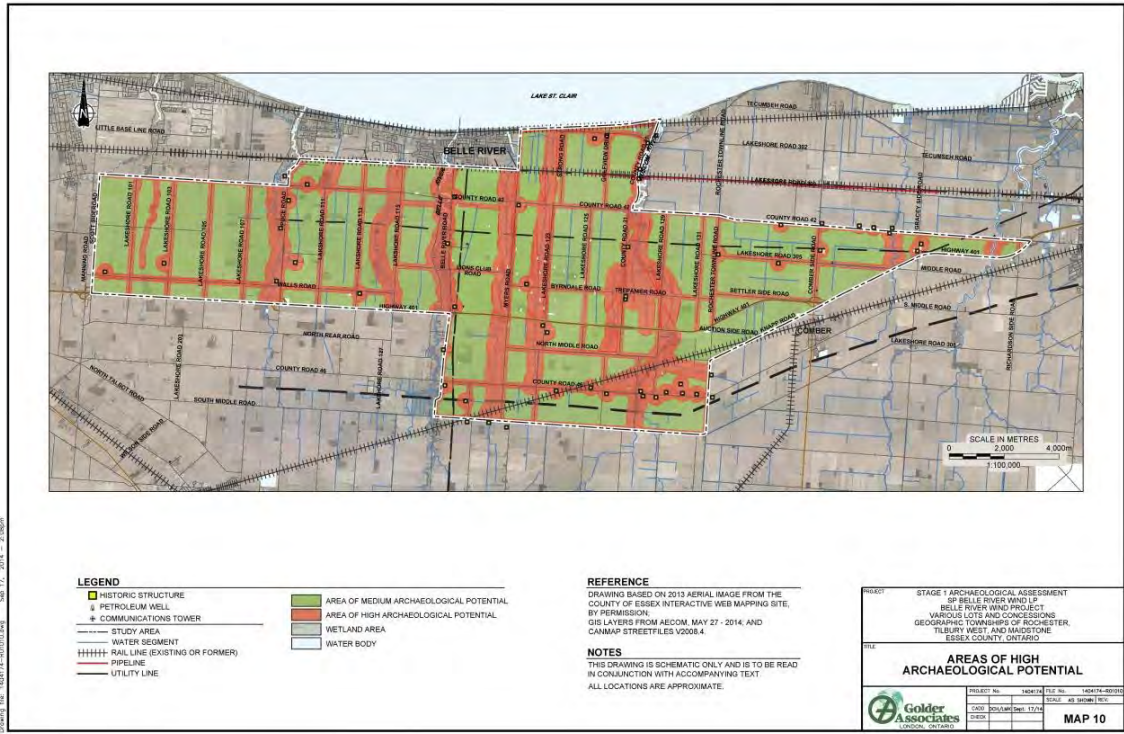
Map 16: TMHC (2009) Stage 2 Assessment Area for the Tilbury Solar Farm





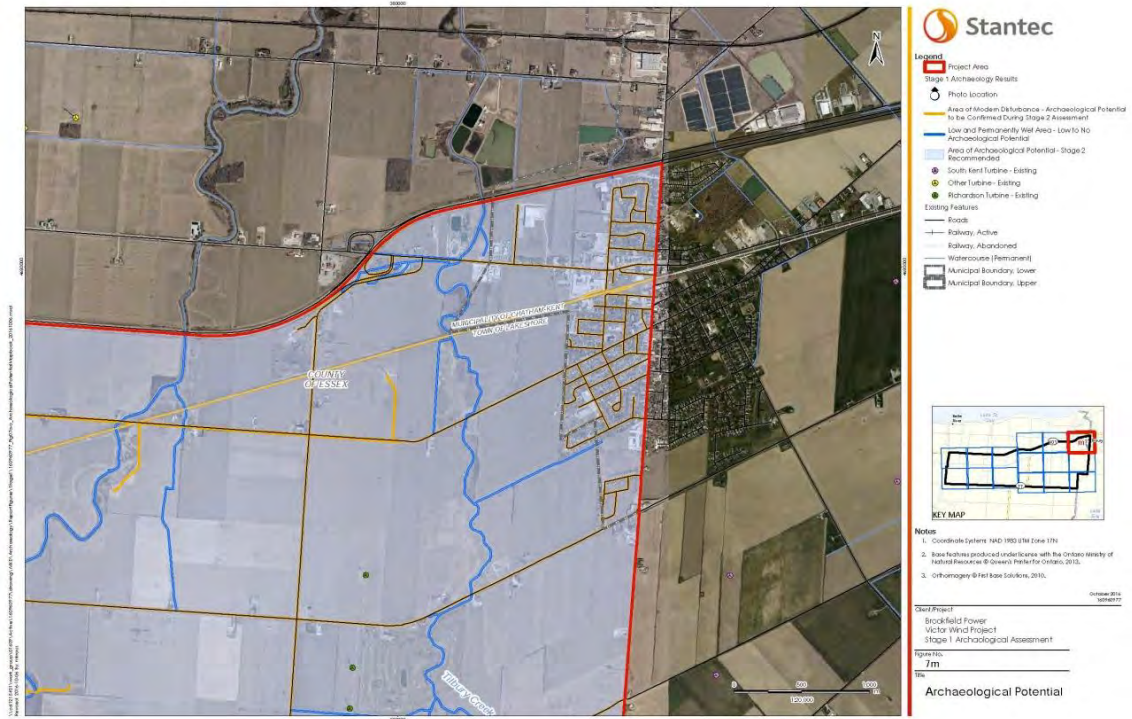
Map 17: ASI (2011) Stage 1 and Stage 2 Assessment Map for the South Kent Wind Project





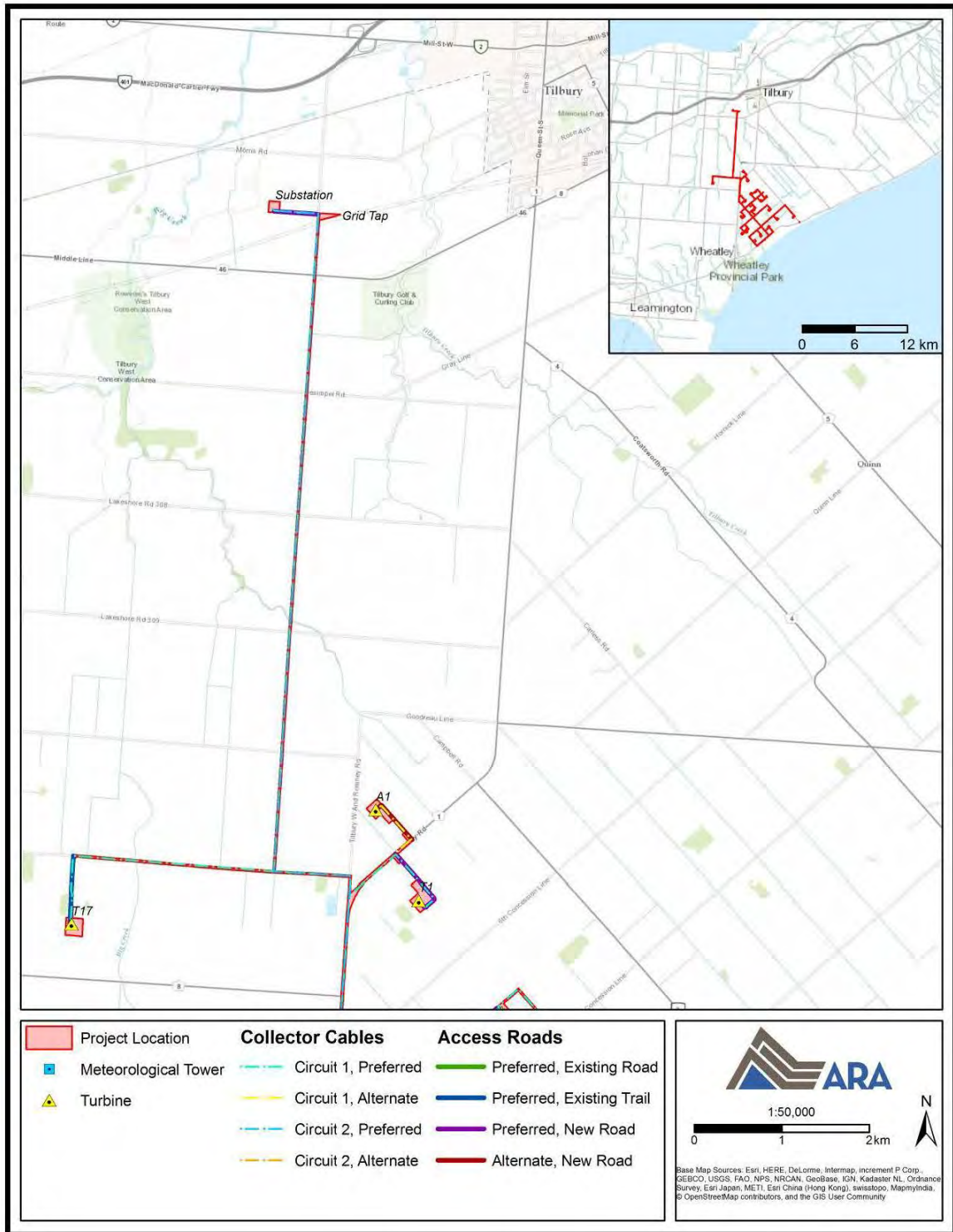
Map 18: Golder (2014) Stage 1 Assessment Map for the Belle River Wind Project





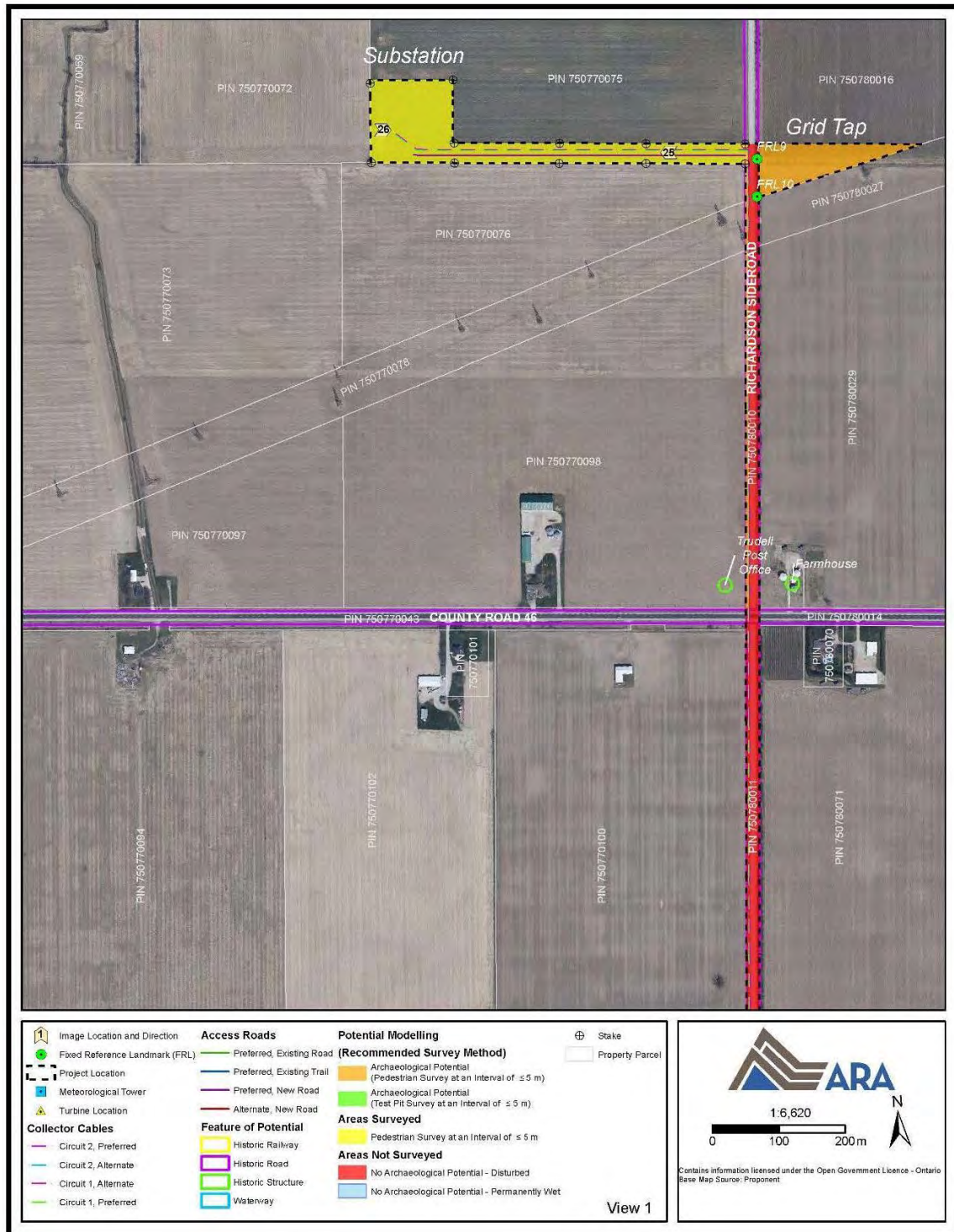
Map 19: Stantec (2016) Relevant Portion of Stage 1 Map for the Victor Wind Project





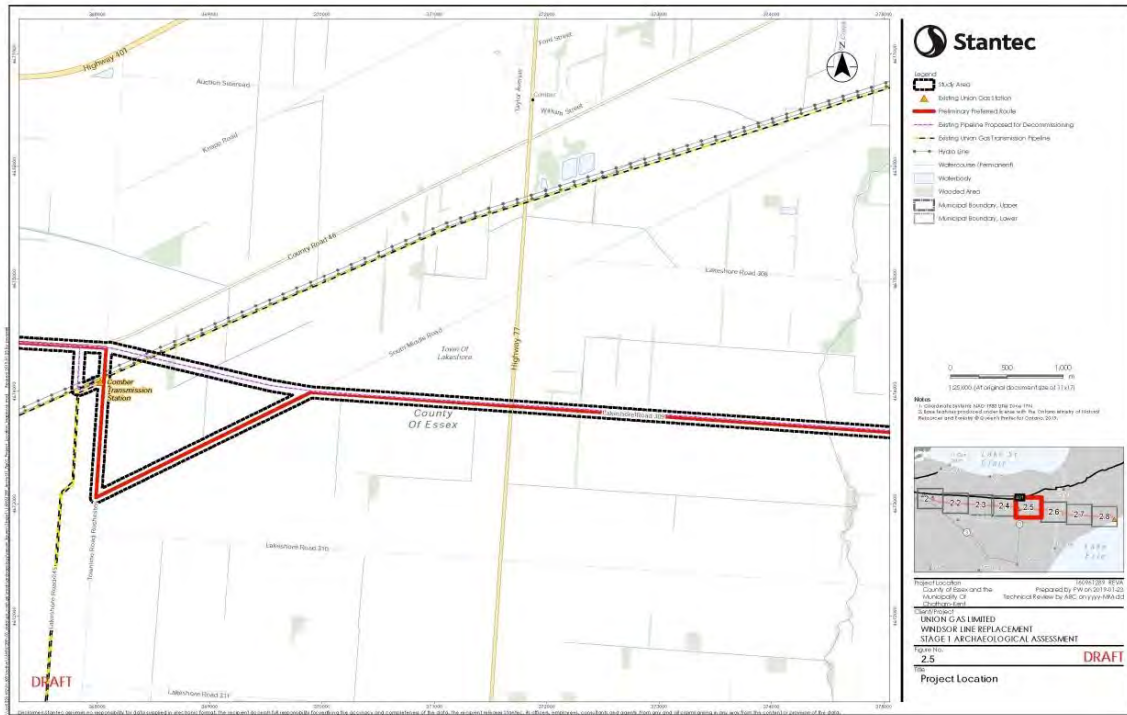
Map 20: ARA (2017) Stage 1 Assessment Area (North Portion) for the Romney Wind Energy Centre





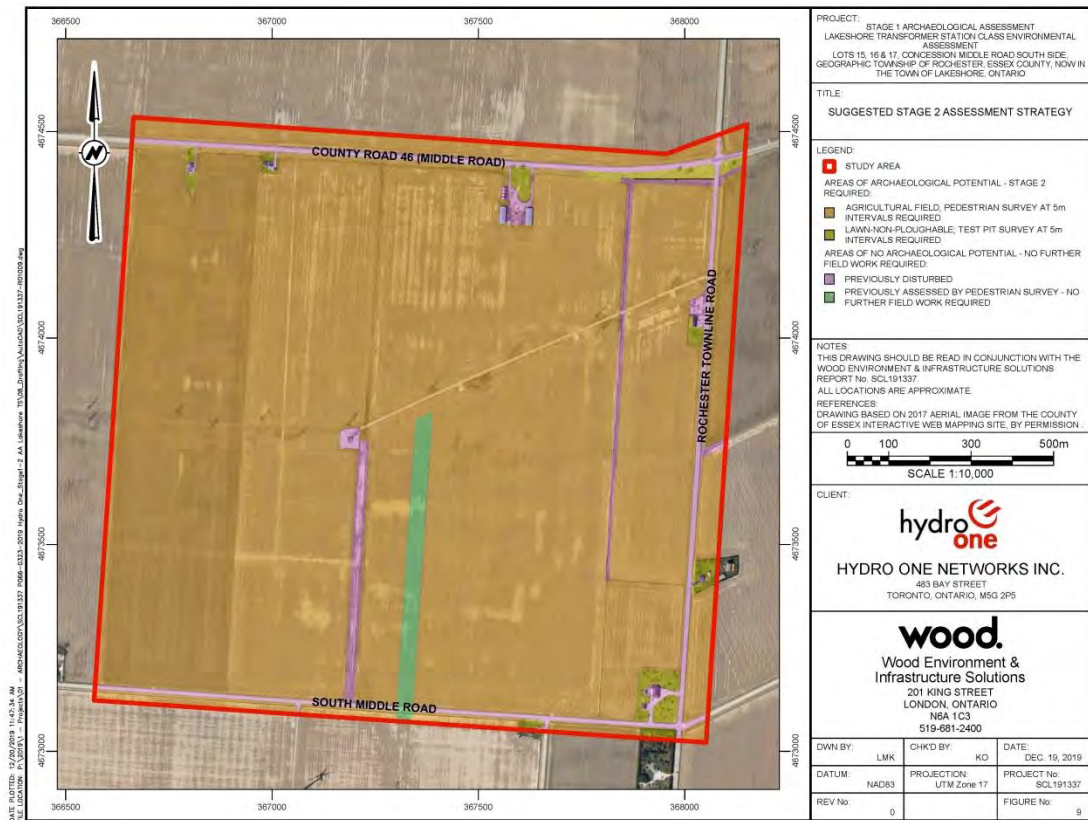
Map 21: ARA (2017) Relevant Stage 2 Assessment Area for the Romney Wind Energy Centre





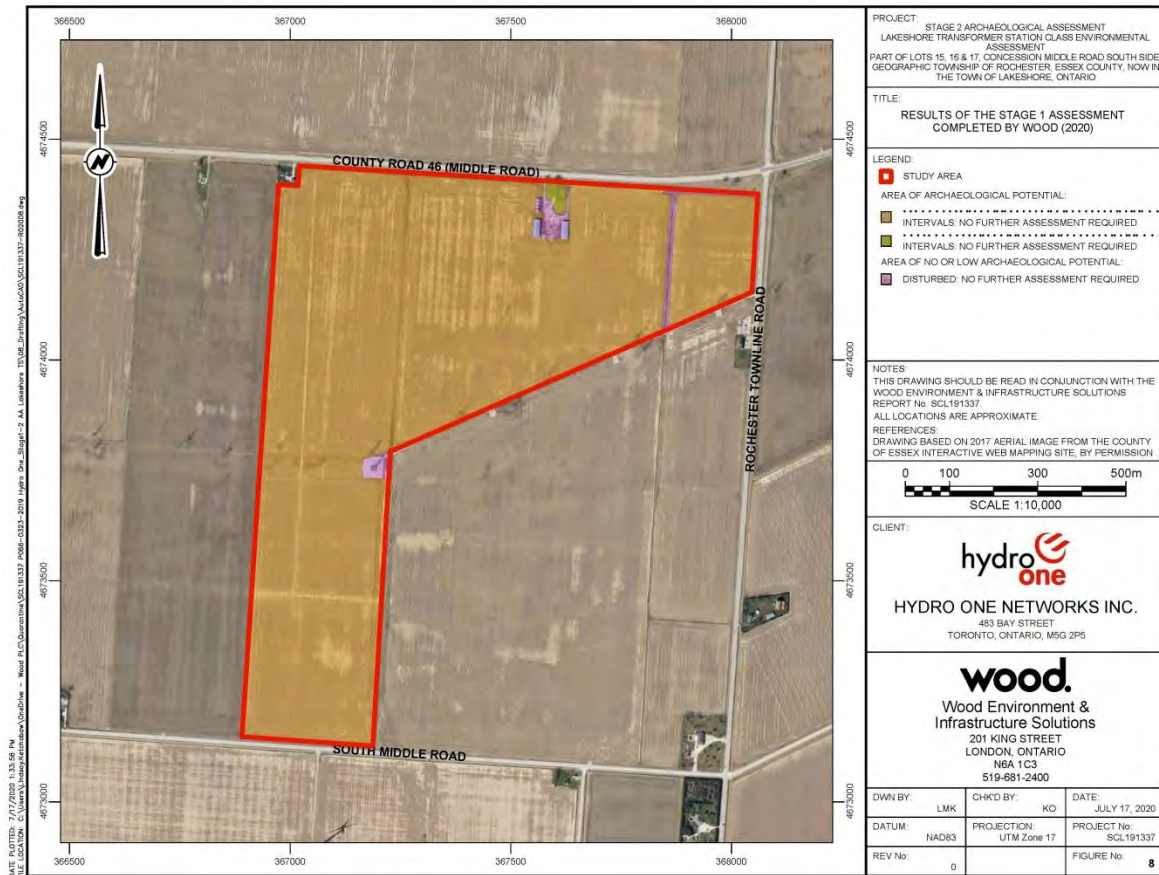
Map 22: Stantec (2019) Relevant Stage 1 Assessment Area for the Union Gas Windsor Line Replacement





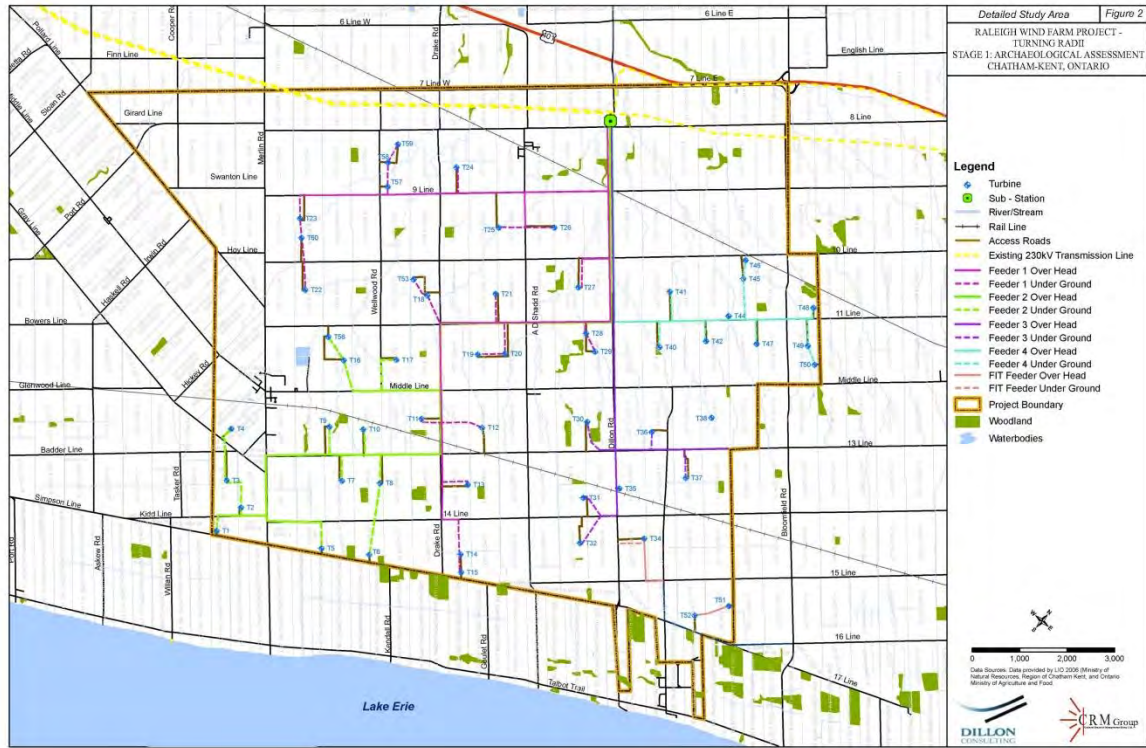
Map 23: Wood (2019) Stage 1 Assessment Map for the HONI Lakeshore Transformer Station





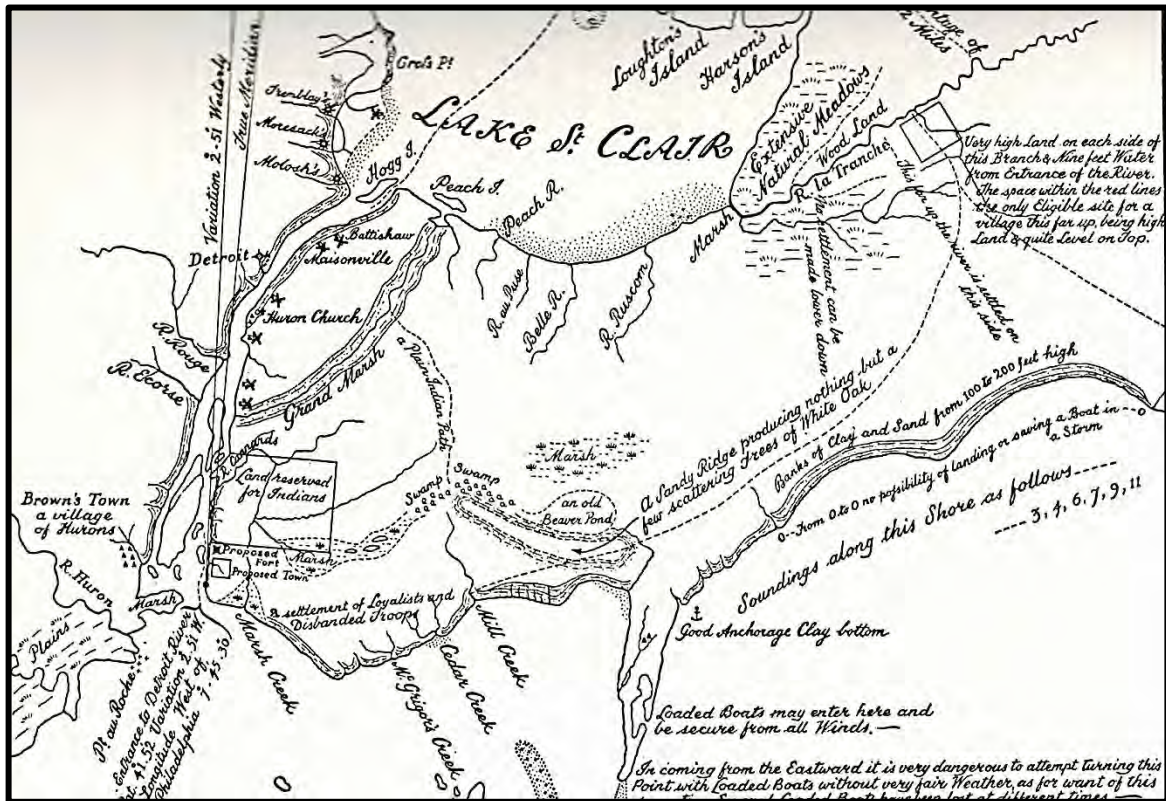
**Map 24: Wood (2020) Stage 2 Assessment Map for the HONI Lakeshore
 Transformer Station**





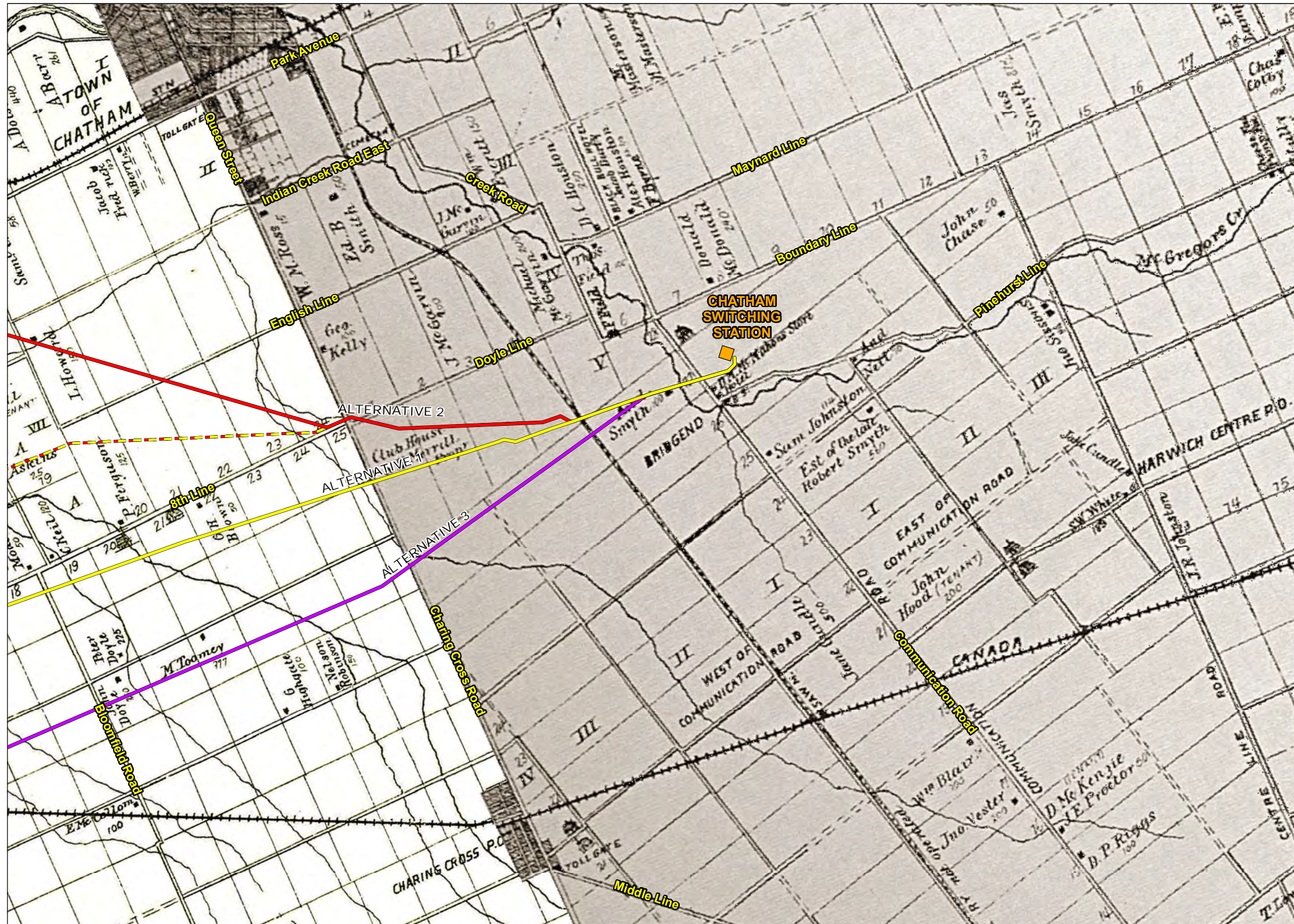
Map 25: CRM Group (2009a) Stage 1 & 2 Assessment Map for the Raleigh Wind Farm Project





Map 26: Adaptation of McNiff's 1791 Survey Map Noting Poor Conditions Away from the Thames River (R. La Tranché) in Tilbury East and Tilbury West Townships (adapted from Lajeunesse 1960)





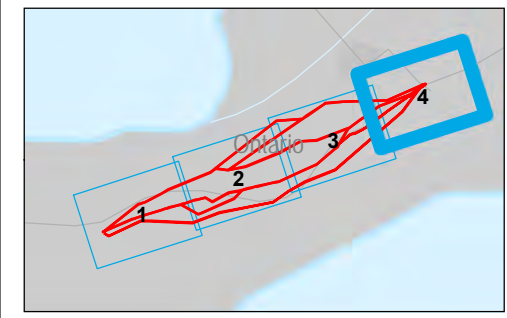
HYDRO ONE INC.
 CHATHAM X LAKESHORE
 ILLUSTRATED HISTORICAL ATLAS

- Switching Station
- Route Alternatives**
- Alternative 1
- Variation
- Alternative 2
- Variation
- Alternative 3

Source: Illustrated Historical Atlases of the
 Counties of Kent and Essex (1881)



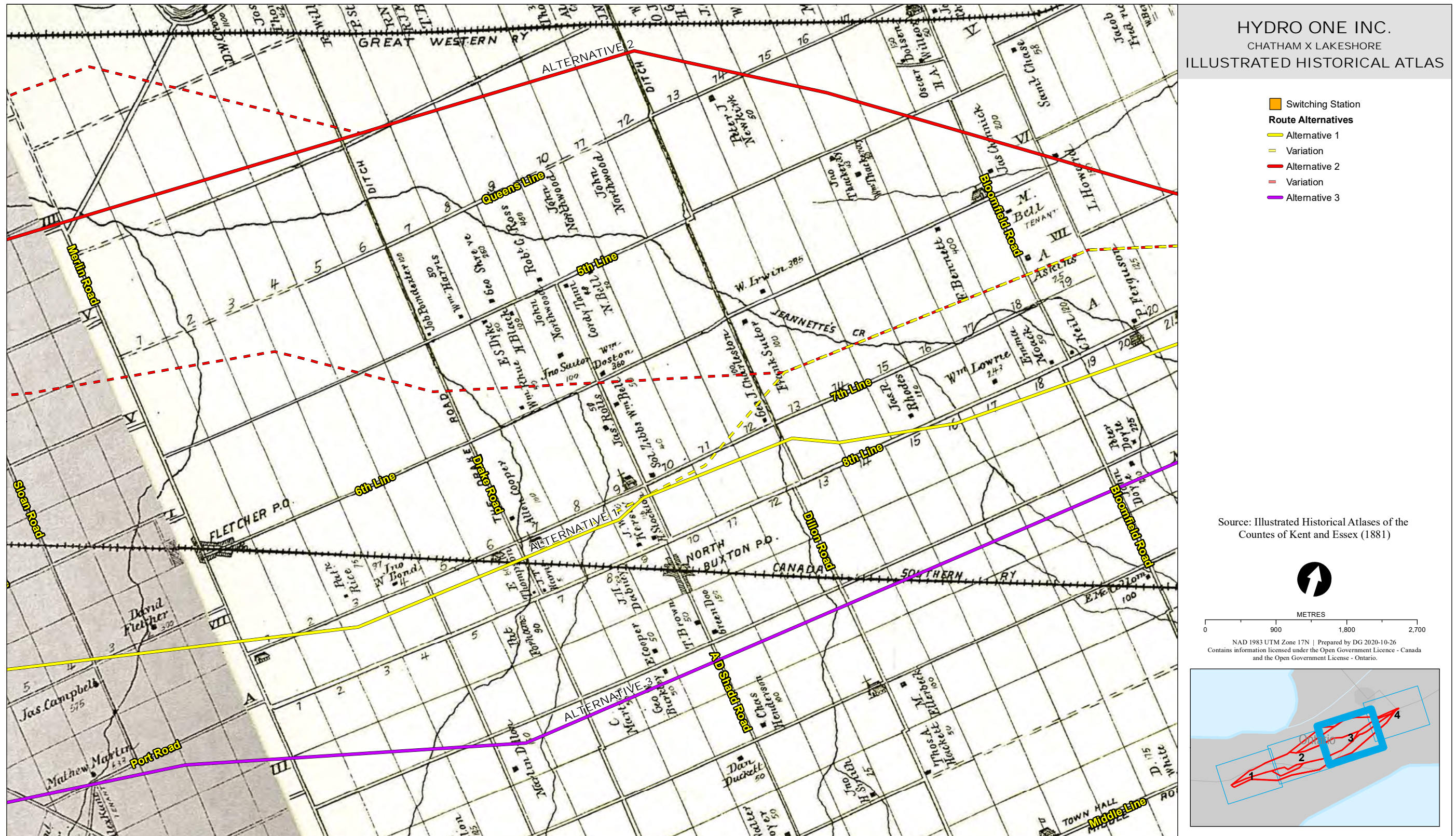
NAD 1983 UTM Zone 17N | Prepared by DG 2020-10-26
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Map 27 a: Proposed Route Alternatives Shown on 1881 Illustrated Historical Atlas Maps of Essex and Kent Counties - East Portion

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Map 27 b: Proposed Route Alternatives Shown on 1881 Illustrated Historical Atlas Maps of Essex and Kent Counties - East-Central Portion

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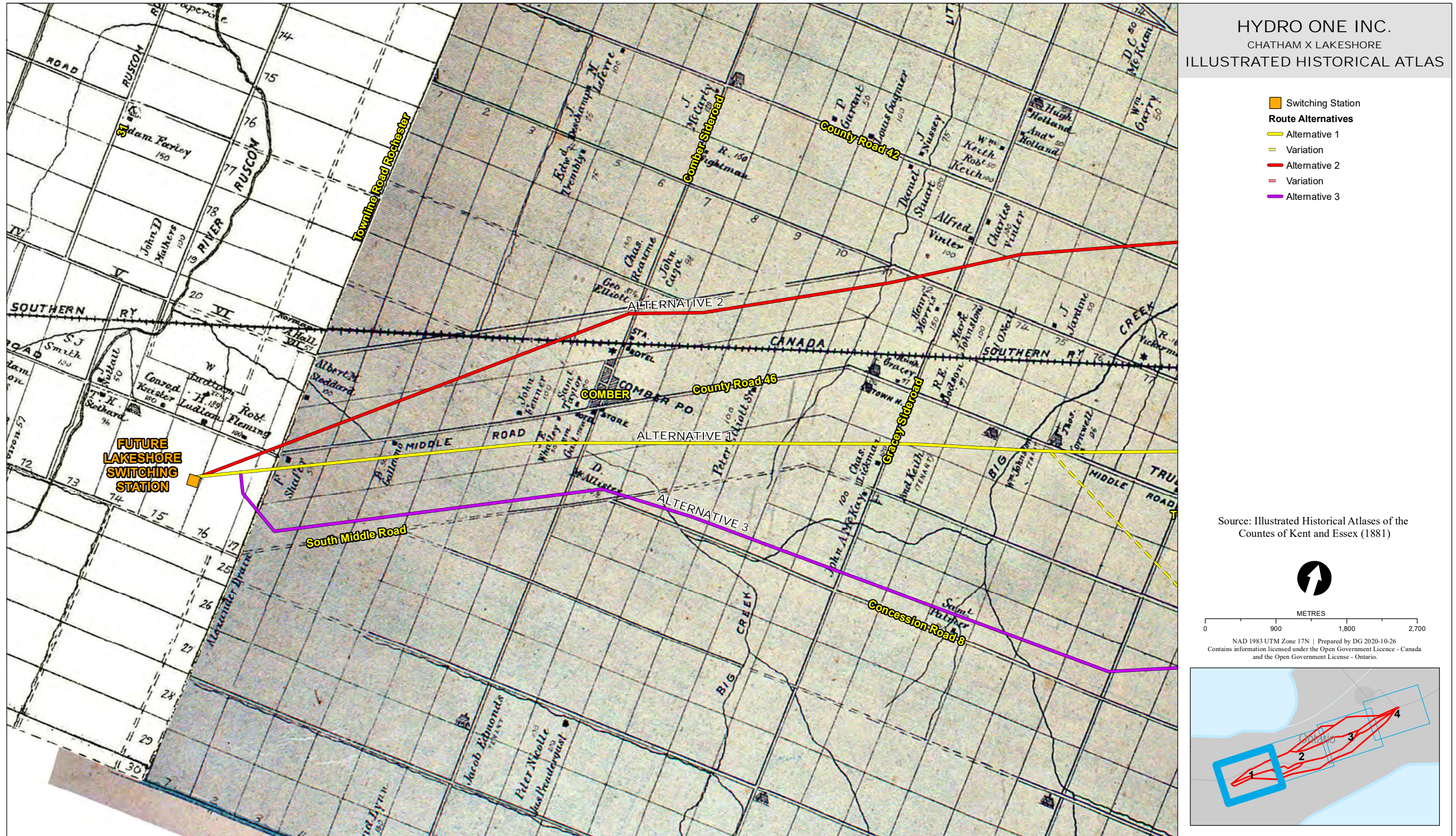




Map 27 c: Proposed Route Alternatives Shown on 1881 Illustrated Historical Atlas Maps of Essex and Kent Counties - West-Central Portion

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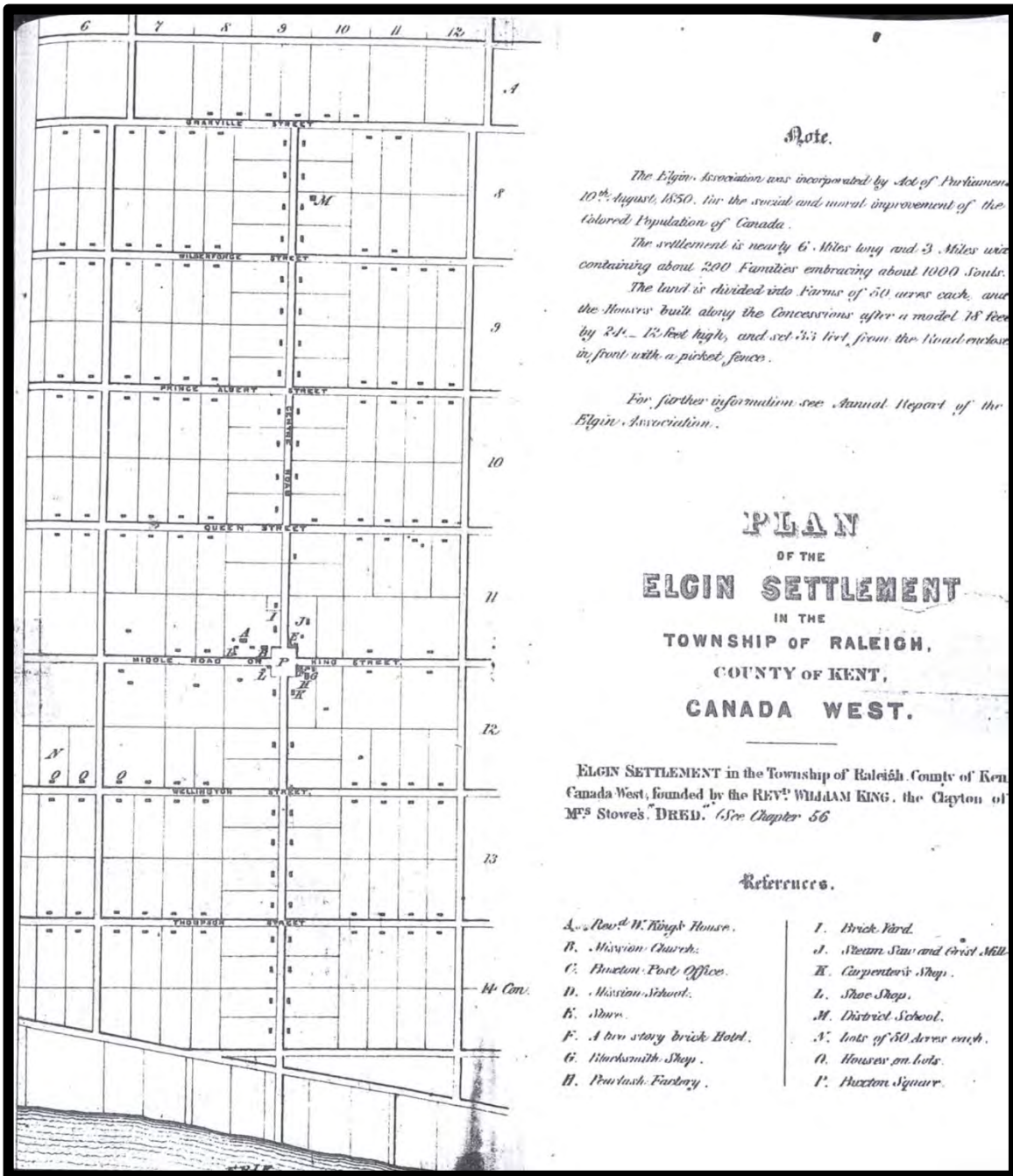




Map 27 d: Proposed Route Alternatives Shown on 1881 Illustrated Historical Atlas Maps of Essex and Kent Counties - West Portion

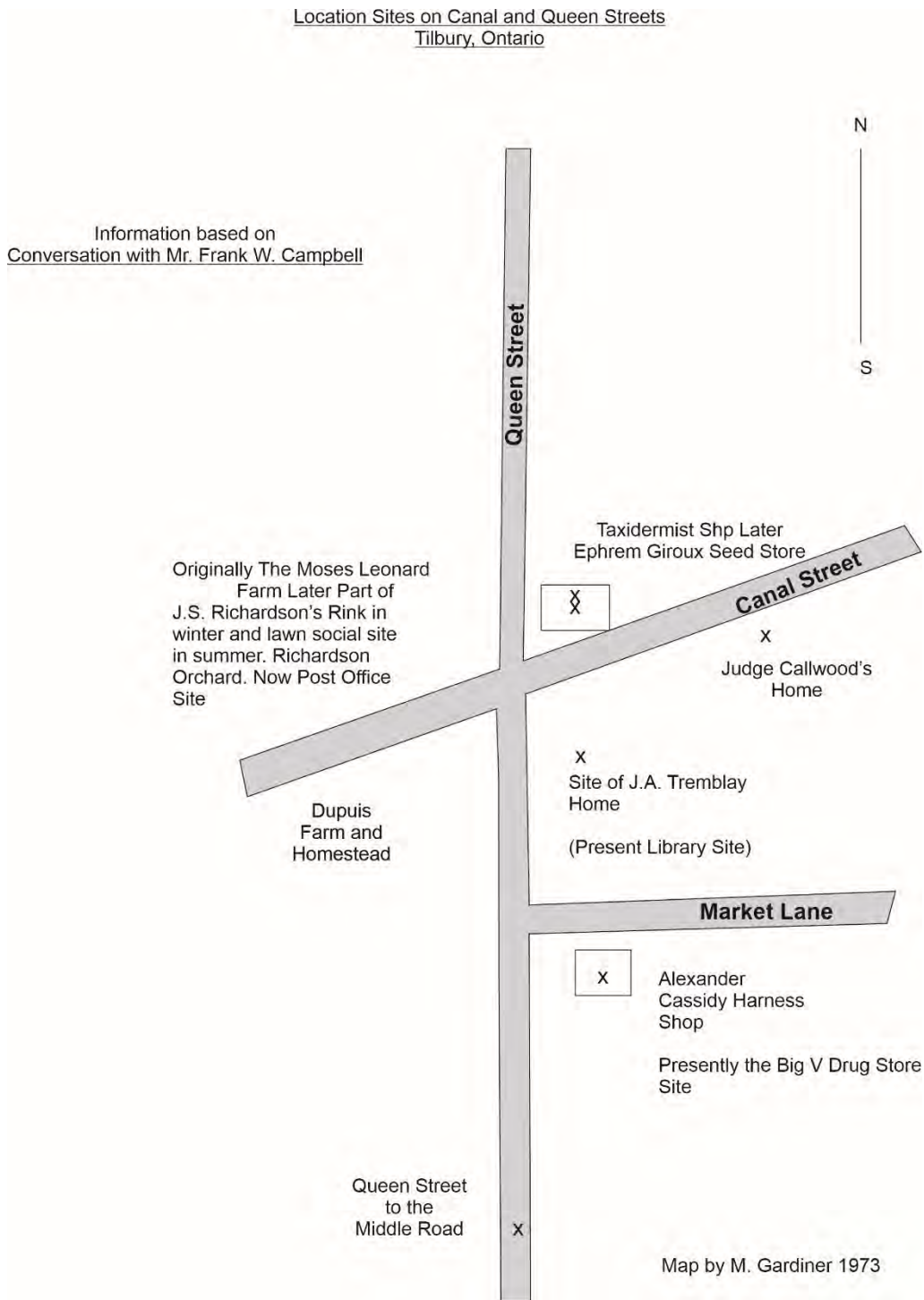
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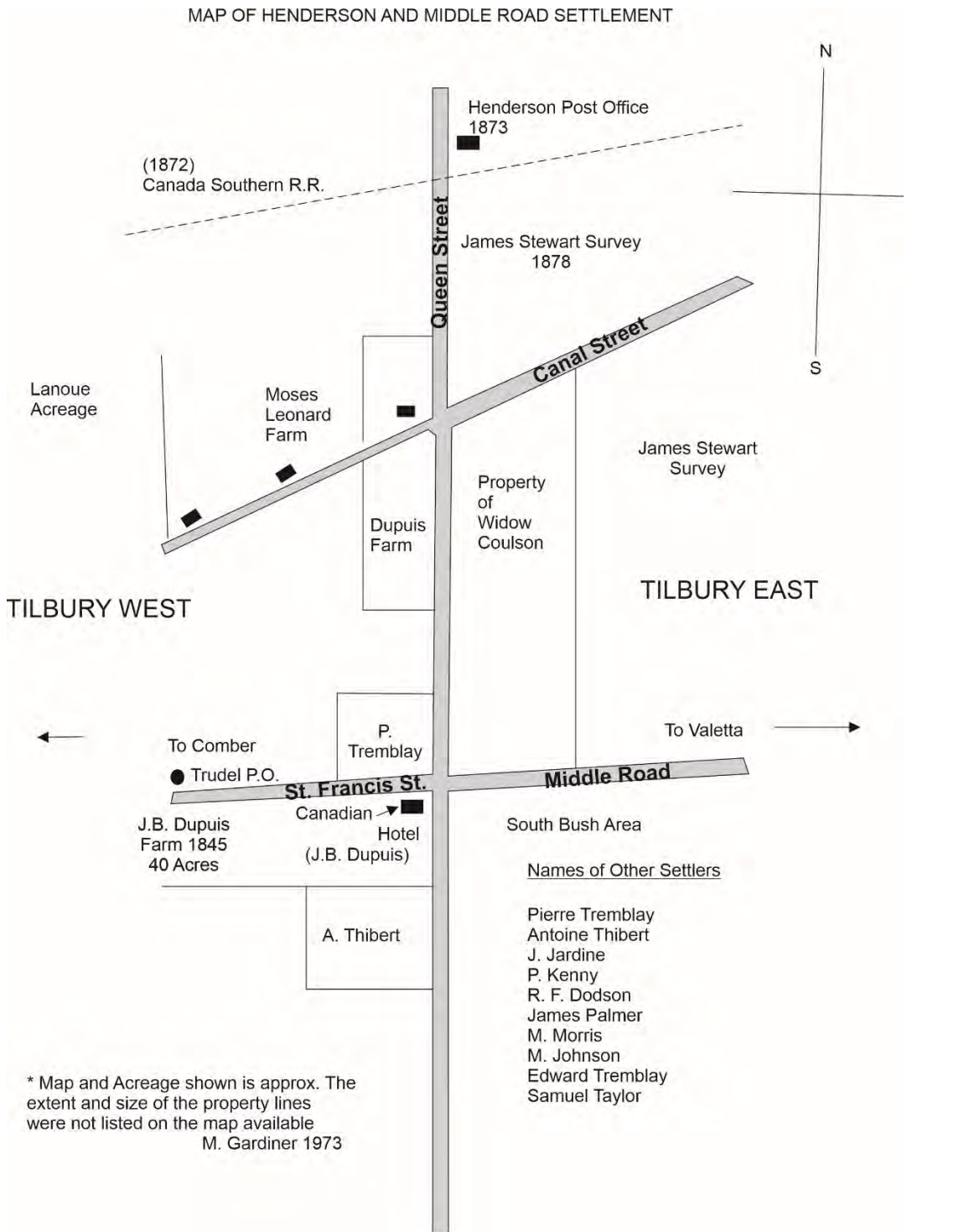
Map 28: Plan of Buxton (The Elgin Settlement)





Map 29: Schematic Showing the Historic Core of Tilbury
(by M. Gardiner 1973 in Duquette et al. 1987:31; adapted by TMHC)





Map 30: Schematic of Henderson (Tilbury), Trudell & the Middle Road Settlement
 (by M. Gardiner 1973 in Duquette et al. 1987:13; adapted by TMHC)





Map 31 a: Proposed Route Alternatives Shown on Patent and Survey Maps of Harwich, Raleigh, East Tilbury, West Tilbury and Rochester Townships - East Portion

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Map 31 b: Proposed Route Alternatives Shown on Patent and Survey Maps of Harwich, Raleigh, East Tilbury, West Tilbury and Rochester Townships - East-Central Portion

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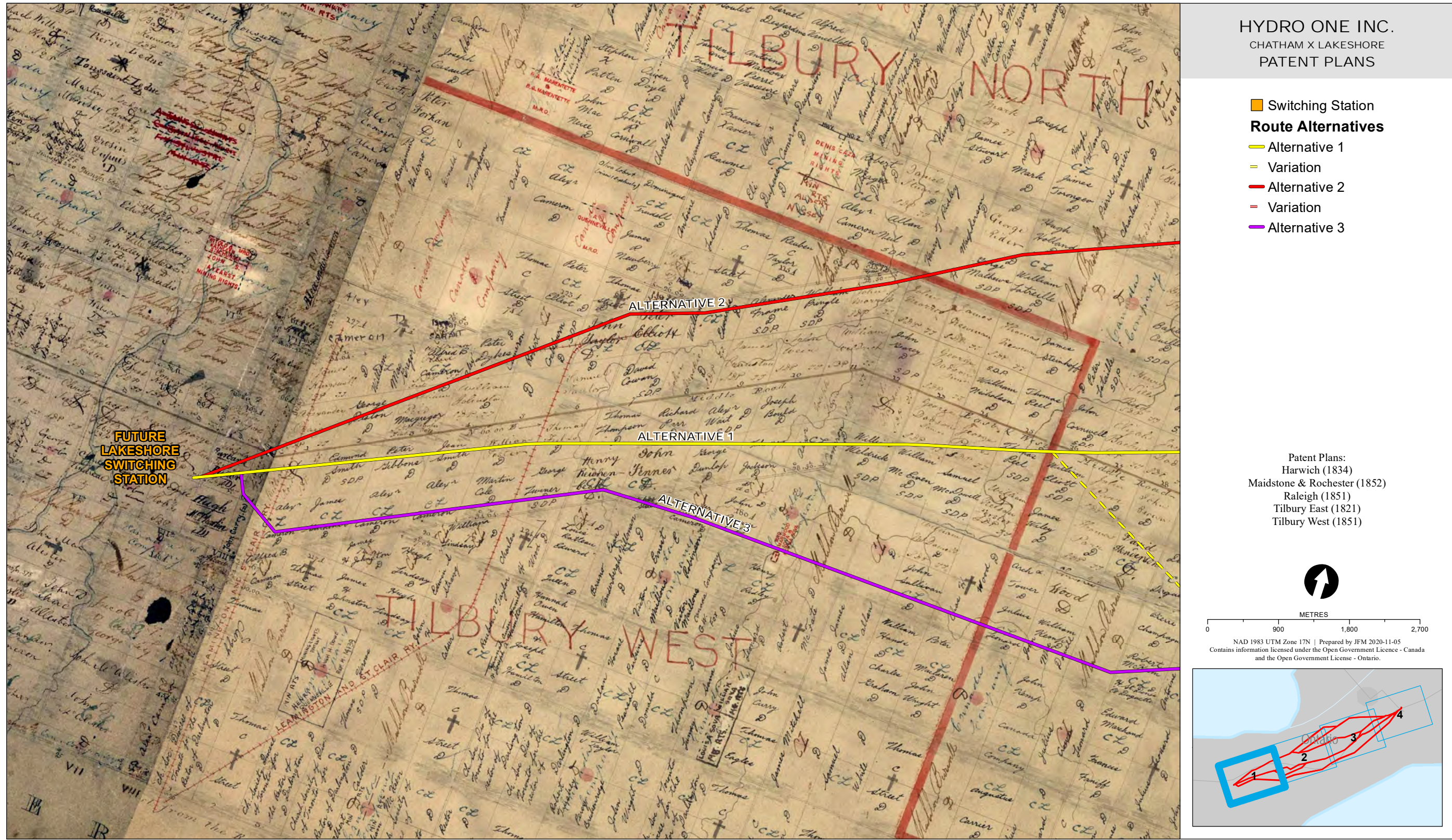




Map 31 c: Proposed Route Alternatives Shown on Patent and Survey Maps of Harwich, Raleigh, East Tilbury, West Tilbury and Rochester Townships - West-Central Portion

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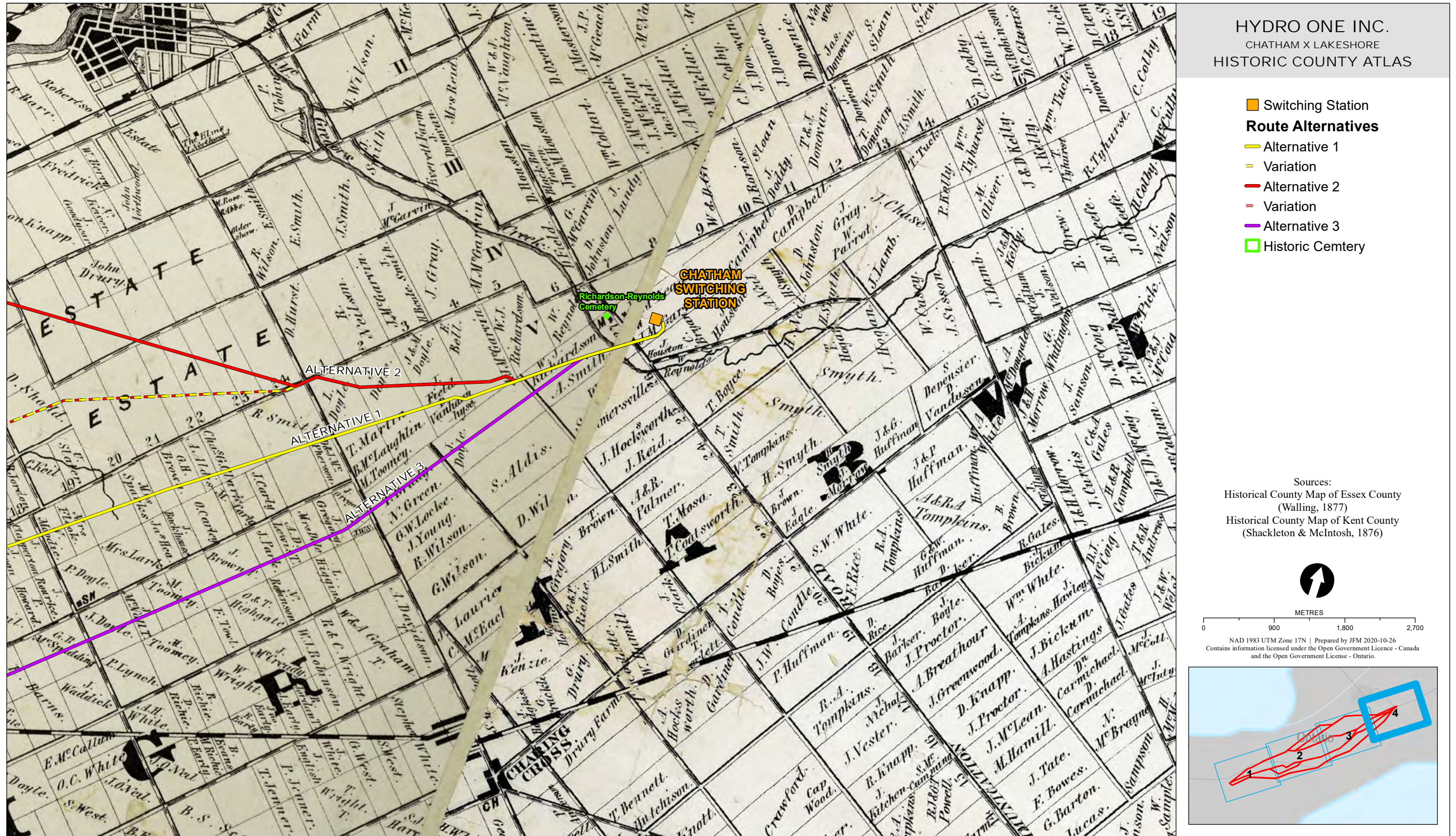




Map 31 d: Proposed Route Alternatives Shown on Patent and Survey Maps of Harwich, Raleigh, East Tilbury, West Tilbury and Rochester Townships - West Portion

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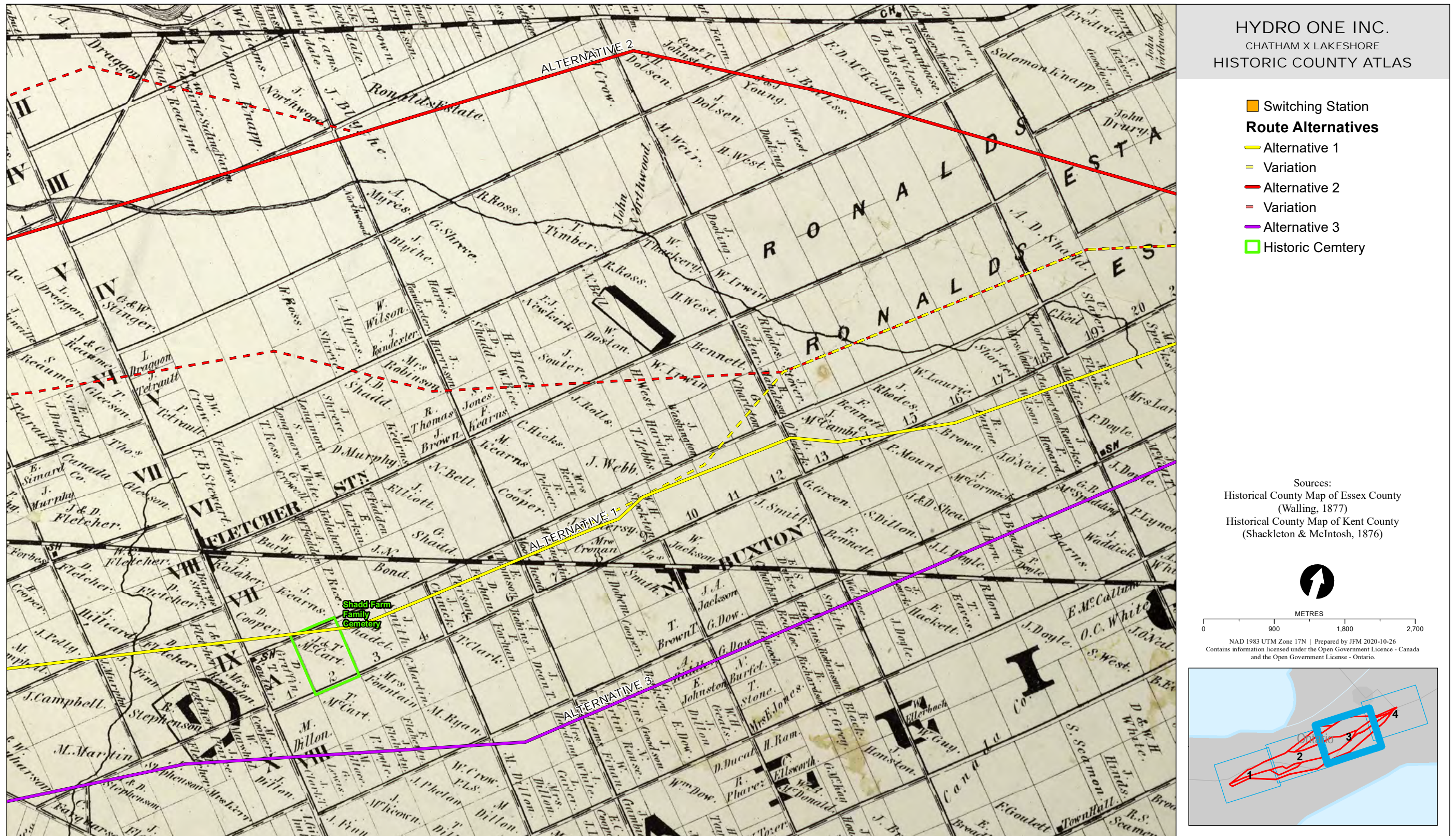




Map 32 a: Proposed Route Alternatives Shown on the 1876 Map of Kent County and 1877 Map of Essex County - East Portion

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Map 32 b: Proposed Route Alternatives Shown on the 1876 Map of Kent County and 1877 Map of Essex County - East-Central Portion

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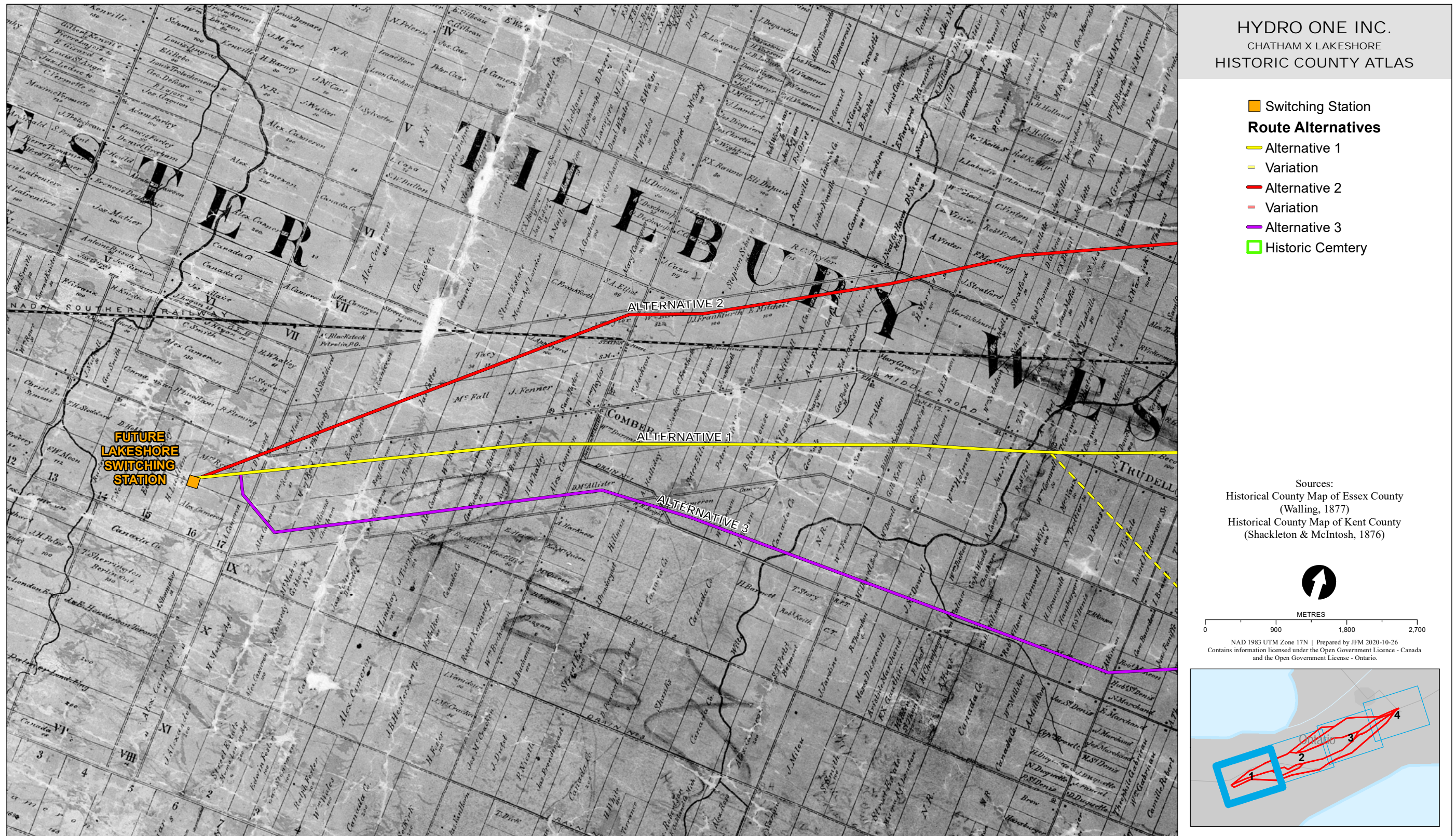




Map 32 c: Proposed Route Alternatives Shown on the 1876 Map of Kent County and 1877 Map of Essex County - West-Central Portion

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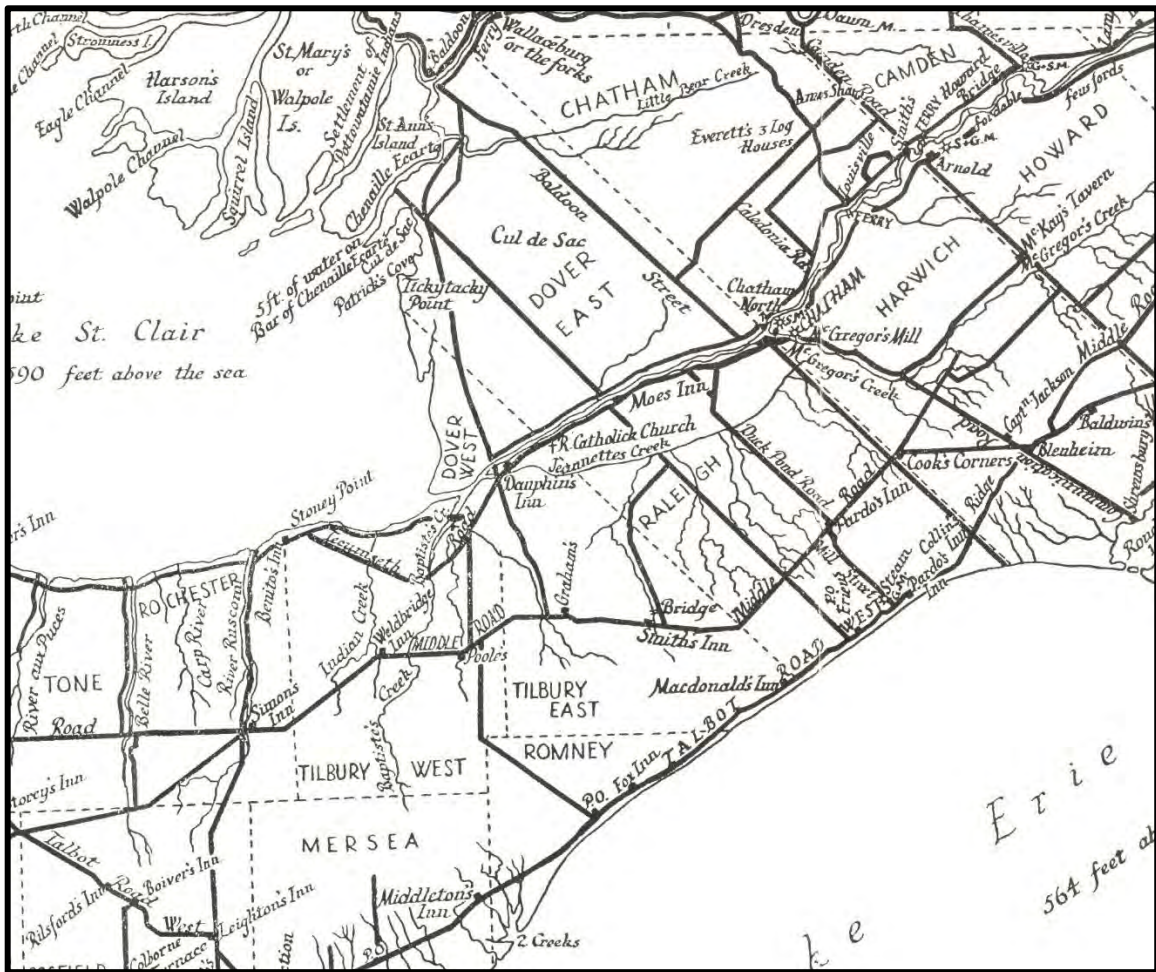




Map 32 d: Proposed Route Alternatives Shown on the 1876 Map of Kent County and 1877 Map of Essex County - West Portion

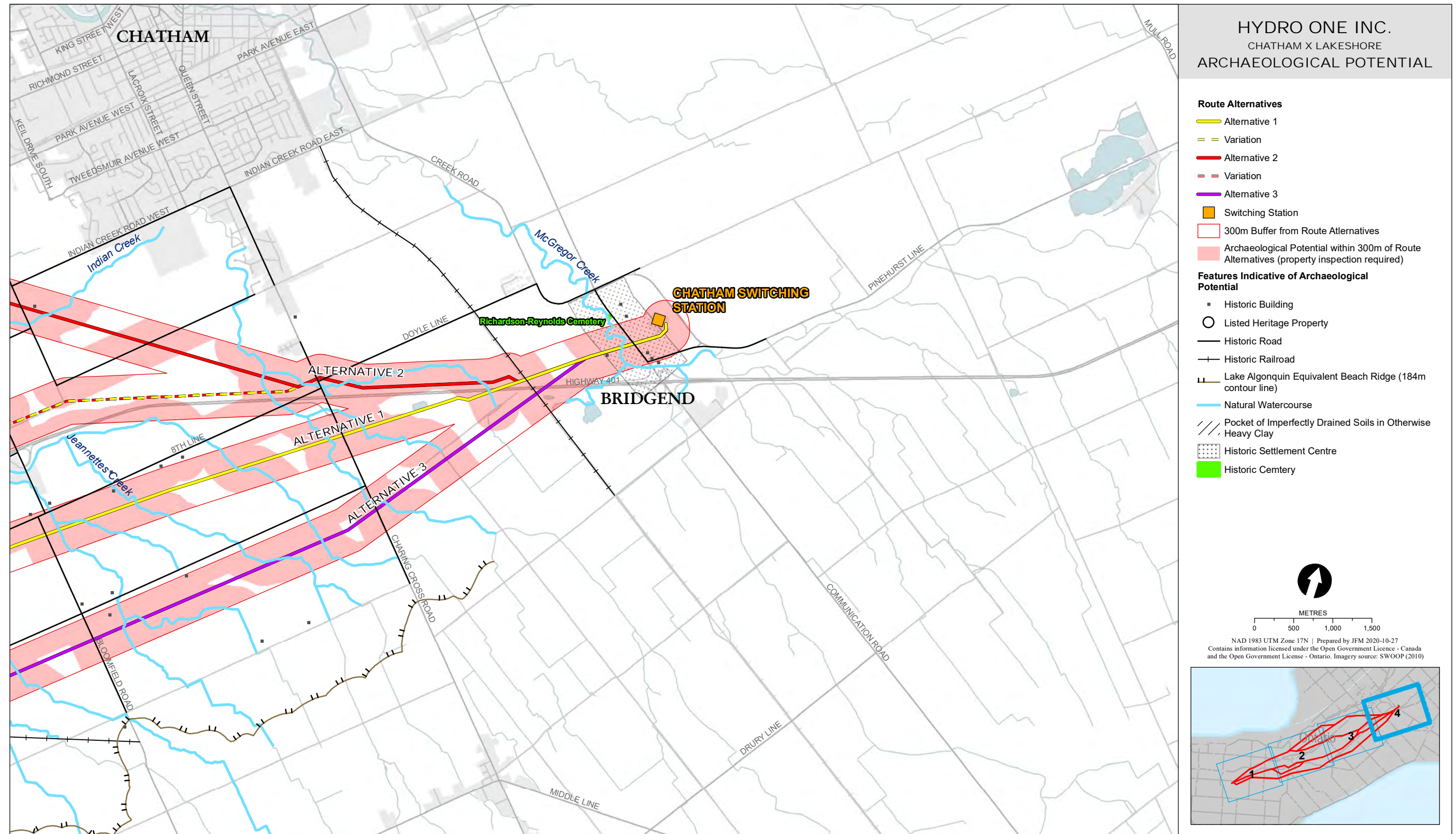
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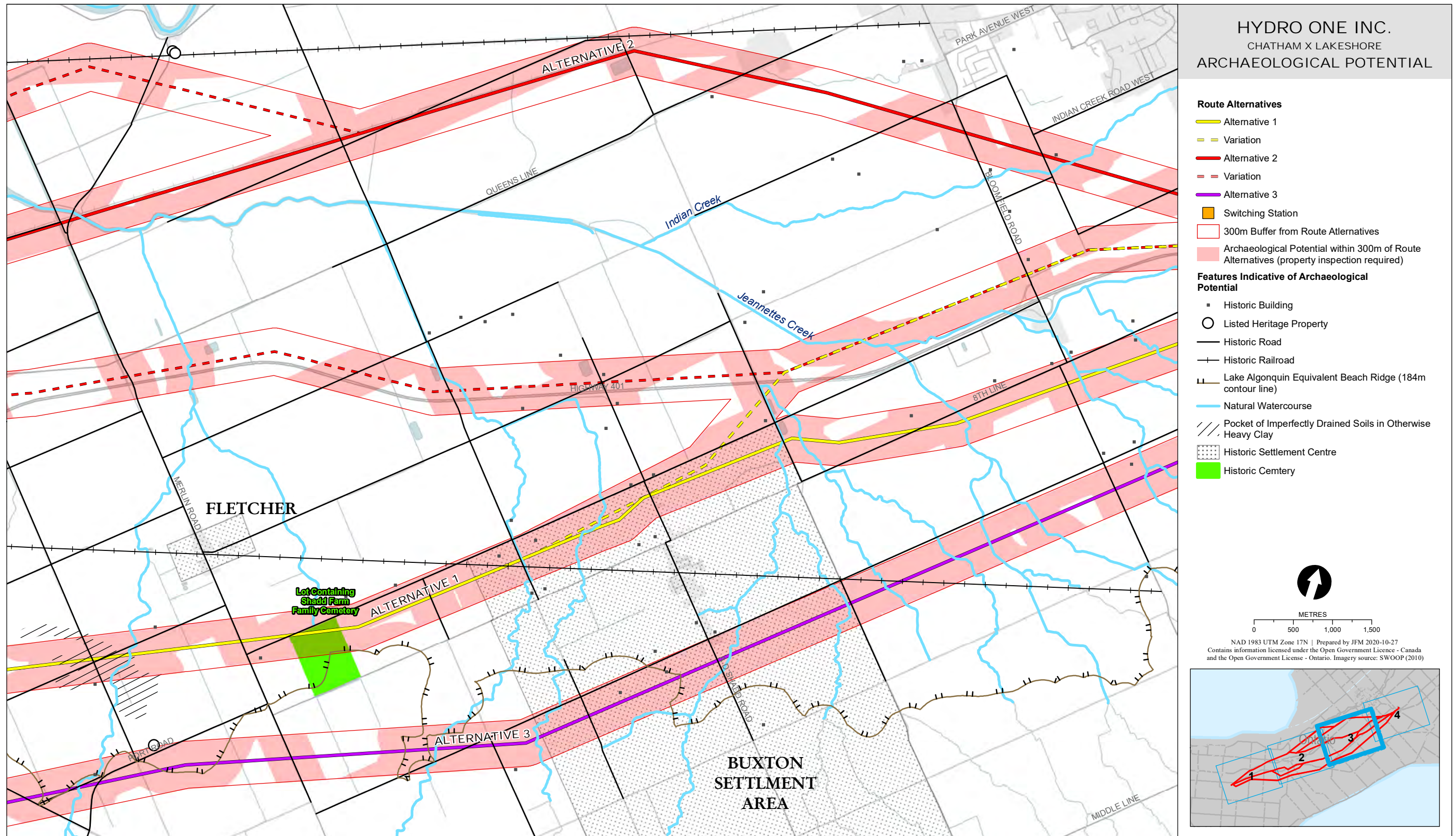
Map 33: Early Roads in Harwich, Raleigh, Tilbury East, Tilbury West and Rochester Townships (adapted from Hamil 1951)





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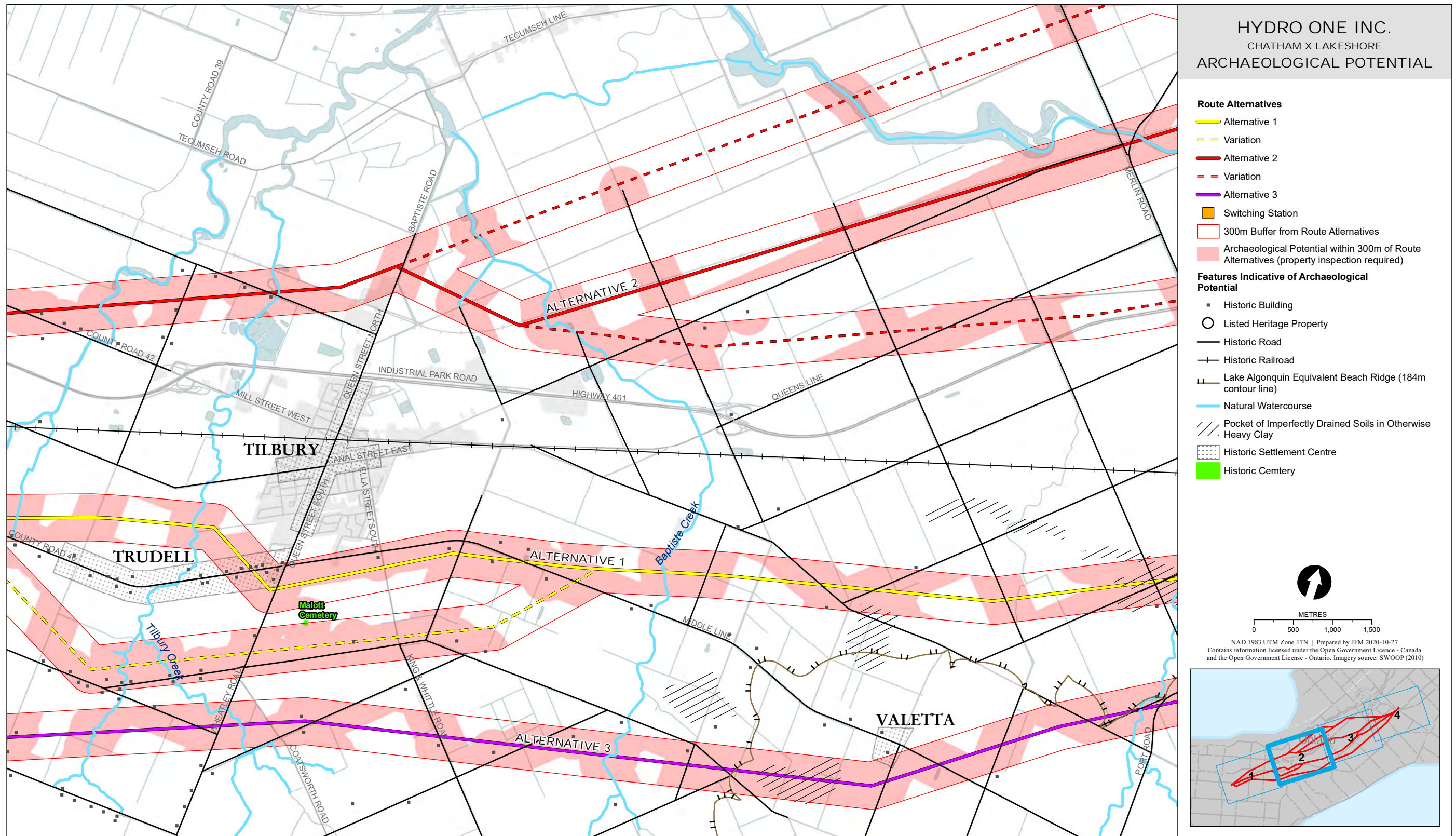




Map 34 b: Map of Archaeological Potential - East - Central Portion

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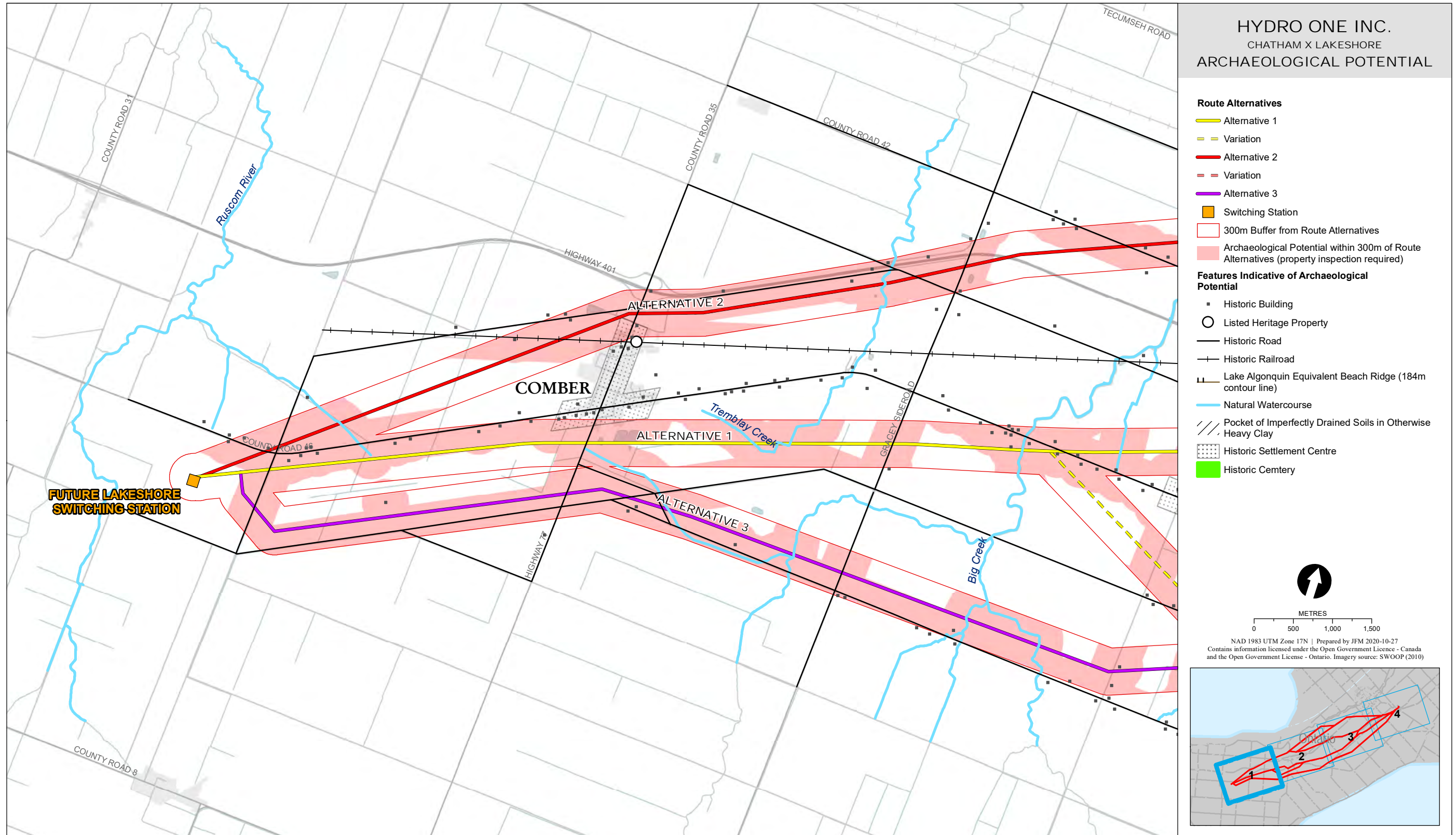




Map 34 c: Map of Archaeological Potential - West-Central Portion

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Map 34 d: Map of Archaeological Potential - West Portion

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REPORT

Chatham to Lakeshore New Double-Circuit 230 KV Transmission Line Project

Cultural Heritage Existing Conditions Report

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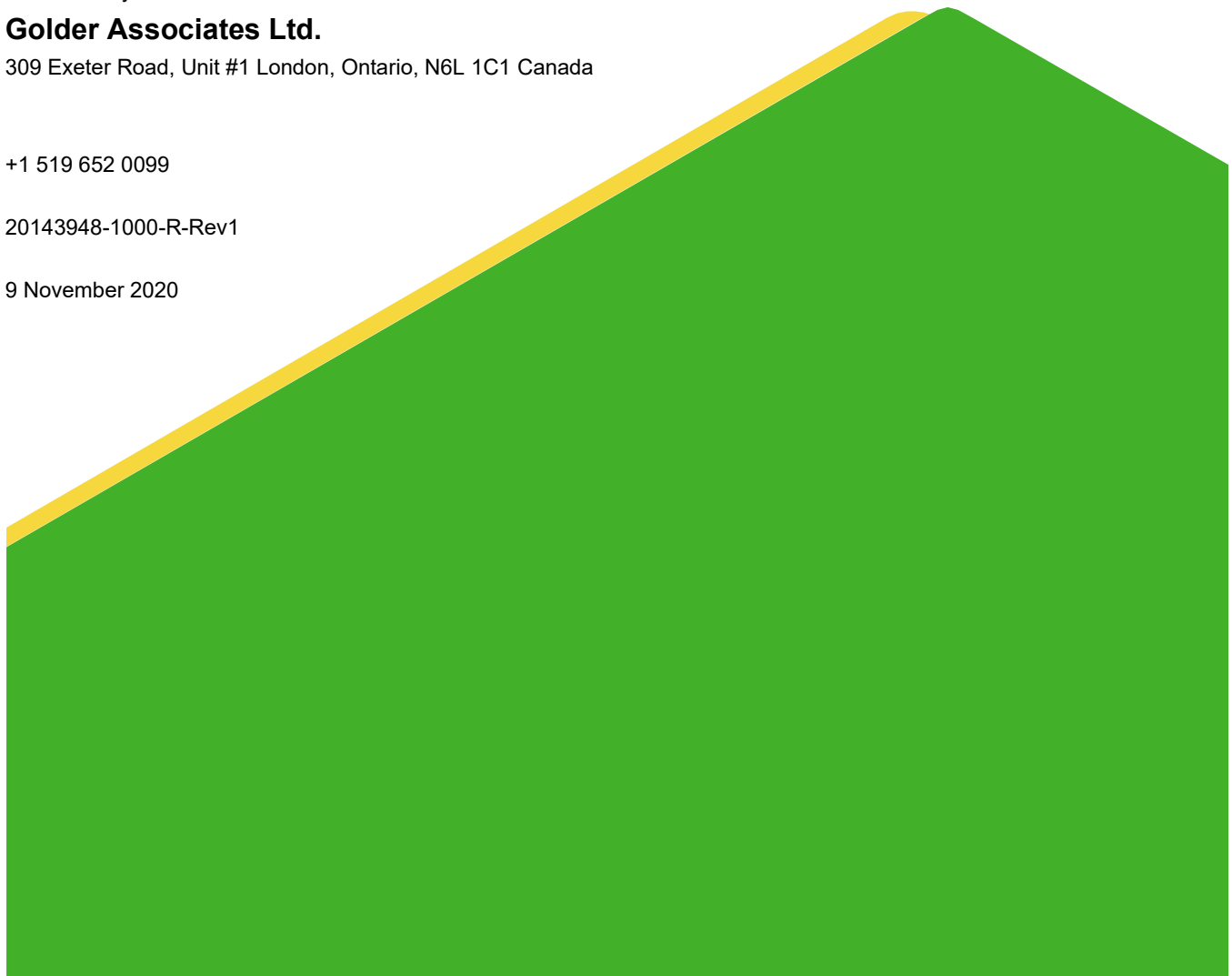
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9 November 2020



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Executive Summary

The Executive Summary summarizes only the key points of the report. For a complete account of the results and conclusions, as well as the limitations of this study, the reader should examine the report in full.

In May 2020, Hydro One Networks Inc. (Hydro One) retained Golder Associates Ltd. (Golder) to provide a Cultural Heritage Existing Conditions (CHEC) report to support the Chatham to Lakeshore New Double-Circuit 230 kV Transmission Line Project (the Project). The Project is subject to the Class Environmental Assessment (EA) for Minor Transmission Facilities as well as Section 92 approval by the Ontario Energy Board (OEB). The objective of the CHEC is to help characterize the study area environment by identifying potential or known heritage resources and to assist Hydro One to select the preferred route for a new transmission line connecting the Chatham Switching Station (SS) in the Municipality of Chatham-Kent to the future Lakeshore SS in the Town of Lakeshore.

Hydro One defined the study area as three (3) groups of feasible route alternatives (with overlap) with a buffer of 120 metres (m) on either side of each centreline. To address properties within the Buxton Settlement National Historic Site of Canada (NHSC), Golder extended this buffer to 500 m on either side of each centreline. The three groups of proposed route alternatives for the Project are Route 1 which includes variations 1A, 1B, 1C and 1D; Route 2 which includes variations 2A, 2B and 2C; and finally Route 3 which includes variation 3A.

Following guidance provided by the Ministry of Heritage, Sport, Tourism and Culture Industries (MHSTCI), this CHEC provides a background on the relevant provincial and municipal legislation and policies for cultural heritage, outlines the methods used to identify built heritage resources and cultural heritage landscapes in the study area, and identifies from desktop analysis and field investigations the known and potential built heritage resources and cultural heritage landscapes within the study area.

In total, the study area includes or crosses 1,301 property parcels. Of these Golder identified:

- One (1) cultural heritage landscape designated under the Government of Canada *Historic Sites and Monuments Act* (R.S.C., 1985, c. H-4) (Buxton NHSC, non-administered)
 - the NHSC encompasses seven properties within the study area
- One (1) property listed on the Lakeshore *Municipal Heritage Register* (15628 Middle Road, Comber)
- Sixty-two (62) properties evaluated at a preliminary level to have potential cultural heritage value or interest (CHVI) for their built heritage resources
- One (1) property evaluated at a preliminary level to have potential cultural heritage value or interest (CHVI) as a cultural heritage landscape
- Three (3) properties evaluated at a preliminary level to have potential cultural heritage value or interest (CHVI) for their built heritage resources and as a cultural heritage landscape

An additional 243 properties were found to have buildings or structures 40 years or more years old but were evaluated at a preliminary level not to have potential CHVI.

Since all route options cross or are adjacent to known and potential built heritage resources and cultural heritage landscapes identified in this CHEC, Golder recommends to:

- Conduct a Preliminary Heritage Impact Assessment (HIA) to identify the direct and indirect impacts from the preferred alternative on the known and potential built heritage resources and cultural heritage landscapes identified in this CHEC.
 - Based on the impacts identified, the Preliminary HIA will determine if property specific Cultural Heritage Evaluation Reports (CHERs) or Heritage Impact Assessment (HIAs) are required and recommend mitigation measures to avoid or reduce the adverse effects.

Study Limitations

Golder Associates Ltd. has prepared this report in a manner consistent with guidance developed by the Ontario Ministry of Heritage, Sport, Tourism and Culture Industries, subject to the time limits and physical constraints applicable to this report. No other warranty expressed or implied is made.

This report has been prepared for the specific site, design objective, developments and purpose described to Golder Associates Ltd. by Hydro One Networks Inc. (the Client). The factual data, interpretations and recommendations pertain to a specific project as described in this report and are not applicable to any other project or site location.

The information, recommendations and opinions expressed in this report are for the sole benefit of the Client. No other party may use or rely on this report or any portion thereof without Golder Associates Ltd.'s express written consent. If the report was prepared to be included for a specific permit application process, then upon the reasonable request of the Client, Golder Associates Ltd. may authorize in writing the use of this report by the regulatory agency as an Approved User for the specific and identified purpose of the applicable permit review process. Any other use of this report by others is prohibited and is without responsibility to Golder Associates Ltd. The report, all plans, data, drawings and other documents as well as electronic media prepared by Golder Associates Ltd. are considered its professional work product and shall remain the copyright property of Golder Associates Ltd., who authorizes only the Client and Approved Users to make copies of the report, but only in such quantities as are reasonably necessary for the use of the report by those parties. The Client and Approved Users may not give, lend, sell, or otherwise make available the report or any portion thereof to any other party without the express written permission of Golder Associates Ltd. The Client acknowledges the electronic media is susceptible to unauthorized modification, deterioration and incompatibility and therefore the Client cannot rely upon the electronic media versions of Golder Associates Ltd.'s report or other work products.

Unless otherwise stated, the suggestions, recommendations and opinions given in this report are intended only for the guidance of the Client in the design of the specific project

Table of Contents

1.0 INTRODUCTION	1
2.0 POLICY FRAMEWORK	3
2.1 Federal and International Heritage Policies	3
2.2 Provincial Heritage Policies	3
2.2.1 Environmental Assessment Act and Ontario Energy Board Act	3
2.2.2 Planning Act and Provincial Policy Statement	3
2.2.3 Ontario Heritage Act and Ontario Regulation 9/06	5
2.2.3.1 Provincial Standards & Guidelines	6
2.3 Municipal Heritage Policies	7
2.3.1 Official Plan of the Municipality of Chatham-Kent	7
2.3.2 Official Plan of the Town of Lakeshore	8
3.0 SCOPE & METHOD	9
4.0 RESULTS	11
4.1 Study Area	11
4.1.1 Route 1	12
4.1.2 Route 2	16
4.1.3 Route 3	20
4.1.4 Results of Analysis & Recommendations	23
5.0 SUMMARY STATEMENT AND RECOMMENDATIONS	24
6.0 FIGURES	26
6.1 Study Area	26

TABLES

Table 1: Record of engagement	10
Table 2: Designated or Listed Heritage Properties within Route 1 Study Area	12
Table 3: Properties evaluated to have potential CHVI within Route 1 Study Area and within Buxton Settlement NHSC	12

Table 4: Properties evaluated to have potential CHVI within Route 1 Study Area	13
Table 5: Properties evaluated to have potential CHVI within Route 2 Study Area	16
Table 6: Designated or Listed Heritage Properties within Route 3 Study Area.....	20
Table 7: Properties evaluated to have potential CHVI within Route 3 Study Area and within Buxton Settlement NHSC	20
Table 8: Properties evaluated to have potential CHVI within Route 3 Study Area	21

FIGURES

Figure 1: Location of Study Area	2
Figures 2 A-G: Study Area overlaid on 19 th century historical mapping.....	27
Figures 3 A-G: Study Area overlaid on 20 th century historical mapping.....	28
Figures 4 A-G: Properties of known and potential CHVI identified in the study area.....	29

APPENDIX A

Known and Potential Built Heritage Resources and Cultural Heritage Landscapes identified in the Route 1 Study Area

APPENDIX B

Known and Potential Built Heritage Resources and Cultural Heritage Landscapes identified in the Route 2 Study Area

APPENDIX C

Known and Potential Built Heritage Resources and Cultural Heritage Landscapes identified in the Route 3 Study Area

APPENDIX D

Properties with Buildings or Structures 40 or more years old evaluated at a preliminary level not to have CHVI

APPENDIX E

Registration of Heritage By-Law 267-2008 Buxton National Historic Site of Canada and Museum

1.0 INTRODUCTION

In May 2020, Hydro One Networks Inc. (Hydro One) retained Golder Associates Ltd. (Golder) to provide a Cultural Heritage Existing Conditions (CHEC) report to support the Chatham to Lakeshore New Double-Circuit 230 kV Transmission Line Project (the Project). The Project is subject to the Class Environmental Assessment (EA) for Minor Transmission Facilities as well as Section 92 approval by the Ontario Energy Board (OEB). The objective of the CHEC is to help characterize the study area environment by identifying potential or known heritage resources and to assist Hydro One to select the preferred route for a new transmission line connecting the Chatham Switching Station (SS) in the Municipality of Chatham-Kent to the future Lakeshore SS in the Town of Lakeshore (Figure 1).

Hydro One defined the study area as three (3) groups of feasible route alternatives (with overlap) with a buffer of 120 metres (m) on either side of each centreline. To address properties within the Buxton Settlement National Historic Site of Canada (NHSC), Golder extended this buffer to 500 m on either side of each centreline. The three groups of proposed route alternatives for the Project are Route 1 which includes variations 1A, 1B, 1C, and 1D; Route 2 which includes variations 2A, 2B, and 2C; and finally Route 3 which includes variation 3A.

Following guidance provided by the Ministry of Heritage, Sport, Tourism and Culture Industries (MHSTCI), this CHEC provides:

- An overview of the relevant heritage policies for identifying and protecting built heritage resources and cultural heritage landscapes in Ontario
- A summary of the study's objectives, scope, and the methods used to identify built heritage resources and cultural heritage landscapes in the study area
- An inventory based on desktop analysis and field investigation of all built heritage resources and cultural heritage landscapes associated with each routing option
- Recommendations for future studies.

Figure 1: Location of Study Area

2.0 POLICY FRAMEWORK

Built heritage resources and cultural heritage landscapes are recognized, protected, and managed through several provincial and municipal planning and policy regimes, as well as guidance developed at the federal and international levels. These policies have varying levels of authority at the local level, though generally all inform decision-making on the identification and evaluation of built heritage resources and cultural heritage landscapes.

2.1 Federal and International Heritage Policies

Although the Buxton NHSC is not administered by Parks Canada or other federal agency and therefore not subject to federal heritage property legislation, it is encouraged that all non-administered NSHC follow the Canada's Historic Places *Standards and Guidelines for the Conservation of Historic Places in Canada* (Canada's Historic Places 2010). This document was drafted in response to international and national agreements such as the 1964 *International Charter for the Conservation and Restoration of Monuments and Sites (Venice Charter)*, 1979 *Australia ICOMOS Charter for Places of Cultural Significance (Burra Charter, updated 2013)*, and 1983 *Canadian Appleton Charter for the Protection and Enhancement of the Built Environment*. The *Standards and Guidelines* define three conservation “treatments” — preservation, rehabilitation, and restoration— and outlines the process and required and recommended actions to meet the objectives for each treatment for a range of cultural heritage resources.

2.2 Provincial Heritage Policies

2.2.1 Environmental Assessment Act and Ontario Energy Board Act

The *Environmental Assessment Act* (EAA) was legislated to ensure that Ontario's environment is protected, conserved, and wisely managed. Under the EAA, “environment” includes not only natural elements such as air, land, water and plant and animal life, but also the “social, economic and cultural conditions that influence the life of humans or a community”, and “any building, structure, machine or other device or thing made by humans”. To determine the potential environmental effects of a new development, the Environmental Assessment (EA) process was created to standardize decision-making.

Small-scale project types that occur frequently and have predictable environmental effects are grouped under the “Class EA Process,” and do not require additional approvals under the EAA if the established procedure is correctly followed. For the Project, this procedure is outlined in the *Class Environmental Assessment for Minor Transmission Facilities* (2016).

The Project is also subject to Section 92 by the *Ontario Energy Board [OEB] Act, 1998*, which requires that transmitters and distributors obtain approval from the OEB. Once the OEB approves a project it will grant the transmitter or distributor a “Leave to Construct”.

2.2.2 Planning Act and Provincial Policy Statement

The Ontario *Planning Act* (1990) and associated *Provincial Policy Statement 2020* (PPS 2020) mandate heritage conservation in land use planning. Under the *Planning Act*, conservation of “features of significant architectural, cultural, historical, archaeological or scientific interest” are a “matter of provincial interest” and integrates this at the provincial and municipal levels through the PPS 2020. Issued under Section 3 of the *Planning Act*, PPS 2020 recognizes that cultural heritage and archaeological resources “provide important environmental, economic, and social benefits”, and that “encouraging a sense of place, by promoting well-designed built form and cultural planning, and by conserving features that help define character, including *built heritage resources* and *cultural heritage landscapes*” supports long-term economic prosperity (PPS 2020:6,22).

The importance of identifying and evaluating built heritage and cultural heritage landscapes is recognized in two policies of PPS 2020:

- Section 2.6.1 – *Significant built heritage resources* and *significant cultural heritage landscapes* shall be conserved
- Section 2.6.3 – Planning authorities shall not permit *development* and *site alteration* on *adjacent lands* to *protected heritage property* except where the proposed *development* and *site alteration* has been evaluated and it has been demonstrated that the *heritage attributes* of the *protected heritage property* will be conserved

Each of the italicised terms is defined in Section 6.0 of PPS 2020:

- **Adjacent lands:** for the purposes of policy 2.6.3, those lands contiguous to a *protected heritage property* or as otherwise defined in the municipal official plan
- **Built heritage resource:** means a building, structure, monument, installation or any manufactured or constructed part or remnant that contributes to a property's cultural heritage value or interest as identified by a community, including an Indigenous community. *Built heritage resources* are located on property that may be designated under Parts IV or V of the *Ontario Heritage Act*, or that may be included on local, provincial, federal and/or international registers.
- **Conserved:** means the identification, protection, management and use of built heritage resources, cultural heritage landscapes and archaeological resources in a manner that ensures their cultural heritage value or interest is retained. This may be achieved by the implementation of recommendations set out in a conservation plan, archaeological assessment, and/or heritage impact assessment that has been approved, accepted or adopted by the relevant planning authority and/or decision-maker. Mitigative measures and/or alternative development approaches can be included in these plans and assessments.
- **Cultural heritage landscape:** means a defined geographical area that may have been modified by human activity and is identified as having cultural heritage value or interest by a community, including an Indigenous community. The area may include features such as buildings, structures, spaces, views, archaeological sites or natural elements that are valued together for their interrelationship, meaning or association. Cultural heritage landscapes may be properties that have been determined to have cultural heritage value or interest under the *Ontario Heritage Act*; or have been included in on federal and/or international registers, and/or protected through official plan, zoning by-law, or other land use planning mechanisms.
- **Development:** means the creation of a new lot, a change in land use, or the construction of buildings and structures requiring approval under the Planning Act
- **Heritage attributes:** the principal features or elements that contribute to a protected heritage property's cultural heritage value or interest, and may include the property's built, constructed, or manufactured elements, as well as natural landforms, vegetation, water features, and its visual setting (e.g. significant views or vistas to or from a protected heritage property)
- **Protected heritage property:** property designated under Parts IV, V or VI of the *Ontario Heritage Act*; property subject to a heritage conservation easement under Parts II or IV of the *Ontario Heritage Act*; property identified by the Province and prescribed public bodies as provincial heritage property under the Standards and Guidelines for Conservation of Provincial Heritage Properties; property protected under federal legislation, and UNESCO World Heritage Sites.

- **Significant:** means, in regard to cultural heritage and archaeology, resources that have been determined to have cultural heritage value or interest. Processes and criteria for determining cultural heritage value or interest are established by the Province under the authority of the *Ontario Heritage Act*.

Importantly, the definition for *significant* includes a caveat that “criteria for determining significance...are recommended by the Province, but municipal approaches that achieve or exceed the same objective may also be used”, and that “while some significant resources may already be identified and inventoried by official sources, the significance of others can only be determined after evaluation.” The criteria for significance recommended by the Province, as well as the need for evaluation, is outlined in the following section.

2.2.3 Ontario Heritage Act and Ontario Regulation 9/06

The *Ontario Heritage Act (OHA)* enables the Province and municipalities to conserve significant individual properties and areas. For provincially owned, administered, or occupied heritage properties, compliance with the MHSTCI S&Gs is mandatory under Part III of the *OHA* and holds the same authority for ministries and prescribed public bodies as a Management Board or Cabinet directive. For municipalities, Part IV and Part V of the *OHA* enables council to “designate” individual properties (Part IV), or properties within a heritage conservation district (HCD) (Part V), as being of “cultural heritage value or interest” (CHVI). Evaluation for CHVI under the *OHA* (or *significance* under PPS 2020) is guided by *Ontario Regulation 9/06 (O. Reg. 9/06)*, which prescribes the *criteria for determining cultural heritage value or interest*. *O. Reg. 9/06* has three categories of absolute or non-ranked criteria, each with three sub-criteria:

- 1) The property has **design value or physical value** because it:
 - i) Is a rare, unique, representative or early example of a style, type, expression, material or construction method;
 - ii) Displays a high degree of craftsmanship or artistic merit; or
 - iii) Demonstrates a high degree of technical or scientific achievement.
- 2) The property has **historic value or associative value** because it:
 - i) Has direct associations with a theme, event, belief, person, activity, organization, or institution that is significant to a community;
 - ii) Yields, or has the potential to yield information that contributes to an understanding of a community or culture; or
 - iii) Demonstrates or reflects the work or ideas of an architect, artist, builder, designer, or theorist who is significant to a community.
- 3) The property has **contextual value** because it:
 - i) Is important in defining, maintaining or supporting the character of an area;
 - ii) Is physically, functionally, visually or historically linked to its surroundings; or
 - iii) Is a landmark.

A property needs to meet only one criterion of *O. Reg. 9/06* to be considered for designation under Part IV of the *OHA*. If found to meet one or more criterion, the property’s CHVI is then described with a Statement of Cultural Heritage Value or Interest (SCHVI) that includes a brief property description, a succinct statement of the

property's cultural heritage significance, and a list of its heritage attributes. In the *OHA* heritage attributes are defined slightly differently to the PPS 2020 and directly linked to real property¹; therefore, in most cases a property's CHVI applies to the entire land parcel, not just individual buildings or structures. Once a municipal council decides to designate a property, it is recognized through by-law and added to a "Register" maintained by the municipal clerk. A municipality may also "list" a property on the Register to indicate it as having potential cultural heritage value or interest.

Section B2 of the MHSTCI S&Gs requires that evaluation of built assets or landscapes on properties owned or occupied by the Province or by a provincial ministry, agency or crown corporation—which includes properties prescribed under *Ontario Regulation 157/10* or properties with special significance— must be use both *O. Reg. 9/06* and the *O. Reg. 10/06 Criteria for Determining Cultural Heritage Value or Interest of Provincial Significance*. The *O. Reg. 10/06* criteria are:

- 1) The property represents or demonstrates a theme or pattern in Ontario's history.
- 2) The property yields, or has the potential to yield, information that contributes to an understanding of Ontario's history.
- 3) The property demonstrates an uncommon, rare or unique aspect of Ontario's cultural heritage.
- 4) The property is of aesthetic, visual or contextual importance to the province.
- 5) The property demonstrates a high degree of excellence or creative, technical or scientific achievement at a provincial level in a given period.
- 6) The property has a strong or special association with the entire province or with a community that is found in more than one part of the province. The association exists for historic, social, or cultural reasons or because of traditional use.
- 7) The property has a strong or special association with the life or work of a person, group or organization of importance to the province or with an event of importance to the province.
- 8) The property is located in unorganized territory and the Minister determines that there is a provincial interest in the protection of the property. *O. Reg. 10/06*, s. 1 (2).

If a provincially owned, administered or occupied property meets one or more criterion of *O. Reg. 9/06*, it may be considered for designation as a "provincial heritage property" (PHP), while a property that meets one or more of the criteria under *O. Reg. 10/06* may be considered for designation as a "provincial heritage property of provincial significance" (PHPPS). PHPs and PHPPS are formally described with a *Statement of Cultural Heritage Value* (SCHV) that like a SCHVI includes a brief property description, a succinct statement of the property's cultural heritage significance, and a list of its heritage attributes. Provincially owned, administered, or occupied properties that are identified to have built heritage resources or cultural heritage landscapes are then added to a list maintained by MHSTCI.

2.2.3.1 Provincial Standards & Guidelines

As mentioned above, heritage conservation on provincial properties must comply with the MHSTCI S&Gs. After introducing the requirement for the MHSTCI S&Gs under the *OHA* and key definitions, the document outlines the

¹ The OHA definition "heritage attributes means, in relation to real property, and to the buildings and structures on the real property, the attributes of the property, buildings and structures that contribute to their cultural heritage value or interest."

overall principles, general provisions, and a series of comprehensive policies for how Ministries and public bodies shall operate to maintain, use, and dispose of provincial heritage properties. The MHSTCI S&Gs also require all provincial ministries and public bodies to develop their own “evaluation process to identify provincial heritage properties” (Section B.2). To address this requirement, Hydro One developed the *Hydro One Cultural Heritage Identification and Evaluation Process* (2019).

Additional documents drafted to support implementing the MHSTCI S&Gs include the *Standards and Guidelines for the Conservation of Provincial Heritage Properties – Heritage Identification & Evaluation Process* (2014), which provides detailed explanations of the *O. Reg. 9/06* and *O. Reg. 10/06* criteria and their application, and *Information Bulletin 3*, which describes how to organize the sections of a heritage impact assessment and the range of possible impacts and mitigation measures.

The Province, through the MHSTCI, has also developed a series of products to advise municipalities, organizations, and individuals on heritage protection and conservation. One product is the MHSTCI *Criteria for Evaluating Potential for Built Heritage Resources and Cultural Heritage Landscapes: A Checklist for the Non-Specialist* (MHSTCI *Checklist*) which helps to identify if a study area contains or is adjacent to known built heritage resources and cultural heritage landscapes, provides general direction on identifying potential built heritage resources and cultural heritage landscapes, and aids in determining the next stages of evaluation and assessment. More detailed guidance on identifying, evaluating, and assessing impact to built heritage resources and cultural heritage landscapes is provided in the *Ontario Heritage Tool Kit* series.

For heritage evaluations, the *Ontario Heritage Tool Kit* partially, but not entirely, supersedes earlier MHSTCI advice. Criteria to identify cultural landscapes is provided in greater detail in the *Guidelines on the Man-Made Heritage Component of Environmental Assessments* (1980:7), while recording and documentation procedures are outlined in the *Guideline for Preparing the Cultural Heritage Resource Component of Environmental Assessments* (1992:3-7).

2.3 Municipal Heritage Policies

2.3.1 Official Plan of the Municipality of Chatham-Kent

The Municipality of Chatham-Kent's *Official Plan* was consolidated on 19 November 2018 with the goal of reflecting the shared views of the citizens within the established provincial planning policy framework. The Plan provides policy framework and guidance for cultural heritage resource conservation including implementation of cultural heritage policies of the Provincial Policy Statement and application of the *OHA* for built heritage resources, cultural heritage landscapes, and archaeological resources at the municipal level.

Section 5.3 of the Plan discusses Heritage Resource Policies and emphasizes historical ecology and the interactions between humans and the environments in which they live. Particular emphasis is placed on the Municipality's rich history including that of Indigenous groups, American slavery, and the Underground Railroad. The two objectives of the Heritage Resource Policies are described below:

- Support and encourage the preservation of the Municipality's rich cultural heritage resources (5.3.1.1); and
- Encourage the documentation, display, interpretation and celebration of the Municipality's cultural heritage (5.3.1.2).

Following these objectives, the Plan outlines twenty-seven Heritage Resource Policies. As most of the study area is located within large tracts of rural landscape not previously subject to assessment, of particular relevance to this CHEC are the following policies:

- Development and/or site alteration shall not be permitted on properties containing significant built heritage resources and/or cultural heritage landscapes, unless it is demonstrated through a heritage impact assessment prepared by a qualified professional to the satisfaction of the Municipality that the significant built heritage resources or cultural heritage landscapes on or adjacent to the subject property(ies) will be conserved (5.3.2.2); and
- The preservation of cultural landscapes in the rural areas such as hedgerows, stone fences or tree lines is encouraged (5.3.2.20).

2.3.2 Official Plan of the Town of Lakeshore

The Town of Lakeshore's *Official Plan* was approved 22 November 2010. Section 4.2.3 of the Plan discusses cultural heritage resources as important components to the Town's history and community identity which should be preserved and enhanced. The Plan outlines ten policies regarding cultural heritage resources, three policies pertaining to the operation of the Heritage Committee, four policies regarding the management of Heritage Properties or Districts, five policies regarding Archaeological Resources, and finally eight policies pertaining to Development. As the majority of the study area is located within large tracts of rural landscape not previously subject to assessment, of particular relevance to this CHEC are the following policies, of which the latter is identical to policy 5.3.2.20 of the Chatham-Kent *Official Plan*):

- New development and redevelopment will have regard for heritage resources and will, wherever feasible, incorporate these resources into any plan that may be prepared for such a new development or re-development within the Town (4.2.3.5.a)
- The preservation of cultural landscapes in the rural area such as hedgerows, stone fences or tree lines are encouraged (4.2.3.3.d)

3.0 SCOPE & METHOD

The objective of the CHEC was to identify through desktop sources and field investigation all known or potential built heritage resources and cultural heritage landscapes within the study area. Since cultural heritage under the *OHA* is linked to real property, analysis of the study area included all parcels that wholly or partially intersected the study area.

Following the *Hydro One Cultural Heritage Identification and Evaluation Process*, the study area was screened for built heritage resources and cultural heritage landscapes using the *MHSTCI Checklist*). The *MHSTCI Checklist* provides a screening tool to identify all known or recognized built heritage resources and cultural heritage landscapes in a study area, as well as commemorative plaques, cemeteries, Canadian Heritage River watersheds, properties with buildings or structures 40 or more years old, and potential cultural heritage landscapes. To complete the checklist, Golder undertook the following tasks:

- Reviewed federal, provincial, and municipal heritage registers, inventories, and databases were reviewed to identify known built heritage resources and cultural heritage landscapes in the study area. These sources include:
 - Canadian Register of Historic Places (www.historicplaces.ca)
 - Historic Sites and Monuments Board of Canada Directory of Federal Heritage Designations (https://www.pc.gc.ca/apps/dfhd/search-recherche_eng.aspx)
 - Historic Sites and Monuments Board of Canada Directory of Heritage Railway Stations (<https://www.pc.gc.ca/en/culture/clmhc-hsmbc/pat-her/gar-sta/on>)
 - Ontario Heritage Trust Online Plaque Guide (<http://www.heritagetrust.on.ca/en/index.php/online-plaque-guide>) and Ontario Places of Worship Inventory (<http://www.heritagetrust.on.ca/Ontario-s-Places-of-Worship/Inventory>), and List of Easement Properties (<http://www.heritagetrust.on.ca/en/property-types/easement-properties>)
 - Canadian Heritage River System list of designated heritage river systems (<http://chrs.ca/>)
 - The Ontario Heritage Bridge List in the Ontario Heritage Bridge Guidelines for Provincially Owned Bridges (Interim) (Ministry of Transport 2008)
 - Chatham-Kent Municipal Heritage Register (<https://www.chatham-kent.ca/tourism-culture/heritage-resources/heritage-designations-in-chatham-kent>)
 - Town of Lakeshore Heritage Register (via correspondence with planning staff)
- Consulted with the Municipality of Chatham-Kent heritage planning staff
- Consulted with the Town of Lakeshore heritage planning staff
- Consulted 19th century historical county maps and early 20th century topographical maps (Figures 2)
- Conducted a field investigation of the study area.

- Cultural Heritage Specialist Alisha Mohamed conducted field investigations between 23 and 25 July 2020, which included documenting properties from the public right-of-way using a Nikon D3300 SLR camera
- Mapped and listed all identified built heritage resources by its association with each proposed route option

Ontario Heritage Trust coordinators and planning staff from the Municipality of Chatham-Kent and Town of Lakeshore were engaged during the background research for this report. A summary of the correspondence is provided in Table 1.

Table 1: Record of engagement.

Date	Query	Contact	Response
29 June 2020	Inquiry regarding easements within study area	Kiki Aravopoulos, Easement Coordinator, Ontario Heritage Trust	Confirmed there are no cultural heritage easements within study area
13 July 2020	Inquiry regarding plaques within study area	Dawson Bridger, Easement Coordinator, Ontario Heritage Trust Kevin DeMille, Natural Heritage Coordinator, Ontario Heritage Trust	Confirmed there are no provincial heritage plaques within study area
02 September 2020	Inquiry regarding listed and designated properties within the study area	Anthony Jas, Heritage Planner, Municipality of Chatham-Kent	Confirmed there is only one designated (Buxton NHSC) property within study area
17 September 2020	Inquiry regarding listed and designated properties within the study area	Ian Search, Planner Level 1, Town of Lakeshore Gisele Pillon, Administrative Assistant, Town of Lakeshore	Confirmed there are no designated properties within study area and one listed property within study area

4.0 RESULTS

4.1 Study Area

In total, the study area includes or crosses 1,301 property parcels. Of these Golder identified:

- One (1) cultural heritage landscape designated under the Government of Canada *Historic Sites and Monuments Act* (R.S.C., 1985, c. H-4) (Buxton NHSC, non-administered)
 - the NHSC encompasses seven properties within the study area (see Table 3 and Table 7)
- One (1) property listed on the Lakeshore *Municipal Heritage Register* (15628 Middle Road, Comber)
- Sixty-two (62) properties evaluated at a preliminary level to have potential cultural heritage value or interest (CHVI) for their built heritage resources
- One (1) property evaluated at a preliminary level to have potential cultural heritage value or interest (CHVI) as a cultural heritage landscape
- Three (3) properties evaluated at a preliminary level to have potential cultural heritage value or interest (CHVI) for their built heritage resources and as a cultural heritage landscape

An additional 243 properties were found to have buildings or structures 40 years or more years old but were evaluated at a preliminary level not to have potential CHVI.

The built heritage resources and cultural heritage landscapes identified using the MHSTCI *Checklist* and through field investigations are listed by each route option in the following subsections, with a detailed inventory provided in APPENDIX A to APPENDIX C. APPENDIX D includes brief descriptions and photographs of properties with buildings or structures 40 or more years old evaluated at a preliminary level not to have CHVI.

4.1.1 Route 1

Table 2 includes all protected heritage properties located wholly or partially within or adjacent to the study area for Route 1. Table 4 includes all properties evaluated at a preliminary level to have CHVI. Figures 4 A-G: maps all built heritage resources and cultural heritage landscapes within the Route 1 study area.

Table 2: Designated or Listed Heritage Properties within Route 1 Study Area

Civic Address or Location	Description	Cultural Heritage Status
4.8 km (3 miles) along Seventh Line West (roughly between Drake and Dillon Roads) and south 6 miles (to Lake Erie)	From Parks Canada <i>Directory of Federal Heritage Designations</i>: The Buxton Settlement NHSC is a cultural landscape of some 4,680 hectares. It is a primarily agricultural landscape, comprised of flat, worked fields defined by deep drainage ditches and a grid of intersecting roads. Homesteads are scattered throughout the settlement area including its two hamlets, South and North Buxton, which also contain important religious, educational, and cultural institutions associated with the settlement's founding by Underground Railroad refugees.	<ul style="list-style-type: none"> ■ Protected heritage property designated under the Government of Canada <i>Historic Sites and Monuments Act</i> (R.S.C., 1985, c. H-4) ■ One parcel within the Buxton NHSC is designated under Part IV of the <i>Ontario Heritage Act</i> (By-law 257-2008, APPENDIX E) but this is <u>not within</u> the study area.
15628 Middle Road, Comber	St. George's Anglican Church Cemetery, plot measuring approximately 30 m east-west by 165 m north-south. Grave markers range in date from 1866 to 2017 (dates of death). The property has contextual value as a mid-19 th to early 20 th century burial ground for the Comber community. It is a good example of a 19 th century rural cemetery.	<ul style="list-style-type: none"> ■ Listed on the Lakeshore <i>Municipal Heritage Register</i>

Table 3: Properties evaluated to have potential CHVI within Route 1 Study Area and within Buxton Settlement NHSC

Civic Address or Location	Description	Cultural Heritage Status
6328 7 Line West, Raleigh, Merlin	7 th Line Baptist Cemetery, also known as Anti Slavery Baptist Church Cemetery. Small plot measuring approximately 34 m east-west by 42 m north-south. Grave markers range in date from 1862 to 1950 (dates of death). The property has contextual value as a mid-19 th to early 20 th century burial ground for the Raleigh/ Buxton community. It is a good example of a 19 th century rural cemetery.	<ul style="list-style-type: none"> ■ Property/ cultural heritage landscape of potential CHVI
6327 8 Line, Raleigh, Merlin	Single detached, storey-and-a-half, vinyl siding clad house with associated wooden outbuildings to east. The property has potential design or physical value for its vernacular expression of the Gothic Revival style, as well as potential contextual value for its maintenance and support of the character of the Buxton Settlement area, to which it is still visually linked.	<ul style="list-style-type: none"> ■ Property of Potential CHVI
6491 8 Line, Raleigh, Merlin	Single detached, storey-and-a-half, vinyl siding clad house. The property has potential design or physical value for its vernacular expression of the Gothic Revival style, as well as potential contextual value for its maintenance and support of the character of the Buxton Settlement area, to which it is still visually linked.	<ul style="list-style-type: none"> ■ Property of Potential CHVI
6680 7 Line West, Raleigh, Merlin	Single detached, storey-and-a-half, vinyl siding clad house. The property has potential design or physical value for its vernacular expression of the Gothic Revival style, as well as potential contextual value for its maintenance and support of the character of the Buxton Settlement area, to which it is still visually linked.	<ul style="list-style-type: none"> ■ Property of Potential CHVI
The following properties are located within the Buxton Settlement and were found to have buildings or structures 40 years or more years old but were evaluated at a preliminary level not to have potential CHVI (see APPENDIX D for details):		
<ul style="list-style-type: none"> ■ 5585 8 Line, Raleigh, Merlin 	<ul style="list-style-type: none"> ■ 6987 7 Line West, Raleigh, Merlin 	<ul style="list-style-type: none"> ■ 22258 Drake Road, Raleigh, Merlin ■ 22171 A D Shadd Road, Raleigh, Merlin

Civic Address or Location	Description	Cultural Heritage Status
■ 6233 8 Line, Raleigh, Merlin	■ 6825 7 Line West, Raleigh, Merlin	■ 22149 Drake Road, Raleigh, Merlin
■ 6833 8 Line, Raleigh, Merlin	■ 6733 7 Line West, Raleigh, Merlin	■ 6333 8 Line, Raleigh, Merlin
■ 6845 8 Line, Raleigh, Merlin	■ 6664 7 Line West, Raleigh, Merlin	■ 6549 8 Line, Raleigh, Merlin
■ 22162 Dillon Road, Raleigh, Merlin	■ 6664 7 Line West, Raleigh, Merlin	■ 22191 A D Shadd Road, Raleigh, Merlin
		■ 22207 A D Shadd Road, Raleigh, Merlin
		■ 22233 A D Shadd Road, Raleigh, Merlin

Table 4: Properties evaluated to have potential CHVI within Route 1 Study Area

Civic Address or Location	Description	Cultural Heritage Status
Variation 1A		
21815 Communication Road, Chatham	Single detached, two-storey, vinyl siding clad house and associated rear (northwest) barn. The property has potential design or physical value for its complimentary gambrel roof farmhouse and barn, as well as potential contextual value for its maintenance and support of the rural agricultural character of the area, including the tree lines emphasized in the Municipality of Chatham-Kent's <i>Official Plan</i> , to which it is still visually linked.	■ Property/ cultural heritage landscape of potential CHVI
21864 Communication Road, Chatham	Single detached, two-storey brick house and associated rear (south) barns and outbuildings. The property has potential design or physical value for its vernacular expression of the Georgian revival style, as well as potential contextual value for its maintenance and support of the natural landscape (McGregor Creek) and rural agricultural character of the area to which it is still visually linked.	■ Property of Potential CHVI
4309 Middle Road, Comber	Though obstructed by tree cover, the property appears to contain a single detached, vinyl siding clad house and associated outbuilding rear (south) outbuilding. The property has potential design or physical value for its Ontario vernacular style architecture.	■ Property of Potential CHVI
6035 Middle Road, Comber	Single detached, two-storey, red brick house and associated rear (south) barn and outbuildings. The property has potential design or physical value for its Ontario vernacular style architecture.	■ Property of Potential CHVI
3979 Middle Line, Tilbury	Single detached, storey-and-a-half, red brick house. The property has potential design or physical value for its vernacular expression of the Gothic Revival style.	■ Property of Potential CHVI
4063 Middle Line, Tilbury	Single detached, storey-and-a-half, vinyl siding clad house with associated rear (north) outbuildings and silos. The property has potential design or physical value for its Ontario vernacular style architecture.	■ Property of Potential CHVI
10109 Middle Road, Comber	Single detached, storey-and-a-half, vinyl siding clad house with associated rear (south) shed. The property has potential design or physical value for its vernacular expression of the Gothic Revival style.	■ Property of Potential CHVI
7437 8 Line, Chatham	Single detached, storey-and-a-half, vinyl siding clad house with separate garage to east. The property has potential design or physical value for its vernacular expression of the Gothic Revival style.	■ Property of Potential CHVI

Civic Address or Location	Description	Cultural Heritage Status
7544 8 Line, Chatham	Single detached, storey-and-a-half, vinyl siding clad house with associated rear (south) outbuildings. The property has potential design or physical value for its vernacular expression of the Gothic Revival style.	■ Property of Potential CHVI
21895 Charing Cross Road, Chatham	Single detached, two-storey, red brick house with associated rear (east) barns and recreation centre. The property has potential design or physical value for its Ontario vernacular style architecture.	■ Property of Potential CHVI
22006 Charing Cross Road, Chatham	Single detached, two-storey, vinyl siding clad house with associated rear (west) barn. The property has potential design or physical value for its Ontario vernacular style architecture.	■ Property of Potential CHVI
22542 Sloan Road, Merlin	Single detached, storey-and-a-half, vinyl siding clad house and associated rear (west) barn. The property has potential design or physical value for its vernacular expression of the Gothic Revival style.	■ Property of Potential CHVI
4859 Finn Line, Merlin	Single detached, storey-and-a-half, vinyl siding clad house and associated rear (north) barn and silos. The property has potential design or physical value for its vernacular expression of the Gothic Revival style.	■ Property of Potential CHVI
22491 Cooper Road, Merlin	Single detached, storey-and-a-half, vinyl siding clad house. The property has potential design or physical value for its vernacular expression of the Gothic Revival style.	■ Property of Potential CHVI
4493 Morris Line, Merlin	Single detached, storey-and-a-half, vinyl siding clad house with associated outbuildings and silos to the north. The property has potential design or physical value for its vernacular expression of the Gothic Revival style.	■ Property of Potential CHVI
Variations 1B and 1D		
Not applicable	Not applicable	■ No properties of Potential CHVI
Variations 1C and 1D		
8386 Seventh Line East, Chatham	Single detached, storey-and-a-half, red brick house and associated rear (south) barn. The property has potential design or physical value for its Ontario vernacular style architecture.	■ Property of Potential CHVI
8565 Doyle Line, Chatham	Single detached, two storey, red brick house and associated rear (northwest) outbuilding. The property has potential design or physical value for its vernacular expression of the Gothic Revival style.	■ Property of Potential CHVI
6741 7 Line West, Tilbury	Single detached, storey-and-a-half, red brick house with associated rear (north) outbuildings and silos. The property has potential design or physical value for its vernacular expression of the Gothic Revival style.	■ Property of Potential CHVI
8361 8 Line, Chatham	Single detached, storey-and-a-half, vinyl siding clad house with rear (north) barns. The property has potential design or physical value for its vernacular expression of the Gothic Revival style.	■ Property of Potential CHVI

Civic Address or Location	Description	Cultural Heritage Status
8393 8 Line, Chatham	Single detached, storey-and-a-half, red brick house. The property has potential design or physical value for its vernacular expression of the Gothic Revival style.	■ Property of Potential CHVI
8412 8 Line, Chatham	Single detached, storey-and-a-half, red brick house with associated rear (south) barns. The property has potential design or physical value for its vernacular expression of the Gothic Revival style.	■ Property of Potential CHVI
7546 6 Line East, Chatham	Single detached, two-and-a-half storey, red brick house with associated rear (south) metal outbuildings. The property has potential design or physical value for its vernacular expression of the Gothic Revival style.	■ Property of Potential CHVI
7048-7050 6 Line East, Chatham	Single detached, storey-and-a-half, vinyl siding clad house and associated large complex of outbuildings to south and adjacent one-storey vinyl siding clad structure to east. The property has potential design or physical value for its vernacular expression of the Gothic Revival style.	■ Property of Potential CHVI

4.1.2 Route 2

Table 5 includes all properties located wholly or partially within or adjacent to the study area for Route 2 evaluated at a preliminary level to have CHVI. Figures 4 A-G: maps all built heritage resources and cultural heritage landscapes within the Route 2 study area.

Table 5: Properties evaluated to have potential CHVI within Route 2 Study Area

Civic Address or Location	Description	Cultural Heritage Status
Variation 2A		
22046 Creek Road, Chatham	Single detached, two storey, vinyl siding clad house and associated rear (north) barns. The property has potential design or physical value for its vernacular expression of the Gothic Revival style, as well as potential contextual value for its maintenance and support of the natural landscape (McGregor Creek) and of the rural agricultural character of the area to which it is still visually linked.	■ Property/ cultural heritage landscape of potential CHVI
9006 Doyle Line, Chatham	Single detached, two-storey, red dichromatic brick house and associated rear (south) barn. The property has potential design or physical value as it is stylistically representative of the c. 1930s local architectural trends.	■ Property of Potential CHVI
8934 Doyle Line, Chatham	Single detached, storey-and-a-half, vinyl siding clad house and associated rear (south) outbuilding. The property has potential design or physical value for its vernacular expression of the Gothic Revival style.	■ Property of Potential CHVI
8436 Seventh Line East, Chatham	Single detached, two-and-a-half storey, red brick house and associated rear (south) outbuildings. The property has potential design or physical value for its vernacular expression of the Romanesque revival style.	■ Property of Potential CHVI
8386 Seventh Line East, Chatham	Single detached, storey-and-a-half, red brick house and associated rear (south) barn. The property has potential design or physical value for its Ontario vernacular style architecture.	■ Property of Potential CHVI
8319 Seventh Line East, Chatham	Single detached, two-storey, vinyl siding clad house and associated rear (north) barns. The property has potential design or physical value for its vernacular expression of the Gothic Revival style.	■ Property of Potential CHVI
8075 Seventh Line East, Chatham	Single detached, two-storey, red brick house and associated rear (north) barn. The property has potential design or physical value for its vernacular expression of the Gothic Revival style.	■ Property of Potential CHVI
8019 Seventh Line East, Chatham	Single detached, storey-and-a-half, vinyl siding clad house and associated rear (north) barn. The property has potential design or physical value for its vernacular expression of the Gothic Revival style, as well as potential contextual value for its maintenance and support of the rural agricultural character of the area, including the tree lines emphasized in the Municipality of Chatham-Kent's <i>Official Plan</i> , to which it is still visually linked.	■ Property of Potential CHVI
7867 6 Line East, Chatham	Single detached, storey-and-a-half, red brick house. The property has potential design or physical value for its vernacular expression of the Gothic Revival style.	■ Property of Potential CHVI
22820 Bloomfield Road, Chatham	Single detached, two-storey, vinyl siding clad house and associated rear (west) barn and outbuildings. The property has potential design or physical value for its complimentary gambrel roof farmhouse and barn, as well as potential contextual value for its maintenance and support of the rural agricultural character of the area to which it is still visually linked.	■ Property/ cultural heritage landscape of potential CHVI

Civic Address or Location	Description	Cultural Heritage Status
7617 5 Line East, Chatham	Single detached, two-and-a-half storey, red brick house. The property has potential design or physical value for its vernacular expression of the Gothic Revival style.	■ Property of Potential CHVI
6730 3 Line, Chatham	Single detached, storey-and-a-half, vinyl siding clad house and associated rear (south) barn and outbuildings. The property has potential design or physical value for its vernacular expression of the Gothic Revival style.	■ Property of Potential CHVI
6481 3 Line, Chatham	Single detached, storey-and-a-half, red brick house with wood panelling along the upper storey and associated (west) outbuildings. The property has potential design or physical value for its Ontario vernacular style architecture.	■ Property of Potential CHVI
6311 3 Line, Chatham	Single detached, one-storey, vinyl siding clad house. The property has potential design or physical value for its vernacular expression of the Gothic Revival style.	■ Property of Potential CHVI
6281 3 Line, Chatham	Single detached, storey-and-a-half, vinyl siding clad house and associated (west) barn. The property has potential design or physical value for its vernacular expression of the Gothic Revival style.	■ Property of Potential CHVI
6623 Queen's Line, Chatham	Single detached, storey-and-a-half, brick house and associated rear (north) outbuildings. The property has potential design or physical value for its Ontario vernacular style architecture.	■ Property of Potential CHVI
6155 3 Line, Chatham	Single detached, one-storey, red brick house with associated rear (north) barn. The property has potential design or physical value as it is stylistically representative of the c. 1930s local architectural trends.	■ Property of Potential CHVI
6085 3 Line, Chatham	Single detached, storey-and-a-half, log house with associated rear (north) outbuildings. The property has potential design or physical value due to its uniqueness as one of the only remaining log houses in the area.	■ Property of Potential CHVI
21500 Lakeshore Road 303, Tilbury	Single detached, storey-and-a-half, vinyl siding clad house and associated rear (north) barn and outbuilding. The property has potential design or physical value for its vernacular expression of the Gothic Revival style.	■ Property of Potential CHVI
21400 Lakeshore Road 303, Tilbury	Single detached, storey-and-a-half, red brick house and associated rear (northeast) outbuildings. The property has potential design or physical value for its Ontario vernacular style architecture.	■ Property of Potential CHVI
15100 Morris Road, Comber	Single detached, storey-and-a-half, vinyl siding clad house and associated rear (north) barn. The property has potential design or physical value for its Ontario vernacular style architecture.	■ Property of Potential CHVI
10403 Morris Road, Comber	Single detached, storey-and-a-half, vinyl siding clad house and associated (west) barn. The property has potential design or physical value for its vernacular expression of the Gothic Revival style.	■ Property of Potential CHVI
9507 Morris Road, Comber	Single detached, storey-and-a-half, wood panelled house and associated rear (south) barn. The property has potential design or physical value due to its uniqueness as one of the only remaining wood panelled houses in the area.	■ Property of Potential CHVI

Civic Address or Location	Description	Cultural Heritage Status
4479 Industrial Park Road, Tilbury	Single detached, storey-and-a-half, vinyl siding clad house and associated rear (north) outbuildings. The property has potential design or physical value for its vernacular expression of the Gothic Revival style.	■ Property of Potential CHVI
5235 Industrial Park Road, Chatham	Single detached, storey-and-a-half, vinyl siding clad house and associated (west) outbuildings. The property has potential design or physical value for its vernacular expression of the Gothic Revival style.	■ Property of Potential CHVI
5354 Industrial Park Road, Chatham	Single detached, storey-and-a-half, vinyl siding clad house and associated rear (south) outbuilding. The property has potential design or physical value for its vernacular expression of the Gothic Revival style.	■ Property of Potential CHVI
Variation 2B		
6155 3 Line, Chatham	Single detached, one-storey, red brick house with associated rear (north) barn. The property has potential design or physical value as it is stylistically representative of the c. 1930s local architectural trends.	■ Property of Potential CHVI
24003 Dauphin Road, Tilbury	Single detached, storey-and-a-half, vinyl siding clad house and associated (west) barns and silos. The property has potential design or physical value for its vernacular expression of the Gothic Revival style, as well as potential contextual value for its maintenance and support of the rural agricultural character of the area to which it is still visually linked.	■ Property of Potential CHVI
Variation 2C		
8386 Seventh Line East, Chatham	Single detached, storey-and-a-half, red brick house and associated rear (south) barn. The property has potential design or physical value for its Ontario vernacular style architecture.	■ Property of Potential CHVI
8565 Doyle Line, Chatham	Single detached, two storey, red brick house and associated rear (northwest) outbuilding. The property has potential design or physical value for its vernacular expression of the Gothic Revival style.	■ Property of Potential CHVI
8361 8 Line, Chatham	Single detached, storey-and-a-half, vinyl siding clad house with rear (north) barns. The property has potential design or physical value for its vernacular expression of the Gothic Revival style.	■ Property of Potential CHVI
8393 8 Line, Chatham	Single detached, storey-and-a-half, red brick house. The property has potential design or physical value for its vernacular expression of the Gothic Revival style.	■ Property of Potential CHVI
8412 8 Line, Chatham	Single detached, storey-and-a-half, red brick house with associated rear (south) barns. The property has potential design or physical value for its vernacular expression of the Gothic Revival style.	■ Property of Potential CHVI
7546 6 Line East, Chatham	Single detached, two-and-a-half storey, red brick house with associated rear (south) metal outbuildings. The property has potential design or physical value for its vernacular expression of the Gothic Revival style.	■ Property of Potential CHVI

Civic Address or Location	Description	Cultural Heritage Status
7048-7050 6 Line East, Chatham	Single detached, storey-and-a-half, vinyl siding clad house and associated large complex of outbuildings to south and adjacent one-storey vinyl siding clad structure to east. The property has potential design or physical value for its vernacular expression of the Gothic Revival style.	■ Property of Potential CHVI
22520 Dillon Road, Chatham	Single detached, storey-and-a-half, vinyl siding clad house and associated rear (south) barn and silo. The property has potential design or physical value for its vernacular expression of the Gothic Revival style.	■ Property of Potential CHVI
6665 6 Line East, Chatham	Single detached, storey-and-a-half, vinyl siding clad house and associated rear (north) barn and outbuildings. The property has potential design or physical value for its vernacular expression of the Gothic Revival style, as well as potential contextual value for its maintenance and support of the rural agricultural character of the area to which it is still visually linked.	■ Property of Potential CHVI

4.1.3 Route 3

Table 6 includes all protected heritage properties located wholly or partially within or adjacent to the study area for Route 3. Table 8 includes all properties evaluated at a preliminary level to have CHVI. Figures 4 A-G: maps all built heritage resources and cultural heritage landscapes within the Route 3 study area.

Table 6: Designated or Listed Heritage Properties within Route 3 Study Area

Civic Address or Location	Description	Cultural Heritage Status
4.8 km (3 miles) along Seventh Line West (roughly between Drake and Dillon Roads) and south 6 miles (to Lake Erie)	From Parks Canada Directory of Federal Heritage Designations: The Buxton Settlement NHSC is a cultural landscape of some 4,680 hectares. It is a primarily agricultural landscape, comprised of flat, worked fields defined by deep drainage ditches and a grid of intersecting roads. Homesteads are scattered throughout the settlement area including its two hamlets, South and North Buxton, which also contain important religious, educational, and cultural institutions associated with the settlement's founding by Underground Railroad refugees.	<ul style="list-style-type: none"> ■ Protected heritage property designated under the Government of Canada <i>Historic Sites and Monuments Act</i> (R.S.C., 1985, c. H-4) ■ One parcel within the Buxton NHSC is designated under Part IV of the <i>Ontario Heritage Act</i> (By-law 257-2008, APPENDIX E) but this is <u>not within</u> the study area.

Table 7: Properties evaluated to have potential CHVI within Route 3 Study Area and within Buxton Settlement NHSC

Civic Address or Location	Description	Cultural Heritage Status
Variation 3A		
21812 A D Shadd Road, Raleigh, Merlin	Single detached, storey-and-a-half, vinyl siding clad house with rear (west) shed. The property has potential design or physical value for its vernacular expression of the Gothic Revival style, as well as potential contextual value for its maintenance and support of the character of the Buxton Settlement area, to which it is still visually linked.	■ Property of Potential CHVI
21843 A D Shadd Road, Raleigh, Merlin	Single detached, storey-and-a-half, vinyl siding clad house. The property has potential design or physical value for its vernacular expression of the Gothic Revival style, as well as potential contextual value for its maintenance and support of the character of the Buxton Settlement area, to which it is still visually linked.	■ Property of Potential CHVI
6903 9 Line, Raleigh, Merlin	Though obstructed by tree cover, appears to be a single detached, storey-and-a-half, vinyl siding clad house and rear (north). The property has potential design or physical value for its vernacular expression of the Gothic Revival style, as well as potential contextual value for its maintenance and support of the character of the Buxton Settlement area, to which it is still visually linked.	■ Property of Potential CHVI
<p>The following properties are located within the Buxton Settlement and were found to have buildings or structures 40 years or more years old but were evaluated at a preliminary level not to have potential CHVI (see APPENDIX D for details):</p> <ul style="list-style-type: none"> ■ 6926 9 Line, Raleigh, Merlin ■ 6490 9 Line, Raleigh, Merlin ■ 21737 A D Shadd Road, Raleigh, Merlin ■ 21773 A D Shadd Road, Raleigh, Merlin 		

Table 8: Properties evaluated to have potential CHVI within Route 3 Study Area

Civic Address or Location	Description	Cultural Heritage Status
21815 Communication Road, Chatham	Single detached, two-storey, vinyl siding clad house and associated rear (northwest) barn. The property has potential design or physical value for its complimentary gambrel roof farmhouse and barn, as well as potential contextual value for its maintenance and support of the rural agricultural character of the area, including the tree lines emphasized in the Municipality of Chatham-Kent's <i>Official Plan</i> , to which it is still visually linked.	■ Property/ cultural heritage landscape of potential CHVI
21864 Communication Road, Chatham	Single detached, two-storey brick house and associated rear (south) barns and outbuildings. The property has potential design or physical value for its vernacular expression of the Georgian revival style, as well as potential contextual value for its maintenance and support of the natural landscape (McGregor Creek) and rural agricultural character of the area to which it is still visually linked.	■ Property of Potential CHVI
3326 South Middle Road, Comber	Single detached, storey-and-a-half, vinyl siding clad house with associated rear (northeast) barn and outbuildings. The property has potential design or physical value for its vernacular expression of the Gothic Revival style.	■ Property of Potential CHVI
9545 South Middle Road, Comber	Single detached, two-storey, vinyl siding clad house and associated detached garage. The property has potential design or physical value for its Ontario vernacular style architecture.	■ Property of Potential CHVI
11560 Lakeshore Road 308, Comber	Single detached, storey-and-a-half, wood panelled house. The property has potential design or physical value due to its uniqueness as one of the only remaining wooden houses in the area.	■ Property of Potential CHVI
5013 Pollard Line, Merlin	Single detached, storey-and-a-half, stone and vinyl siding clad house with rear (north) outbuildings. The property has potential design or physical value due to its uniqueness as one of the only remaining stone houses in the area.	■ Property of Potential CHVI
22059 Port Road, merlin	Single detached, storey-and-a-half, vinyl siding clad house and associated rear (south) barns. The property has potential design or physical value for its vernacular expression of the Gothic Revival style.	■ Property of Potential CHVI
22155 Port Road, merlin	Single detached, storey-and-a-half, red brick house and associated rear (south) outbuildings. The property has potential design or physical value for its vernacular expression of the Gothic Revival style.	■ Property of Potential CHVI
7864 8 Line, Chatham	Single detached, storey-and-a-half, red brick house and associated rear (south) barns. The property has potential design or physical value for its vernacular expression of the Gothic Revival style.	■ Property of Potential CHVI
7946 8 Line, Chatham	Single detached, storey-and-a-half, vinyl siding clad house with rear (south) barn and silos. The property has potential design or physical value for its vernacular expression of the Gothic Revival style.	■ Property of Potential CHVI
8038 8 Line, Chatham	Single detached, two-and-a-half-storey, red brick house and associated rear (south) outbuildings. The property has potential design or physical value as it is stylistically representative of the c. 1930s local architectural trends.	■ Property of Potential CHVI
21808 Charing Cross Road, Chatham	Single detached, storey-and-a-half, vinyl siding clad house, detached garages to south and associated barns to west. The property has potential design or physical value for its vernacular expression of the Gothic Revival style.	■ Property of Potential CHVI

Civic Address or Location	Description	Cultural Heritage Status
8376 9 Line, Chatham	Single detached, two-storey, vinyl siding clad house with associated rear (south) barn. The property has potential design or physical value for its Ontario vernacular style architecture.	■ Property of Potential CHVI
7696 9 Line, Chatham	Single detached, storey-and-a-half, red brick house with associated rear (south) barns. The property has potential design or physical value for its vernacular expression of the Gothic Revival style, as well as potential contextual value for its maintenance and support of the rural agricultural character of the area to which it is still visually linked.	■ Property of Potential CHVI
7557 9 Line, Chatham	Single detached, storey-and-a-half, vinyl siding clad house with associated rear (north) outbuildings. The property has potential design or physical value for its vernacular expression of the Gothic Revival style.	■ Property of Potential CHVI
7426 9 Line, Chatham	Single detached, storey-and-a-half, vinyl siding clad house with associated rear (south) outbuilding. The property has potential design or physical value for its vernacular expression of the Gothic Revival style.	■ Property of Potential CHVI
7186 9 Line, Chatham	Single detached, storey-and-a-half, red brick house with associated rear (south) barns and adjacent (west) pastures. The property has potential design or physical value for its vernacular expression of the Gothic Revival style, as well as potential contextual value for its maintenance and support of the rural agricultural character of the area to which it is still visually linked.	■ Property of Potential CHVI
3516 Hornick Line, Tilbury	Single detached, storey-and-a-half, vinyl siding clad house. The property has potential design or physical value for its vernacular expression of the Gothic Revival style.	■ Property of Potential CHVI

4.1.4 Results of Analysis & Recommendations

The preceding analysis has determined that:

- The Route 1 study area potentially impacts the greatest number of properties of known or potential CHVI, including the Buxton NHSC and one (1) property listed on the Lakeshore *Municipal Heritage Register*:
 - 29 properties intersected by Route 1 with variation 1A only
 - 29 properties intersected by Route 1 with variations 1A, 1B and 1D
 - 27 properties intersected by Route 1 with variations 1A, 1C and 1D
 - 26 properties intersected by Route 1 with variations 1A, 1B, 1C and 1D
- The Route 2 study area potentially impacts the second greatest number of properties of known or potential CHVI, but does not impact the Buxton NHSC:
 - 28 properties intersected by Route 2 with variation 2A only
 - 25 properties intersected by Route 2 with variations 2A and 2B
 - 18 properties intersected by Route 2 with variations 2A and 2C
- The Route 3 study area potentially impacts the lowest number of properties of known or potential CHVI, but does impact the Buxton NHSC:
 - 17 properties intersected by Route 3 (variation 3A)

Since all route options cross or are adjacent to known and potential built heritage resources and cultural heritage landscapes, Golder recommends to:

- Conduct a Preliminary Heritage Impact Assessment (HIA) to identify the direct and indirect impacts from the preferred alternative to all known and potential built heritage resources and cultural heritage landscapes included in this CHEC.
 - Based on the impacts identified, the Preliminary HIA will determine if property specific Cultural Heritage Evaluation Reports (CHERs) or Heritage Impact Assessment (HIAs) are required and recommend mitigation measures to avoid or reduce the adverse effects.

5.0 SUMMARY STATEMENT AND RECOMMENDATIONS

In May 2020, Hydro One Networks Inc. (Hydro One) retained Golder Associates Ltd. (Golder) to provide a Cultural Heritage Existing Conditions (CHEC) report to support the Chatham to Lakeshore New Double-Circuit 230 kV Transmission Line Project (the Project). The Project is subject to the Class Environmental Assessment (EA) for Minor Transmission Facilities as well as Section 92 approval by the Ontario Energy Board (OEB). The objective of the CHEC is to help characterize the study area environment by identifying potential or known heritage resources and to assist Hydro One to select the preferred route for a new transmission line connecting the Chatham Switching Station (SS) in the Municipality of Chatham-Kent to the future Lakeshore SS in the Town of Lakeshore.

Hydro One defined the study area as three (3) groups of feasible route alternatives (with overlap) with a buffer of 120 metres (m) on either side of each centreline. To address properties within the Buxton Settlement National Historic Site of Canada (NHSC), Golder extended this buffer to 500 m on either side of each centreline. The three groups of proposed route alternatives for the Project are Route 1 which includes variations 1A, 1B, 1C, and 1D; Route 2 which includes variations 2A, 2B, and 2C; and finally Route 3 which includes variation 3A.

Following guidance provided by the Ministry of Heritage, Sport, Tourism and Culture Industries (MHSTCI), this CHEC provides a background on the relevant provincial and municipal legislation and policies for cultural heritage, outlines the methods used to identify built heritage resources and cultural heritage landscapes in the study area, and identifies from desktop analysis and field investigations the known and potential built heritage resources and cultural heritage landscapes within the study area.

In total, the study area includes or crosses 1,302 property parcels. Of these Golder identified:

- One (1) cultural heritage landscape designated under the Government of Canada *Historic Sites and Monuments Act* (R.S.C., 1985, c. H-4) (Buxton NHSC, non-administered)
 - the NHSC encompasses seven properties within the study area (see Table 3 and Table 8)
- One (1) property listed on the Lakeshore *Municipal Heritage Register* (15628 Middle Road, Comber)
- Sixty-two (62) properties evaluated at a preliminary level to have potential cultural heritage value or interest (CHVI) for their built heritage resources
- One (1) property evaluated at a preliminary level to have potential cultural heritage value or interest (CHVI) as a cultural heritage landscape
- Three (3) properties evaluated at a preliminary level to have potential cultural heritage value or interest (CHVI) for their built heritage resources and as a cultural heritage landscape

An additional 243 properties were found to have buildings or structures 40 years or more years old but were evaluated at a preliminary level not to have potential CHVI.

Since all route options cross or are adjacent to known and potential built heritage resources and cultural heritage landscapes identified in this CHEC, Golder recommends to:

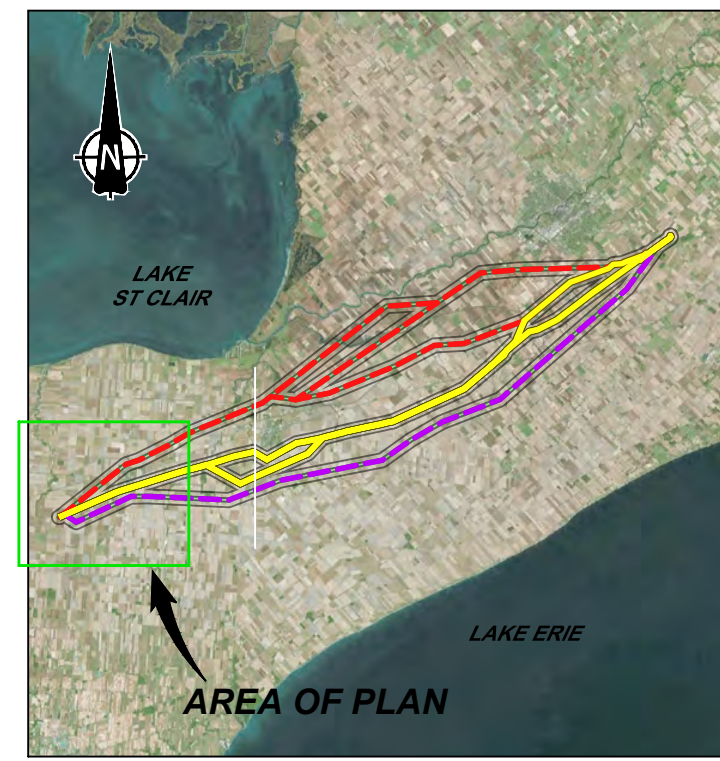
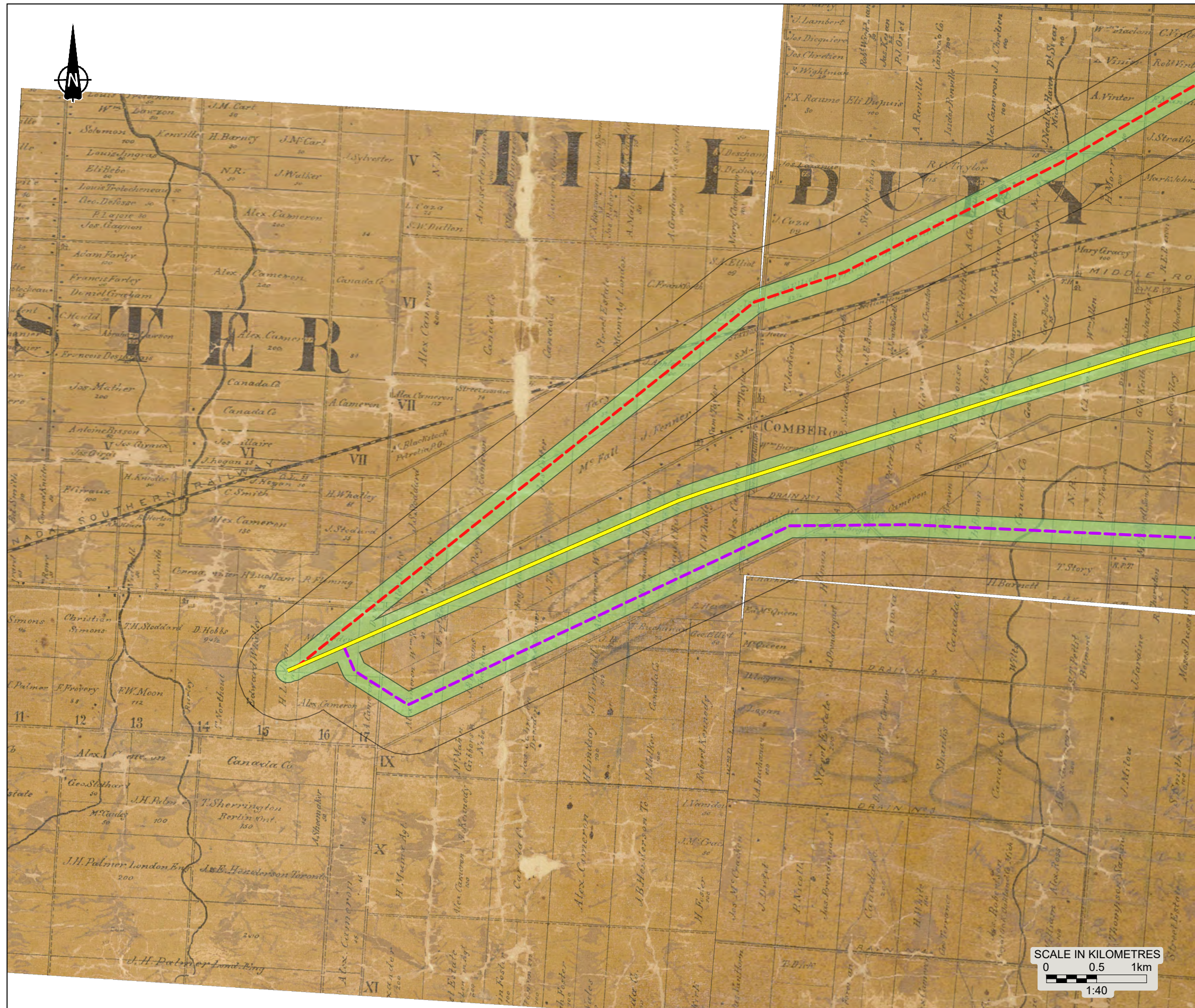
- Conduct a Preliminary Heritage Impact Assessment (HIA) to identify the direct and indirect impacts from the preferred alternative on the known and potential built heritage resources and cultural heritage landscapes identified in this CHEC.

- Based on the impacts identified, the Preliminary HIA will determine if property specific Cultural Heritage Evaluation Reports (CHERs) or Heritage Impact Assessment (HIAs) are required and recommend mitigation measures to avoid or reduce the adverse effects.

6.0 FIGURES

6.1 Study Area

All figures for the study area are provided in following pages.



KEY PLAN

LEGEND

- ALTERNATIVE 1
- - - ALTERNATIVE 2
- - - ALTERNATIVE 3
- 120m BUFFER
- 500m BUFFER

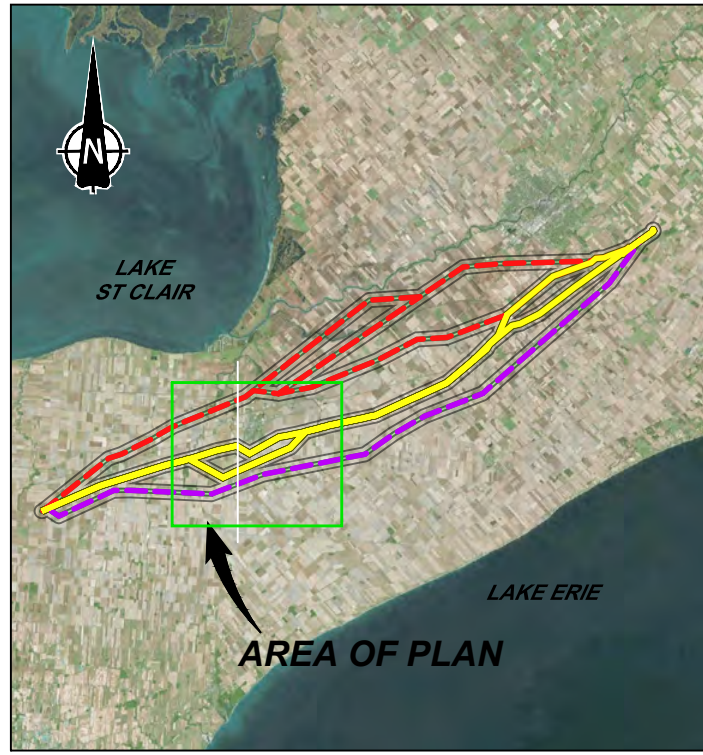
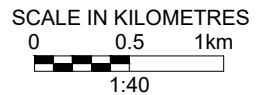
REFERENCE

DRAWING BASED ON DATA PROVIDED BY HYDRO ONE NETWORKS INC; AND BING IMAGERY AS OF SEPTEMBER 24, 2020 (IMAGE DATE UNKNOWN)

NOTES

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 BING IMAGERY USED FOR ILLUSTRATION PURPOSES ONLY AND NOT TO BE USED FOR MEASUREMENTS.
 ALL LOCATIONS ARE APPROXIMATE.

CHATHAM TO LAKESHORE TRANSMISSION LINE PROJECT			
STUDY AREA OVERLAID ON 19TH CENTURY HISTORICAL MAPPING (1 of 7)			
PROJECT	PROJECT No. 20143948	FILE N20143948-1000-R01002	
GOLDER	CADD DGH	Oct 30/20	SCALE AS SHOWN REV.
	CHECK		FIGURE 2A



KEY PLAN

LEGEND

- ALTERNATIVE 1
- - - ALTERNATIVE 2
- - - ALTERNATIVE 3
- 120m BUFFER
- 500m BUFFER

REFERENCE

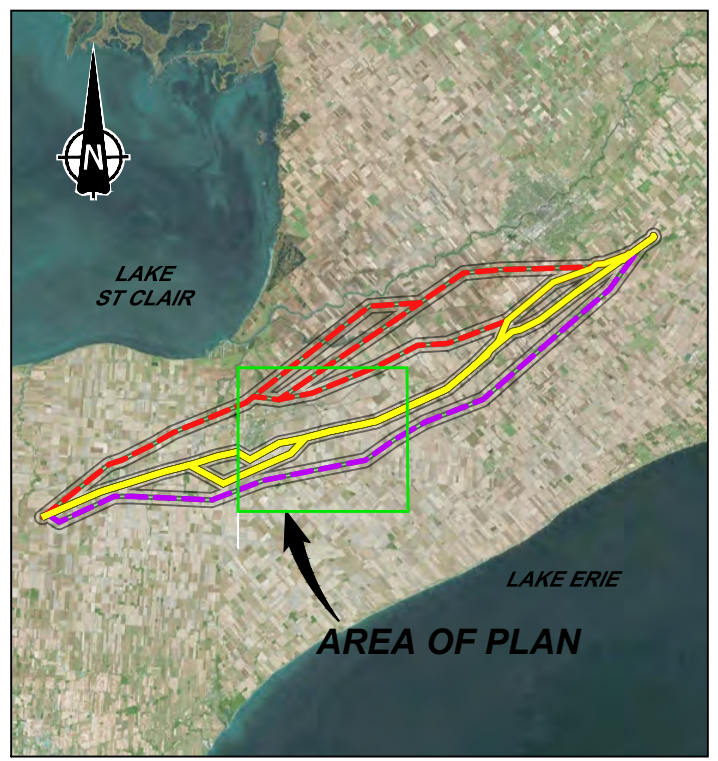
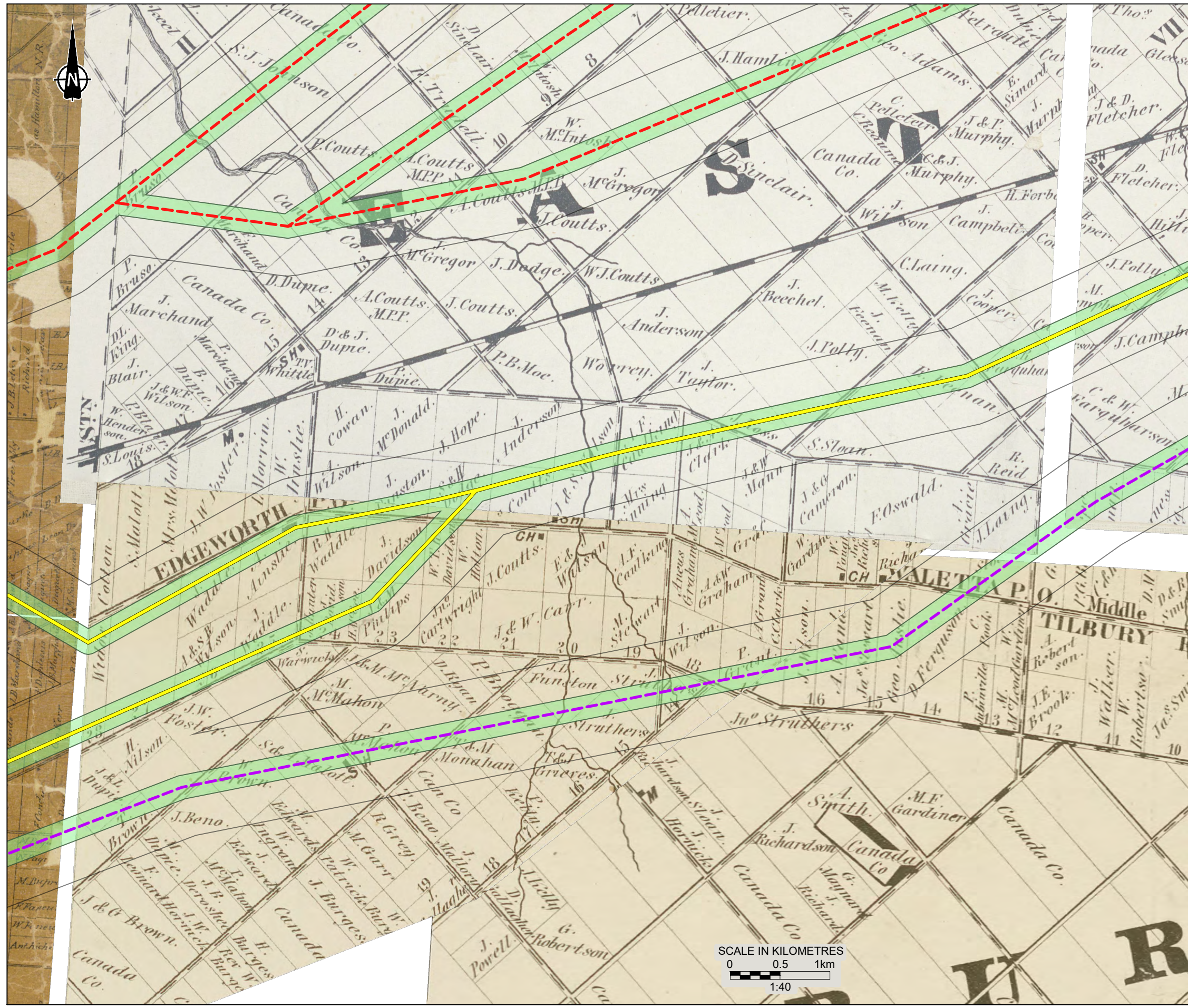
DRAWING BASED ON DATA PROVIDED BY HYDRO ONE NETWORKS INC; AND BING IMAGERY AS OF SEPTEMBER 24, 2020 (IMAGE DATE UNKNOWN)

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PROJECT			
CHATHAM TO LAKESHORE TRANSMISSION LINE PROJECT			
TITLE			
STUDY AREA OVERLAID ON 19TH CENTURY HISTORICAL MAPPING (2 of 7)			
	PROJECT No. 20143948		FILE N:20143948-1000-R01002
	CADD	DGH	SCALE AS SHOWN
	CHECK	Oct 30/20	REV.
			FIGURE 2B

Client: Hydro One Networks Inc.
 Original Format is Tabloid 279mm x 432mm
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 Oct 30, 2020 - 8:51am
 Drawing file: 20143948-1000-R01002.dwg



KEY PLAN

LEGEND

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- - - ALTERNATIVE 2
- - - ALTERNATIVE 3
- 120m BUFFER
- 500m BUFFER

REFERENCE

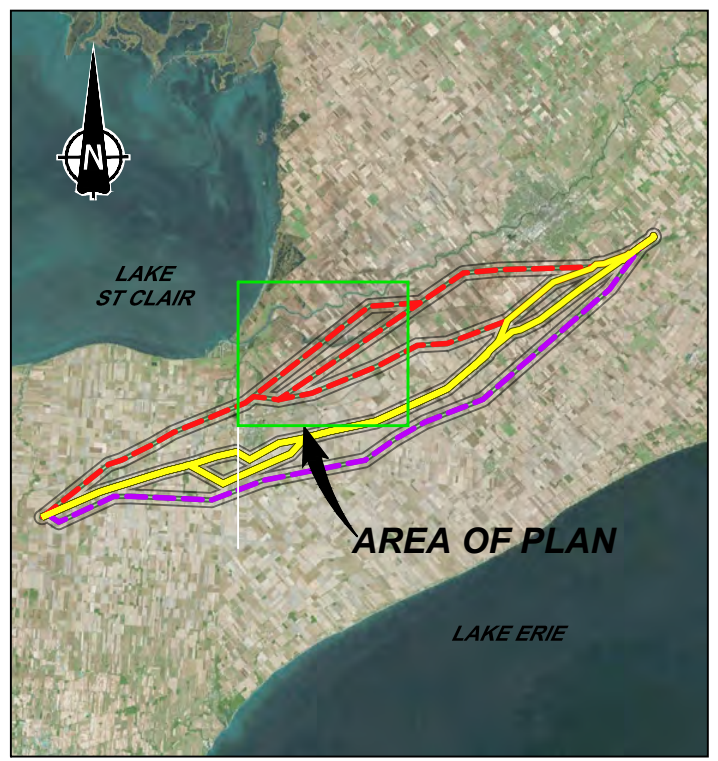
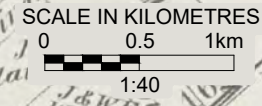
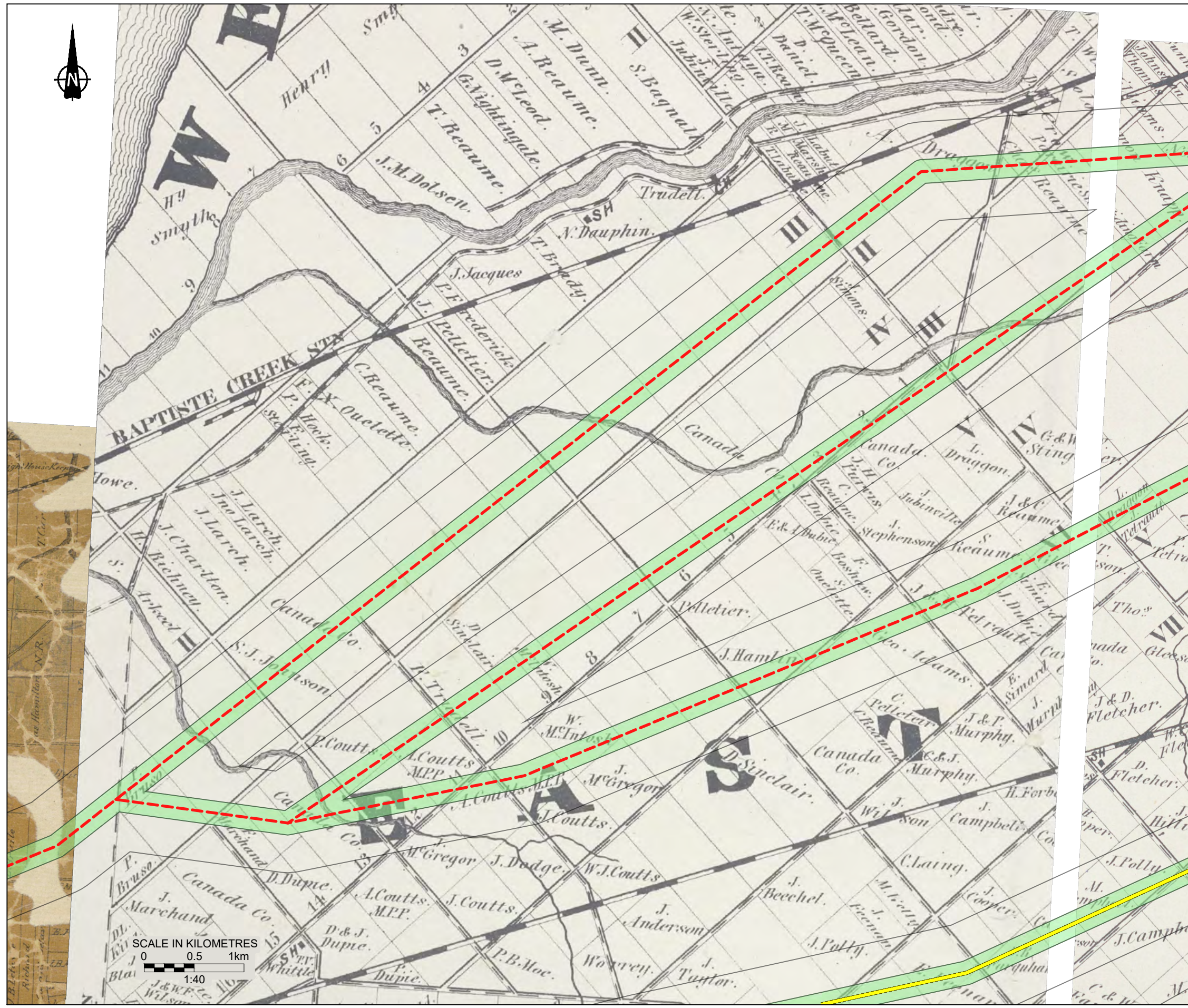
DRAWING BASED ON DATA PROVIDED BY HYDRO ONE NETWORKS INC; AND BING IMAGERY AS OF SEPTEMBER 24, 2020 (IMAGE DATE UNKNOWN)

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CHATHAM TO LAKESHORE TRANSMISSION LINE PROJECT			
STUDY AREA OVERLAID ON 19TH CENTURY HISTORICAL MAPPING (3 of 7)			
GOLDER		PROJECT No. 20143948	FILE No 20143948-1000-R01002
CADD	DGH	Oct 30/20	SCALE AS SHOWN
CHECK			FIGURE 2C

Client: Hydro One Networks Inc. Original Format is Tabloid 279mm x 432mm
 Drawing file: 20143948-1000-R01002.dwg Oct 30, 2020 - 8:52am 25mm 0



KEY PLAN

LEGEND

- ALTERNATIVE 1
- - - ALTERNATIVE 2
- ALTERNATIVE 3
- 120m BUFFER
- 500m BUFFER

REFERENCE

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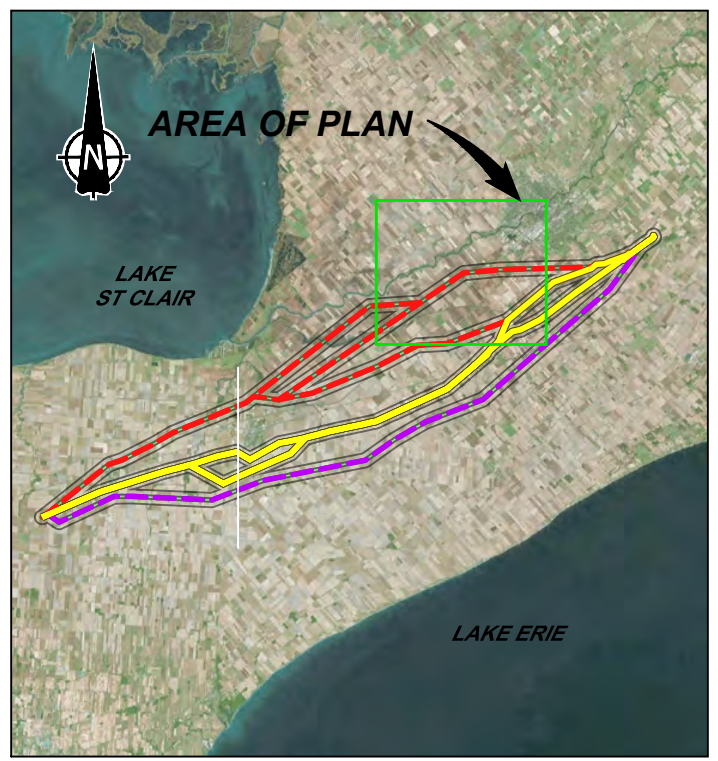
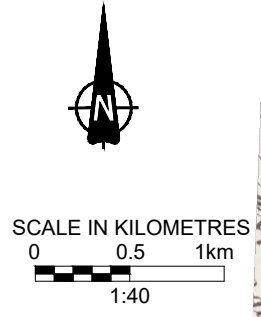
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CHATHAM TO LAKESHORE TRANSMISSION LINE PROJECT			
STUDY AREA OVERLAID ON 19TH CENTURY HISTORICAL MAPPING (4 of 7)			
PROJECT No.	20143948	FILE No	20143948-1000-R01002
CADD	DGH	Oct 30/20	SCALE AS SHOWN
CHECK			FIGURE 2D



Client: Hydro One Networks Inc. Original Format is Tabloid 279mm x 432mm 25mm 0 Oct 30, 2020 - 8:53am Drawing file: 20143948-1000-R01002.dwg



KEY PLAN

LEGEND

- ALTERNATIVE 1
- - - ALTERNATIVE 2
- ALTERNATIVE 3
- BUXTON SETTLEMENT (NATIONAL HISTORIC SITE OF CANADA)
- 120m BUFFER
- 500m BUFFER

REFERENCE

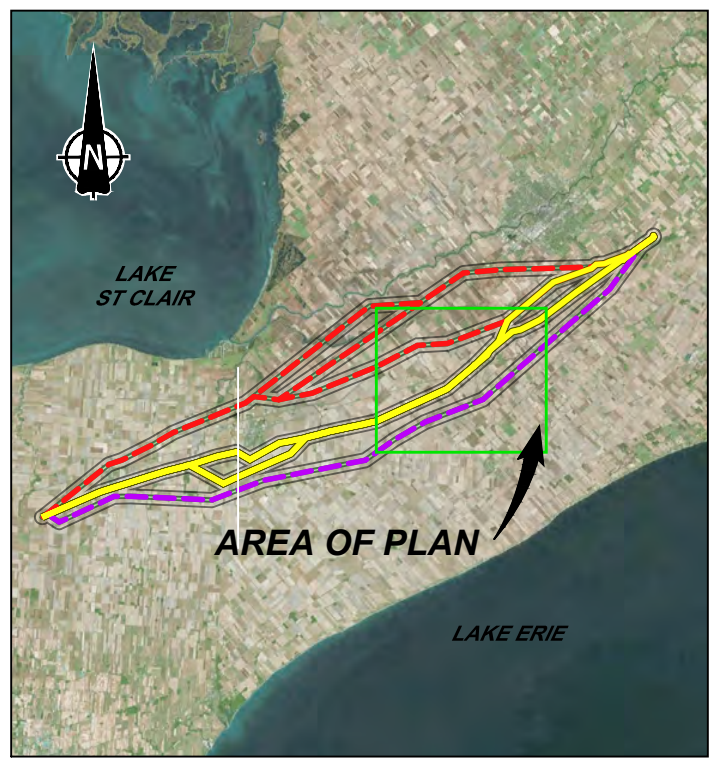
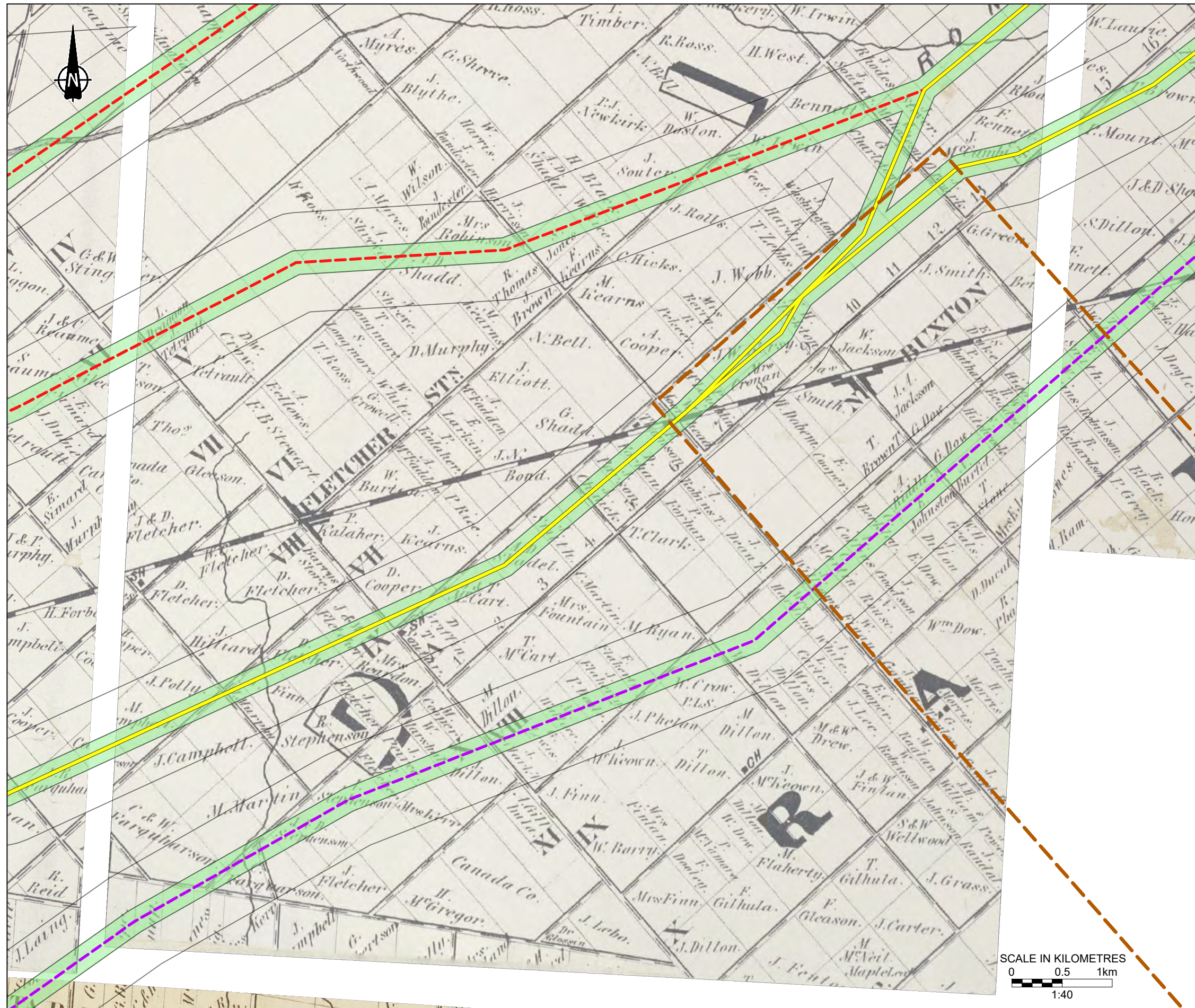
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CHATHAM TO LAKESHORE TRANSMISSION LINE PROJECT			
STUDY AREA OVERLAID ON 19TH CENTURY HISTORICAL MAPPING (5 of 7)			
GOLDER		PROJECT No. 20143948	FILE No 20143948-1000-R01002
CADD	DGH	Oct 30/20	SCALE AS SHOWN
CHECK			FIGURE 2E

Client: Hydro One Networks Inc.
 Original Format is Tabloid 279mm x 432mm
 Drawing file: 20143948-1000-R01002.dwg
 Oct 30, 2020 - 8:54am
 25mm
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LEGEND

- ALTERNATIVE 1
- ALTERNATIVE 2
- ALTERNATIVE 3
- BUXTON SETTLEMENT
(NATIONAL HISTORIC SITE OF CANADA)
- 120m BUFFER
- 500m BUFFER

KEY PLAN

REFERENCE

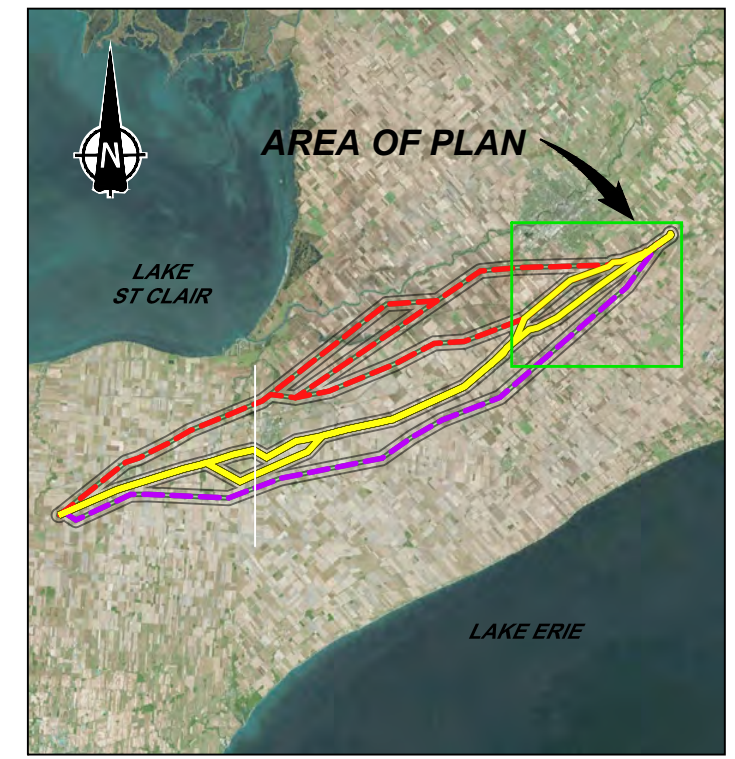
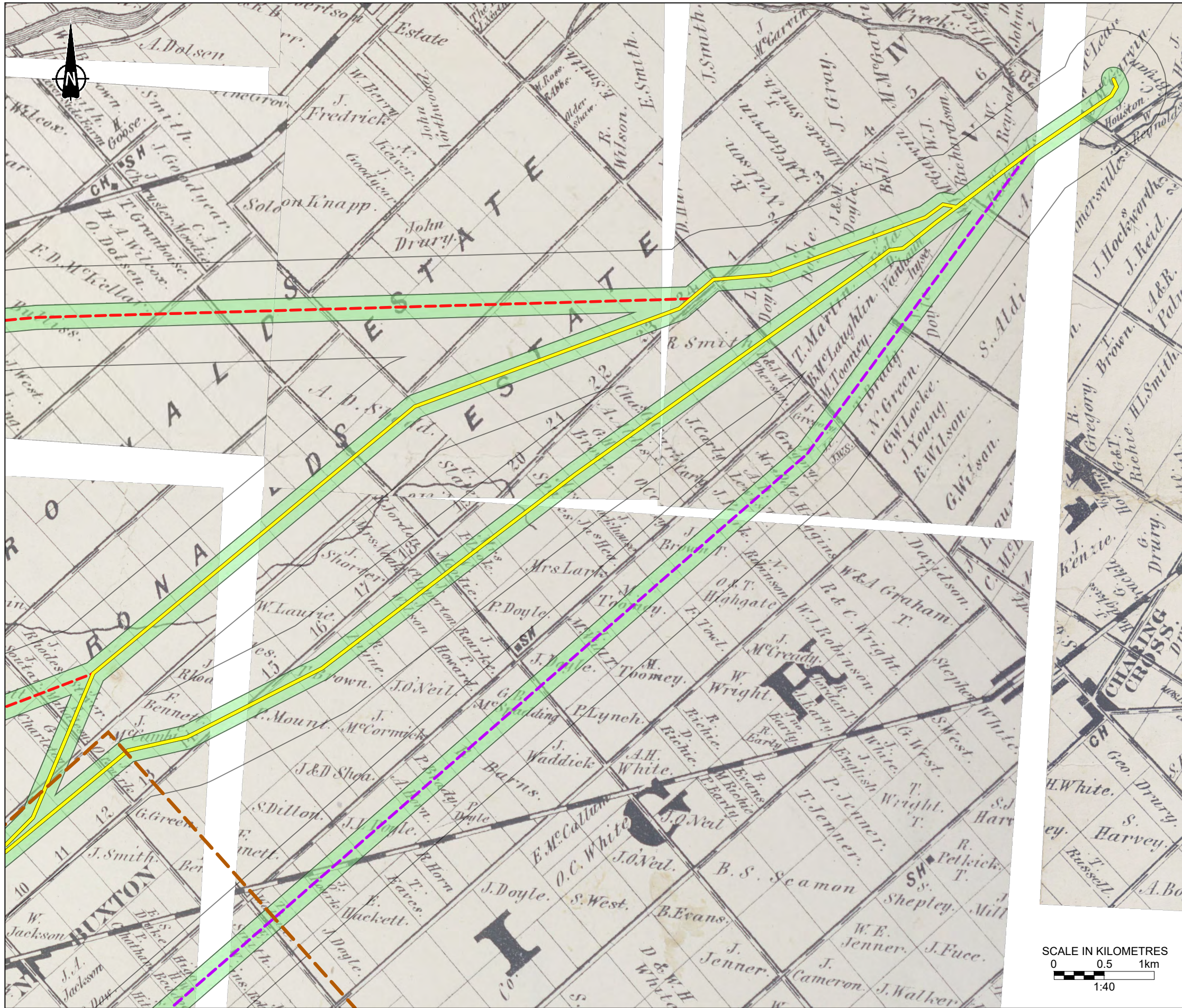
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CHATHAM TO LAKESHORE TRANSMISSION LINE PROJECT			
STUDY AREA OVERLAID ON 19TH CENTURY HISTORICAL MAPPING (6 of 7)			
GOLDER	PROJECT No. 20143948	FILE N20143948-1000-R01002	SCALE AS SHOWN REV.
CADD	DGH	Oct 30/20	FIGURE 2F
CHECK			

Client: Hydro One Networks Inc. Drawing file: 20143948-1000-R01002.dwg Oct 30, 2020 - 8:55am 25mm Original Format is Tabloid 279mm x 432mm



KEY PLAN

LEGEND

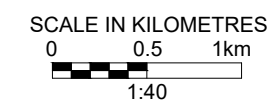
- ALTERNATIVE 1
- - - - ALTERNATIVE 2
- - - - ALTERNATIVE 3
- 120m BUFFER
- 500m BUFFER

REFERENCE

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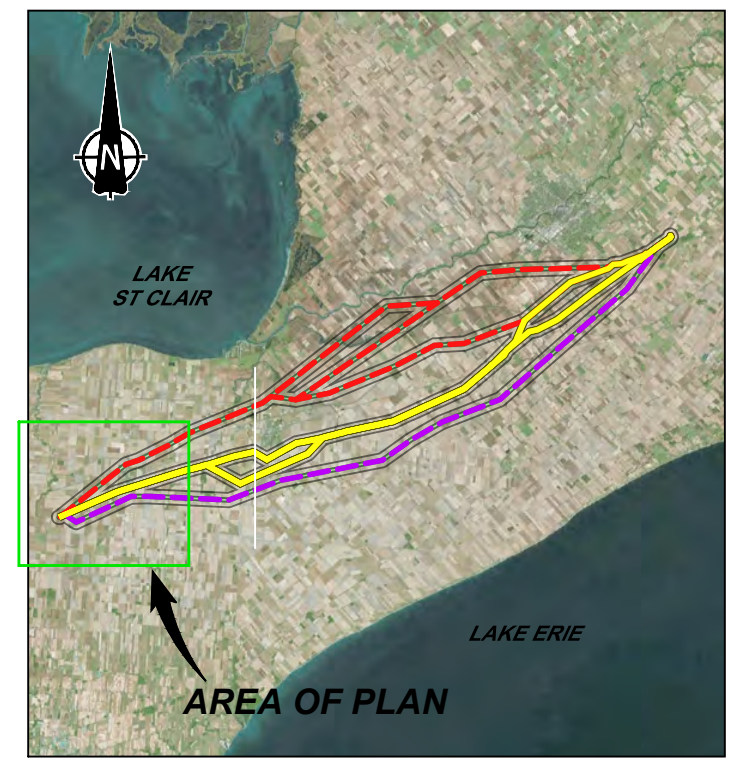
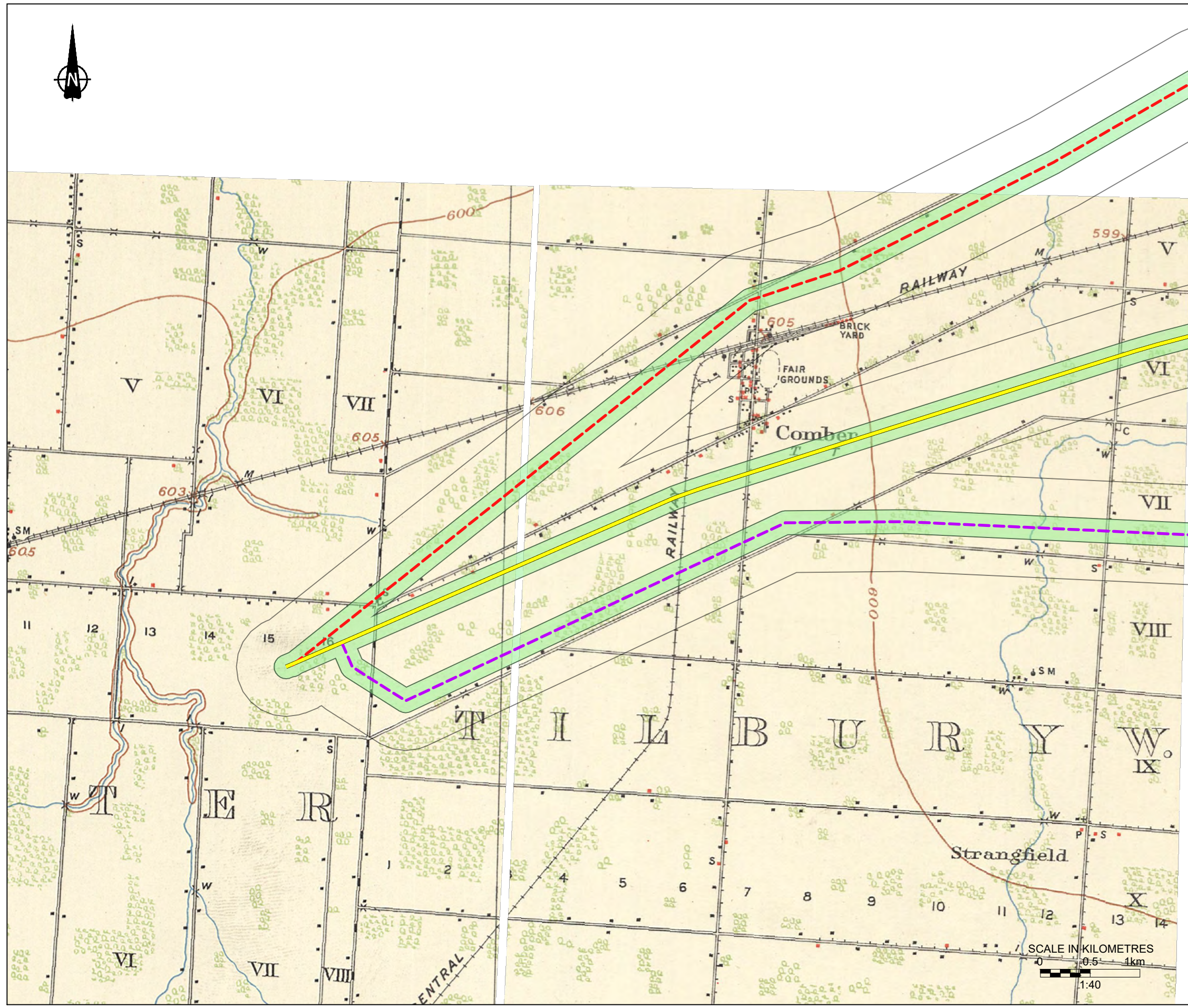
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PROJECT			
CHATHAM TO LAKESHORE TRANSMISSION LINE PROJECT			
TITLE			
STUDY AREA OVERLAID ON 19TH CENTURY HISTORICAL MAPPING (7 of 7)			
	PROJECT No. 20143948		FILE N20143948-1000-R01002
	CADD	DGH	Oct 30/20
	SCALE AS SHOWN		REV.
			FIGURE 2G

Drawing file: 20143948-1000-R01003.dwg Oct 30, 2020 - 8:56am 0 25mm Original Format is Tabloid 279mm x 432mm Client: Hydro One Networks Inc.



KEY PLAN

LEGEND

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- ALTERNATIVE 2
- ALTERNATIVE 3
- 120m BUFFER
- 500m BUFFER

REFERENCE

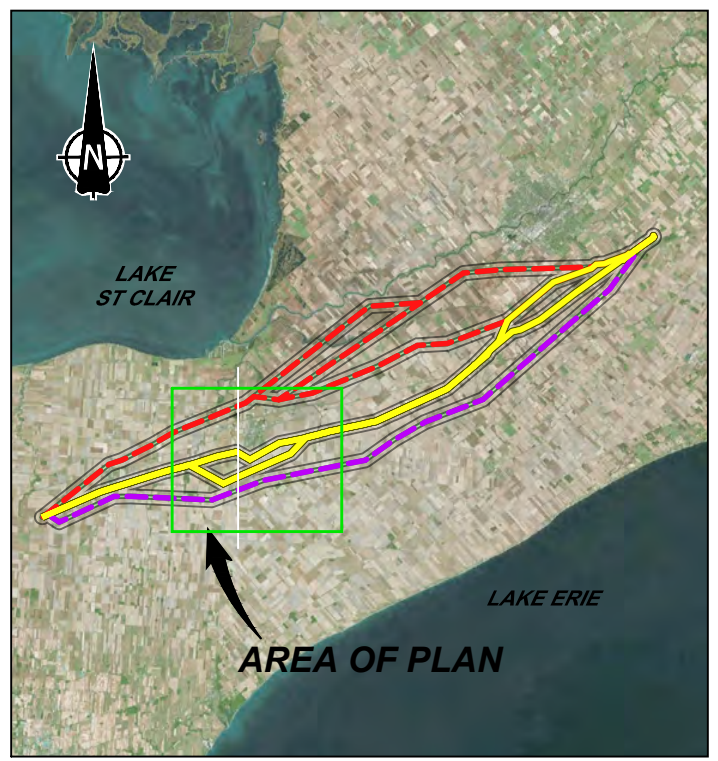
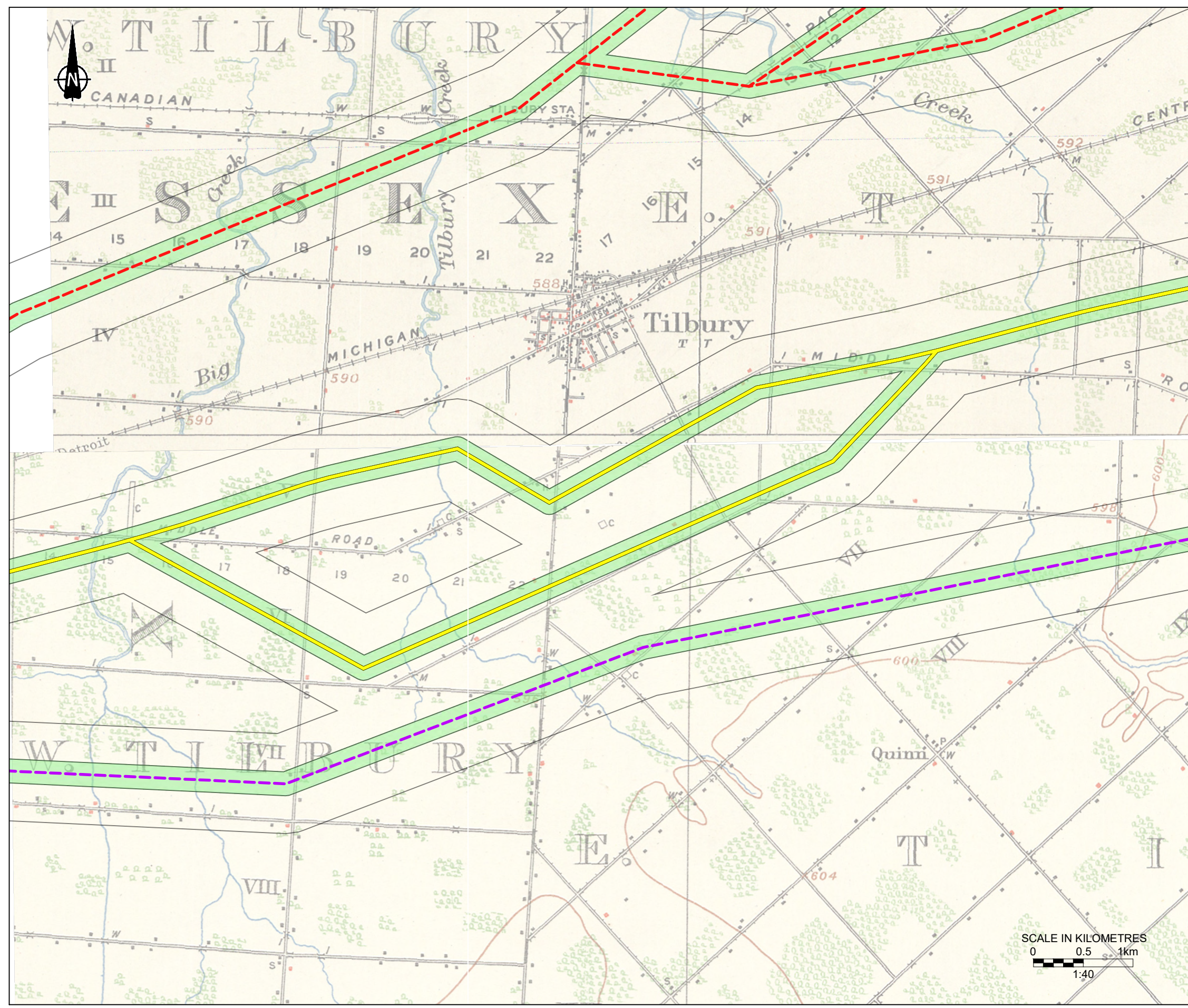
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CHATHAM TO LAKESHORE TRANSMISSION LINE PROJECT			
STUDY AREA OVERLAID ON EARLY 20TH CENTURY TOPOGRAPHICAL MAPPING (1 of 7)			
PROJECT	PROJECT No.	20143948	FILE N:20143948-1000-R01003
GOLDER	CADD	DGH	Oct 30/20
	CHECK		
		SCALE AS SHOWN	REV.
		FIGURE 3A	

Client: Hydro One Networks Inc.
 Drawing file: 20143948-1000-R01003.dwg
 Oct 30, 2020 - 8:57am
 Original Format is Tabloid 279mm x 432mm
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KEY PLAN

LEGEND

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- ALTERNATIVE 2
- ALTERNATIVE 3
- 120m BUFFER
- 500m BUFFER

REFERENCE

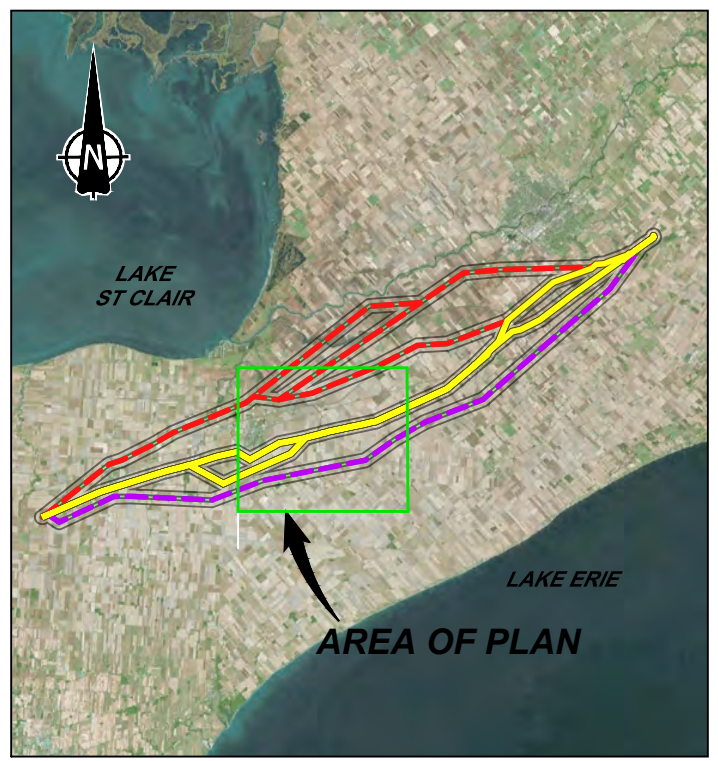
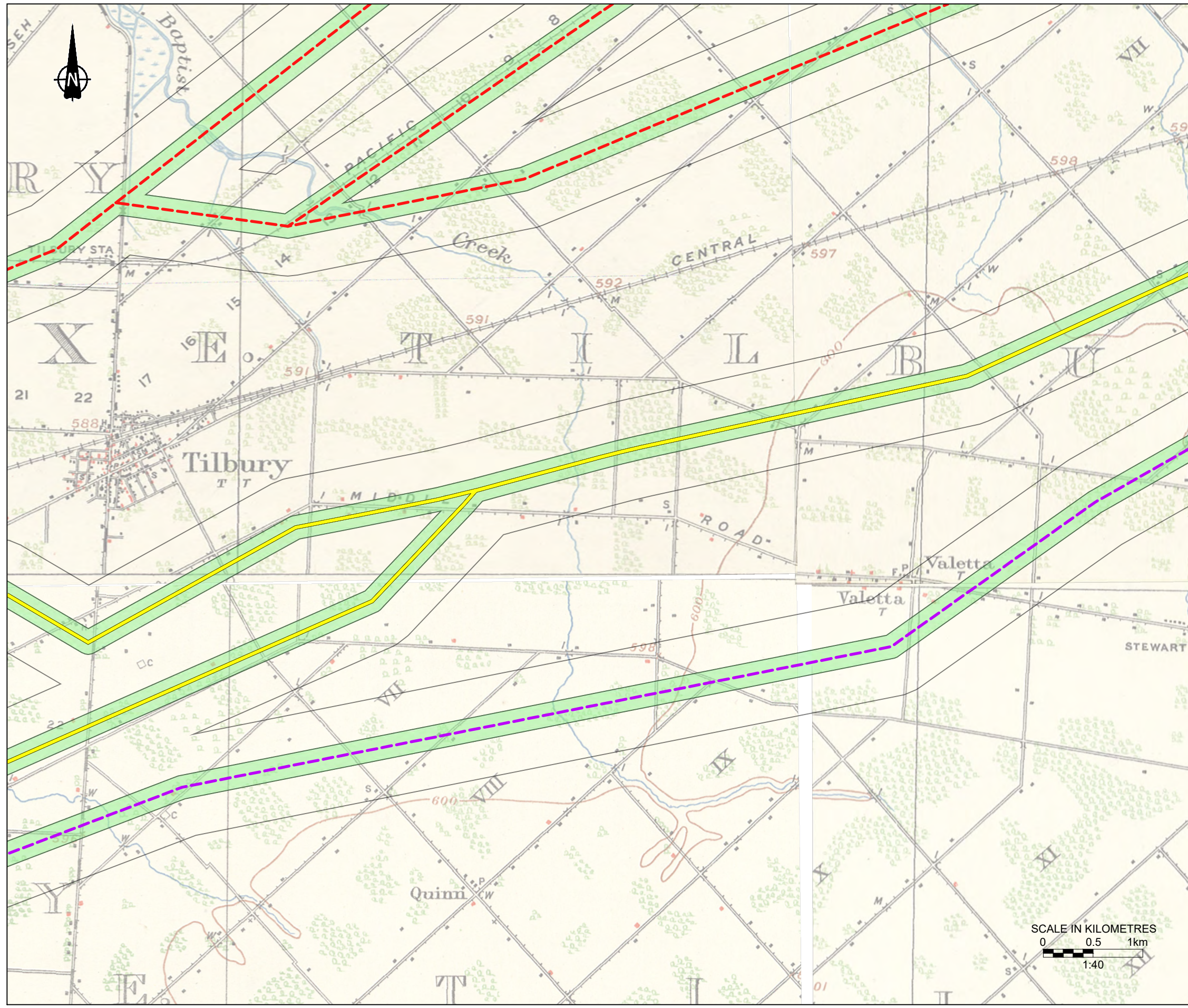
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PROJECT			
CHATHAM TO LAKESHORE TRANSMISSION LINE PROJECT			
TITLE			
STUDY AREA OVERLAID ON EARLY 20TH CENTURY TOPOGRAPHICAL MAPPING (2 of 7)			
GOLDER		PROJECT No. 20143948	FILE N20143948-1000-R01003
CADD	DGH	Oct 30/20	SCALE AS SHOWN REV.
CHECK			
			FIGURE 3B

Client: Hydro One Networks Inc.
 Drawing file: 20143948-1000-R01003.dwg
 Oct 30, 2020 - 8:58am
 Original Format is Tabloid 279mm x 432mm
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KEY PLAN

LEGEND

- ALTERNATIVE 1
- ALTERNATIVE 2
- ALTERNATIVE 3
- 120m BUFFER
- 500m BUFFER

REFERENCE

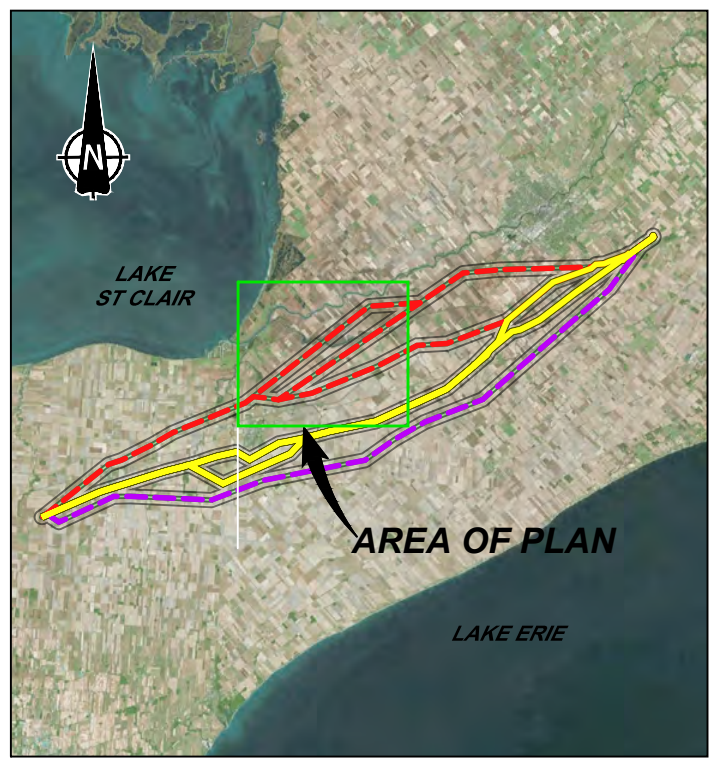
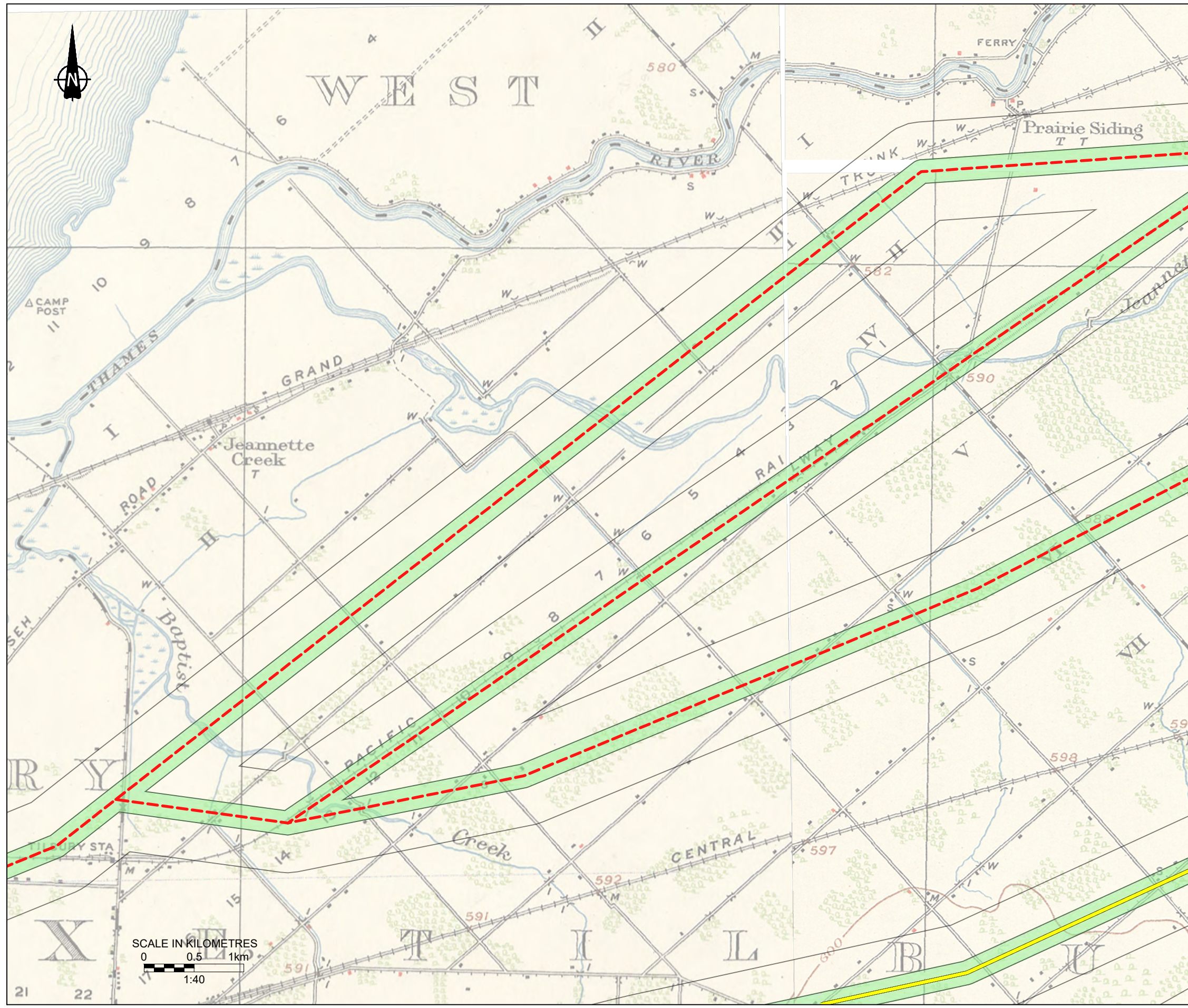
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PROJECT			
CHATHAM TO LAKESHORE TRANSMISSION LINE PROJECT			
TITLE			
STUDY AREA OVERLAID ON EARLY 20TH CENTURY TOPOGRAPHICAL MAPPING (3 of 7)			
GOLDER		PROJECT No. 20143948	FILE N20143948-1000-R01003
CADD	DGH	Oct 30/20	SCALE AS SHOWN REV.
CHECK			FIGURE 3C

Client: Hydro One Networks Inc.
 Drawing file: 20143948-1000-R01003.dwg
 Original Format is Tabloid 279mm x 432mm
 25mm
 0
 Oct 30, 2020 - 8:59am



KEY PLAN

LEGEND

- ALTERNATIVE 1
- ALTERNATIVE 2
- ALTERNATIVE 3
- 120m BUFFER
- 500m BUFFER

REFERENCE

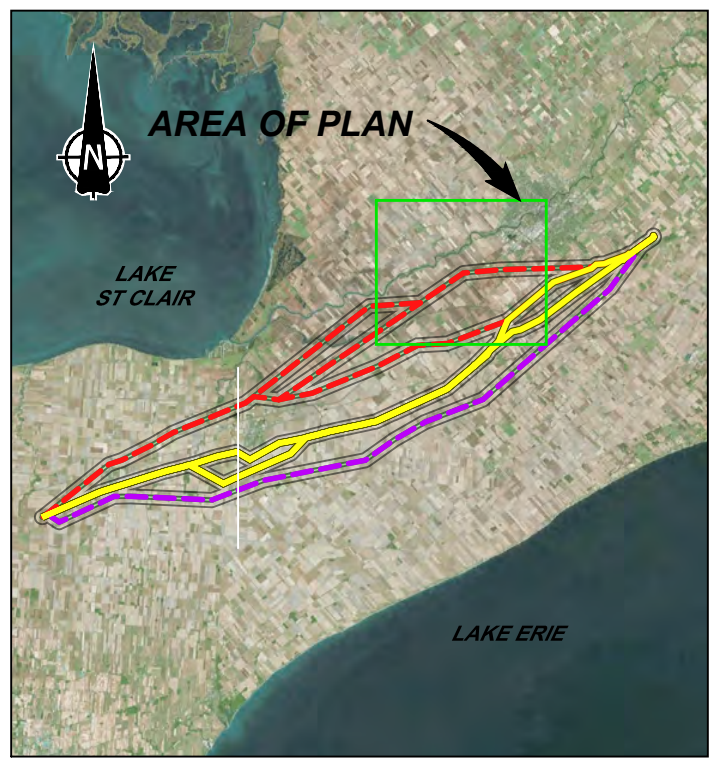
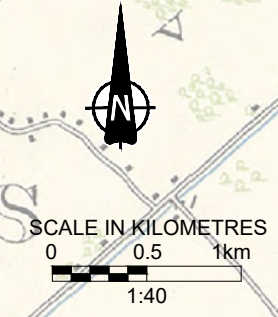
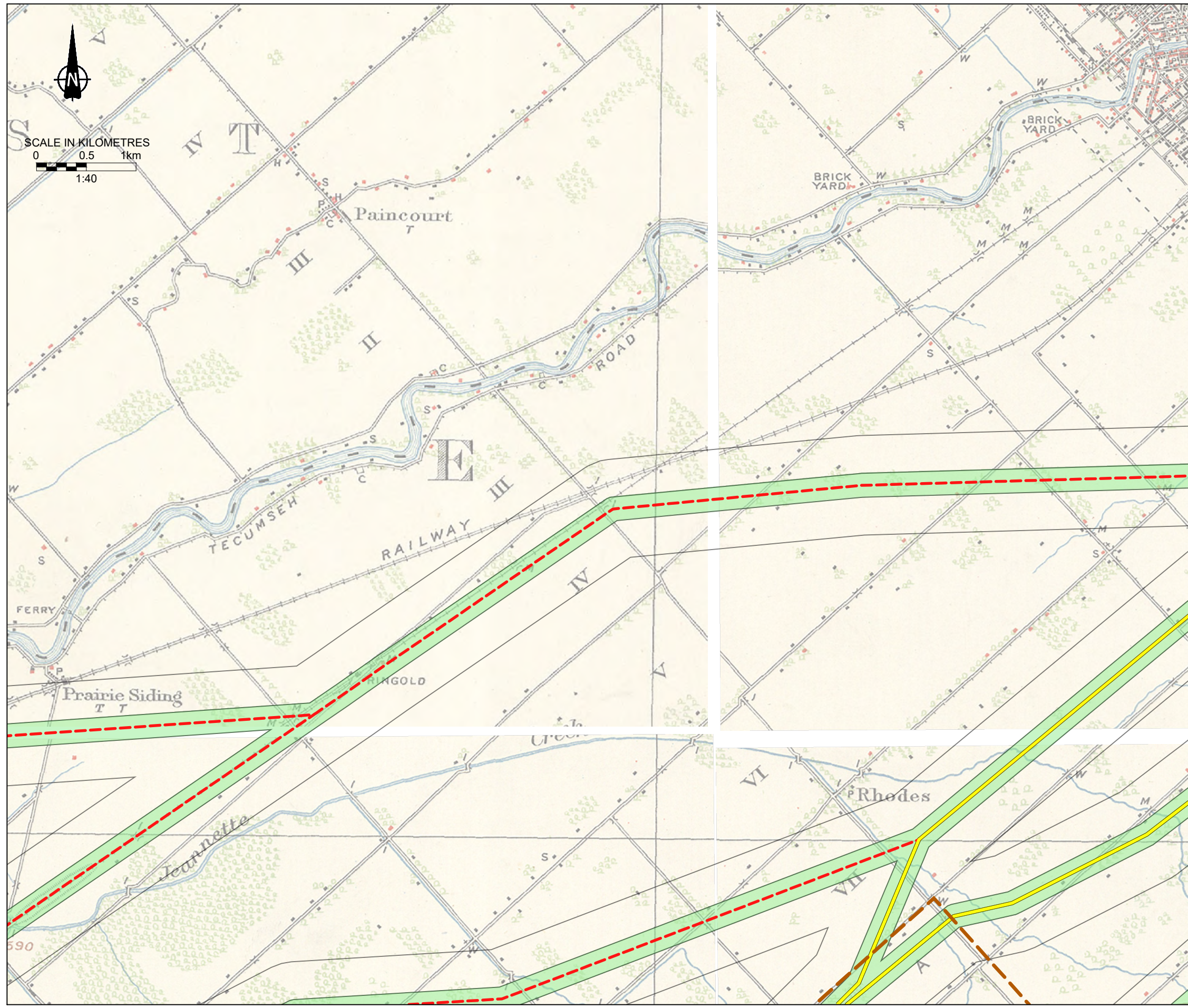
DRAWING BASED ON DATA PROVIDED BY HYDRO ONE NETWORKS INC; AND BING IMAGERY AS OF SEPTEMBER 24, 2020 (IMAGE DATE UNKNOWN)

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CHATHAM TO LAKESHORE TRANSMISSION LINE PROJECT			
STUDY AREA OVERLAID ON EARLY 20TH CENTURY TOPOGRAPHICAL MAPPING (4 of 7)			
GOLDER	PROJECT No. 20143948	FILE No 20143948-1000-R01003	SCALE AS SHOWN REV.
CADD	DGH	Oct 30/20	FIGURE 3D
CHECK			

Client: Hydro One Networks Inc. Original Format is Tabloid 279mm x 432mm 25mm 0 8:59am Oct 30, 2020 Drawing file: 20143948-1000-R01003.dwg



KEY PLAN

LEGEND

- ALTERNATIVE 1
- ALTERNATIVE 2
- ALTERNATIVE 3
- BUXTON SETTLEMENT
(NATIONAL HISTORIC SITE OF CANADA)
- 120m BUFFER
- 500m BUFFER

REFERENCE

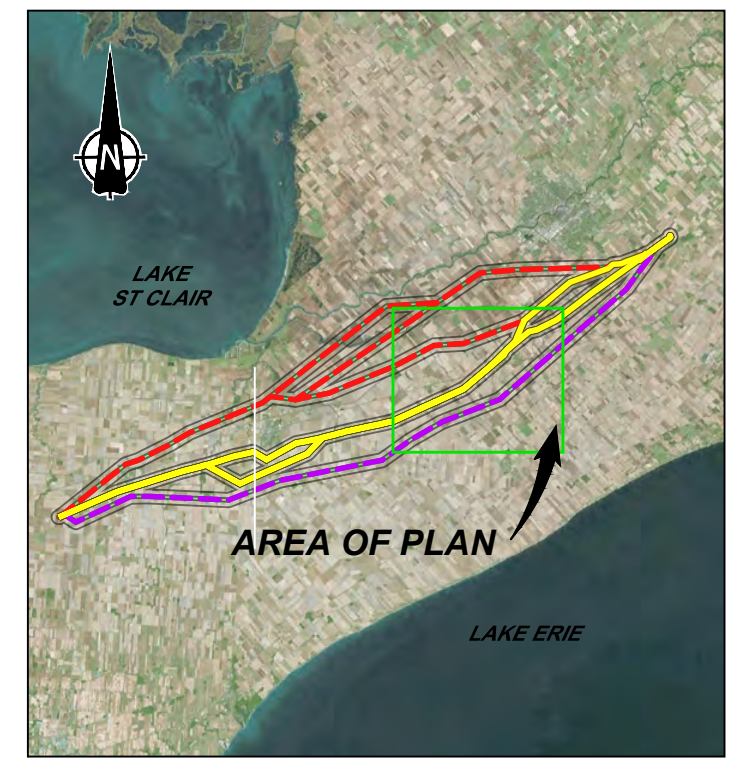
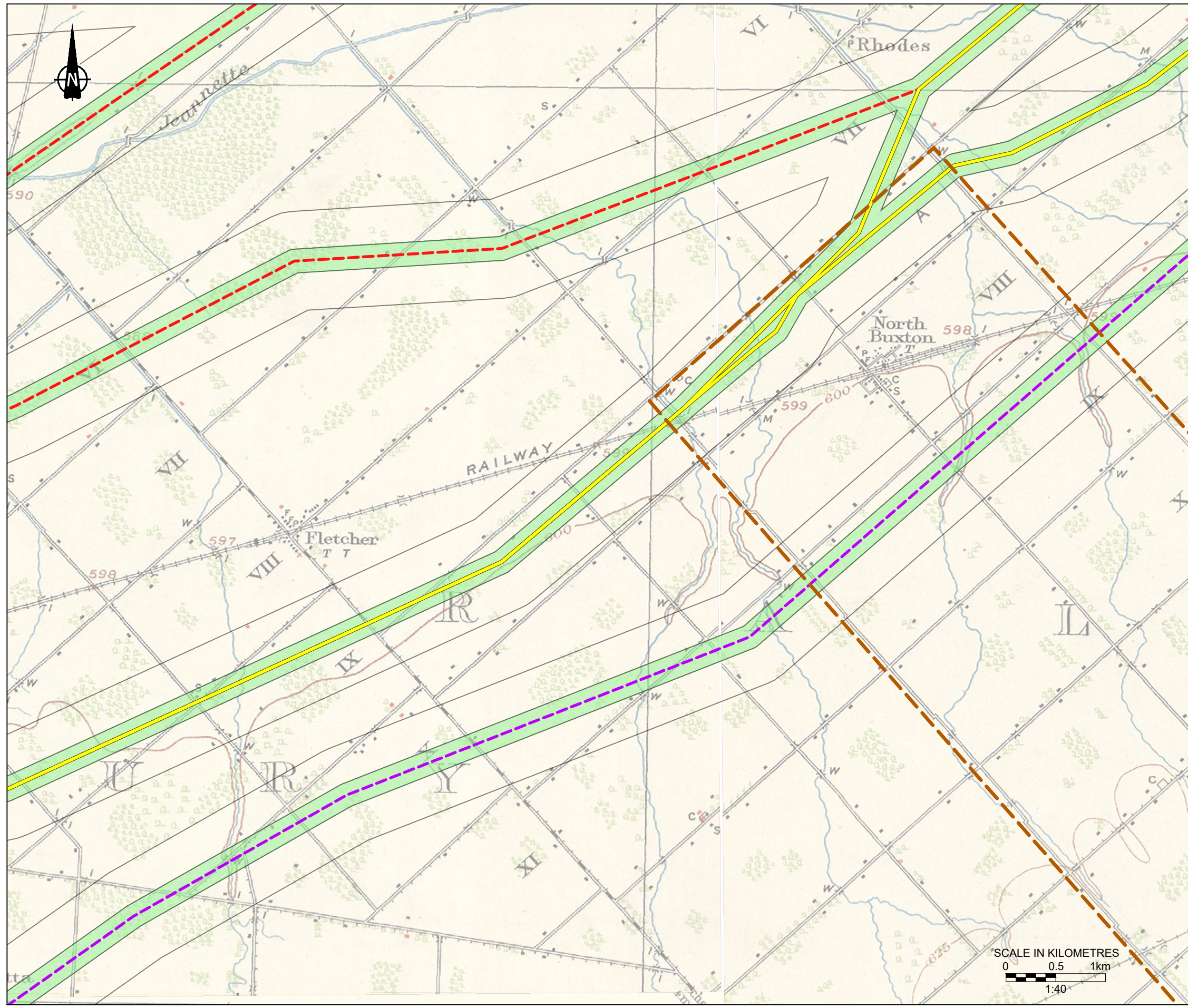
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NOTES

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 ALL LOCATIONS ARE APPROXIMATE.

CHATHAM TO LAKESHORE TRANSMISSION LINE PROJECT			
STUDY AREA OVERLAID ON EARLY 20TH CENTURY TOPOGRAPHICAL MAPPING (5 of 7)			
PROJECT No.	20143948	FILE No	20143948-1000-R01003
CADD	DGH	SCALE	AS SHOWN
CHECK		REV.	
GOLDER		FIGURE 3E	

Client: Hydro One Networks Inc.
 Drawing file: 20143948-1000-R01003.dwg
 Oct 30, 2020 - 9:00am
 Original Format is Tabloid 279mm x 432mm
 25mm
 0



- LEGEND**
- ALTERNATIVE 1
 - ALTERNATIVE 2
 - ALTERNATIVE 3
 - - - BUXTON SETTLEMENT (NATIONAL HISTORIC SITE OF CANADA)
 - 120m BUFFER
 - 500m BUFFER

REFERENCE

DRAWING BASED ON DATA PROVIDED BY HYDRO ONE NETWORKS INC; AND BING IMAGERY AS OF SEPTEMBER 24, 2020 (IMAGE DATE UNKNOWN)

NOTES

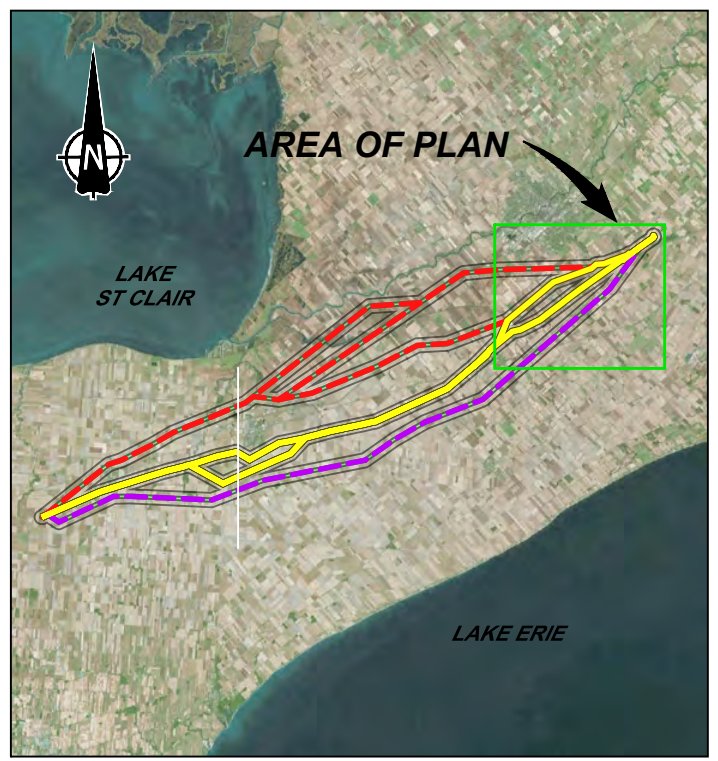
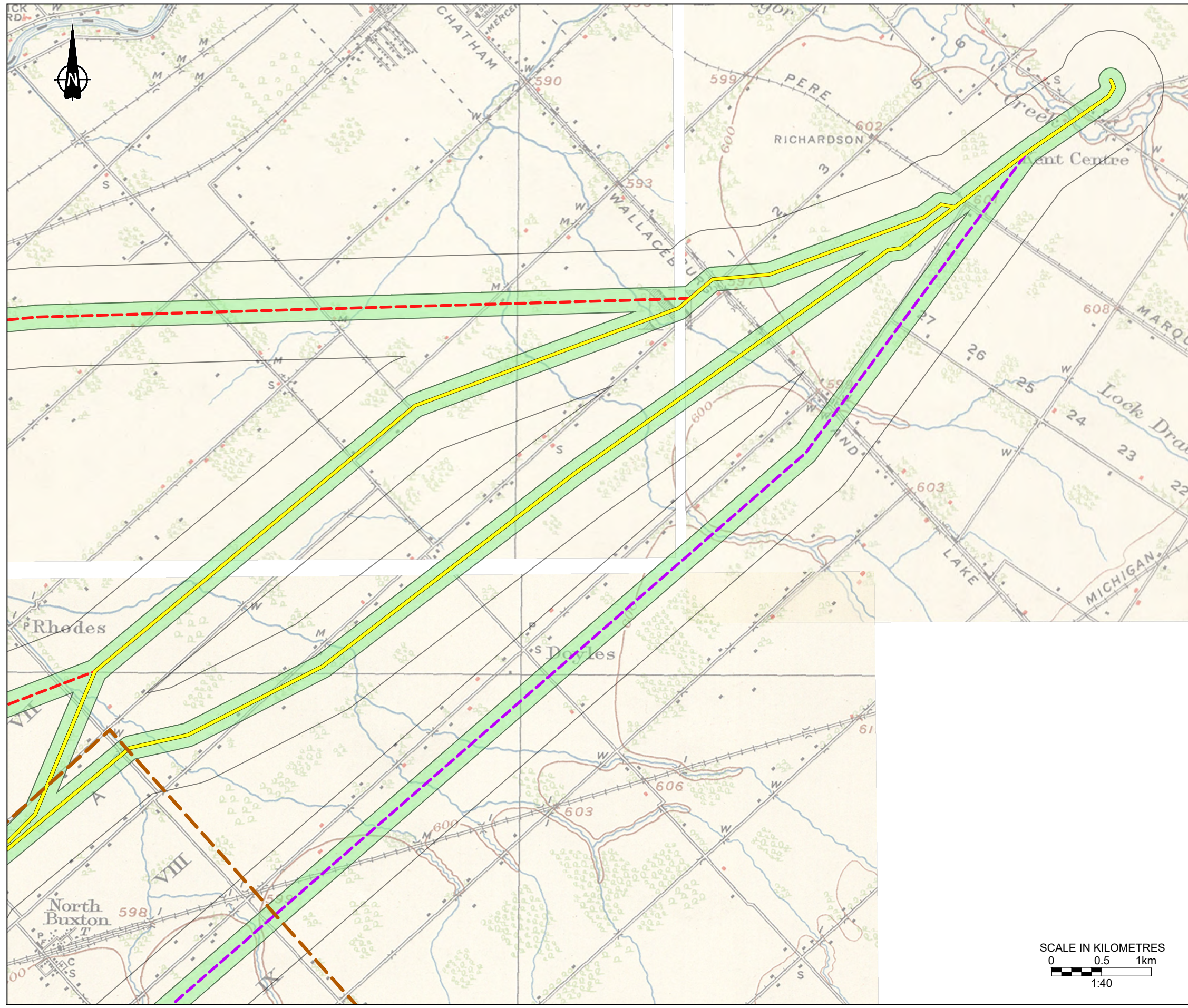
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ALL LOCATIONS ARE APPROXIMATE.

PROJECT			
CHATHAM TO LAKESHORE TRANSMISSION LINE PROJECT			
TITLE			
STUDY AREA OVERLAID ON EARLY 20TH CENTURY TOPOGRAPHICAL MAPPING (6 of 7)			
PROJECT No. 20143948		FILE No 20143948-1000-R01003	
CADD	DGH	Oct 30/20	SCALE AS SHOWN
GOLDER		FIGURE 3F	

Client: Hydro One Networks Inc. Original Format is Tabloid 279mm x 432mm
 Drawing file: 20143948-1000-R01003.dwg Oct 30, 2020 - 9:01am 25mm 0



KEY PLAN

LEGEND

- ALTERNATIVE 1
- ALTERNATIVE 2
- ALTERNATIVE 3

- 120m BUFFER
- 500m BUFFER

REFERENCE

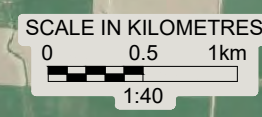
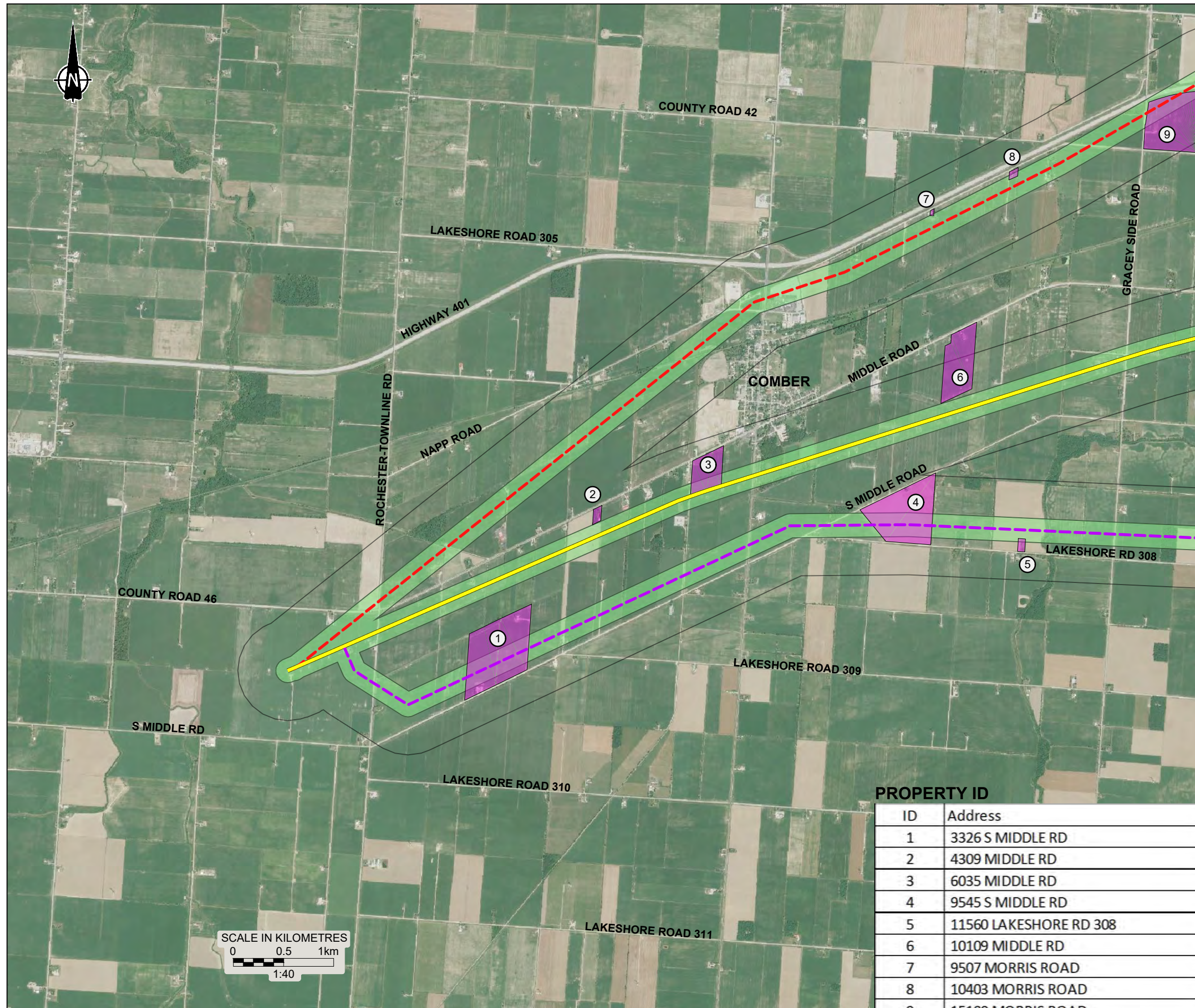
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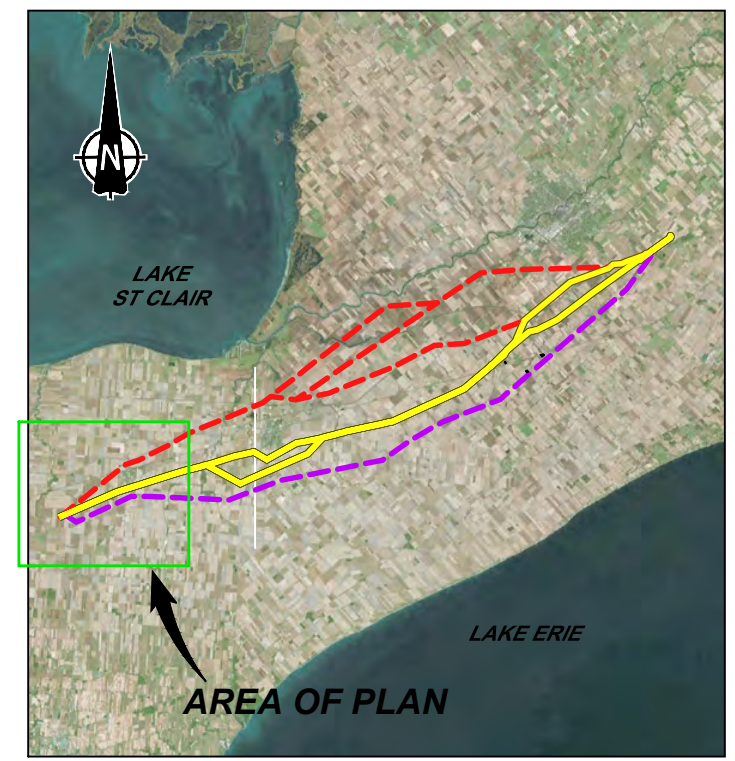
CHATHAM TO LAKESHORE TRANSMISSION LINE PROJECT			
STUDY AREA OVERLAID ON EARLY 20TH CENTURY TOPOGRAPHICAL MAPPING (7 of 7)			
PROJECT No.	20143948	FILE No	20143948-1000-R01003
CADD CHECK	DGH	Oct 30/20	SCALE AS SHOWN REV.
GOLDER			FIGURE 3G

Client: Hydro One Networks Inc.
 Drawing file: 20143948-1000-R01004.dwg
 Original Format is Tabloid 279mm x 432mm
 25mm
 0
 Oct 30, 2020 - 10:09am



PROPERTY ID

ID	Address
1	3326 S MIDDLE RD
2	4309 MIDDLE RD
3	6035 MIDDLE RD
4	9545 S MIDDLE RD
5	11560 LAKESHORE RD 308
6	10109 MIDDLE RD
7	9507 MORRIS ROAD
8	10403 MORRIS ROAD
9	15100 MORRIS ROAD



KEY PLAN

LEGEND

- ALTERNATIVE 1
- - - ALTERNATIVE 2
- - - ALTERNATIVE 3
- 120m BUFFER
- 500m BUFFER
- 3 PROPERTY ID
- PARCEL OF POTENTIAL CHVI (WITHIN OR PARTIALLY WITHIN 120m BUFFER)

REFERENCE

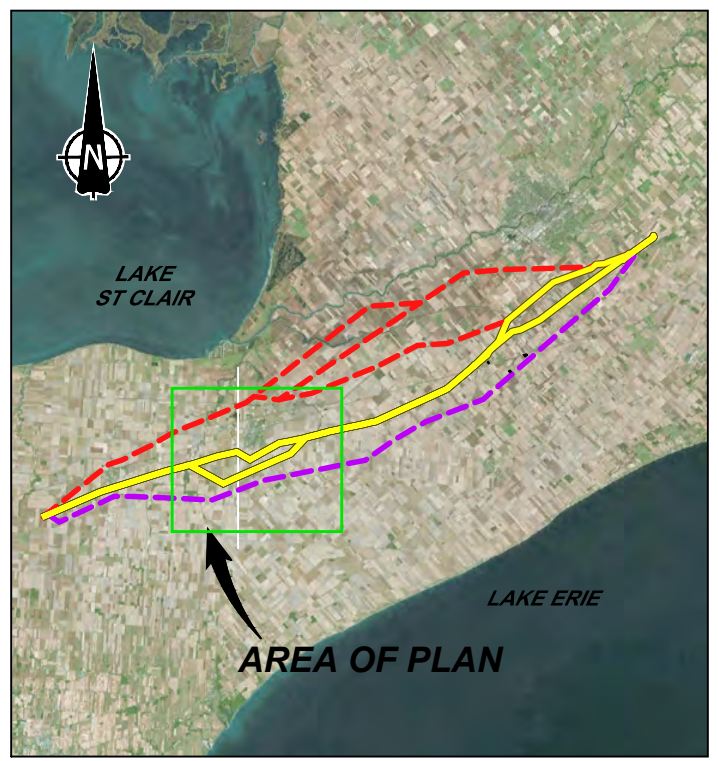
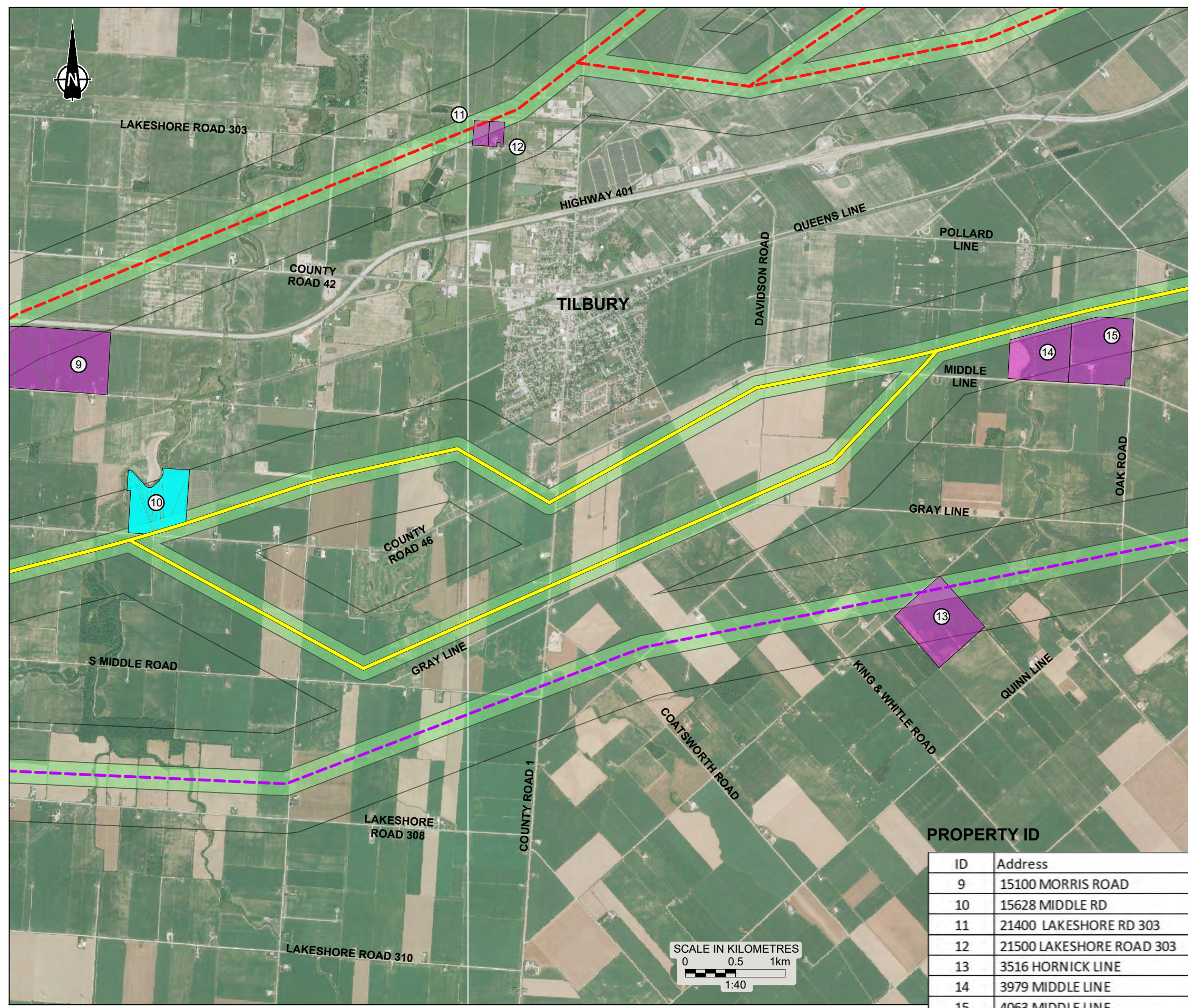
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CHATHAM TO LAKESHORE TRANSMISSION LINE PROJECT			
PROPERTIES OF KNOWN AND POTENTIAL CHVI IDENTIFIED IN THE STUDY AREA (1 of 7)			
	PROJECT No. 20143948	FILE N20143948-1000-R01004	SCALE AS SHOWN REV.
CADD CHECK	DGH	Oct 30/20	FIGURE 4A

Client: Hydro One Networks Inc.
 Drawing file: 20143948-1000-R01004.dwg
 Oct 30, 2020 - 10:12am
 Original Format is Tabloid 279mm x 432mm
 25mm
 0



KEY PLAN

LEGEND

- ALTERNATIVE 1
- - - ALTERNATIVE 2
- - - ALTERNATIVE 3
- 120m BUFFER
- 500m BUFFER
- 3 PROPERTY ID
- PARCEL OF POTENTIAL CHVI (WITHIN OR PARTIALLY WITHIN 120m BUFFER)
- PARCEL LISTED ON MUNICIPAL REGISTER

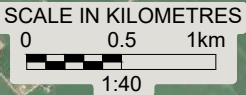
REFERENCE

DRAWING BASED ON DATA PROVIDED BY HYDRO ONE NETWORKS INC; AND BING IMAGERY AS OF SEPTEMBER 24, 2020 (IMAGE DATE UNKNOWN)

NOTES

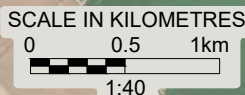
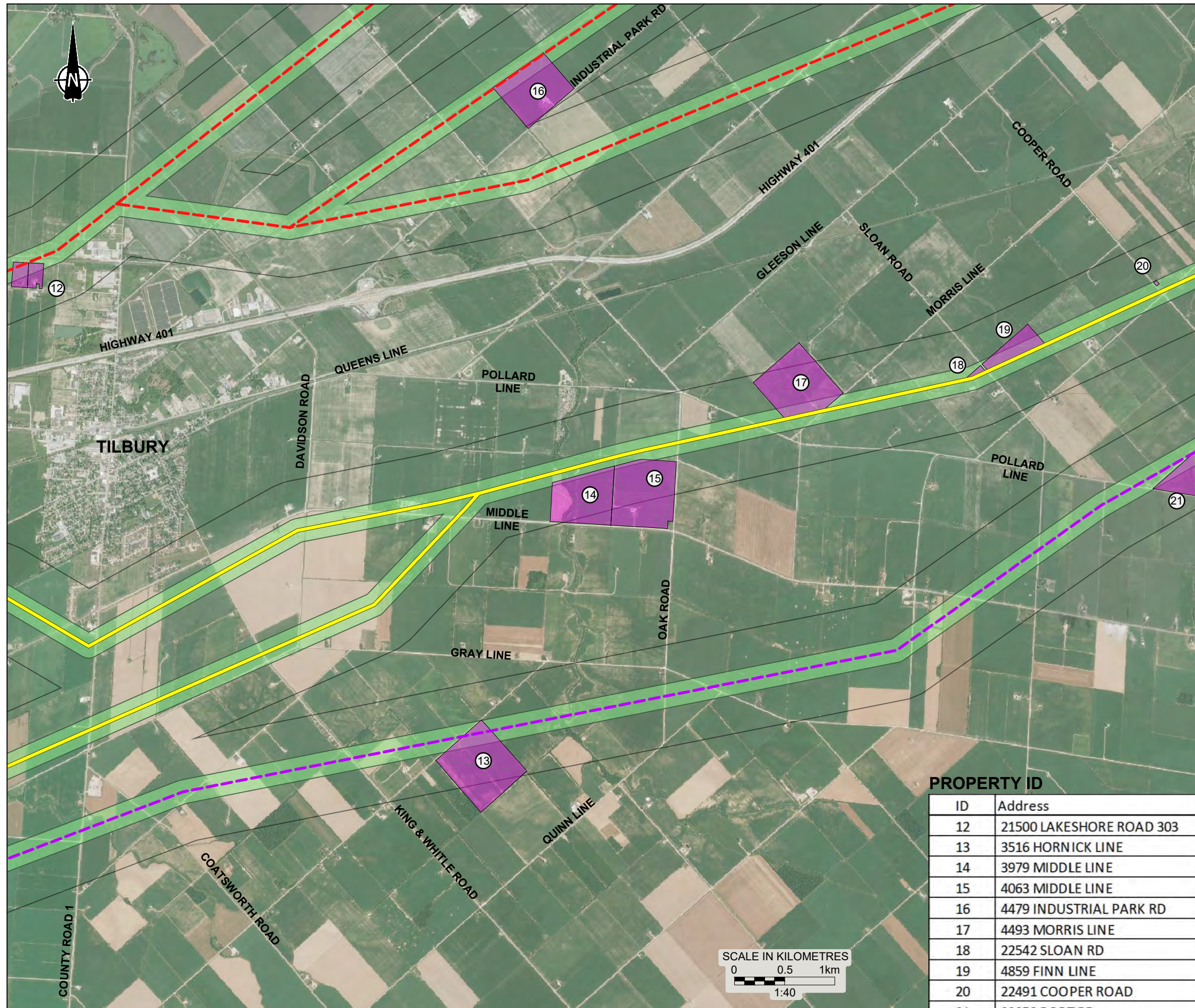
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 ALL LOCATIONS ARE APPROXIMATE.

PROPERTY ID	
ID	Address
9	15100 MORRIS ROAD
10	15628 MIDDLE RD
11	21400 LAKESHORE RD 303
12	21500 LAKESHORE ROAD 303
13	3516 HORNICK LINE
14	3979 MIDDLE LINE
15	4063 MIDDLE LINE



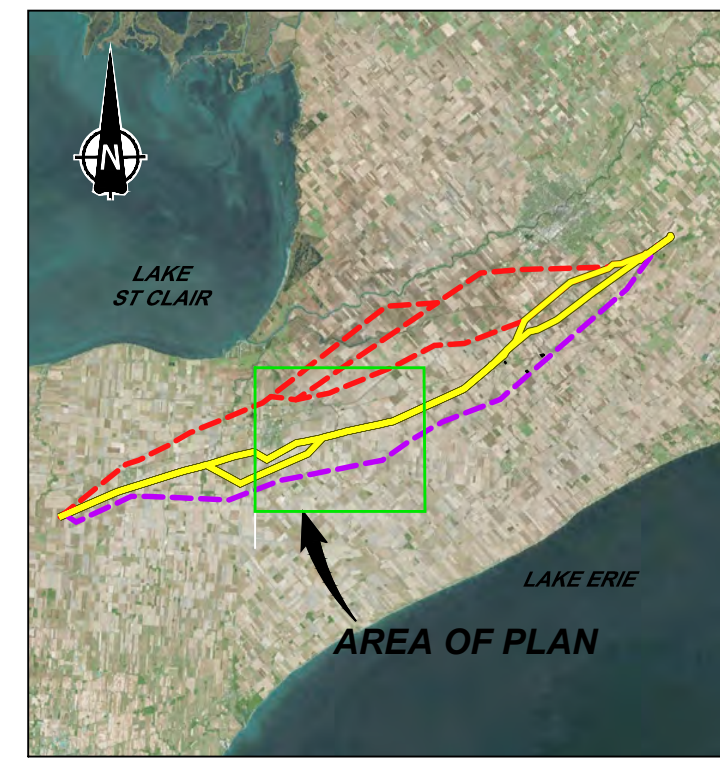
PROJECT			
CHATHAM TO LAKESHORE TRANSMISSION LINE PROJECT			
TITLE			
PROPERTIES OF KNOWN AND POTENTIAL CHVI IDENTIFIED IN THE STUDY AREA (2 of 7)			
	PROJECT No.	20143948	FILE N20143948-1000-R01004
	CADD	DGH	Oct 30/20
	CHECK		
SCALE AS SHOWN		REV.	
		FIGURE 4B	

Client: Hydro One Networks Inc.
 Drawing file: 20143948-1000-R01004.dwg
 Oct 30, 2020 - 10:16am
 Original Format is: Tabloid 279mm x 432mm
 25mm
 0



PROPERTY ID

ID	Address
12	21500 LAKESHORE ROAD 303
13	3516 HORNICK LINE
14	3979 MIDDLE LINE
15	4063 MIDDLE LINE
16	4479 INDUSTRIAL PARK RD
17	4493 MORRIS LINE
18	22542 SLOAN RD
19	4859 FINN LINE
20	22491 COOPER ROAD
21	22059 PORT RD



KEY PLAN

LEGEND

- ALTERNATIVE 1
- - - ALTERNATIVE 2
- - - ALTERNATIVE 3
- 120m BUFFER
- 500m BUFFER
- 3 PROPERTY ID
- PARCEL OF POTENTIAL CHVI (WITHIN OR PARTIALLY WITHIN 120m BUFFER)

REFERENCE

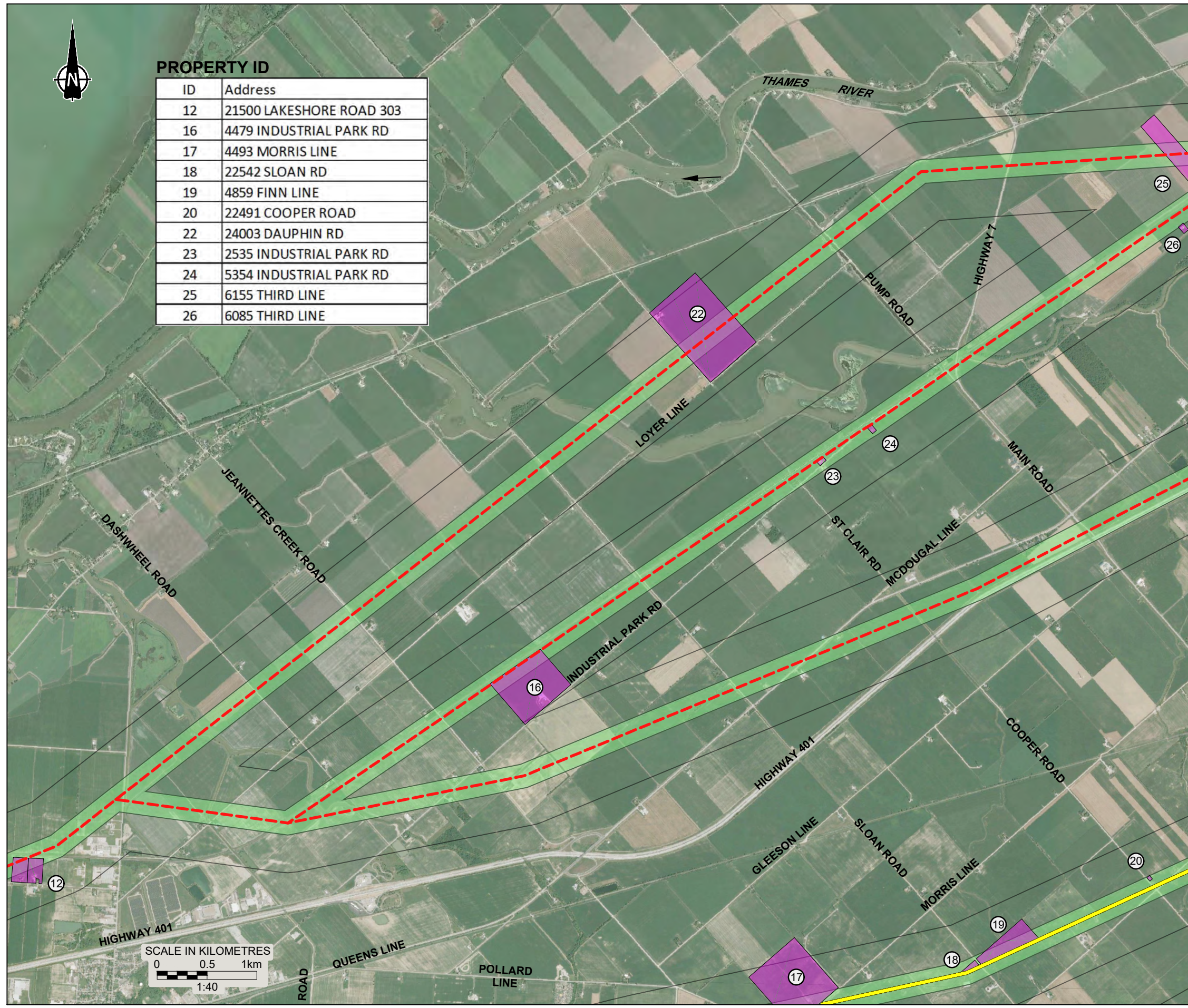
DRAWING BASED ON DATA PROVIDED BY HYDRO ONE NETWORKS INC; AND BING IMAGERY AS OF SEPTEMBER 24, 2020 (IMAGE DATE UNKNOWN)

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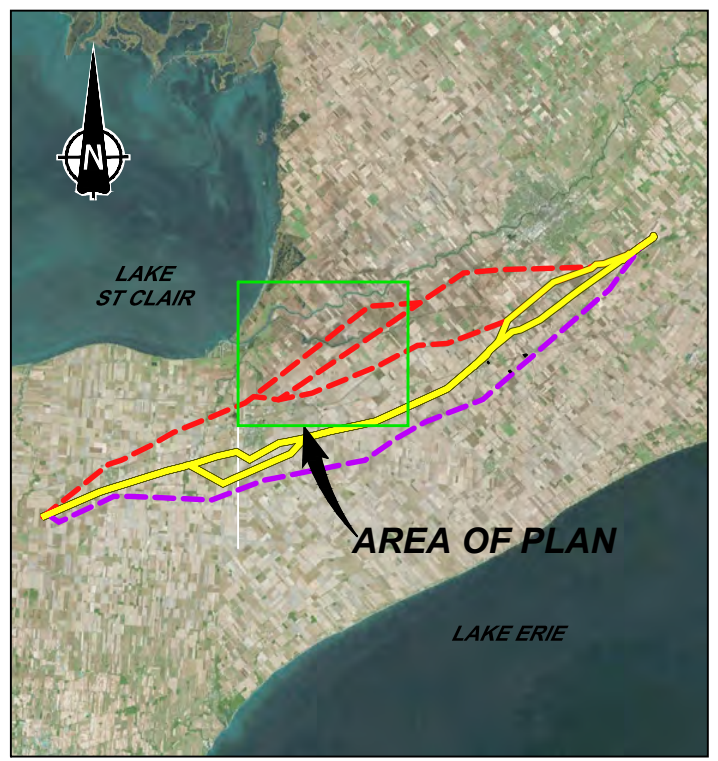
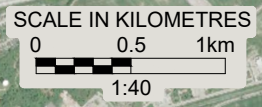
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CHATHAM TO LAKESHORE TRANSMISSION LINE PROJECT			
PROPERTIES OF KNOWN AND POTENTIAL CHVI IDENTIFIED IN THE STUDY AREA (3 of 7)			
GOLDER		PROJECT No. 20143948	FILE N20143948-1000-R01004
CADD CHECK	DGH	Oct 30/20	SCALE AS SHOWN REV.
			FIGURE 4C

Client: Hydro One Networks Inc. Original Format is Tabloid 279mm x 432mm 25mm 0 Oct 30, 2020 - 10:19am Drawing file: 20143948-1000-R01004.dwg



ID	Address
12	21500 LAKESHORE ROAD 303
16	4479 INDUSTRIAL PARK RD
17	4493 MORRIS LINE
18	22542 SLOAN RD
19	4859 FINN LINE
20	22491 COOPER ROAD
22	24003 DAUPHIN RD
23	2535 INDUSTRIAL PARK RD
24	5354 INDUSTRIAL PARK RD
25	6155 THIRD LINE
26	6085 THIRD LINE



KEY PLAN

LEGEND

- ALTERNATIVE 1
- - - ALTERNATIVE 2
- - - ALTERNATIVE 3
- 120m BUFFER
- 500m BUFFER
- 3 PROPERTY ID
- PARCEL OF POTENTIAL CHVI (WITHIN OR PARTIALLY WITHIN 120m BUFFER)

REFERENCE

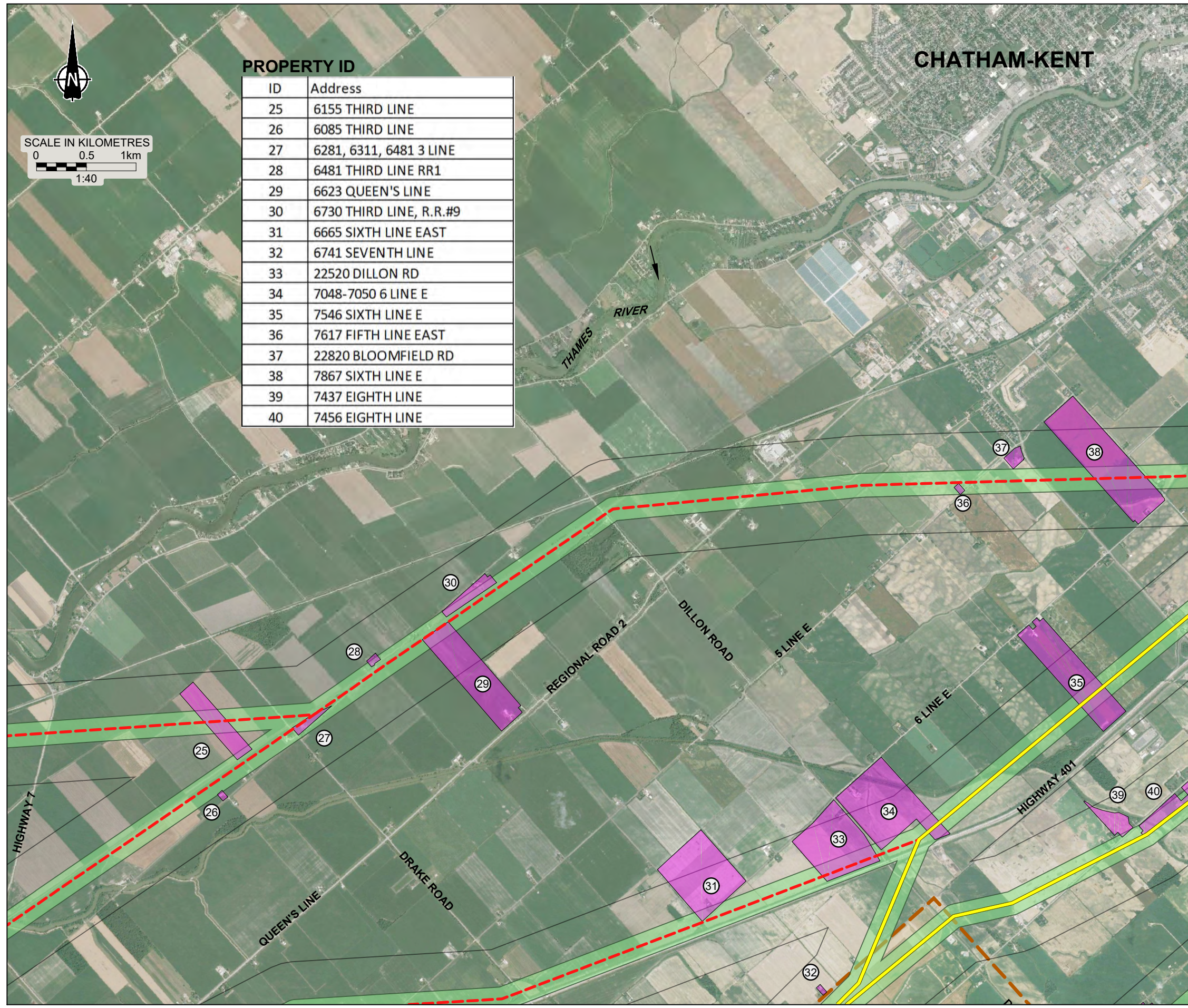
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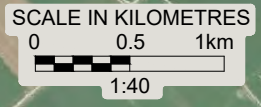
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CHATHAM TO LAKESHORE TRANSMISSION LINE PROJECT			
PROPERTIES OF KNOWN AND POTENTIAL CHVI IDENTIFIED IN THE STUDY AREA (4 of 7)			
	PROJECT No. 20143948	FILE N20143948-1000-R01004	
CADD	DGH	Oct 30/20	SCALE AS SHOWN REV.
CHECK			FIGURE 4D

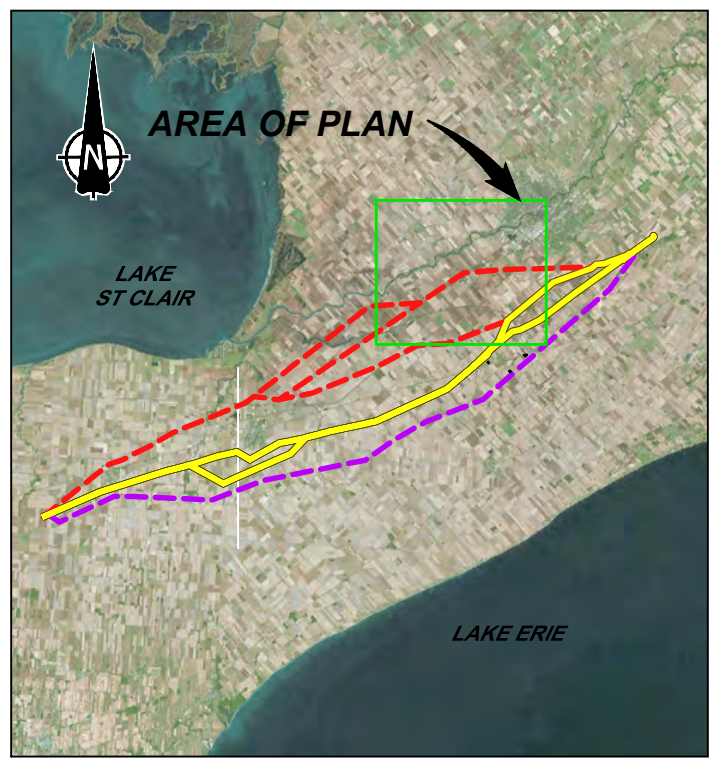
Client: Hydro One Networks Inc. Original Format is: Tabloid 279mm x 432mm
 Drawing file: 20143948-1000-R01004.dwg Oct 30, 2020 - 10:22am



PROPERTY ID	
ID	Address
25	6155 THIRD LINE
26	6085 THIRD LINE
27	6281, 6311, 6481 3 LINE
28	6481 THIRD LINE RR1
29	6623 QUEEN'S LINE
30	6730 THIRD LINE, R.R.#9
31	6665 SIXTH LINE EAST
32	6741 SEVENTH LINE
33	22520 DILLON RD
34	7048-7050 6 LINE E
35	7546 SIXTH LINE E
36	7617 FIFTH LINE EAST
37	22820 BLOOMFIELD RD
38	7867 SIXTH LINE E
39	7437 EIGHTH LINE
40	7456 EIGHTH LINE



CHATHAM-KENT



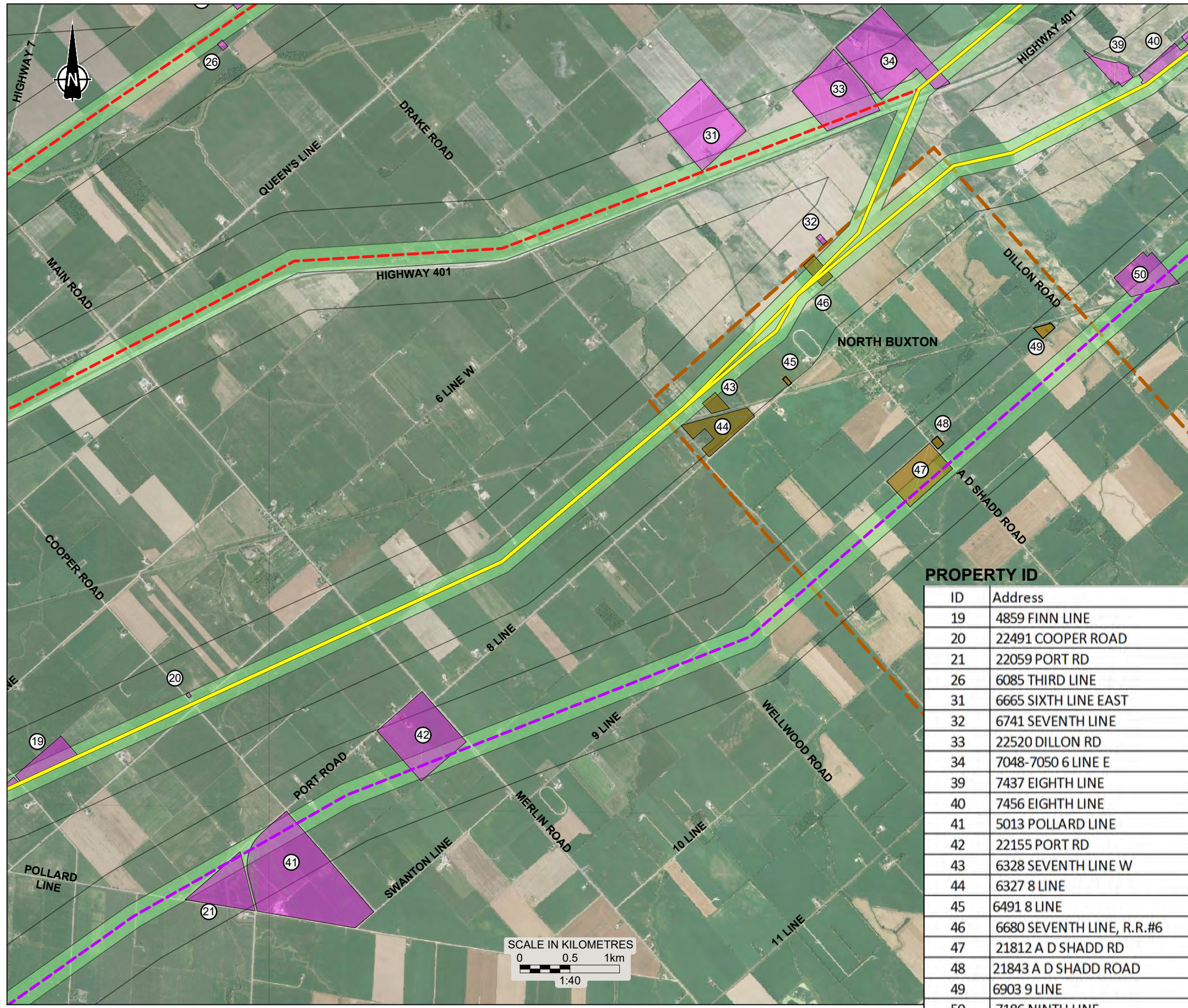
- LEGEND**
- ALTERNATIVE 1
 - - - ALTERNATIVE 2
 - - - ALTERNATIVE 3
 - - - BUXTON SETTLEMENT (NATIONAL HISTORIC SITE OF CANADA)
 - 120m BUFFER
 - 500m BUFFER
 - 3 PROPERTY ID
 - PARCEL OF POTENTIAL CHVI (WITHIN OR PARTIALLY WITHIN 120m BUFFER)

REFERENCE
 DRAWING BASED ON DATA PROVIDED BY HYDRO ONE NETWORKS INC; AND BING IMAGERY AS OF SEPTEMBER 24, 2020 (IMAGE DATE UNKNOWN)

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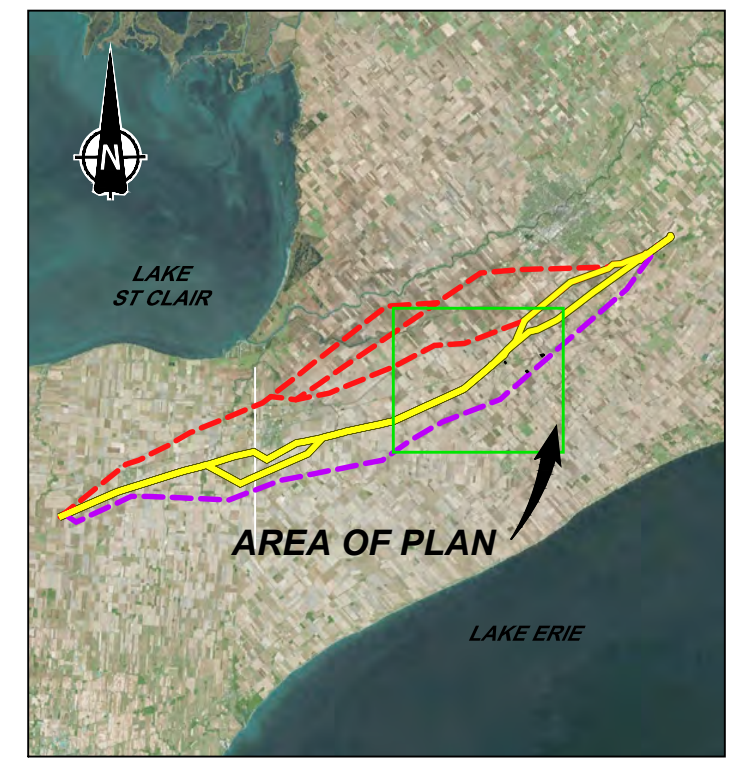
CHATHAM TO LAKESHORE TRANSMISSION LINE PROJECT			
PROPERTIES OF KNOWN AND POTENTIAL CHVI IDENTIFIED IN THE STUDY AREA (5 of 7)			
GOLDER	PROJECT No. 20143948	FILE N20143948-1000-R01004	
	CADD DGH Oct 30/20	SCALE AS SHOWN	REV.
	CHECK		FIGURE 4E

Client: Hydro One Networks Inc.
 Drawing file: 20143948-1000-R01004.dwg
 Original Format is: Tabloid 279mm x 432mm
 Oct 30, 2020 - 10:32am
 25mm
 0



PROPERTY ID

ID	Address
19	4859 FINN LINE
20	22491 COOPER ROAD
21	22059 PORT RD
26	6085 THIRD LINE
31	6665 SIXTH LINE EAST
32	6741 SEVENTH LINE
33	22520 DILLON RD
34	7048-7050 6 LINE E
39	7437 EIGHTH LINE
40	7456 EIGHTH LINE
41	5013 POLLARD LINE
42	22155 PORT RD
43	6328 SEVENTH LINE W
44	6327 8 LINE
45	6491 8 LINE
46	6680 SEVENTH LINE, R.R.#6
47	21812 A D SHADD RD
48	21843 A D SHADD ROAD
49	6903 9 LINE
50	7186 NINTH LINE



KEY PLAN

LEGEND

- ALTERNATIVE 1
- - - ALTERNATIVE 2
- - - ALTERNATIVE 3
- - - BUXTON SETTLEMENT (NATIONAL HISTORIC SITE OF CANADA)
- 120m BUFFER
- 500m BUFFER
- 3 PROPERTY ID
- PARCEL OF POTENTIAL CHVI (WITHIN OR PARTIALLY WITHIN 120m BUFFER)
- PARCEL WITHIN NHSC DESIGNATED SETTLEMENT

REFERENCE

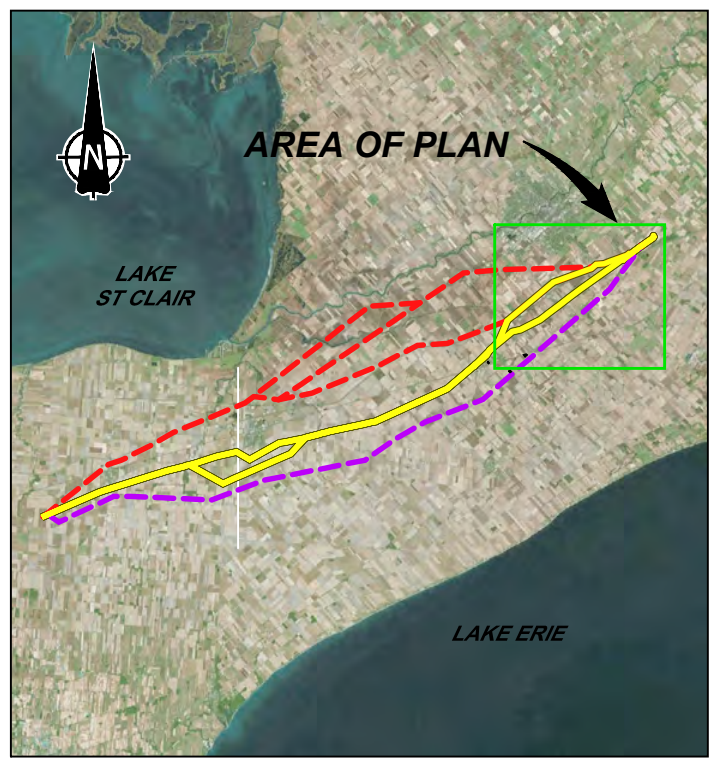
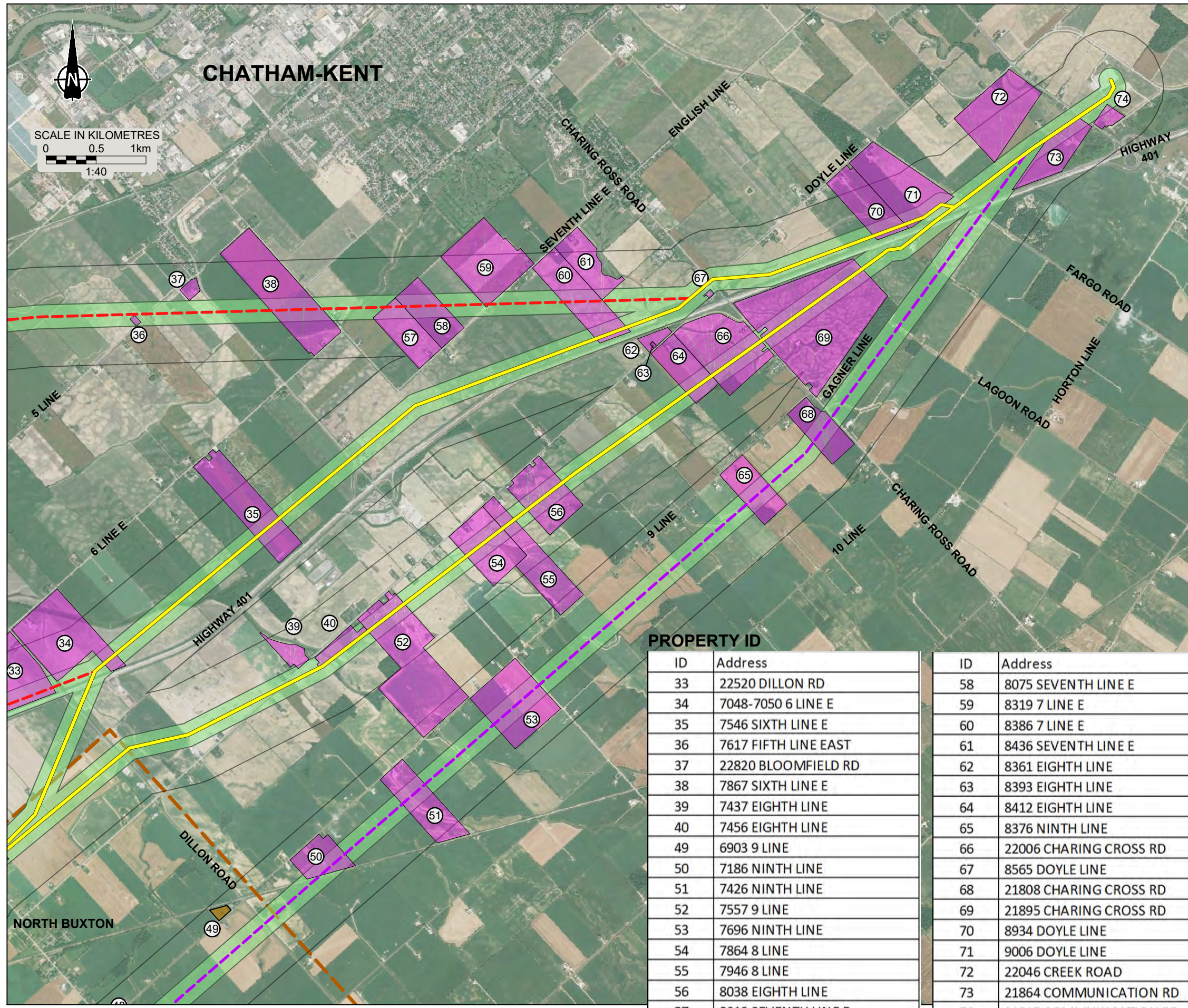
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CHATHAM TO LAKESHORE TRANSMISSION LINE PROJECT			
PROPERTIES OF KNOWN AND POTENTIAL CHVI IDENTIFIED IN THE STUDY AREA (6 of 7)			
GOLDER	PROJECT No. 20143948	FILE N20143948-1000-R01004	SCALE AS SHOWN
CADD CHECK	DGH	Oct 30/20	REV.
			FIGURE 4F

Client: Hydro One Networks Inc. Original Format is Tabloid 279mm x 432mm
 Drawing file: 20143948-1000-R01004.dwg Oct 30, 2020 - 10:38am 0 25mm



KEY PLAN

LEGEND

- ALTERNATIVE 1
- - - ALTERNATIVE 2
- - - ALTERNATIVE 3
- - - BUXTON SETTLEMENT (NATIONAL HISTORIC SITE OF CANADA)
- 120m BUFFER
- 500m BUFFER

- 3 PROPERTY ID
- PARCEL OF POTENTIAL CHVI (WITHIN OR PARTIALLY WITHIN 120m BUFFER)
- PARCEL WITHIN NHSC DESIGNATED SETTLEMENT

REFERENCE

DRAWING BASED ON DATA PROVIDED BY HYDRO ONE NETWORKS INC; AND BING IMAGERY AS OF SEPTEMBER 24, 2020 (IMAGE DATE UNKNOWN)

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PROPERTY ID

ID	Address	ID	Address
33	22520 DILLON RD	58	8075 SEVENTH LINE E
34	7048-7050 6 LINE E	59	8319 7 LINE E
35	7546 SIXTH LINE E	60	8386 7 LINE E
36	7617 FIFTH LINE EAST	61	8436 SEVENTH LINE E
37	22820 BLOOMFIELD RD	62	8361 EIGHTH LINE
38	7867 SIXTH LINE E	63	8393 EIGHTH LINE
39	7437 EIGHTH LINE	64	8412 EIGHTH LINE
40	7456 EIGHTH LINE	65	8376 NINTH LINE
49	6903 9 LINE	66	22006 CHARING CROSS RD
50	7186 NINTH LINE	67	8565 DOYLE LINE
51	7426 NINTH LINE	68	21808 CHARING CROSS RD
52	7557 9 LINE	69	21895 CHARING CROSS RD
53	7696 NINTH LINE	70	8934 DOYLE LINE
54	7864 8 LINE	71	9006 DOYLE LINE
55	7946 8 LINE	72	22046 CREEK ROAD
56	8038 EIGHTH LINE	73	21864 COMMUNICATION RD
57	8019 SEVENTH LINE E	74	21815 COMMUNICATION RD

CHATHAM TO LAKESHORE TRANSMISSION LINE PROJECT			
PROPERTIES OF KNOWN AND POTENTIAL CHVI IDENTIFIED IN THE STUDY AREA (7 of 7)			
GOLDER		PROJECT No. 20143948	FILE No 20143948-1000-R01004
CADD	DGH	Oct 30/20	SCALE AS SHOWN
CHECK			REV.
			FIGURE 4G

Signature Page

Golder Associates Ltd.



Alisha Mohamed, M.A.
Cultural Heritage Specialist/ Archaeologist



Henry Cary, Ph.D., CAHP, RPA
Senior Cultural Heritage Specialist/ Senior Archaeologist

AM/HC/ly

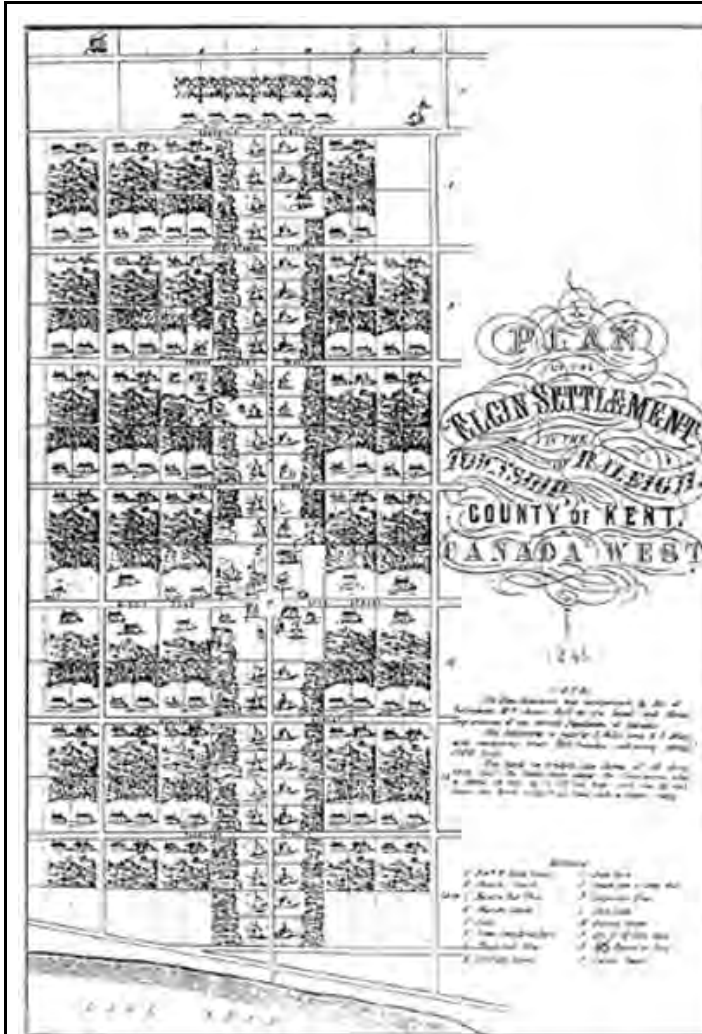
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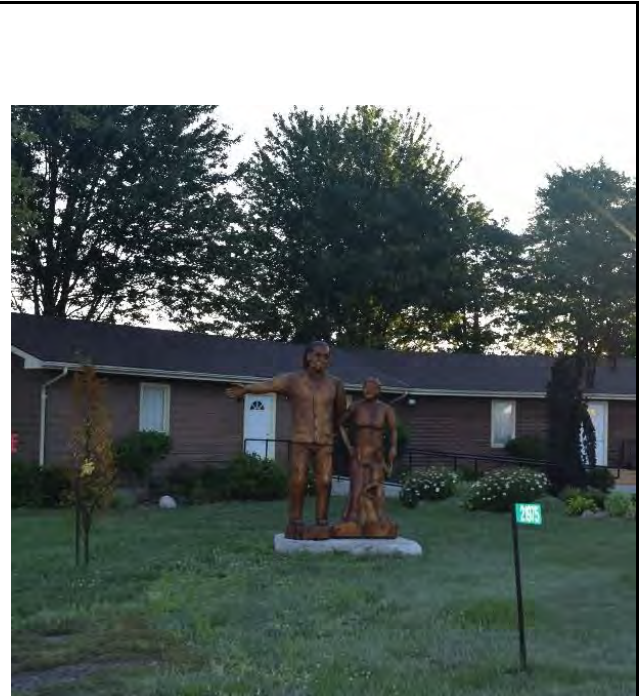
APPENDIX A

**Known and Potential Built Heritage
Resources and Cultural Heritage
Landscapes identified in the Route
1 Study Area**

BUXTON SETTLEMENT, RALEIGH, MERLIN



1866 Plan of the Elgin Settlement, later known as the Buxton Settlement (Parks Canada Directory of Federal Heritage Designations)



Settlement described as “3 miles [4.8 km] along Seventh Line West (roughly between Drake and Dillon Roads) and south 6 miles (to Lake Erie)”

NHSC, Federal Plaque and Museum located at 21975-21979 A.D. Shadd Road (outside study area).

Ontario Heritage Trust (OHT) Provincial Plaque located at intersection of County Roads 6 and 8 (outside study area).

Heritage Status: Designated a NHSC under Historic Sites and Monuments Act (R.S.C., 1985, c. H-4)

Description of Historic Place (from Parks Canada Directory of Federal Heritage Designations): The Buxton Settlement NHSC is a cultural landscape of some 4,680 hectares. It is a primarily agricultural landscape, comprised of flat, worked fields defined by deep drainage ditches and a grid of intersecting roads. Homesteads are scattered throughout the settlement area including its two hamlets, South and North Buxton, which also contain important religious, educational, and cultural institutions associated with the settlement’s founding by Underground Railroad refugees.

CHVI: Buxton Settlement NHSC was designated because:

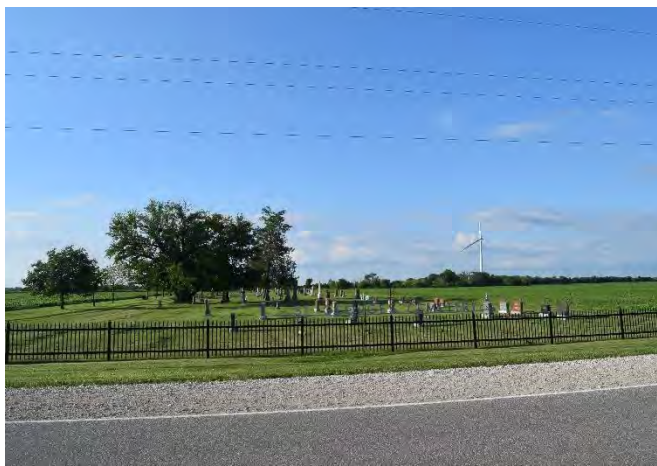
- this cultural landscape, through the retention of land-use patterns and built resources, speaks to the successful realization of the block or planned refugee settlement in Canada;

- the cultural landscape continues as a living memorial to its founders and to the courage of every Underground Railroad refugee who took their life in their hands and chose Canada as their home.

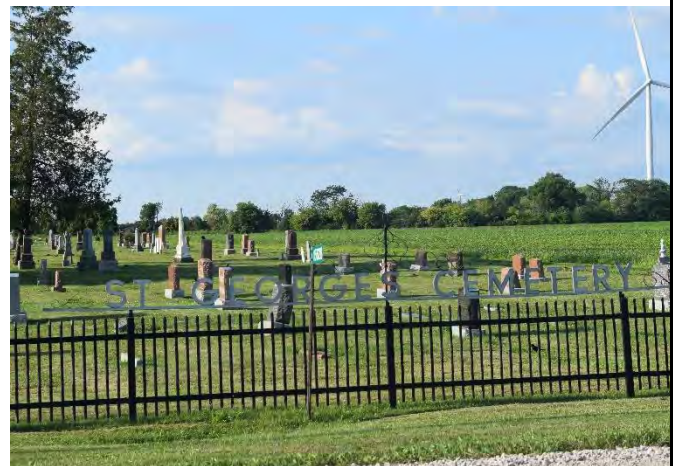
The heritage value of this site resides in the site's illustration of a successful Underground Railroad refugee block settlement through the survival of land-use patterns and associated built resources.

Established as the Elgin Settlement at Buxton, Ontario, the Buxton Settlement survives today as a distinct cultural landscape, one that continues to function as a community while preserving tangible survivals from its historic past. It was founded in 1849 by Irish Presbyterian Minister, Reverend William King and 15 former American slaves who, with other Underground Railroad (UGRR) refugees and abolitionists, purchased a 4,680-hectare tract of land as a joint stock company. Settlers cleared the land and established farms on 50-acre (202,342 square metre) plots which they purchased over time. By 1859, the settlement reached its peak population of over 1,000 residents served by three integrated schools, two temperance hotels, a general store, a post office, a sawmill, a brickyard, a grist mill and a pearlsh factory. In 1873, its objectives achieved, the company was disbanded but the community survived.

15628 MIDDLE ROAD, COMBER



Property lot, looking north from Middle Road



South fence for cemetery property

Heritage Status: Listed on the Lakeshore *Municipal Heritage Register*

Description: *Cultural Heritage Landscape* – St. George's Anglican Church Cemetery, plot measuring approximately 30 m east-west by 165 m north-south. Grave markers range in date from 1866 to 2017 (dates of death).

Consultation with early 20th century topographical maps indicate that the property was owned by Robert Peel by 1877 (Figure 2) and was subdivided as a cemetery by 1913 (Figure 3).

CHVI: The property has contextual value as a mid-19th to early 20th century burial ground for the Comber community. It is a good example of a 19th century rural cemetery.

Heritage Attributes:

- Association with the surrounding village (Comber)
- Original markers and monuments, some with surviving inscriptions
- Variety/ range of styles, sizes, materials and symbolism represented in the markers and monuments

6328 7 Line West, Raleigh, Merlin



Property lot, looking south from 7 Line



Seven visible grave markers in cemetery

Heritage Status: Property of potential CHVI

Description: *Cultural Heritage Landscape* – 7th Line Baptist Cemetery, also known as Anti Slavery Baptist Church Cemetery. Small plot measuring approximately 34 m east-west by 42 m north-south. Grave markers range in date from 1862 to 1950 (dates of death).

Consultation with early 20th century topographical maps indicate that the property was owned by P. McLaughlin by 1877 (Figure 2) and was subdivided as a cemetery by 1913 (Figure 3).

CHVI: The property has contextual value as a mid-19th to early 20th century burial ground for the Raleigh/ Buxton community. It is a good example of a 19th century rural cemetery.

Established as the Elgin Settlement at Buxton, Ontario, the Buxton Settlement survives today as a distinct cultural landscape, one that continues to function as a community while preserving tangible survivals from its historic past. It was founded in 1849 by Irish Presbyterian Minister, Reverend William King and 15 former American slaves who, with other Underground Railroad (UGRR) refugees and abolitionists, purchased a 4,680-hectare tract of land as a joint stock company.

Heritage Attributes:

- Association with the surrounding Buxton Settlement area
- Original markers and monuments, some with surviving inscriptions

6680 7 Line West, Raleigh, Merlin



Property lot, looking southeast from 7 Line



North (front) façade of house on property

Heritage Status: Property of potential CHVI

Description: *Built heritage resource* – Single detached, storey-and-a-half, vinyl siding clad house. The main block of the house has a medium pitch gable roof with centre gable on the north (front) façade. It has an L-shaped plan and one-storey extension (garage) to the west. The north façade exhibits an enclosed porch set below a low pitch roof.

The house is set back approximately 29 m from A D Shadd Road and is accessed by gravel driveway.

Consultation with the 19th century historical county maps and early 20th century topographical maps did not provide a proprietor; however, an earlier wooden version of the house was on the property by 1913 (Figure 3).

CHVI: The property has potential design or physical value for its vernacular expression of the Gothic Revival style, as well as potential contextual value for its maintenance and support of the character of the Buxton Settlement area, to which it is still visually linked.

Heritage Attributes:

- Association with the surrounding Buxton Settlement area
- Main block in the Gothic Revival style with:
 - L-shaped plan
 - Cross gable

6327 8 Line, Raleigh, Merlin



Property lot, looking northwest from 8 Line



South (front) façade of house on property

Heritage Status: Property of potential CHVI

Description: *Built heritage resource* – Single detached, storey-and-a-half, vinyl siding clad house with associated wooden outbuildings to east. The house has a three-bay main block with a medium pitch gable roof and offset (right) dormer window in the south (front) façade. It has a rectangular plan, of which the south (front) façade is located along the wider axis, and a large extension to the north.

Two wooden outbuildings with metal clad roofs are located to the east of the house.

The house is set back approximately 15 m from 8 Line. A gravel driveway runs to the east of the house for approximately 20 m before arriving at the nearest wooden outbuilding.

Consultation with early 20th century topographical maps indicate that the property was owned by P. McLaughlin by 1877 (Figure 2) and that a wooden version of the house was on the property by 1913 (Figure 3).

CHVI: The property has potential design or physical value for its vernacular expression of the Gothic Revival style, as well as potential contextual value for its maintenance and support of the character of the Buxton Settlement area, to which it is still visually linked.

Heritage Attributes:

- Association with the surrounding Buxton Settlement area
- Main block in the Gothic Revival style with:
 - Rectangular plan

6491 8 Line, Raleigh, Merlin



Property lot, looking northwest from 8 Line



South (front) façade of house on property

Heritage Status: Property of potential CHVI

Description: *Built heritage resource* – Single detached, storey-and-a-half, vinyl siding clad house. The house has a three-bay main block with a medium pitch gable roof and centre gable on the south (front) façade. It has a rectangular plan, of which the south (front) façade is located along the wider axis, and a large extension to the north and smaller one-storey extension to the west. Roof appears to have been recently redone with synthetic shingles.

The house is set back approximately 21 m from 8 Line and is accessed by a gravel driveway. A wooden children’s playhouse is located 26 m west of the house.

Consultation with early 20th century topographical maps indicate that the property was owned by a Mrs. Cronon by 1877 (Figure 2), however, no wooden, stone or brick versions of the house appear on the property by 1913 (Figure 3).

CHVI: The property has potential design or physical value for its vernacular expression of the Gothic Revival style, as well as potential contextual value for its maintenance and support of the character of the Buxton Settlement area, to which it is still visually linked.

Heritage Attributes:

- Association with the surrounding Buxton Settlement area
- Main block in the Gothic Revival style with:
 - Rectangular plan

21815 COMMUNICATION ROAD, CHATHAM



Property lot, looking northeast from Communication Road



South (front) façade of house of property



South (front) façade of barn on property



Associated farm, looking north from Pinehurst Line

Heritage Status: Property of potential CHVI

Description: *Built heritage resource and cultural heritage landscape* – Single detached, two-storey, vinyl siding clad house and associated rear (northwest) barn. The main block of the house has a gambrel roof and enclosed porch making the original number of bays indiscernible. It has a rectangular plan, of which the south (front) façade is located along the shorter axis, and one northeast extension. The closed porch on the south façade is set below a low pitch roof.

The wooden barn compliments the house with a gambrel roof and appears to have been recently painted with some walls refaced with metal siding. There is large extension to the north of the barn and the building is currently used as an antique store. The house and barn are associated with one of the few remaining farm lots surrounding the Chatham Switching Station.

The house is set back approximately 21 m from Communication Road. A gravel driveway runs to the west of the house for approximately 50 m before arriving at the barn (located 30 m northwest of the house). The farm lot is delineated to the north and east with hedgerows/ tree lines.

Consultation with the 19th century historical county maps and early 20th century topographical maps indicate that the property was owned by J.M. McGarvin by 1877 (Figure 2) and that a wooden version of the house and barn were on the property by 1913 (Figure 3).

CHVI: The property has potential design or physical value for its complimentary gambrel roof farmhouse and barn, as well as potential contextual value for its maintenance and support of the rural agricultural character of the area, including the tree lines emphasized in the Municipality of Chatham-Kent's *Official Plan*, to which it is still visually linked.

Heritage Attributes:

- Association between the house and outbuilding(s)
- Rural agricultural landscape
- Main block with:
 - Rectangular plan

21864 COMMUNICATION ROAD, CHATHAM



North (front) façade of house on property



Associated barns on property, looking southwest from Communication Road

Heritage Status: Property of potential CHVI

Description: *Built heritage resource* – Single detached, two-storey brick house and associated rear (south) barns and outbuildings. The main block of the house has a medium pitch gable roof and fenestration flanked by shutters. It has a rectangular plan, of which the north (front) façade is located along the wider axis, and no major extensions. The north façade exhibits an open porch set below a low pitch roof.

The house is set back approximately 215 m from Communication Road and is accessed by a gravel driveway and bridge which cross McGregor Creek; a small tributary of the Thames River that appears to traverse a similar path as depicted in mid-19th century mapping. The barns and farming related outbuildings appear to be metal structures with the nearest being located 35 m south of the house.

Consultation with the 19th century historical county maps and early 20th century topographical maps indicate that the property was owned by W.J. Richards by 1877 (Figure 2) and that the brick house on the property was built by 1913 (Figure 3).

CHVI: The property has potential design or physical value for its vernacular expression of the Georgian revival style, as well as potential contextual value for its maintenance and support of the natural landscape (McGregor Creek) and rural agricultural character of the area to which it is still visually linked.

Heritage Attributes:

- Association between the house and outbuilding(s)
- Rural agricultural landscape
- Main block with:
 - Rectangular plan

8565 DOYLE LINE, CHATHAM



Property lot, looking northeast from Doyle Line



South (front) façade of house on property



South (front) façade and east wall of house on property



North façade and east wall of house on property

Heritage Status: Property of potential CHVI

Description: *Built heritage resource* – Single detached, two storey, red brick house and associated rear (northwest) outbuilding. The house has a three-bay main block with symmetrical fenestration and a medium pitch gable roof with centre gable on the south (front) façade and decorated fascia in the gables of the north and east façades. It also has a T-shaped plan and two one-storey vinyl siding clad extensions in the northeast and northwest corners. Brick voussoirs top each window and include keystones for the upper storey windows on the south and east façades.

The house is set back approximately 20 m from Doyle Line but would have been located approximately 60 m southwest of the concession road that is present-date Charing Cross Road. A gravel driveway runs to the west of the house for approximately 38 m before arriving at the metal outbuilding (located 5 m northwest of the house).

Consultation with the 19th century historical county maps and early 20th century topographical maps indicate that the property was subdivided as part of the Ronalds Estate by 1877 (Figure 2) and that the brick house on the property was built by 1913 (Figure 3).

CHVI: The property has potential design or physical value for its vernacular expression of the Gothic Revival style.

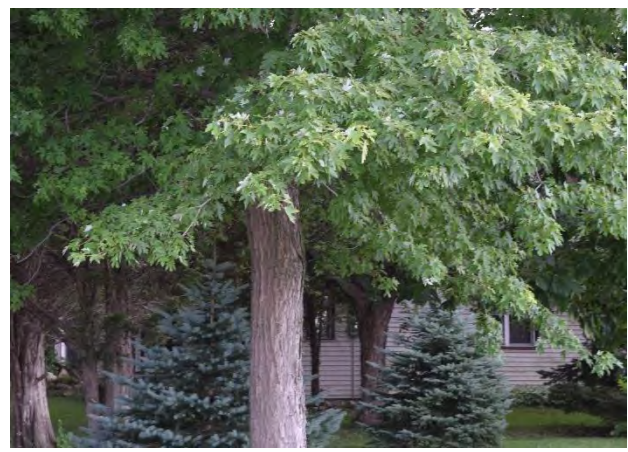
Heritage Attributes:

- Main block in the Gothic Revival style with:
 - T-shaped plan
 - Cross gable

4309 MIDDLE ROAD, COMBER



Property lot, looking south from Middle Road



North (front) façade of house on property

Heritage Status: Property of potential CHVI

Description: *Built heritage resource* – Though obstructed by tree cover, the property appears to contain a single detached, vinyl siding clad house and associated outbuilding rear (south) outbuilding. The main block has a T-shaped plan and no major extensions.

The house is set back approximately 32 m from Middle Road and is accessed by a gravel driveway. The large metal outbuilding is located 79 m south of the house.

Consultation with the 19th century historical county maps and early 20th century topographical maps indicate that the property was owned by William Howe by 1877 (Figure 2) and that an earlier wooden house was on the property by 1913 (Figure 3).

CHVI: The property has potential design or physical value for its Ontario vernacular style architecture.

Heritage Attributes:

- Main block with:
 - T-shaped plan
 - Cross gable

6035 MIDDLE ROAD, COMBER



Property lot, looking south from Middle Road



North (front) façade of house on property

Heritage Status: Property of potential CHVI

Description: *Built heritage resource* – Single detached, two-storey, red brick house and associated rear (south) barn and outbuildings. The main block of the house has a medium pitch gable roof. It has a rectangular plan, of which the north (front) façade is located along the wider axis, and two one-storey vinyl siding clad extensions to the north and south.

A gambrel roof barn and two large metal outbuildings are located to the north of the house.

The house is set back approximately 16 m from Middle Road. A gravel driveway runs to the west of the house for approximately 46 m before arriving at the first of the two metal outbuildings.

Consultation with the 19th century historical county maps and early 20th century topographical maps indicate that the property was owned by H. Whalley 1877 (Figure 2) and that the brick house on the property was built by 1913 (Figure 3).

CHVI: The property has potential design or physical value for its Ontario vernacular style architecture.

Heritage Attributes:

- Main block with:
 - Rectangular plan

6741 7 LINE WEST, TILBURY



South (front) façade of house on property



Associated barn on property, looking northwest from 7 Line West

Heritage Status: Property of potential CHVI

Description: *Built heritage resource* – Single detached, storey-and-a-half, red brick house with associated rear (north) outbuildings and silos. The house has a three-bay main block with a medium pitch gable roof. It has a rectangular plan, of which the south (front) façade is located along the wider axis, and no major extensions.

A wooden gable roof barn, wooden shed, metal outbuilding and silos are located to the north of the house.

The house is set back approximately 25 m from 7 Line West. A gravel driveway runs to the east of the house for approximately 62 m before arriving at the nearest (metal) outbuilding.

Consultation with the 19th century historical county maps and early 20th century topographical maps indicate that the property was owned by R. Harding by 1877 (Figure 2) and that a wooden version of the house was on the property by 1913 (Figure 3).

CHVI: The property has potential design or physical value for its vernacular expression of the Gothic Revival style.

Heritage Attributes:

- Main block in the Gothic Revival style:
 - Rectangular plan

3979 MIDDLE LINE, TILBURY



Property lot, looking north from Middle Line



South (front) façade of house on property

Heritage Status: Property of potential CHVI

Description: *Built heritage resource* – Single detached, storey-and-a-half, red brick house. The house has a three-bay main block and a medium pitch gable roof with an offsite (right) gable on the south (front) façade. It has a T-shaped plan with no major extensions.

The house is set back approximately 49 m from Middle Line East. A gravel driveway runs to the east of the house for approximately 100 m before arriving at a rubble foundation representing a now demolished wooden outbuilding.

Consultation with the 19th century historical county maps and early 20th century topographical maps indicate that the property was owned by J. & S. Watson by 1877 (Figure 2) and that the brick house on the property was built by 1913 (Figure 3).

CHVI: The property has potential design or physical value for its vernacular expression of the Gothic Revival style.

Heritage Attributes:

- Main block in the Gothic Revival style with:
 - T-shaped plan
 - Cross gable

4063 MIDDLE LINE, TILBURY



Property lot, looking north from Middle Line



South (front) façade of house on property

Heritage Status: Property of potential CHVI

Description: *Built heritage resource* – Single detached, storey-and-a-half, vinyl siding clad house with associated rear (north) outbuildings and silos. The main block of the house appears to have a medium pitch gable roof with dormer windows. It has a rectangular plan with a large extension to the north and another one-storey extension to the west.

The house is set back approximately 121 m from Middle Line and is accessed by a paved driveway. The nearest of two metal buildings is located 20 m to the northwest of the house.

Consultation with the 19th century historical county maps and early 20th century topographical maps indicate that the property was owned by “Mrs. [...]inning” by 1877 (Figure 2) and that a wooden version of the house was on the property by 1913 (Figure 3).

CHVI: The property has potential design or physical value for its Ontario vernacular style architecture.

Heritage Attributes:

- Main block with:
 - Rectangular plan

10109 MIDDLE ROAD, COMBER



South (front) façade of house on property



Associated barn and outbuildings on property, looking north from South Middle Road

Heritage Status: Property of potential CHVI

Description: *Built heritage resource* – Single detached, storey-and-a-half, vinyl siding clad house with associated rear (south) shed. The house has a medium pitch gable roof (with cross gable), L-shaped plan, and no major extensions.

The house is set back approximately 31 m from Middle Road and is accessed by a gravel driveway.

Consultation with the 19th century historical county maps and early 20th century topographical maps indicate that the property was owned by B. Roadhouse by 1877 (Figure 2) and that an earlier wooden version of the house was on the property by 1913 (Figure 3).

CHVI: The property has potential design or physical value for its vernacular expression of the Gothic Revival style.

Heritage Attributes:

- Main block in the Gothic Revival style with:
 - L-shaped plan
 - Cross gable

8361 8 LINE, CHATHAM



Property lot, looking north from 8 Line



South (front) façade of house on property

Heritage Status: Property of potential CHVI

Description: *Built heritage resource* – Single detached, storey-and-a-half, vinyl siding clad house with rear (north) barns. The house has a four-bay main block with a medium pitch gable roof and offset (right) dormer window on the south (front) façade. It also has a T-shaped plan with no major extensions.

The house is set back approximately 27 m from 8 Line. Two gravel driveways run to the east of the house for approximately 63 m before arriving on either side of one of three metal outbuildings.

Consultation with the 19th century historical county maps and early 20th century topographical maps did not provide a proprietor; however, a wooden version of the house was on the property by 1913 (Figure 3).

CHVI: The property has potential design or physical value for its vernacular expression of the Gothic Revival style.

Heritage Attributes:

- Main block in the Gothic Revival style with:
 - T-shaped plan
 - Cross gable

8393 8 LINE, CHATHAM



Property lot, looking north from 8 Line



South (front) façade of house on property

Heritage Status: Property of potential CHVI

Description: *Built heritage resource* – Single detached, storey-and-a-half, red brick house. The house has a four-bay main block with a medium pitch gable roof and offset (right) gable on the south (front) façade. It also has an L-shaped plan with a large extension to the north.

The house is set back approximately 15 m from 8 Line and is accessed by a gravel driveway.

Consultation with the 19th century historical county maps and early 20th century topographical maps did not provide a proprietor, however, the brick house on the property was constructed by 1913 (Figure 3).

CHVI: The property has potential design or physical value for its vernacular expression of the Gothic Revival style.

Heritage Attributes:

- Main block in the Gothic Revival style with:
 - L-shaped plan
 - Cross gable

8412 8 LINE, CHATHAM



Property lot, looking south from 8 Line



North (front) façade of house on property

Heritage Status: Property of potential CHVI

Description: *Built heritage resource* – Single detached, storey-and-a-half, red brick house with associated rear (south) barns. The main block of the house has a medium pitch gable roof with a centre gable on the original north (front) façade as well as decorative fascia in the gable of the east façade. It also has a rectangular plan, of which the north (front) façade is located along the wider axis, and large two-storey extension to the west. The extension appears to have been built not long after the main block as it exhibits a similar style with a medium pitch gable roof and voussoirs above windows (like main block). The main entrance is in an enclosed porch, between the main block and extension, and is lined with vinyl siding clad.

A wooden barn and metal barn are located to the south of the house.

The house is set back approximately 20 m from 8 Line. A gravel driveway runs to the east of the house for approximately 50 m before arriving at the metal barn.

Consultation with the 19th century historical county maps and early 20th century topographical maps indicate that the property was owned by R. Smith by 1877 (Figure 2) and that the brick house on the property was built by 1913 (Figure 3).

CHVI: The property has potential design or physical value for its vernacular expression of the Gothic Revival style.

Heritage Attributes:

- Main block in the Gothic Revival style with:
 - Rectangular plan

7437 8 LINE, CHATHAM



Property lot, looking northeast from 8 Line



South (front) façade of house on property

Heritage Status: Property of potential CHVI

Description: *Built heritage resource* – Single detached, storey-and-a-half, vinyl siding clad house with separate garage to east. The house has a medium pitch gable roof, T-shaped plan, and large extension to the north. The east half of the south façade and all the east façade of the main block exhibits a low pitch roof set above an open wrap-around porch.

The house is set back approximately 20 m from 8 Line and is accessed by a gravel driveway.

Consultation with the 19th century historical county maps and early 20th century topographical maps indicate that the property was owned by W. Laurier by 1877 (Figure 2) and that a wooden version of the house was on the property by 1913 (Figure 3).

CHVI: The property has potential design or physical value for its vernacular expression of the Gothic Revival style.

Heritage Attributes:

- Main block in the Gothic Revival style with:
 - T-shaped plan
 - Cross gable

7544 8 LINE, CHATHAM



Property lot, looking south from 8 Line



North (front) façade of house on property



Associated structure on property, looking south from 8 Line



Associated structure on property, looking south from 8 Line

Heritage Status: Property of potential CHVI

Description: *Built heritage resource* – Single detached, storey-and-a-half, vinyl siding clad house with associated rear (south) outbuildings. The house has a medium pitch gable roof, L-shaped plan, and large extension to the south. The northeast corner of the house appears to exhibit a low pitch roof, possibly set above an open porch.

The house is set back approximately 57 m from 8 Line. A gravel driveway runs to the east of the house for approximately 60 m before arriving at the first of three metal outbuildings. A small, abandoned brick structure with a hipped gable roof also appears to be on the property, located 50 m west of the house.

Consultation with the 19th century historical county maps and early 20th century topographical maps indicate that the property was owned by R. Payne by 1877 (Figure 2) and that a wooden version of the house was on the property by 1913 (Figure 3).

CHVI: The property has potential design or physical value for its vernacular expression of the Gothic Revival style.

Heritage Attributes:

- Main block in the Gothic Revival style with:
 - L-shaped plan
 - Cross gable

7546 6 LINE EAST, CHATHAM



Property lot, looking southwest from 6 Line East



Property lot, looking south from 6 Line East



North (front) façade and east wall of house on property



North (front) façade of house on property

Heritage Status: Property of potential CHVI

Description: *Built heritage resource* – Single detached, two-and-a-half storey, red brick house with associated rear (south) metal outbuildings. The house has a six-bay main block with a medium to high pitch gable roof and one dormer window on the east half of the north (front) façade. The main block also has an L-shaped plan with a south extension. All windows on the north façade exhibit brick voussoirs and keystones above upper storey windows. The west half of the north façade has a large bay window set below a low pitch roof which also contains a decorative frieze. The east half of the north façade exhibits an open porch also set below a low pitch roof. The porch contains railings and decorative posts.

The house is set back approximately 35 m from 6 Line East. A gravel driveway runs to the east of the house for approximately 68 m before arriving at one of three metal outbuildings.

Consultation with the 19th century historical county maps and early 20th century topographical maps indicate that the property subdivided as part of the Ronalds Estate by 1877 (Figure 2) and that the brick house on the property was built by 1913 (Figure 3).

CHVI: The property has potential design or physical value for its vernacular expression of the Gothic Revival style.

Heritage Attributes:

- Main block in the Gothic Revival style with:
 - L-shaped plan
 - Cross gable

7048-7050 6 LINE EAST, CHATHAM



North (front) façade of house on property



Associated house/ structure on property, looking southeast from 6 Line East

Heritage Status: Property of potential CHVI

Description: *Built heritage resource* – Single detached, storey-and-a-half, vinyl siding clad house and associated large complex of outbuildings to south and adjacent one-storey vinyl siding clad structure to east. The house has a medium pitch gable roof with an offset (left) gable on the north (front) façade. It also has a T-shaped plan and extension to the south. The north façade of the house exhibits an open porch set below a low pitch roof.

The house is set back approximately 22 m from 6 Line East. A gravel driveway runs in between the house and smaller vinyl siding clad structure for approximately 72 m before arriving at a large complex of 10 silos and four metal outbuildings.

Consultation with the 19th century historical county maps and early 20th century topographical maps indicate that the property was owned by J. Soutar by 1877 (Figure 2) and that a wooden version of the house was on the property by 1913 (Figure 3).

CHVI: The property has potential design or physical value for its vernacular expression of the Gothic Revival style.

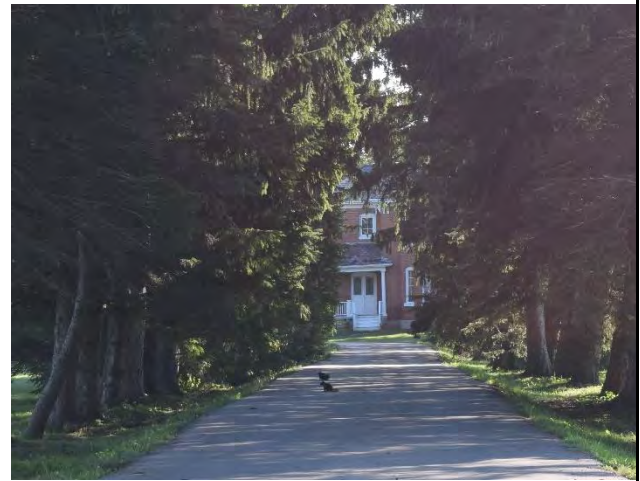
Heritage Attributes:

- Main block in the Gothic Revival style with:
 - T-shaped plan
 - Cross gable

21895 CHARING CROSS ROAD, CHATHAM



Property lot, looking east from Charing Cross Road



West (front) façade of house on property

Heritage Status: Property of potential CHVI

Description: *Built heritage resource* – Single detached, two-storey, red brick house with associated rear (east) barns and recreation centre. The main block of the house has a medium pitch hip roof, T-shaped plan, and large extension to the east. The west (front) façade exhibits an open porch set below a low pitch roof.

The house is set back approximately 150 m from Charing Cross Road and is accessed by a paved driveway. Two large metal outbuildings are located 38 m northwest of the house and a large recreation centre and tennis courts are located 164 m to the northwest.

Consultation with the 19th century historical county maps and early 20th century topographical maps indicate that the property was owned by T. Martin by 1877 (Figure 2) and that the brick house on the property was built by 1913 (Figure 3).

CHVI: The property has potential design or physical value for its Ontario vernacular style architecture.

Heritage Attributes:

- Main block with:
 - T-shaped plan
 - Cross gable

22006 CHARING CROSS ROAD, CHATHAM



Property lot, looking west from Charing Cross Road



East (front) façade of house on property

Heritage Status: Property of potential CHVI

Description: *Built heritage resource* – Single detached, two-storey, vinyl siding clad house with associated rear (west) barn. The house has a four-bay main block with a medium pitch hip roof. It has a square plan with an extension to the south. The east (front) façade exhibits an open porch set below a low pitch roof.

The house is set back approximately 18 m from Charing Cross Road and is accessed by a gravel driveway. A gable roof wooden barn is located 62 m southwest of the house.

Consultation with the 19th century historical county maps and early 20th century topographical maps indicate that the property was owned by R. Smith by 1877 (Figure 2) and that a wooden version of the house was on the property by 1913 (Figure 3).

CHVI: The property has potential design or physical value for its Ontario vernacular style architecture.

Heritage Attributes:

- Main block with:
 - Square plan

22542 SLOAN ROAD, MERLIN



Property lot, looking west from Sloan Road



East (front) façade of house on property

Heritage Status: Property of potential CHVI

Description: *Built heritage resource* – Single detached, storey-and-a-half, vinyl siding clad house and associated rear (west) barn. The main block of the house has a medium pitch gable roof and L-shaped plan with small extensions east (possible former porch) and west.

The house is set back approximately 29 m from Sloan Road and is accessed by a looped gravel driveway. A large metal barn is located 34 m southwest of the house.

Consultation with the 19th century historical county maps and early 20th century topographical maps indicate that the property was owned by E. Feenan by 1877 (Figure 2) and that a wooden version of the house was on the property by 1913 (Figure 3).

CHVI: The property has potential design or physical value for its vernacular expression of the Gothic Revival style.

Heritage Attributes:

- Main block in the Gothic Revival style with:
 - L-shaped plan
 - Cross gable

4859 FINN LINE, MERLIN



Property lot, looking west from Sloan Road



East (front) façade of house on property

Heritage Status: Property of potential CHVI

Description: *Built heritage resource* – Single detached, storey-and-a-half, vinyl siding clad house and associated rear (north) barn and silos. The house has a four-bay main block with a medium pitch gable roof and centre dormer window. It has a rectangular plan with an extension to the north.

The house is set back approximately 88 m from Finn Line. A gravel driveway runs to the west of the house for approximately 147 m before arriving at the silos followed by a metal barn.

Consultation with the 19th century historical county maps and early 20th century topographical maps indicate that the property was owned by D.R. Farquhar by 1877 (Figure 2) and that two wooden structures were built on the property by 1913 (Figure 3).

CHVI: The property has potential design or physical value for its vernacular expression of the Gothic Revival style.

Heritage Attributes:

- Main block in the Gothic Revival style with:
 - Rectangular plan

22491 COOPER ROAD, MERLIN



Property lot, looking east from Cooper Road



West (front) façade of house on property

Heritage Status: Property of potential CHVI

Description: *Built heritage resource* – Single detached, storey-and-a-half, vinyl siding clad house. The house has a three-bay main block with a medium pitch gable roof and windows with shutters. It has a rectangular plan with an extension to the east.

The house is set back approximately 15 m from Cooper Road and is accessed by a gravel driveway.

Consultation with the 19th century historical county maps and early 20th century topographical maps indicate that the property was owned by J. Polly by 1877 (Figure 2) and that a wooden version of the house was on the property by 1913 (Figure 3).

CHVI: The property has potential design or physical value for its vernacular expression of the Gothic Revival style.

Heritage Attributes:

- Main block in the Gothic Revival style with:
 - Rectangular plan

4493 MORRIS LINE, MERLIN



Property lot, looking north from Morris Line



South (front) façade of house on property

Heritage Status: Property of potential CHVI

Description: *Built heritage resource* – Single detached, storey-and-a-half, vinyl siding clad house with associated outbuildings and silos to the north. The main block of the house has a medium pitch gable roof with offset (left) dormer window on south (front) façade. It also has a T-shaped main block with one store extensions to the north and south (possibly former porch).

The house is set back approximately 44 m from Morris Line. A gravel driveway runs to the west of the house for approximately 75 m before arriving at the first of three metal outbuildings.

Consultation with the 19th century historical county maps and early 20th century topographical maps did not provide a proprietor; however, a wooden version of the house was on the property by 1913 (Figure 3).

CHVI: The property has potential design or physical value for its vernacular expression of the Gothic Revival style.

Heritage Attributes:

- Main block in the Gothic Revival style with:
 - T-shaped plan
 - Cross gable

8386 SEVENTH LINE EAST, CHATHAM



Property lot, looking southeast from Seventh Line East



Property lot, looking southwest from Seventh Line East



Property lot, looking south from Seventh Line East



North (front) façade of house on property

Heritage Status: Property of potential CHVI

Description: *Built heritage resource* – Single detached, storey-and-a-half, red brick house and associated rear (south) barn. The house has a three-bay main block with a medium pitch gable roof and symmetrical fenestration with shutters. It has a rectangular plan, of which the north (front) façade is located along the wider axis, and a large south extension.

The house is set back approximately 15 m from Seventh Line East. A paved driveway runs to the west of the house for approximately 77 m before arriving at a large metal barn.

Consultation with the 19th century historical county maps and early 20th century topographical maps indicate that the property was subdivided as part of the Ronalds Estate by 1877 (Figure 2) and that an earlier wooden house, to the south of the brick house, was on the property by 1913 (Figure 3).

APPENDIX B

Known and Potential Built Heritage
Resources and Cultural Heritage
Landscapes identified in the Route
2 Study Area

22046 CREEK ROAD, CHATHAM



Property lot, looking southeast from Creek Road



North (front) façade of house on property



McGregor Creek traversing west of property



Associated barns on property, looking south from McGregor Creek

Heritage Status: Property of potential CHVI

Description: *Built heritage resource and cultural heritage landscape* – Single detached, two storey, vinyl siding clad house and associated rear (north) barns. The house has four-bay main block with a medium pitch gable roof. It has an L-shaped plan with no major extensions. The north (front) façade exhibits an open porch set below a low pitch roof.

To the south of the house are a number of gable roof wooden and metal barns, more clearly visible from the Communication Road or McGregor Creek; a small tributary of the Thames River that appears to traverse a similar path as depicted in mid-19th century mapping.

The house is set back approximately 60 m from Creeks Road. A gravel driveway runs to the west of the house for approximately 115 m before arriving at the first barn. McGregor Creek hugs the north periphery of the property, approximately 100 m northeast of the house.

Consultation with the 19th century historical county maps and early 20th century topographical maps indicate that the property was owned by W. Reynold by 1877 (Figure 2) and that a wooden version of the house was on the property by 1913 (Figure 3).

CHVI: The property has potential design or physical value for its vernacular expression of the Gothic Revival style, as well as potential contextual value for its maintenance and support of the natural landscape (McGregor Creek) and of the rural agricultural character of the area to which it is still visually linked.

Heritage Attributes:

- Association between the house and outbuilding(s)
- Rural agricultural landscape
- Main block in the Gothic Revival style with:
 - L-shaped plan
 - Cross gable

9006 DOYLE LINE, CHATHAM



Property lot, looking south from Doyle Line



North (front) façade of house on property

Heritage Status: Property of potential CHVI

Description: *Built heritage resource* – Single detached, two-storey, red dichromatic brick house and associated rear (south) barn. The house has a five-bay main block with a medium pitch hip roof and symmetrical fenestration with shutters. It has a square plan and small south extension. The north (front) façade exhibits an open porch, supported by eight Doric style columns, set below a low pitch roof.

The house is set back approximately 20 m from Doyle Line. A gravel driveway runs to the west of the house for approximately 50 m before arriving at a large metal barn.

Consultation with the 19th century historical county maps and early 20th century topographical maps indicate that the property was owned by E. Bell by 1877 (Figure 2) and that an earlier wooden house was on the property by 1913 (Figure 3).

CHVI: The property has potential design or physical value as it is stylistically representative of the c. 1930s local architectural trends.

Heritage Attributes:

- Main block with:
 - Square plan

8934 DOYLE LINE, CHATHAM



Property lot, looking southeast from Doyle Line



Property lot, looking southwest from Doyle Line



North (front) façade of house on property



North (front) façade and west wall of house on property

Heritage Status: Property of potential CHVI

Description: *Built heritage resource* – Single detached, storey-and-a-half, vinyl siding clad house and associated rear (south) outbuilding. The house has a two-bay main block with a medium pitch gable roof. It has an L-shaped plan and a large extension to the south. The north (front) façade exhibits a low pitch roof set above an open porch that wraps around the right half of the north façade and all the main block's west façade.

The house is set back approximately 37 m from Doyle Line. A gravel driveway runs to the west of the house for approximately 80 m before arriving at a metal shed.

Consultation with the 19th century historical county maps and early 20th century topographical maps indicate that the property was owned by J. & M. Doyle by 1877 (Figure 2) and that a wooden version of the house was on the property by 1913 (Figure 3).

CHVI: The property has potential design or physical value for its vernacular expression of the Gothic Revival style.

Heritage Attributes:

- Main block in the Gothic Revival style with:
 - L-shaped plan
 - Cross gable

8565 DOYLE LINE, CHATHAM



Property lot, looking northeast from Doyle Line



South (front) façade of house on property



South (front) façade and east wall of house on property



North façade and east wall of house on property

Heritage Status: Property of potential CHVI

Description: *Built heritage resource* – Single detached, two storey, red brick house and associated rear (northwest) outbuilding. The house has a three-bay main block with symmetrical fenestration and a medium pitch gable roof with centre gable on the south (front) façade and decorated fascia in the gables of the north and east façades. It also has a T-shaped plan and two one-storey vinyl siding clad extensions in the northeast and northwest corners. Brick voussoirs top each window and include keystones for the upper storey windows on the south and east façades.

The house is set back approximately 20 m from Doyle Line but would have been located approximately 60 m southwest of the concession road that is present-date Charing Cross Road. A gravel driveway runs to the west of the house for approximately 38 m before arriving at the metal outbuilding (located 5 m northwest of the house).

Consultation with the 19th century historical county maps and early 20th century topographical maps indicate that the property was subdivided as part of the Ronalds Estate by 1877 (Figure 2) and that the brick house on the property was built by 1913 (Figure 3).

CHVI: The property has potential design or physical value for its vernacular expression of the Gothic Revival style.

Heritage Attributes:

- Main block in the Gothic Revival style with:
 - T-shaped plan
 - Cross gable

8436 SEVENTH LINE EAST, CHATHAM



Property lot, looking southeast from Seventh Line East



North (front) façade of house on property

Heritage Status: Property of potential CHVI

Description: *Built heritage resource* – Single detached, two-and-a-half storey, red brick house and associated rear (south) outbuildings. The house has a two-bay main block with medium pitch gable roof with returned eaves on the north (front) façade. It has a T-shaped plan and one long one-storey brick extensions jutting from the west façade. The left half of the north (front) façade exhibits an open porch set below a low pitch roof. Brick voussoirs and keystones top each window on the west half of the north façade including the semi-circular bay window which contains shaped transom and decorative window panel. Though rectangular, the second storey window of the north façade exhibits a similar decorative window panel.

The house is set back approximately 15 m from Seventh Line East. Four metal farming related outbuildings are located to the rear (south) of the house with the closest structure being situated approximately 7 m to the south.

Consultation with the 19th century historical county maps and early 20th century topographical maps indicate that the property was subdivided as part of the Ronalds Estate by 1877 (Figure 2) and that the brick house on the property was built by 1913 (Figure 3).

CHVI: The property has potential design or physical value for its vernacular expression of the Romanesque revival style.

Heritage Attributes:

- Main block with:
 - T-shaped plan
 - Cross gable

8386 SEVENTH LINE EAST, CHATHAM



Property lot, looking southeast from Seventh Line East



Property lot, looking southwest from Seventh Line East



Property lot, looking south from Seventh Line East



North (front) façade of house on property

Heritage Status: Property of potential CHVI

Description: *Built heritage resource* – Single detached, storey-and-a-half, red brick house and associated rear (south) barn. The house has a three-bay main block with a medium pitch gable roof and symmetrical fenestration with shutters. It has a rectangular plan, of which the north (front) façade is located along the wider axis, and a large south extension.

The house is set back approximately 15 m from Seventh Line East. A paved driveway runs to the west of the house for approximately 77 m before arriving at a large metal barn.

Consultation with the 19th century historical county maps and early 20th century topographical maps indicate that the property was subdivided as part of the Ronalds Estate by 1877 (Figure 2) and that an earlier wooden house, to the south of the brick house, was on the property by 1913 (Figure 3).

CHVI: The property has potential design or physical value for its Ontario vernacular style architecture.

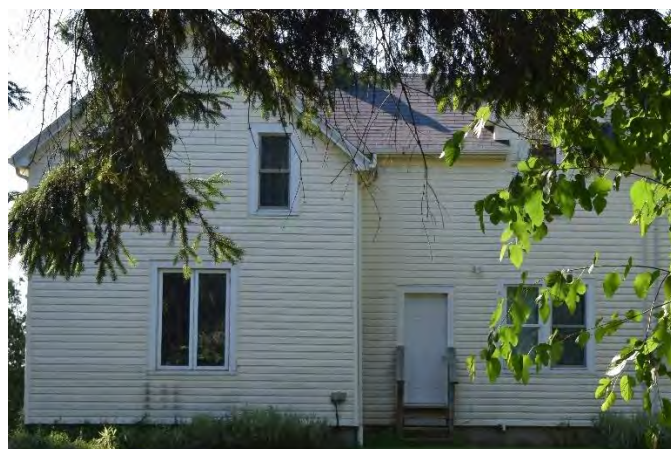
Heritage Attributes:

- Main block with:
 - Rectangular plan

8319 SEVENTH LINE EAST, CHATHAM



Property lot, looking northwest from Seventh Line East



South (front) façade of house on property

Heritage Status: Property of potential CHVI

Description: *Built heritage resource* – Single detached, two-storey, vinyl siding clad house and associated rear (north) barns. The house has a three-bay main block with a medium pitch gable roof. It has a T-shaped plan with a large extension to the north.

The house is set back approximately 20 m from Seventh Line East. A gravel driveway runs to the east of the house for approximately 50 m before arriving at the barn.

Consultation with the 19th century historical county maps and early 20th century topographical maps indicate that the property was subdivided as part of the Ronalds Estate by 1877 (Figure 2) and that a wooden version of the house was on the property by 1913 (Figure 3).

CHVI: The property has potential design or physical value for its vernacular expression of the Gothic Revival style.

Heritage Attributes:

- Main block in the Gothic Revival style with:
 - T-shaped plan
 - Cross gable

8075 SEVENTH LINE EAST, CHATHAM



Property lot, looking northeast from Seventh Line East



Property lot, looking northwest from Seventh Line East



South (front) façade of house on property



East wall of house on property

Heritage Status: Property of potential CHVI

Description: *Built heritage resource* – Single detached, two-storey, red brick house and associated rear (north) barn. The house has a five-bay main block, including a bay window on the south (front) façade, and a medium pitch gable roof with decorative brackets and brick voussoirs on the south façade. It has an L-shaped plan with a large extension to the north. The right half of the south façade exhibits an open porch set below a low pitch roof.

The house is set back approximately 20 m from Seventh Line East. A gravel driveway runs to the east of the house for approximately 50 m before arriving at the large metal barn.

Consultation with the 19th century historical county maps and early 20th century topographical maps indicate that the property was subdivided as part of the Ronalds Estate by 1877 (Figure 2) and that the brick house on the property was built by 1913 (Figure 3).

CHVI: The property has potential design or physical value for its vernacular expression of the Gothic Revival style.

Heritage Attributes:

- Main block in the Gothic Revival style with:
 - L-shaped plan
 - Cross gable

8019 SEVENTH LINE EAST, CHATHAM



Property lot, looking northeast from Seventh Line East



Property lot, looking north from Seventh Line East



Associated open air barn on property, looking north from Seventh Line East



South (front) façade of house on property

Heritage Status: Property of potential CHVI

Description: *Built heritage resource* – Single detached, storey-and-a-half, vinyl siding clad house and associated rear (north) barn. The house has a three-bay main block with symmetrical fenestration and a medium pitch gable roof with a centre gable on the south (front) façade exhibiting a decorated fascia (damaged, partially missing). It has a rectangular plan with a one-storey extension to the north.

The house is set back approximately 30 m from Seventh Line East. A gravel driveway runs to the west of the house for approximately 65 m before arriving at a large open-air barn (wooden posts below a metal roof) and silo. The farm lot is delineated to the north and west with hedgerows/ tree lines.

Consultation with the 19th century historical county maps and early 20th century topographical maps indicate that the property was subdivided as part of the Ronalds Estate by 1877 (Figure 2) and that a wooden version of the house was on the property by 1913 (Figure 3).

CHVI: The property has potential design or physical value for its vernacular expression of the Gothic Revival style, as well as potential contextual value for its maintenance and support of the rural agricultural character of the area, including the tree lines emphasized in the Municipality of Chatham-Kent's *Official Plan*, to which it is still visually linked.

Heritage Attributes:

- Association between the house and outbuilding(s)
- Rural agricultural landscape

Heritage Attributes:

- Main block in the Gothic Revival style with:
 - Rectangular plan

7867 6 LINE EAST, CHATHAM



Property lot, looking northwest from 6 Line



South (front) façade of house on property

Heritage Status: Property of potential CHVI

Description: *Built heritage resource* – Single detached, storey-and-a-half, red brick house. The house has a two-bay main block and a medium pitch gable roof. It has an L-shaped plan with a large extension to the north. Brick voussoirs top the upper storey window on the south (front) façade. The south façade exhibits a low pitch roof set above an open porch that wraps around the right half of the north façade and all the main block’s east façade, however, that portion of the porch is enclosed. The porch and pillars appear to be faced with a decorative stone facing.

The house is set back approximately 25 m from 6 Line East and is accessed by a gravel driveway.

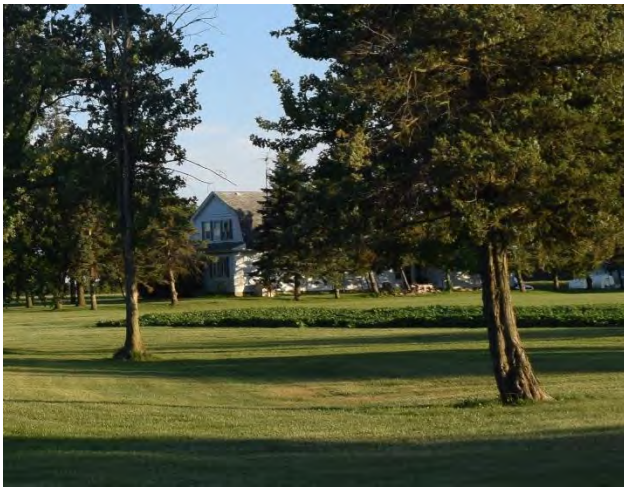
Consultation with the 19th century historical county maps and early 20th century topographical maps indicate that the property was subdivided as part of the Ronalds Estate by 1877 (Figure 2) and that the brick house on the property was built by 1913 (Figure 3).

CHVI: The property has potential design or physical value for its vernacular expression of the Gothic Revival style.

Heritage Attributes:

- Main block in the Gothic Revival style with:
 - L-shaped plan
 - Cross gable

22820 BLOOMFIELD ROAD, CHATHAM



East (front) façade and north wall of house on property



Associated barns on property, looking south from 5 Line East

Heritage Status: Property of potential CHVI

Description: *Built heritage resource and cultural heritage landscape* – Single detached, two-storey, vinyl siding clad house and associated rear (west) barn and outbuildings. The main block of the house has a gambrel roof and rectangular plan, of which the east (front) façade is located along the shorter axis, and a large western extension.

The wooden barn compliments the house with its slight gambrel roof and though it appears to have been recently refaced with metal roofing and siding. Between the barn and the house in a large metal outbuilding and two silos.

The house is set back approximately 38 m from Bloomfield Road and is accessed by a gravel driveway. The wooden barn is located 43 m west of the house.

Consultation with the 19th century historical county maps and early 20th century topographical maps indicate that the property was subdivided as part of the Ronalds Estate by 1877 (Figure 2) and that a wooden version of the house was on the property by 1913 (Figure 3).

CHVI: The property has potential design or physical value for its complimentary gambrel roof farmhouse and barn, as well as potential contextual value for its maintenance and support of the rural agricultural character of the area to which it is still visually linked.

Heritage Attributes:

- Association between the house and outbuilding(s)
- Rural agricultural landscape

Heritage Attributes:

- Main block with:
 - Rectangular plan

7617 5 LINE EAST, CHATHAM



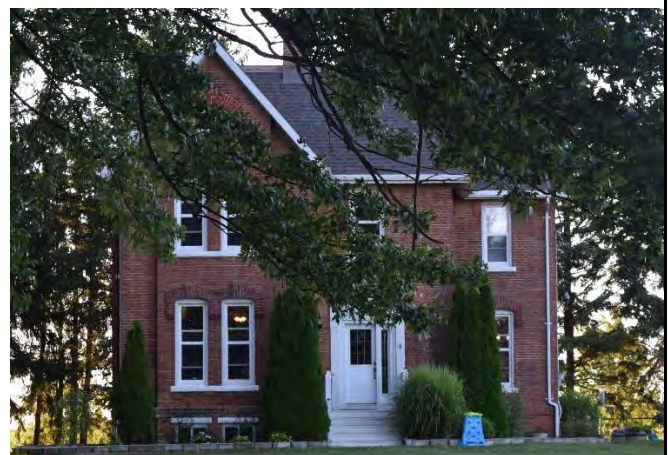
Property lot, looking northwest from 5 Line East



Property lot, looking north from 5 Line East



South (front) façade and west wall of house on property



South (front) façade of house on property

Heritage Status: Property of potential CHVI

Description: *Built heritage resource* – Single detached, two-and-a-half storey, red brick house. The house has a four-bay main block with a medium pitch gable roof. It has an L-shaped plan with a north extension and a modern detached metal garage to the east. Brick voussoirs top each window and a decorated trim surrounds the front door.

The house is set back approximately 40 m from 5 Line East and the garage is located approximately 20 m east of the house.

Consultation with the 19th century historical county maps and early 20th century topographical maps indicate that the property was owned by E.D. McKellar by 1877 (Figure 2) and that the brick house on the property was built by 1913 (Figure 3).

CHVI: The property has potential design or physical value for its vernacular expression of the Gothic Revival style.

Heritage Attributes:

- Main block in the Gothic Revival style with:
 - L-shaped plan
 - Cross gable

6730 3 LINE, CHATHAM



Property lot, looking south from 3 Line



Property lot, looking southwest from 3 Line



North (front) façade of house on property



Associated barn and outbuilding on property, looking southwest from 3 Line

Heritage Status: Property of potential CHVI

Description: *Built heritage resource* – Single detached, storey-and-a-half, vinyl siding clad house and associated rear (south) barn and outbuildings. The house has a four-bay main block with a medium pitch gable roof. It has a T-shaped plan with no major extensions. The north (front) façade exhibits an open porch/ deck with no roof/ covering.

To the south of the house is a large wooden barn with gable roof, a smaller wooden shed, and a metal farming related outbuilding.

The house is set back approximately 19 m from 3 Line. A gravel driveway runs to the west of the house for approximately 65 m before arriving at the wooden barn.

Consultation with the 19th century historical county maps and early 20th century topographical maps did not provide a proprietor; however, it was adjacent to lots belonging to the Ronalds Estate by 1877 (Figure 2). A wooden version of the house was on the property by 1913 (Figure 3).

CHVI: The property has potential design or physical value for its vernacular expression of the Gothic Revival style.

Heritage Attributes:

- Main block in the Gothic Revival style with:
 - T-shaped plan
 - Cross gable

6481 3 LINE, CHATHAM



Property lot, looking north from 3 Line



South (front) façade of house on property

Heritage Status: Property of potential CHVI

Description: *Built heritage resource* – Single detached, storey-and-a-half, red brick house with wood panelling along the upper storey and associated (west) outbuildings. The house has a three-bay main block with a medium pitch gable roof. It has an L-shaped plan with no major extensions.

The house is set back approximately 30 m from 3 Line. A gravel driveway runs to the west of the house for approximately 22 m before arriving at two metal outbuildings.

Consultation with the 19th century historical county maps and early 20th century topographical maps indicate that the property was subdivided as part of the Ronalds Estate by 1877 (Figure 2) and that a wooden version of the house was on the property by 1913 (Figure 3).

CHVI: The property has potential design or physical value for its Ontario vernacular style architecture.

Heritage Attributes:

- Main block in the Gothic Revival style with:
 - L-shaped plan
 - Cross gable

6311 3 LINE, CHATHAM



Property lot, looking north from 3 Line



South (front) façade of house on property

Heritage Status: Property of potential CHVI

Description: *Built heritage resource* – Single detached, one-storey, vinyl siding clad house. The house has a three-bay main block with a medium pitch gable roof. It has an L-shaped plan with no major extensions.

The house is set back approximately 12 m from 3 Line and is accessed by a gravel driveway.

Consultation with the 19th century historical county maps and early 20th century topographical maps indicate that the property was owned by J. Blythe by 1877 (Figure 2), however, no wooden, stone or brick versions of the house are visible on the property by 1913 (Figure 3).

CHVI: The property has potential design or physical value for its vernacular expression of the Gothic Revival style.

Heritage Attributes:

- Main block in the Gothic Revival style with:
 - L-shaped plan
 - Cross gable

6281 3 LINE, CHATHAM



South (front) façade and west wall of house on property



Property lot, looking north from 3 Line

Heritage Status: Property of potential CHVI

Description: *Built heritage resource* – Single detached, storey-and-a-half, vinyl siding clad house and associated (west) barn. The house has a two-bay main block with a medium pitch gable roof and upper storey windows with shutters. It has a T-shaped plan with a large extension to the north.

The house is set back approximately 26 m from 3 Line. A gravel driveway runs to the west of the house for approximately 50 m before arriving at a metal outbuilding with silos to the east.

Consultation with the 19th century historical county maps and early 20th century topographical maps indicate that the property was owned by J. Blythe by 1877 (Figure 2) and that a brick or stone house was on the property by 1913 (Figure 3).

CHVI: The property has potential design or physical value for its vernacular expression of the Gothic Revival style.

Heritage Attributes:

- Main block in the Gothic Revival style with:
 - T-shaped plan
 - Cross gable

6623 QUEEN'S LINE, CHATHAM



Property lot, looking north from Queen's Line



South (front) façade and east wall of house on property

Heritage Status: Property of potential CHVI

Description: *Built heritage resource* – Single detached, storey-and-a-half, brick house and associated rear (north) outbuildings. The main block of the house has a medium pitch gable roof and square plan.

The house is set back approximately 32 m from Queen's Line. A gravel driveway runs to the west of the house for approximately 75 m before arriving at the first of two metal outbuildings with silos to the east.

Consultation with the 19th century historical county maps and early 20th century topographical maps indicate that the property was subdivided as part of the Ronalds Estate by 1877 (Figure 2) and that a wooden version of the house was on the property by 1913 (Figure 3).

CHVI: The property has potential design or physical value for its Ontario vernacular style architecture.

Heritage Attributes:

- Main block with:
 - Square plan

6155 3 LINE, CHATHAM



South (front) façade of house on property



Associated barn on property, looking north from 3 Line

Heritage Status: Property of potential CHVI

Description: *Built heritage resource* – Single detached, one-storey, red brick house with associated rear (north) barn. The house has a three-bay main block with a medium pitch hip roof. It has a rectangular plan, of which the south (front) façade is located along the shorter axis, and no major extensions.

The house is set back approximately 10 m from 3 Line. A gravel driveway runs to the west of the house for approximately 55 m before arriving at a metal barn.

Consultation with the 19th century historical county maps and early 20th century topographical maps indicate that the property was owned by J. Northwood by 1877 (Figure 2), however, no wooden, stone or brick versions of the house are visible on the property by 1913 (Figure 3)..

CHVI: The property has potential design or physical value as it is stylistically representative of the c. 1930s local architectural trends.

Heritage Attributes:

- Main block in the Gothic Revival style with:
 - Rectangular plan

6085 3 LINE, CHATHAM



Property lot, looking northeast from Queen's Line



South façade of house on property

Heritage Status: Property of potential CHVI

Description: *Built heritage resource* – Single detached, storey-and-a-half, log house with associated rear (north) outbuildings. The house has a three-bay main block with a medium pitch gable roof. It has a rectangular plan, of which the west (front) façade is located along the wider axis, and no major extensions. Walls and foundation appear to have been recently refaced/ refinished.

The house is set back approximately 14 m from 3 Line and is accessed by a gravel driveway. Two metal outbuildings are located at the rear of the house with the nearest being 25 m to the north.

Consultation with the 19th century historical county maps and early 20th century topographical maps indicate that the property was owned by Solomon Knapp by 1877 (Figure 2) and that the wooden house was built on the property by 1913 (Figure 3).

CHVI: The property has potential design or physical value due to its uniqueness as one of the only remaining log houses in the area.

Heritage Attributes:

- Main block in the Gothic Revival style with:
 - Rectangular plan

24003 DAUPHIN ROAD, TILBURY



Property lot, looking northeast from Dauphin Road



West wall of house on property



Associated barns on property, looking northeast from Dauphin Road



Associated farm, looking east from Dauphin Road

Heritage Status: Property of potential CHVI

Description: *Built heritage resource* – Single detached, storey-and-a-half, vinyl siding clad house and associated (west) barns and silos. The main block of the house has a medium pitch gable roof and windows with shutters. It has a rectangular plan, of which the south (front) façade is located along the shorter axis, and a large extension to the east and smaller extension to the north.

The house is set back approximately 46 m from Dauphin Road and is accessed via a bridge over a diverted tributary of Jeannettes Creek that separates it from the road. Three metal barns are located at the west of the house with the nearest measuring 12 m to the northwest.

Consultation with the 19th century historical county maps and early 20th century topographical maps did not provide a proprietor; however, it was adjacent to lots belonging to the Canada Co. by 1877 (Figure 2). A wooden version of the house was on the property by 1913 (Figure 3).

CHVI: The property has potential design or physical value for its vernacular expression of the Gothic Revival style, as well as potential contextual value for its maintenance and support of the rural agricultural character of the area to which it is still visually linked.

Heritage Attributes:

- Association between the house and outbuilding(s)
- Rural agricultural landscape
- Main block in the Gothic Revival style with:
 - Rectangular plan

21500 LAKESHORE ROAD 303, TILBURY



South (front) façade of house on property



Associated barn on property, looking north from Lakeshore Road 303

Heritage Status: Property of potential CHVI

Description: *Built heritage resource* – Single detached, storey-and-a-half, vinyl siding clad house and associated rear (north) barn and outbuilding. The main block of the house has a medium pitch gable roof and windows with shutters. It has a rectangular plan, of which the east (front) façade is located along the wider axis, and no major extensions.

To the north of the house is a wooden barn with a gable roof as well as a metal outbuilding.

The house is set back approximately 12 m from Lakeshore Road 303. A gravel driveway runs to the east of the house for approximately 73 m before arriving at the wooden barn.

Consultation with the 19th century historical county maps and early 20th century topographical maps indicate that the property was owned by a proprietor with the surname Bruile by 1877 (Figure 2) and that a wooden version of the house was on the property by 1913 (Figure 3).

CHVI: The property has potential design or physical value for its vernacular expression of the Gothic Revival style.

Heritage Attributes:

- Main block in the Gothic Revival style with:
 - Rectangular plan

21400 LAKESHORE ROAD 303, TILBURY



Property lot, looking north from Lakeshore Road 303



South (front) façade of house on property

Heritage Status: Property of potential CHVI

Description: *Built heritage resource* – Single detached, storey-and-a-half, red brick house and associated rear (northeast) outbuildings. The house has a three-bay main block with a gambrel roof. It has a rectangular plan, of which the south (front) façade is located along the wider axis, and a vinyl siding clad extension to the north.

The house is set back approximately 14 m from Lakeshore Road 303. A gravel driveway runs to the east of the house for approximately 40 m before arriving at a cluster of metal barns.

Consultation with the 19th century historical county maps and early 20th century topographical maps did not provide a proprietor; however, it was adjacent to lots belonging to the surname Bruile by 1877 (Figure 2). A wooden version of the house was on the property by 1913 (Figure 3).

CHVI: The property has potential design or physical value for its Ontario vernacular style architecture.

Heritage Attributes:

- Main block with:
 - Rectangular plan

15100 MORRIS ROAD, COMBER



Property lot, looking north from Morris Road



South (front) façade of house on property

Heritage Status: Property of potential CHVI

Description: *Built heritage resource* – Single detached, storey-and-a-half, vinyl siding clad house and associated rear (north) barn. The house has a three-bay main block with a medium pitch gable roof and symmetrical fenestration with shutters. It has a rectangular plan, of which the south (front) façade is located along the wider axis, and a large northeast extension.

The house is set back approximately 20 m from Morris Road and is accessed by a gravel driveway. A metal barn is located 56 m north of the house.

Consultation with the 19th century historical county maps and early 20th century topographical maps did not provide a proprietor; however, an earlier wooden version of the house was on the property by 1913 (Figure 3).

CHVI: The property has potential design or physical value for its Ontario vernacular style architecture.

Heritage Attributes:

- Main block with:
 - Rectangular plan

10403 MORRIS ROAD, COMBER



Property lot, looking southwest from Morris Road



North (front) façade of house on property

Heritage Status: Property of potential CHVI

Description: *Built heritage resource* – Single detached, storey-and-a-half, vinyl siding clad house and associated (west) barn. The house has a two-bay main block with a medium pitch gable roof and offset (right) gable on the north (front) façade. It has a T-shaped plan with a small extension to the south. The north façade exhibits an open porch set below a low pitch roof.

A small wooden barn with a metal clad gable roof is located to the southwest of the house.

The house is set back approximately 36 m from Morris Road and is accessed by a gravel driveway. The barn is located 37 m to the southwest of the house.

Consultation with the 19th century historical county maps and early 20th century topographical maps indicate that the property was owned by R.C. Taylor by 1877 and that the house on the property was also built by 1877 (Figure 2).

CHVI: The property has potential design or physical value for its vernacular expression of the Gothic Revival style.

Heritage Attributes:

- Main block in the Gothic Revival style with:
 - T-shaped plan
 - Cross gable

9507 MORRIS ROAD, COMBER



Property lot, looking southeast from Morris Road



West (front) façade of house on property

Heritage Status: Property of potential CHVI

Description: *Built heritage resource* – Single detached, storey-and-a-half, wood panelled house and associated rear (south) barn. The main block of the house has a medium pitch hipped gable roof, a rectangular plan, and a one-storey extension to the west.

A small wooden barn with a metal clad gable roof is located to the south of the house.

The house is set back approximately 22 m from Morris Road and is accessed by a gravel driveway shared with the neighbouring 9503 Morris Road. The barn is located 8 m to the south of the house.

Consultation with the 19th century historical county maps and early 20th century topographical maps indicate that the property was owned by E. Mitchell by 1877 (Figure 2) and that the wooden house was built on the property by 1913 (Figure 3).

CHVI: The property has potential design or physical value due to its uniqueness as one of the only remaining wood panelled houses in the area.

Heritage Attributes:

- Main block with:
 - Rectangular plan
 - Wooden construction

8361 8 LINE, CHATHAM



Property lot, looking north from 8 Line



South (front) façade of house on property

Heritage Status: Property of potential CHVI

Description: *Built heritage resource* – Single detached, storey-and-a-half, vinyl siding clad house with rear (north) barns. The house has a four-bay main block with a medium pitch gable roof and offset (right) dormer window on the south (front) façade. It also has a T-shaped plan with no major extensions.

The house is set back approximately 27 m from 8 Line. Two gravel driveways run to the east of the house for approximately 63 m before arriving on either side of one of three metal outbuildings.

Consultation with the 19th century historical county maps and early 20th century topographical maps did not provide a proprietor; however, a wooden version of the house was on the property by 1913 (Figure 3).

CHVI: The property has potential design or physical value for its vernacular expression of the Gothic Revival style.

Heritage Attributes:

- Main block in the Gothic Revival style with:
 - T-shaped plan
 - Cross gable

8393 8 LINE, CHATHAM



Property lot, looking north from 8 Line



South (front) façade of house on property

Heritage Status: Property of potential CHVI

Description: *Built heritage resource* – Single detached, storey-and-a-half, red brick house. The house has a four-bay main block with a medium pitch gable roof and offset (right) gable on the south (front) façade. It also has an L-shaped plan with a large extension to the north.

The house is set back approximately 15 m from 8 Line and is accessed by a gravel driveway.

Consultation with the 19th century historical county maps and early 20th century topographical maps did not provide a proprietor, however, the brick house on the property was constructed by 1913 (Figure 3).

CHVI: The property has potential design or physical value for its vernacular expression of the Gothic Revival style.

Heritage Attributes:

- Main block in the Gothic Revival style with:
 - L-shaped plan
 - Cross gable

8412 8 LINE, CHATHAM



Property lot, looking south from 8 Line



North (front) façade of house on property

Heritage Status: Property of potential CHVI

Description: *Built heritage resource* – Single detached, storey-and-a-half, red brick house with associated rear (south) barns. The main block of the house has a medium pitch gable roof with a centre gable on the original north (front) façade as well as decorative fascia in the gable of the east façade. It also has a rectangular plan, of which the north (front) façade is located along the wider axis, and large two-storey extension to the west. The extension appears to have been built not long after the main block as it exhibits a similar style with a medium pitch gable roof and voussiors above windows (like main block). The main entrance is in an enclosed porched, between the main block and extension, and is lined with vinyl siding clad.

A wooden barn and metal barn are located to the south of the house.

The house is set back approximately 20 m from 8 Line. A gravel driveway runs to the east of the house for approximately 50 m before arriving at the metal barn.

Consultation with the 19th century historical county maps and early 20th century topographical maps indicate that the property was owned by R. Smith by 1877 (Figure 2) and that the brick house on the property was built by 1913 (Figure 3).

CHVI: The property has potential design or physical value for its vernacular expression of the Gothic Revival style.

Heritage Attributes:

- Main block in the Gothic Revival style with:
 - Rectangular plan

7546 6 LINE EAST, CHATHAM



Property lot, looking southwest from 6 Line East



Property lot, looking south from 6 Line East



North (front) façade and east wall of house on property



North (front) façade of house on property

Heritage Status: Property of potential CHVI

Description: *Built heritage resource* – Single detached, two-and-a-half storey, red brick house with associated rear (south) metal outbuildings. The house has a six-bay main block with a medium to high pitch gable roof and one dormer window on the east half of the north (front) façade. The main block also has an L-shaped plan with a south extension. All windows on the north façade exhibit brick voussoirs and keystones above upper storey windows. The west half of the north façade has a large bay window set below a low pitch roof which also contains a decorative frieze. The east half of the north façade exhibits an open porch also set below a low pitch roof. The porch contains railings and decorative posts.

The house is set back approximately 35 m from 6 Line East. A gravel driveway runs to the east of the house for approximately 68 m before arriving at one of three metal outbuildings.

Consultation with the 19th century historical county maps and early 20th century topographical maps indicate that the property subdivided as part of the Ronalds Estate by 1877 (Figure 2) and that the brick house on the property was built by 1913 (Figure 3).

CHVI: The property has potential design or physical value for its vernacular expression of the Gothic Revival style.

Heritage Attributes:

- Main block in the Gothic Revival style with:
 - L-shaped plan
 - Cross gable

7048-7050 6 LINE EAST, CHATHAM



North (front) façade of house on property



Associated house/ structure on property, looking southeast from 6 Line East

Heritage Status: Property of potential CHVI

Description: *Built heritage resource* – Single detached, storey-and-a-half, vinyl siding clad house and associated large complex of outbuildings to south and adjacent one-storey vinyl siding clad structure to east. The house has a medium pitch gable roof with an offset (left) gable on the north (front) façade. It also has a T-shaped plan and extension to the south. The north façade of the house exhibits an open porch set below a low pitch roof.

The house is set back approximately 22 m from 6 Line East. A gravel driveway runs in between the house and smaller vinyl siding clad structure for approximately 72 m before arriving at a large complex of 10 silos and four metal outbuildings.

Consultation with the 19th century historical county maps and early 20th century topographical maps indicate that the property was owned by J. Soutar by 1877 (Figure 2) and that a wooden version of the house was on the property by 1913 (Figure 3).

CHVI: The property has potential design or physical value for its vernacular expression of the Gothic Revival style.

Heritage Attributes:

- Main block in the Gothic Revival style with:
 - T-shaped plan
 - Cross gable

22520 DILLON ROAD, CHATHAM



Property lot, looking west from Dillon Road



East (front) façade and south wall of house on property

Heritage Status: Property of potential CHVI

Description: *Built heritage resource* – Single detached, storey-and-a-half, vinyl siding clad house and associated rear (south) barn and silo. The house has a medium pitch gable roof, T-shaped plan, and one-storey extension (with a side entrance) to the south.

The house is set back approximately 13 m from Dillon Road. A gravel driveway runs to the south of the house for approximately 50 m before arriving at a large concrete silo and metal barn.

Consultation with the 19th century historical county maps and early 20th century topographical maps indicate that the property was owned by a proprietor of the surname Bennet by 1877 (Figure 2) and that a wooden version of the house was on the property by 1913 (Figure 3).

CHVI: The property has potential design or physical value for its vernacular expression of the Gothic Revival style.

Heritage Attributes:

- Main block in the Gothic Revival style with:
 - T-shaped plan
 - Cross gable

6665 6 LINE EAST, CHATHAM



Property lot, looking north from 6 Line East



Property lot, looking east from Centre Road

Heritage Status: Property of potential CHVI

Description: *Built heritage resource* – Single detached, storey-and-a-half, vinyl siding clad house and associated rear (north) barn and outbuildings. The house has a two-bay main block with a medium pitch gable roof. It also has an L-shaped plan with no major extensions.

A large wooden barn with metal glad gable roof and three metal outbuildings are located to the north of the house.

The house is set back approximately 34 m from 6 Line East and is accessed by a gravel driveway. A second gravel driveway runs to the east of the house for approximately 50 m before arriving at the outbuildings.

Consultation with the 19th century historical county maps and early 20th century topographical maps indicate that the property was owned by W. Boston by 1877 (Figure 2) and that a wooden version of the house was on the property by 1913 (Figure 3).

CHVI: The property has potential design or physical value for its vernacular expression of the Gothic Revival style, as well as potential contextual value for its maintenance and support of the rural agricultural character of the area to which it is still visually linked.

Heritage Attributes:

- Association between the house and outbuilding(s)
- Rural agricultural landscape
- Main block in the Gothic Revival style with:
 - L-shaped plan
 - Cross gable

4479 INDUSTRIAL PARK ROAD, TILBURY



Property lot, looking north from Industrial Park Road



South (front) façade of house on property

Heritage Status: Property of potential CHVI

Description: *Built heritage resource* – Single detached, storey-and-a-half, vinyl siding clad house and associated rear (north) outbuildings. The house has a three-bay main block with a medium pitch gable roof and offset (left) gable on the south (front) façade. It has a T-shaped plan with large extension to the north.

The house is set back approximately 28 m from Industrial Park Road and is accessed by a looped paved driveway. A second gravel driveway runs to the east of the house for approximately 65 m before arriving at the outbuildings.

Consultation with the 19th century historical county maps and early 20th century topographical maps indicate that the property was owned by W. McIntosh by 1877 (Figure 2) and that a wooden version of the house was on the property by 1913 (Figure 3).

CHVI: The property has potential design or physical value for its vernacular expression of the Gothic Revival style.

Heritage Attributes:

- Main block in the Gothic Revival style with:
 - T-shaped plan
 - Cross gable

5235 INDUSTRIAL PARK ROAD, CHATHAM



Property lot, looking north from Industrial Park Road



South (front) façade of house on property

Heritage Status: Property of potential CHVI

Description: *Built heritage resource* – Single detached, storey-and-a-half, vinyl siding clad house and associated (west) outbuildings. The house has a medium pitch gable roof and offset (right) dormer window on the south (front) façade. It has a T-shaped plan with a one-storey extension to the west. The south façade exhibits an open porch set below a low pitch roof.

The house is set back approximately 23 m from Industrial Park Road and is accessed by a gravel driveway. The nearest of three metal outbuildings is located 20 m west of the house.

Consultation with the 19th century historical county maps and early 20th century topographical maps indicate that the property was owned by J.H. Purvis by 1877 (Figure 2) and that a wooden version of the house was on the property by 1913 (Figure 3).

CHVI: The property has potential design or physical value for its vernacular expression of the Gothic Revival style.

Heritage Attributes:

- Main block in the Gothic Revival style with:
 - T-shaped plan
 - Cross gable

5354 INDUSTRIAL PARK ROAD, CHATHAM



Property lot, looking south from Industrial Park Road



North (front) façade of house on property

Heritage Status: Property of potential CHVI

Description: *Built heritage resource* – Single detached, storey-and-a-half, vinyl siding clad house and associated rear (south) outbuilding. The main block of the house has a medium pitch gable roof with shutters flanking the lower storey windows. It has a rectangular plan with a one-storey extension to the west.

The house is set back approximately 23 m from Industrial Park Road. A gravel driveway runs to the west of the house for approximately 50 m before arriving at the metal outbuilding.

Consultation with the 19th century historical county maps and early 20th century topographical maps indicate that the property was owned by the Canada Co. by 1877 (Figure 2) and that a wooden version of the house was on the property by 1913 (Figure 3).

CHVI: The property has potential design or physical value for its vernacular expression of the Gothic Revival style.

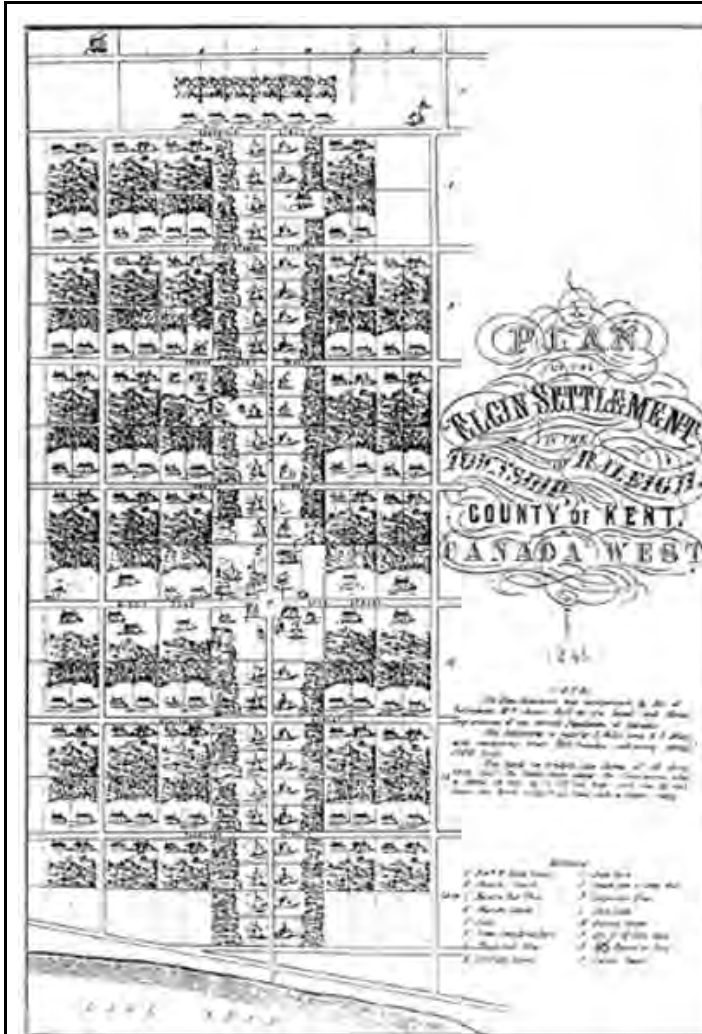
Heritage Attributes:

- Main block in the Gothic Revival style with:
 - Rectangular plan

APPENDIX C

Known and Potential Built Heritage
Resources and Cultural Heritage
Landscapes identified in the Route
3 Study Area

BUXTON SETTLEMENT, RALEIGH, MERLIN



1866 Plan of the Elgin Settlement, later known as the Buxton Settlement (Parks Canada Directory of Federal Heritage Designations)



Settlement described as "3 miles [4.8 km] along Seventh Line West (roughly between Drake and Dillon Roads) and south 6 miles (to Lake Erie)"

NHSC, Federal Plaque and Museum located at 21975-21979 A.D. Shadd Road (outside study area).

Ontario Heritage Trust (OHT) Provincial Plaque located at intersection of County Roads 6 and 8 (outside study area).

Heritage Status: Designated a NHSC under Historic Sites and Monuments Act (R.S.C., 1985, c. H-4)

Description of Historic Place (from Parks Canada Directory of Federal Heritage Designations): The Buxton Settlement NHSC is a cultural landscape of some 4,680 hectares. It is a primarily agricultural landscape, comprised of flat, worked fields defined by deep drainage ditches and a grid of intersecting roads. Homesteads are scattered throughout the settlement area including its two hamlets, South and North Buxton, which also contain important religious, educational, and cultural institutions associated with the settlement's founding by Underground Railroad refugees.

CHVI: Buxton Settlement NHSC was designated because:

- this cultural landscape, through the retention of land-use patterns and built resources, speaks to the successful realization of the block or planned refugee settlement in Canada.

- the cultural landscape continues as a living memorial to its founders and to the courage of every Underground Railroad refugee who took their life in their hands and chose Canada as their home.

The heritage value of this site resides in the site's illustration of a successful Underground Railroad refugee block settlement through the survival of land-use patterns and associated built resources.

Established as the Elgin Settlement at Buxton, Ontario, the Buxton Settlement survives today as a distinct cultural landscape, one that continues to function as a community while preserving tangible survivals from its historic past. It was founded in 1849 by Irish Presbyterian Minister, Reverend William King and 15 former American slaves who, with other Underground Railroad (UGRR) refugees and abolitionists, purchased a 4,680-hectare tract of land as a joint stock company. Settlers cleared the land and established farms on 50-acre (202,342 square metre) plots which they purchased over time. By 1859, the settlement reached its peak population of over 1,000 residents served by three integrated schools, two temperance hotels, a general store, a post office, a sawmill, a brickyard, a grist mill and a pearlsh factory. In 1873, its objectives achieved, the company was disbanded but the community survived.

21812 A D Shadd Road, Raleigh, Merlin



Property lot, looking west from A D Shadd Road



Property lot, looking south from 9 Line



East (front) façade of house on property



North façade of house on property

Heritage Status: Property of potential CHVI

Description: *Built heritage resource* – Single detached, storey-and-a-half, vinyl siding clad house with rear (west) shed. The main block of the house has a medium pitch gable roof, L-shaped plan, and no major extensions.

The house is set back approximately 27 m from A D Shadd Road and is accessed by gravel driveway. A small vinyl siding clad shed is located 65 m west of the house.

Consultation with the 19th century historical county maps and early 20th century topographical maps indicate that the property was owned by A. Riddle by 1877 (Figure 2) and that a wooden version of the house was on the property by 1913 (Figure 3).

CHVI: The property has potential design or physical value for its vernacular expression of the Gothic Revival style, as well as potential contextual value for its maintenance and support of the character of the Buxton Settlement area, to which it is still visually linked.

Heritage Attributes:

- Association with the surrounding Buxton Settlement area
- Main block in the Gothic Revival style with:
 - L-shaped plan
 - Cross gable

21843 A D Shadd Road, Raleigh, Merlin



West (front) façade of house on property



North wall of house on property

Heritage Status: Property of potential CHVI

Description: *Built heritage resource* – Single detached, storey-and-a-half, vinyl siding clad house. The main block of the house has a medium pitch gable roof, L-shaped plan, and no major extensions.

The house is set back approximately 13 m from A D Shadd Road and is accessed by gravel driveway.

Consultation with the 19th century historical county maps and early 20th century topographical maps indicate that the property was owned by A. Riddle by 1877 (Figure 2) and that a wooden version of the house was on the property by 1913 (Figure 3).

CHVI: The property has potential design or physical value for its vernacular expression of the Gothic Revival style, as well as potential contextual value for its maintenance and support of the character of the Buxton Settlement area, to which it is still visually linked.

Heritage Attributes:

- Association with the surrounding Buxton Settlement area
- Main block in the Gothic Revival style with:
 - L-shaped plan
 - Cross gable

6903 9 Line, Raleigh, Merlin



South (front) façade and east wall of house on property



South (front) façade of house on property

Heritage Status: Property of potential CHVI

Description: *Built heritage resource* – Though obstructed by tree cover, appears to be a single detached, storey-and-a-half, vinyl siding clad house and rear (north). The main block of the house has a medium pitch gable roof with an offset (left) gable on the south (front) façade. It has an L-shaped plan with no major extensions. The south façade exhibits an open porch set below a low pitch roof.

The house is set back approximately 26 m from 9 Line and is accessed by gravel driveway. A barn with a metal clad roof is located 45 m north of the house.

Consultation with the 19th century historical county maps and early 20th century topographical maps did not provide a proprietor; however, a wooden version of the house was on the property by 1913 (Figure 3).

CHVI: The property has potential design or physical value for its vernacular expression of the Gothic Revival style, as well as potential contextual value for its maintenance and support of the character of the Buxton Settlement area, to which it is still visually linked.

Heritage Attributes:

- Association with the surrounding Buxton Settlement area
- Main block in the Gothic Revival style with:
 - L-shaped plan
 - Cross gable

21815 COMMUNICATION ROAD, CHATHAM



Property lot, looking northeast from Communication Road



South (front) façade of house of property



South (front) façade of barn on property



Associated farm, looking north from Pinehurst Line

Heritage Status: Property of potential CHVI

Description: *Built heritage resource and cultural heritage landscape* – Single detached, two-storey, vinyl siding clad house and associated rear (northwest) barn. The main block of the house has a gambrel roof and enclosed porch making the original number of bays indiscernible. It has a rectangular plan, of which the south (front) façade is located along the shorter axis, and one northeast extension. The closed porch on the south façade is set below a low pitch roof.

The wooden barn compliments the house with a gambrel roof and appears to have been recently painted with some walls refaced with metal siding. There is large extension to the north of the barn and the building is currently used as an antique store. The house and barn are associated with one of the few remaining farm lots surrounding the Chatham Switching Station.

The house is set back approximately 21 m from Communication Road. A gravel driveway runs to the west of the house for approximately 50 m before arriving at the barn (located 30 m northwest of the house). The farm lot is delineated to the north and east with hedgerows/ tree lines.

Consultation with the 19th century historical county maps and early 20th century topographical maps indicate that the property was owned by J.M. McGarvin by 1877 (Figure 2) and that a wooden version of the house and barn were on the property by 1913 (Figure 3).

CHVI: The property has potential design or physical value for its complimentary gambrel roof farmhouse and barn, as well as potential contextual value for its maintenance and support of the rural agricultural character of the area, including the tree lines emphasized in the Municipality of Chatham-Kent's *Official Plan*, to which it is still visually linked.

Heritage Attributes:

- Association between the house and outbuilding(s)
- Rural agricultural landscape
- Main block with:
 - Rectangular plan

21864 COMMUNICATION ROAD, CHATHAM



North (front) façade of house on property



Associated barns on property, looking southwest from Communication Road

Heritage Status: Property of potential CHVI

Description: *Built heritage resource* – Single detached, two-storey brick house and associated rear (south) barns and outbuildings. The main block of the house has a medium pitch gable roof and fenestration flanked by shutters. It has a rectangular plan, of which the north (front) façade is located along the wider axis, and no major extensions. The north façade exhibits an open porch set below a low pitch roof.

The house is set back approximately 215 m from Communication Road and is accessed by a gravel driveway and bridge which cross McGregor Creek; a small tributary of the Thames River that appears to traverse a similar path as depicted in mid-19th century mapping. The barns and farming related outbuildings appear to be metal structures with the nearest being located 35 m south of the house.

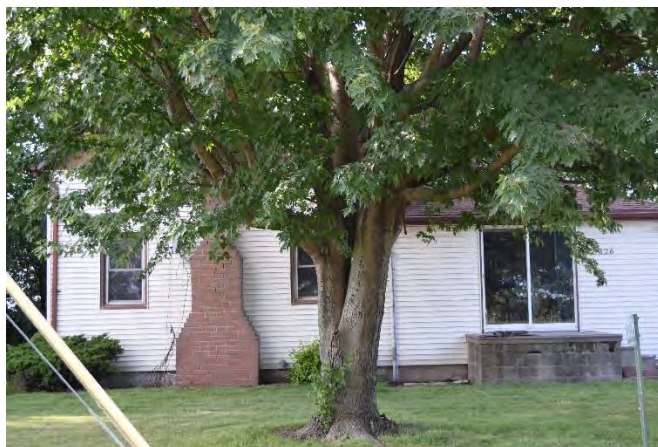
Consultation with the 19th century historical county maps and early 20th century topographical maps indicate that the property was owned by W.J. Richards by 1877 (Figure 2) and that the brick house on the property was built by 1913 (Figure 3).

CHVI: The property has potential design or physical value for its vernacular expression of the Georgian revival style, as well as potential contextual value for its maintenance and support of the natural landscape (McGregor Creek) and rural agricultural character of the area to which it is still visually linked.

Heritage Attributes:

- Association between the house and outbuilding(s)
- Rural agricultural landscape
- Main block in the Gothic Revival style with:
 - Rectangular plan

3326 SOUTH MIDDLE ROAD, COMBER



South (front) façade of house on property



Associated barn and outbuildings on property, looking north from South Middle Road

Heritage Status: Property of potential CHVI

Description: *Built heritage resource* – Single detached, storey-and-a-half, vinyl siding clad house with associated rear (northeast) barn and outbuildings. The house has a three-bay main block with a medium pitch gable roof. It has a T-shaped plan with small extensions to the north and south.

One large metal gambrel roof barn, one large metal outbuilding, one wooden outbuilding and one small vinyl siding clad shed are located to the north and east of the house.

The house is set back approximately 17 m from South Middle Road and is accessed by a gravel driveway. The nearest outbuilding (wooden) is located 12 m north of the house.

Consultation with the 19th century historical county maps and early 20th century topographical maps indicate that the property was owned by “J.B. Williams [of] Chatham” by 1877 (Figure 2) and that an earlier wooden version of the house was on the property by 1913 (Figure 3).

CHVI: The property has potential design or physical value for its vernacular expression of the Gothic Revival style.

Heritage Attributes:

- Main block in the Gothic Revival style with:
 - T-shaped plan
 - Cross gable

9545 SOUTH MIDDLE ROAD, COMBER



Property lot, looking south from South Middle Road



North (front) façade of house on property

Heritage Status: Property of potential CHVI

Description: *Built heritage resource* – Single detached, two-storey, vinyl siding clad house and associated detached garage. The house has a medium pitch hip roof, square plan, and no major extensions.

The house is set back approximately 25 m from South Middle Road and is accessed by a gravel driveway.

Consultation with the 19th century historical county maps and early 20th century topographical maps indicate that the property was owned by Alex Cameron by 1877 (Figure 2), however, no wooden, stone or brick versions of house are visible on the property by 1913 (Figure 3).

CHVI: The property has potential design or physical value for its Ontario vernacular style architecture.

Heritage Attributes:

- Main block with:
 - Square plan

11560 LAKESHORE ROAD 308, COMBER



Property lot, looking northeast from Lakeshore Road 308



Property lot, looking north from Lakeshore Road 308



South (front) façade and west wall of house on property



South (front) façade of house on property

Heritage Status: Property of potential CHVI

Description: *Built heritage resource* – Single detached, storey-and-a-half, wood panelled house. The main block of the house has a medium pitch gable roof, a T-shaped plan, and no major extensions.

The house is set back approximately 28 m from Lakeshore Road 308. A now overgrown gravel driveway runs to the west of the house for approximately 95 m where it appears an outbuilding once stood.

Consultation with the 19th century historical county maps and early 20th century topographical maps indicate that the property was owned by “Canada Co.” by 1877 (Figure 2) and that the wooden house on the property was built by 1913 (Figure 3).

CHVI: The property has potential design or physical value due to its uniqueness as one of the only remaining wooden houses in the area.

Heritage Attributes:

- Main block with:
 - T-shaped plan
 - Wooden construction

5013 POLLARD LINE, MERLIN



South (front) façade and west wall of house on property



South (front) façade of house on property

Heritage Status: Property of potential CHVI

Description: *Built heritage resource* – Single detached, storey-and-a-half, stone and vinyl siding clad house with rear (north) outbuildings. The house has a medium pitch gable roof with dormer windows. It has a T-shaped plan with an extension to the north. The east façade of the house exhibits an open porch set below a low pitch roof.

The house is set back approximately 17 m from Pollard Line and is accessed by a gravel driveway. The nearest of six large metal farming related outbuildings and four narrow outbuildings is located 15 m to the north of the house.

Consultation with the 19th century historical county maps and early 20th century topographical maps did not provide a proprietor; however, an earlier wooden version of the house was on the property by 1913 (Figure 3).

CHVI: The property has potential design or physical value due to its uniqueness as one of the only remaining stone houses in the area.

Heritage Attributes:

- Main block with:
 - T-shaped plan
 - Stone construction

22059 PORT ROAD, MERLIN



Property lot, looking southeast from Port Road



North (front) façade of house on property

Heritage Status: Property of potential CHVI

Description: *Built heritage resource* – Single detached, storey-and-a-half, vinyl siding clad house and associated rear (south) barns. The house has a four-bay main block with a medium pitch gable roof and offset (left) gable on the north (front) façade. It also has a T-shaped plan with no major extensions. The windows on the north façade are flanked by shutters and the front door is surrounded by a moulded trim and plain pediment.

The house is set back approximately 55 m from Port Road. A gravel driveway runs to the east of the house for approximately 85 m before arriving at one of two metal barns and associated silos.

Consultation with the 19th century historical county maps and early 20th century topographical maps indicate that the property was owned by proprietors with the first initials “J.&D.” (surname illegible) by 1877 (Figure 2) and that a wooden version of the house was on the property by 1913 (Figure 3).

CHVI: The property has potential design or physical value for its vernacular expression of the Gothic Revival style.

Heritage Attributes:

- Main block in the Gothic Revival style with:
 - T-shaped plan
 - Cross gable

22155 PORT ROAD, MERLIN



Property lot, looking southeast from Port Road



North (front) façade of house on property

Heritage Status: Property of potential CHVI

Description: *Built heritage resource* – Single detached, storey-and-a-half, red brick house and associated rear (south) outbuildings. The main block of the house has a medium pitch gable roof and offset (left) gable on the north (front) façade. It has a T-shaped plan with a large extension to the south. The north façade exhibits an open porch set below a low pitch roof.

The house is set back approximately 70 m from Port Road. A gravel driveway runs to the east of the house for approximately 117 m before arriving at one of four metal outbuildings.

Consultation with the 19th century historical county maps and early 20th century topographical maps indicate that the property was owned by W. Marshal by 1877 (Figure 2) and that the brick house on the property was built by 1913 (Figure 3).

CHVI: The property has potential design or physical value for its vernacular expression of the Gothic Revival style.

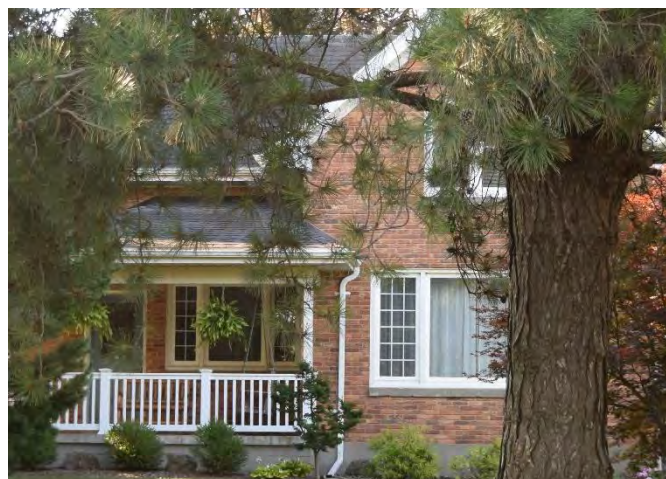
Heritage Attributes:

- Main block in the Gothic Revival style with:
 - T-shaped plan
 - Cross gable

7864 8 LINE, CHATHAM



Property lot, looking south from 8 Line



North (front) façade of house on property

Heritage Status: Property of potential CHVI

Description: *Built heritage resource* – Single detached, storey-and-a-half, red brick house and associated rear (south) barns. The main block of the house has a medium pitch gable roof, L-shaped plan, and a large extension to the south. The east half of the north façade exhibits an open porch set below a low pitch roof.

Two wooden barns with metal clad roofs are located to the south of the house.

The house is set back approximately 28 m from 8 Line. A gravel driveway runs to the east of the house for approximately 68 m before arriving at the nearest wooden barn.

Consultation with the 19th century historical county maps and early 20th century topographical maps indicate that the property was owned by a Mrs. Floole by 1877 (Figure 2) and that a wooden version of the house was on the property by 1913 (Figure 3).

CHVI: The property has potential design or physical value for its vernacular expression of the Gothic Revival style.

Heritage Attributes:

- Main block in the Gothic Revival style with:
 - L-shaped plan
 - Cross gable

7946 8 LINE, CHATHAM



Property lot, looking south from 8 Line



North (front) façade of house on property

Heritage Status: Property of potential CHVI

Description: *Built heritage resource* – Single detached, storey-and-a-half, vinyl siding clad house with rear (south) barn and silos. The house has a three-bay main block with a medium pitch gable roof and offset (left) dormer window on the north (front) façade. It has an L-shaped plan with a large extension to the south. The north façade exhibits an open porch set below a nearly flat roof.

A large wooden barn with metal clad roof as well as three silos are located to the south of the house.

The house is set back approximately 18 m from 8 Line. A gravel driveway runs to the east of the house for approximately 70 m before arriving at the barn and silos.

Consultation with the 19th century historical county maps and early 20th century topographical maps indicate that the property was owned by a Mrs. Lark 1877 (Figure 2) and that a wooden version of the house was on the property by 1913 (Figure 3).

CHVI: The property has potential design or physical value for its vernacular expression of the Gothic Revival style.

Heritage Attributes:

- Main block in the Gothic Revival style with:
 - L-shaped plan
 - Cross gable

8038 8 LINE, CHATHAM



Property lot, looking south from 8 Line



North (front) façade of house on property

Heritage Status: Property of potential CHVI

Description: *Built heritage resource* – Single detached, two-and-a-half-storey, red brick house and associated rear (south) outbuildings. The house has a two-bay main block with a medium pitch hip roof and one centre dormer window on the north (front) façade. It also has a square plan with no major extensions. The north façade exhibits an open porch set below a low pitch roof.

The house is set back approximately 24 m from 8 Line. A gravel driveway runs to the east of the house for approximately 63 m before arriving at two large metal outbuildings.

Consultation with the 19th century historical county maps and early 20th century topographical maps indicate that the property was owned by a Mrs. Sparks by 1877 (Figure 2), however, no wooden, stone or brick versions of the house were on the property by 1913 (Figure 3).

CHVI: The property has potential design or physical value as it is stylistically representative of the c. 1930s local architectural trends.

Heritage Attributes:

- Main block with:
 - Square plan

21808 CHARING CROSS ROAD, CHATHAM



Property lot, looking west from Charing Cross Road



Associated barns on property, looking south from 9 Line

Heritage Status: Property of potential CHVI

Description: *Built heritage resource* – Single detached, storey-and-a-half, vinyl siding clad house, detached garages to south and associated barns to west. The house has a three-bay main block with a medium pitch gable roof and windows with shutters on the north half of the west (front) façade. It has a T-shaped plan with no major extensions. The south half of the west façade exhibits a low pitch roof set above an open porch.

A metal barn and wooden barn with metal clad gable roof are located to the west of the house.

The house is set back approximately 15 m from Charing Cross Road and is accessed via a paved driveway. The barns are located 48 m to the southwest of the house.

Consultation with the 19th century historical county maps and early 20th century topographical maps indicate that the property was owned by J. Gregory by 1877 (Figure 2), however, no wooden, stone or brick versions of the house are visible on the property by 1913 (Figure 3).

CHVI: The property has potential design or physical value for its vernacular expression of the Gothic Revival style.

Heritage Attributes:

- Main block in the Gothic Revival style with:
 - T-shaped plan
 - Cross gable

8376 9 LINE, CHATHAM



Property lot, looking south from 9 Line



North (front) façade of house on property

Heritage Status: Property of potential CHVI

Description: *Built heritage resource* – Single detached, two-storey, vinyl siding clad house with associated rear (south) barn. The house has a two-bay main block with a gambrel roof. It has a rectangular plan, of which the north (front) façade is located along the shorter axis, and no major extensions. The north façade exhibits an open porch set below a low pitch roof.

A wooden barn with metal clad gable roof is located to the south of the house.

The house is set back approximately 70 m from 9 Line and is accessed by a gravel driveway. The barn is located 40 m to the south of the house.

Consultation with the 19th century historical county maps and early 20th century topographical maps indicate that the property was owned by A.D. Lewis by 1877 (Figure 2) and that a wooden version of the house was on the property by 1913 (Figure 3).

CHVI: The property has potential design or physical value for its Ontario vernacular style architecture.

Heritage Attributes:

- Main block with:
 - Rectangular plan

7696 9 LINE, CHATHAM



Property lot, looking southwest from 9 Line



North (front) façade of house on property

Heritage Status: Property of potential CHVI

Description: *Built heritage resource* – Single detached, storey-and-a-half, red brick house with associated rear (south) barns. The house has a three-bay main block with a medium pitch gable roof. It has a rectangular plan, of which the north (front) façade is located along the wider axis, and no major extensions.

The house is set back approximately 140 m from 9 Line. A gravel driveway runs to the west of the house for approximately 165 m before arriving the first of three metal barns.

Consultation with the 19th century historical county maps and early 20th century topographical maps indicate that the property was owned by G.B. McSpadding by 1877 (Figure 2) and that a wooden version of the house was on the property by 1913 (Figure 3).

CHVI: The property has potential design or physical value for its vernacular expression of the Gothic Revival style, as well as potential contextual value for its maintenance and support of the rural agricultural character of the area to which it is still visually linked.

Heritage Attributes:

- Association between the house and outbuilding(s)
- Rural agricultural landscape
- Main block in the Gothic Revival style with:
 - Rectangular plan

7557 9 LINE, CHATHAM



Property lot, looking northwest from 9 Line



West (front) façade and south wall of house on property

Heritage Status: Property of potential CHVI

Description: *Built heritage resource* – Single detached, storey-and-a-half, vinyl siding clad house with associated rear (north) outbuildings. The house has a medium pitch gable roof with dormer windows on the west (front) and west facades. It has an L-shaped plan with a one-storey extension to the north and small one-storey extension (possibly former porch) in the southwest corner.

The house is set back approximately 30 m from 9 Line. A gravel driveway runs to the west of the house for approximately 77 m before arriving at the first of three metal outbuildings.

Consultation with the 19th century historical county maps and early 20th century topographical maps indicate that the property was owned by J. O'Neil by 1877 (Figure 2) and that a wooden version of the house was on the property by 1913 (Figure 3).

CHVI: The property has potential design or physical value for its vernacular expression of the Gothic Revival style.

Heritage Attributes:

- Main block in the Gothic Revival style with:
 - L-shaped plan
 - Cross gable

7426 9 LINE, CHATHAM



Property lot, looking southwest from 9 Line



North (front) façade of house on property

Heritage Status: Property of potential CHVI

Description: *Built heritage resource* – Single detached, storey-and-a-half, vinyl siding clad house with associated rear (south) outbuilding. The house has a medium pitch gable roof and windows with shutters on the north (front) facade. It has an L-shaped plan with a large extension to the south.

The house is set back approximately 25 m from 9 Line and is accessed by a gravel driveway. A second gravel driveway runs to the west of the house for approximately 70 m before arriving at the metal outbuilding.

Consultation with the 19th century historical county maps and early 20th century topographical maps indicate that the property was owned by A. Horn by 1877 (Figure 2) and that a brick version of the house was on the property by 1913 (Figure 3).

CHVI: The property has potential design or physical value for its vernacular expression of the Gothic Revival style.

Heritage Attributes:

- Main block in the Gothic Revival style with:
 - L-shaped plan
 - Cross gable

7186 9 LINE, CHATHAM



Property lot, looking south from 9 Line



North (front) façade of house on property

Heritage Status: Property of potential CHVI

Description: *Built heritage resource* – Single detached, storey-and-a-half, red brick house with associated rear (south) barns and adjacent (west) pastures. The house has a medium pitch gable roof and offset (right) gable on the north (front) façade. It has an L-shaped plan with extensions to the east and west.

The house is set back approximately 62 m from 9 Line. A gravel driveway runs to the east of the house. A second gravel driveway runs to the west of the house for approximately 94 m before arriving at the first of three metal barns/ outbuildings.

Consultation with the 19th century historical county maps and early 20th century topographical maps indicate that the property was owned by J. O'Rourk by 1877 (Figure 2) and that the brick house on the property was built by 1913 (Figure 3).

CHVI: The property has potential design or physical value for its vernacular expression of the Gothic Revival style, as well as potential contextual value for its maintenance and support of the rural agricultural character of the area to which it is still visually linked.

Heritage Attributes:

- Association between the house and outbuilding(s)
- Rural agricultural landscape
- Main block in the Gothic Revival style with:
 - L-shaped plan
 - Cross gable

3516 HORNICK LINE, TILBURY



Property lot, looking south from Hornick Line



North (front) façade of house on property

Heritage Status: Property of potential CHVI

Description: *Built heritage resource* – Single detached, storey-and-a-half, vinyl siding clad house. The main block of the house has a medium pitch gable roof, rectangular plan, and large one-storey extension to the south.

The house is set back approximately 30 m from Hornick Line and is accessed by a gravel driveway.

Consultation with the 19th century historical county maps and early 20th century topographical maps indicate that the property was owned by P. McMahon by 1877 (Figure 2) and that a wooden version of the house was on the property by 1913 (Figure 3).

CHVI: The property has potential design or physical value for its vernacular expression of the Gothic Revival style.




Heritage Attributes:





- Main block in the Gothic Revival style with:
 - Rectangular plan


APPENDIX D

Properties with Buildings or
Structures 40 or more years old
Evaluated at a Preliminary Level
not to have CHVI






Address	Image	Brief Description	CHVI Status
21882 Communication Road, Chatham		Single detached, storey-and-a-half, brick and vinyl siding clad house. Most of house appears to be brick extension on left half of north façade. Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
21882 Communication Road, Chatham		Single detached, one-storey, vinyl siding clad house. Roof appears to have been replaced with faux terracotta shingles. Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
21892 Communication Road, Chatham		Single detached, one-storey, vinyl siding clad house. Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
21908 Communication Road, Chatham		Single detached, one-storey bungalow, brick house. Earlier wooden house on property visible on early 20th century topographical mapping. A sign by the entrance labels the property as the Richardson or Century Farm, c. 1836.	The property does not contain CHVI as the current farmhouse exhibits common architectural styles and materials and demonstrates an average level of construction expertise.





Address	Image	Brief Description	CHVI Status
9020 Doyle Line, Chatham		Single detached, one-storey bungalow, brick house. Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
8902 Doyle Line, Chatham		Single detached, one-storey bungalow, brick house. Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
8849 Doyle Line, Chatham		Single detached, one-storey bungalow, brick and vinyl house. Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
8760 Doyle Line, Chatham		Single detached, one-storey bungalow, vinyl siding clad house. Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.

Address	Image	Brief Description	CHVI Status
8746 Doyle Line, Chatham		<p>Single detached, storey-and-a-half, vinyl siding clad house. Rectangular shaped main block with large extensions to the east and west (garage). Earlier wooden version of house on property visible on early 20th century topographical mapping.</p>	<p>The property does not contain CHVI as the alterations have removed/modified heritage attributes.</p>
8738 Doyle Line, Chatham		<p>Single detached, one-storey bungalow, vinyl siding clad house. Not visible on early 20th century topographical mapping.</p>	<p>The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.</p>
8724 Doyle Line, Chatham		<p>Single detached, one-storey bungalow, vinyl siding clad house. Not visible on early 20th century topographical mapping.</p>	<p>The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.</p>
8610 Doyle Line		<p>Single detached, one-storey, vinyl siding clad house. Not visible on early 20th century topographical mapping, however, collapsed wooden house to east exists by that time (no present-day access).</p>	<p>The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations. Furthermore, the house appears to have undergone some alterations and exhibits some disrepair.</p>



Address	Image	Brief Description	CHVI Status
8563 Doyle Line, Chatham		Single detached, one-storey, vinyl siding clad house. Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
22220 Charing Cross Road		Subdivision of one-storey retirement residences. Not visible on early 20th century topographical mapping	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
22192 Charing Cross Road		Single detached, one-storey bungalow, brick house. Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
22160 Charing Cross Road		Single detached, one-storey bungalow, brick and vinyl house. Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.






Address	Image	Brief Description	CHVI Status
22158 Charing Cross Road		Single detached, one-storey bungalow, brick (with one decorative stone wall) and vinyl house. Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
22158 Charing Cross Road		Single detached, storey-and-a-half brick house. Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
22158 Charing Cross Road		Single detached, one-storey bungalow, brick house. Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
8291 Seventh Line East, Chatham		Single detached, storey-and-a-half, vinyl siding clad house. Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
8260 Seventh Line East, Chatham		Single detached, one-storey bungalow, vinyl siding clad house. Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.





Address	Image	Brief Description	CHVI Status
8182 Seventh Line East, Chatham		Single detached, two-storey, vinyl siding clad house with west brick extension. Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
8052-8054 Seventh Line East, Chatham		Single detached, two-storey, brick and vinyl siding clad house with large metal barns and silos to the rear (south). Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
7796 Howard Road		Single detached, one-storey, vinyl siding clad house. Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
7792 Howard Road		Single detached, one-storey, vinyl siding clad house with metal barn and silo at rear (south). Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
7792 Howard Road		Single detached, storey-and-a-half, vinyl siding clad house (with decorated stone faces base to closed porch) with metal clad barn at rear (south). Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.






Address	Image	Brief Description	CHVI Status
22659 Bloomfield Road, Chatham		<p>Single detached, storey-and-a-half, vinyl siding clad house. Not visible on early 20th century topographical mapping.</p>	<p>The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.</p>
22363 Bloomfield Road, Chatham		<p>Single detached, one-storey, vinyl siding clad house. Earlier wooden house on property visible on early 20th century topographical mapping.</p>	<p>The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.</p>
22575 Howard Road, Chatham		<p>Single detached, storey-and-a-half, brick house with wooden gable roof barn as well as metal barns to rear (north). Initial brick or stone house constructed on the property by early 20th century topographical mapping, however, it appears to have been demolished as current house exhibits all new construction.</p>	<p>The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and no longer has any historical associations.</p>
7632 5 Line East		<p>Single detached, one-storey bungalow, brick house. Not visible on early 20th century topographical mapping.</p>	<p>The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.</p>





Address	Image	Brief Description	CHVI Status
7458 Queen's Line		<p>Single detached, storey-and-a-half, brick house with medium pitch gable roof and metal barn to rear (south). Initial wooden house constructed on the property by early 20th century topographical mapping, however, it appears to have been demolished as current house exhibits all new construction.</p>	<p>The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and no longer has any historical associations.</p>
23284 Dillon Road, Pain Court		<p>Single detached, storey-and-a-half, brick house. Not visible on early 20th century topographical mapping.</p>	<p>The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.</p>
6828 3 Line, Chatham		<p>Single detached, one-storey bungalow, brick house with associated metal barns to the west. Not visible on early 20th century topographical mapping.</p>	<p>The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.</p>
6734 3 Line, Chatham		<p>Single detached, storey-and-a-half, brick and vinyl siding clad house with synthetic roof. Not visible on early 20th century topographical mapping.</p>	<p>The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.</p>





Address	Image	Brief Description	CHVI Status
6644 3 Line, Chatham		Single detached, one-storey, vinyl siding clad house. Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
6606 3 Line, Chatham		Single detached, one-storey, vinyl siding clad house and associated rear (south) outbuilding. Rectangular shaped main block with a large extension to the southwest. Earlier wooden house on property visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and no longer has a historical association.
6576 3 Line, Chatham		Single detached, two-storey, vinyl siding clad house. Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
6573 3 Line, Chatham		Single detached, one-storey, vinyl siding clad house. Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.

Address	Image	Brief Description	CHVI Status
6453 3 Line, Chatham		Single detached, storey-and-a-half, vinyl siding clad house with hipped gable roof. Earlier wooden version of house on property visible on early 20th century topographical mapping.	The property does not contain CHVI as the alterations have removed/modified heritage attributes.
6279 3 Line, Chatham		Single detached, one-storey, vinyl siding clad house. Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
23377 Drake Road, Chatham		Single detached, storey-and-a-half, red brick house with wood panelling along foundation for open porch. Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
6505 Queen's Line, Chatham		Single detached, one-storey, plaster/ stucco siding house. Earlier wooden house visible on property by early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
6086 3 Line Chatham		Single detached, one-storey, vinyl siding clad house. Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.





Address	Image	Brief Description	CHVI Status
6131 3 Line Chatham		Single detached, one-storey bungalow, brick house. Earlier wooden house visible on property by early 20th century topographical mapping, however, it appears to have been demolished as current house exhibits all new construction.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
5831 3 Line Chatham		Single detached, one-storey, vinyl siding clad house. Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
23919 Jeannettes Creek Road, Tilbury		Obstructed by tree cover but appears to be single detached, two-storey, vinyl siding clad house with detached garage and associated wooden barn, metal barn/ outbuilding and silos to the south. Wooden barn or earlier wooden version of house visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
4488 Mint Line, Tilbury		Single detached, one-storey, vinyl siding clad house with one-storey extension to east and associated large metal outbuildings and silos to south. Not visible on early 20th century topographical mapping, however, wooden structure shown further south on property.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.





Address	Image	Brief Description	CHVI Status
4288 Forbes Line, Tilbury		Single detached, one-storey, vinyl siding clad house with one-storey extension to south and associated metal outbuildings and silo to west. Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
24029 Dashwheel Road, Tilbury		Obstructed by tree cover but property does not appear to have residential dwelling, instead it has a collection of one large gambrel roof barn, now faced with metal siding, one metal outbuilding, one small wooden shed and two silos. Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
23846 Dashwheel Road, Tilbury		Single detached, one-storey bungalow, brick house with metal barn and silos to west. Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
4109 Mint Line, Tilbury		Single detached, two-storey, brick house with open porch. Metal outbuildings and silos to north. Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
3762 Mint Line, Tilbury		Single detached, storey-and-a-half, brick and vinyl siding clad house. Earlier wooden structure visible near property on 20 th topographical mapping, however, is most likely neighbouring property at 3734	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction

Address	Image	Brief Description	CHVI Status
		Mint Line (outside of intersecting parcel).	expertise, and has no historical associations.
3777 Mint Line, Tilbury		Single detached, one-storey bungalow, brick house with detached garage. Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
3814 Mint Line, Tilbury		Single detached, storey-and-a-half, vinyl siding clad house. Earlier wooden structure constructed on property by early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
2825 Baptiste Road, Tilbury		Concrete industrial building for Roden Manufacturing. Appears to have been decommissioned in favour of newer metal buildings to north. Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
22100 Lakeshore Road 303, Tilbury		Single detached, one-storey bungalow, brick house. Earlier wooden house constructed further east on the property by early 20th century topographical mapping, however, it appears to have been demolished as current house exhibits all new construction.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.






Address	Image	Brief Description	CHVI Status
21200 Lakeshore Road 303, Tilbury		Single detached, storey-and-a-half, vinyl siding clad house with a large extension to the east. Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
20925 Lakeshore Road 303, Tilbury		Large industrial metal structures associated with the Tilbury Wastewater Treatment Plant. Earlier narrow wooden structure constructed much further north on the property by early 20th century topographical mapping, however, it appears to have been demolished	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
20725 Lakeshore Road 303, Tilbury		Single detached, one-storey, vinyl siding clad house with one-storey extension to south and associated metal barn and silo to south. Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
20300 Lakeshore Road 303, Tilbury		Single detached, two-storey, brick and vinyl siding clad house. Vinyl siding clad appears to be one storey extension on north, south and east façades of brick house. Wooden shed and metal outbuilding to north. Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.

Address	Image	Brief Description	CHVI Status
20125 Lakeshore Road 303, Tilbury		Single detached, storey-and-a-half, vinyl siding clad house with associated gambrel roof barn to east (refaced with metal siding). Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
19825 Lakeshore Road 303, Tilbury		Single detached, one-storey bungalow, brick house. Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
3525 Edgefield Side Road, Tilbury		Single detached, one-storey, vinyl siding clad house with one-storey extension to south and associated metal barn and silo to south. Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
18300 County Road 42, Tilbury		Single detached, one-storey bungalow, brick house with associated rear metal outbuilding. Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
16325 County Road 42, Tilbury		Single detached, one-storey bungalow, brick house with associated stable to west. Earlier wooden structure constructed much further south on the property by early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.

Address	Image	Brief Description	CHVI Status
16300 County Road 42, Tilbury		Single detached, one-storey bungalow, brick house with gambrel roof metal barn and associated complex of metal outbuildings to west. Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
11401 Morris Road, Comber		Single detached, one-storey bungalow, brick house with gambrel roof metal barn and associated complex of metal outbuildings to west. Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
9503 Morris Road, Comber		Single detached, one-storey, vinyl siding clad and associated metal outbuilding to south. Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
8309 Morris Road, Comber		Single detached, one-storey bungalow, brick house with gambrel roof metal barn and associated complex of metal outbuildings to west. Initial wooden house constructed on the property by early 20th century topographical mapping, however, it appears to have been demolished as current house exhibits all new construction.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and no longer has any historical associations.





Address	Image	Brief Description	CHVI Status
6119 Emerson Avenue, Comber		Single detached, one-storey bungalow, brick house with gambrel roof and two associated gambrel roof barns metal barn and associated complex of metal outbuildings to west. Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
5307 Knapp Road, Comber		Single detached, storey-and-a-half, vinyl siding clad house gambrel roof and associated wooden barns with metal gambrel roofs (one to east and one to south across opposite Knapp Road) as well as metal outbuildings. Initial wooden house constructed on the property by early 20th century topographical mapping. A stone or brick structure was along the road opposite the house at that time but appears to have been demolished.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and no longer has any historical associations.
2109 Knapp Road, Comber		Single detached, one-storey bungalow, brick house with associated metal outbuildings and silos to south. Initial brick or stone house constructed on the property by early 20th century topographical mapping, however, it appears to have been demolished as current house exhibits all new construction.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and no longer has any historical associations.
2495 Rochester Townline Road, Comber		Single detached, two-storey, brick house with associated metal barn to west. Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.





Address	Image	Brief Description	CHVI Status
3260 Middle Road, Comber		Single detached, one-storey bungalow, brick and vinyl siding clad house. Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
3306 Middle Road, Comber		Single detached, storey-and-a-half plaster/ stucco siding house with associated outbuilding to north. Initial brick or stone house constructed on the property by early 20th century topographical mapping, however, it appears to have been demolished as current house exhibits all new construction.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and no longer has any historical associations.
3301 Middle Road, Comber		Single detached, one-storey, brick house with associated metal outbuildings to south. Initial brick or stone house constructed on the property by early 20th century topographical mapping, however, it appears to have been demolished as current house exhibits all new construction.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and no longer has any historical associations.
3375 Middle Road, Comber		Single detached, one-storey bungalow, brick house. Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.


Address	Image	Brief Description	CHVI Status
4803 Middle Road, Comber		Single detached, two-storey brick house. Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
4046 South Middle Road, Comber		Single detached, one-storey bungalow, brick house. Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
8007 South Middle Road, Comber		Single detached, storey-and-a-half, vinyl siding clad house. Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
8143 Lakeshore Road 308, Comber		Single detached, one-storey bungalow, brick house. Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
10560 Lakeshore Road 308, Comber		Single detached, one-storey, vinyl siding clad (and possible alternate siding) house with associated metal outbuildings to east. Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.






Address	Image	Brief Description	CHVI Status
12984 Lakeshore Road 308, Comber		Single detached, one-storey, vinyl siding clad house with associated metal outbuildings to east. Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
6659 Gracey Side Road, Comber		Single detached, one-storey, vinyl siding clad house with detached garage. Earlier wooden structure constructed on property by early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
6550 Gracey Side Road, Comber		Single detached, storey-and-a-half, vinyl siding clad house. Earlier wooden structure constructed on property by early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
15003 Middle Road, Comber		Complex of outbuildings, appear abandoned, no nearby house. Include a small wooden shed, wooden barn with metal clad gable roof, separate metal outbuilding, and silo.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
15009 Middle Road, Comber		Single detached, storey-and-a-half, vinyl siding clad house with associated metal outbuildings to east. Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.






Address	Image	Brief Description	CHVI Status
15280 Middle Road, Comber		Single detached, one-storey bungalow, vinyl siding clad house. Earlier wooden structure constructed on property by early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
16500 Middle Road, Comber		Single detached, one-storey, brick house with associated wooden barn and metal outbuildings to north. Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
16525 Middle Road, Comber		Single detached, storey-and-a-half, vinyl siding clad house with associated metal and asphalt gambrel roof barn to southeast. House appears to have recently undergone major renovations in the form of replaced/refaced walls. Earlier wooden structure constructed on property by early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
18500 Middle Road, Comber		Single detached, one-storey bungalow, brick house with metal outbuildings and silos to north. Initial brick or stone house constructed on the property by early 20th century topographical mapping, however, it appears to have been demolished as current house exhibits all new construction.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and no longer has historical associations.





Address	Image	Brief Description	CHVI Status
20425 Middle Road, Comber		<p>Large brick and concrete building for Tilbury Gold Club with associated golf course to south. Initial wooden house constructed to west of property by early 20th century topographical mapping, however, it appears to have been demolished for golf course.</p>	<p>The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and no longer has historical associations.</p>
20600 Middle Road, Comber		<p>Single detached, storey-and-a-half, vinyl siding clad house with associated metal outbuildings to north and east. Earlier wooden structure constructed on property by early 20th century topographical mapping.</p>	<p>The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.</p>
21225 Middle Road, Comber		<p>Single detached, one-storey bungalow, brick house with metal outbuildings and silos to north. Initial wooden house constructed on the property by early 20th century topographical mapping, however, it appears to have been demolished as current house exhibits all new construction.</p>	<p>The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and no longer has historical associations.</p>
21625 Middle Road, Comber		<p>Single detached, one-storey bungalow, vinyl siding clad house with large metal outbuildings to south. Appears to have been recently renovated. Earlier wooden structure constructed on property by early 20th century topographical mapping.</p>	<p>The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.</p>





Address	Image	Brief Description	CHVI Status
21700 Middle Road, Comber		Obscured by tree cover but appears to be single detached, storey-and-a-half, vinyl siding clad house with associated wooden barn with metal clad gable roof and two smaller metal sheds to north. Earlier wooden structure constructed on property by early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
22625 Middle Road, Tilbury		Single detached, one-storey bungalow, brick house with metal outbuilding to north. Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
110 Queen Street South, Tilbury		Single detached, storey-and-a-half, vinyl siding clad house. Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
98 Queen Street South, Tilbury		Single detached, one-storey bungalow, brick house with metal outbuilding to north. Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
103 Queen Street South, Tilbury		Single detached, one-storey bungalow, brick house with metal outbuilding to north. Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction





Address	Image	Brief Description	CHVI Status
			expertise, and has no historical associations.
99 Queen Street South, Tilbury		Single detached, storey-and-a-half, vinyl siding clad house. Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
96 Queen Street South, Tilbury		Single detached, one-storey bungalow, brick house with metal outbuilding to north. Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
94 Queen Street South, Tilbury		Single detached, one-storey bungalow, brick house with metal outbuilding to north. Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
90 Queen Street South, Tilbury		Single detached, one-storey bungalow, brick house with metal outbuilding to north. Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
88 Queen Street South, Tilbury		Single detached, two-storey, vinyl siding clad house. Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.

Address	Image	Brief Description	CHVI Status
97 Queen Street South, Tilbury		Large brick and concrete structure for Tilbury District High School. Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
3288 Middle Line, Tilbury		Single detached, one-storey bungalow, brick house with metal outbuilding to north. Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
3288 Middle Line, Tilbury		Single detached, one-storey bungalow, brick house with metal outbuilding to north. Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
3530 Middle Line, Tilbury		Single detached, storey-and-a-half, vinyl siding clad house. Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
3645 Middle Line, Tilbury		Single detached, one-storey bungalow, brick house with metal outbuildings and silos to north. Initial stone or brick house constructed on the property by early 20th century topographical mapping, however, it appears to have been demolished as current	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and no longer has historical associations.






Address	Image	Brief Description	CHVI Status
		house exhibits all new construction.	
3731 Middle Line, Tilbury		Single detached, one-storey bungalow, vinyl siding clad house with wooden gambrel roof barn to north and large metal outbuildings and silos to south opposite Middle Line. Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
3774 Middle Line, Tilbury		Single detached, storey-and-a-half, vinyl siding clad house with metal outbuildings and silos to south. Signage indicates tree farm. Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
3839 Middle Line, Tilbury		Single detached, one-storey, vinyl siding clad house with metal outbuilding to east. Earlier wooden structure constructed on property by early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
3844 Middle Line, Tilbury		Single detached, one-storey bungalow, brick house with metal outbuildings and silos to north. Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
3905 Middle Line, Tilbury		Single detached, two-storey, vinyl siding clad house. Earlier wooden structure constructed on property by early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction






Address	Image	Brief Description	CHVI Status
			expertise, and has no historical associations.
4272 Middle Line, Tilbury		Single detached, one-storey bungalow, brick house and associated wooden barn with metal clad roof, metal outbuilding and silos to south. Initial wooden house constructed on the property by early 20th century topographical mapping, however, it appears to have been demolished as current house exhibits all new construction.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and no longer has any historical associations
4354 Middle Line, Tilbury		Single detached, one-storey, vinyl siding clad house. Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
4432 Middle Line, Tilbury		Single detached vinyl siding clad house or separate garage. Earlier brick house visible on property by early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
4623 Middle Line, Tilbury		Single detached, one-storey bungalow, brick house with metal outbuildings and silos to north. Initial stone or brick house constructed on the property by early 20th century topographical mapping, however, it appears to have been demolished as current house exhibits all new construction.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and no longer has any historical associations.






Address	Image	Brief Description	CHVI Status
4705 Middle Line, Tilbury		<p>Single detached, one-storey bungalow, brick house with metal outbuilding to north. Initial wooden house constructed on the property (or adjacent 4709 Middle Line) by early 20th century topographical mapping, however, it appears to have been demolished as current house exhibits all new construction.</p>	<p>The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and no longer has any historical associations.</p>
4709 Middle Line, Tilbury		<p>Single detached, one-storey bungalow, brick house. Initial wooden house constructed on the property (or adjacent 4705 Middle Line) by early 20th century topographical mapping, however, it appears to have been demolished as current house exhibits all new construction.</p>	<p>The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and no longer has any historical associations.</p>
22016 Port Road, Merlin		<p>Single detached, one-storey, vinyl siding clad house. Not visible on early 20th century topographical mapping.</p>	<p>The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.</p>
22113 Port Road, Merlin		<p>Single detached, two-storey, brick house with metal outbuilding to south. Initial wooden house constructed on the property by early 20th century topographical mapping, however, it appears to have been demolished as current house exhibits all new construction.</p>	<p>The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and no longer has any historical associations.</p>





Address	Image	Brief Description	CHVI Status
22129 Port Road, Merlin		Single detached, two-storey, vinyl siding clad house with metal outbuilding to south. Earlier wooden structure constructed on property by early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
5585 8 Line, Raleigh, Merlin		Single detached, one-storey bungalow, brick house with metal outbuilding to north. Initial wooden house constructed on the property by early 20th century topographical mapping, however, it appears to have been demolished as current house exhibits all new construction.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and no longer has any historical associations.
6233 8 Line, Raleigh, Merlin		Single detached, one-storey bungalow, vinyl siding clad house with metal outbuilding to north. Initial wooden house constructed on the property by early 20th century topographical mapping, however, it appears to have been demolished as current house exhibits all new construction.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and no longer has any historical associations.
6926 9 Line, Raleigh, Merlin		Single detached, one-storey bungalow, brick house with metal outbuilding to north. Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.





Address	Image	Brief Description	CHVI Status
6490 9 Line, Raleigh, Merlin		Single detached, one-storey, vinyl siding clad house with silo to south. Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
21737 A D Shadd Road, Raleigh, Merlin		Single detached, storey-and-a-half, brick house with metal outbuilding and silos to east. Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
21773 A D Shadd Road, Raleigh, Merlin		Single detached, one-storey, vinyl siding clad house with silo to south. Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
6833 8 Line, Raleigh, Merlin		Single detached, one-storey, vinyl siding clad and metal roof outbuildings to northwest. Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
6845 8 Line, Raleigh, Merlin		Single detached, storey-and-a-half, vinyl siding clad house. Earlier wooden structure constructed on property by early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.





Address	Image	Brief Description	CHVI Status
22162 Dillon Road, Raleigh, Merlin		Large metal structure for Raleigh Wind Power facility. Initial wooden structure constructed on the property by early 20th century topographical mapping, however, it appears to have been demolished as current structure exhibits all new construction.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and no longer as any historical associations.
6987 7 Line West, Raleigh, Merlin		Single detached, one-storey, vinyl siding clad house. Earlier wooden structure constructed on property by early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
6825 7 Line West, Raleigh, Merlin		Single detached, storey-and-a-half, vinyl siding clad house with wooden barn, wooden shed, and metal outbuilding to north. Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
6733 7 Line West, Raleigh, Merlin		Single detached, one-storey bungalow, brick house with metal outbuilding to north. Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
6664 7 Line West, Raleigh, Merlin		Single detached, one-storey, vinyl siding clad house. Earlier wooden structure constructed on property by early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.





Address	Image	Brief Description	CHVI Status
6664 7 Line West, Raleigh, Merlin		Collection of outbuildings and trailers. No structures visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
22258 Drake Road, Raleigh, Merlin		Large metal or vinyl siding clad building with tree farm to south. Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
22149 Drake Road, Raleigh, Merlin		Single detached, one-storey, vinyl siding clad house. Earlier wooden structure constructed further north on property by early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
6333 8 Line, Raleigh, Merlin		Single detached, one-storey bungalow, brick house with metal outbuilding to north. Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
6549 8 Line, Raleigh, Merlin		Single detached, one-storey bungalow, brick house with metal outbuilding and oval dirt track to northeast. Initial wooden house constructed on the property by early 20th century topographical mapping, however, it appears	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and no longer






Address	Image	Brief Description	CHVI Status
		to have been demolished as current house exhibits all new construction.	has any historical associations.
22171 A D Shadd Road, Raleigh, Merlin		Single detached, storey-and-a-half, vinyl siding clad house. Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
22191 A D Shadd Road, Raleigh, Merlin		Single detached, storey-and-a-half, vinyl siding clad house. Earlier wooden structure constructed further north on property by early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
22207 A D Shadd Road, Raleigh, Merlin		Single detached, one-storey, vinyl siding clad house. Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
22233 A D Shadd Road, Raleigh, Merlin		Single detached, one-storey, vinyl siding clad house and associated metal outbuilding to south. Earlier wooden structure constructed further north on property by early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
7952 8 Line, Chatham		Single detached, one-storey bungalow, log house. Initial wooden house constructed on the property by early 20th century topographical mapping, however, it appears to have been demolished as	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and no longer





Address	Image	Brief Description	CHVI Status
		current house exhibits all new construction.	has any historical associations.
8093 8 Line, Chatham		Obstructed by hedgerow (only outbuildings visible) but satellite imagery suggests large brick house with extension to rear. Associated metal outbuildings and silos to north. Earlier stone or brick house constructed on property by early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
8308 8 Line, Chatham		Single detached, one-storey bungalow, brick house with metal outbuilding to north. Initial wooden house constructed on the property by early 20th century topographical mapping, however, it appears to have been demolished as current house exhibits all new construction.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and no longer has any historical associations.
8336 8 Line, Chatham		Farming complex of five metal barns/ farming related outbuildings, five silos and one small dilapidated wooden shed. Earlier wooden structure constructed on property by early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
8336 8 Line, Chatham		Single detached, one-storey, vinyl siding clad house. Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.






Address	Image	Brief Description	CHVI Status
21983 Charing Cross Road, Chatham		Single detached, one-storey bungalow, vinyl siding clad house with decorative brick facing. Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
21983 Charing Cross Road, Chatham		Single detached, one-storey, vinyl siding clad house with one-storey extension to south. Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
21791 Charing Cross Road, Chatham		Single detached, storey-and-a-half, vinyl siding clad house. Earlier wooden structure constructed further north on property by early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
21729 Charing Cross Road, Chatham		Single detached, one-storey, vinyl siding clad house with metal outbuilding and silos to east. Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.





Address	Image	Brief Description	CHVI Status
21727 Charing Cross Road, Chatham		Single detached, two-storey, brick house Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
9101 Gagner Line, Chatham		Single detached, two-storey, brick house Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
9110 Gagner Line, Chatham		Single detached, one-storey, vinyl siding clad house with metal outbuilding and silos to east. Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
9119 Gagner Line, Chatham		Single detached, one-storey, vinyl siding clad house and associated large wooden barn with metal clad gambrel roof to west. Barn signage reads "Gagner Farms". Initial wooden house constructed on the property by early 20th century topographical mapping, however, it appears to have been demolished as current house exhibits all new construction.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and no longer has any historical associations.






Address	Image	Brief Description	CHVI Status
8453 9 Line, Chatham		Single detached, one-storey, brick house with associated barn to north. Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
8387 9 Line, Chatham		Single detached, one-storey, brick house with vinyl extension to west and associated outbuilding to north. Earlier brick house constructed on property by early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
8322 9 Line, Chatham		Single detached, one-storey, brick house with vinyl extension to west and associated outbuilding to north. Earlier wooden house constructed further east on property by early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
7480-7484 9 Line, Chatham		Satellite imagery indicates properties once contained red brick gable roof house (7484 9 Line) and small wooden house (7480 9 Line) however property visit determined they have been demolished. Only wooden gable roof barn and silos to south remain. An early wooden house was constructed on property by early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and no longer has any historical associations.






Address	Image	Brief Description	CHVI Status
7134 9 Line, Chatham		Single detached, one-storey bungalow, brick house with associated metal barn to west. Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
7088 9 Line, Chatham		Single detached, one-storey bungalow, brick and vinyl siding clad house and detached garage to east. Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
7065 8 Line, Chatham		Single detached, two-storey, brick house. Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
7093 8 Line, Chatham		Single detached, two-storey, brick house. Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
7183 8 Line, Chatham		Three large metal buildings associated with the Essex-Kent Fence & Deck facility. Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.






Address	Image	Brief Description	CHVI Status
7189 8 Line, Chatham		Single detached, storey-and-a-half, brick house. Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
7189 8 Line, Chatham		Obstructed by hedgerows but satellite imagery appears to show single detached brick house. Earlier wooden house was constructed on property by early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
7369 8 Line, Chatham		Single detached, one-storey, vinyl siding clad structure (unclear if house) with large two-storey extension to north. Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
7385 8 Line, Chatham		Single detached, one-storey bungalow, brick house with shed to north. Initial wooden house constructed on the property by early 20th century topographical mapping, however, it appears to have been demolished as current house exhibits all new construction.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and no longer has any historical associations.






Address	Image	Brief Description	CHVI Status
7391 8 Line, Chatham		Single detached, one-storey bungalow, brick house. Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
7395 8 Line, Chatham		Single detached, one-storey bungalow, brick house with separate garage to west. Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
7448 8 Line, Chatham		Single detached, one-storey bungalow, brick house with separate garage to west. Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
7445 8 Line, Chatham		Single detached, one-storey, vinyl siding clad house. Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
7566 8 Line, Chatham		Single detached, one-storey bungalow, brick house. Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.





Address	Image	Brief Description	CHVI Status
7600 8 Line, Chatham		Single detached, one-storey, brick office with large facility of metal buildings to rear (south). Signage indicates O'Neill and Farms. Initial wooden house constructed on the property by early 20th century topographical mapping, however, it appears to have been demolished as current house exhibits all new construction.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and no longer has any historical associations.
7634 8 Line, Chatham		Single detached, one-storey bungalow, brick house. Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
7704 8 Line, Chatham		Single detached, one-storey, wood panelled house. Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
7708 8 Line, Chatham		Single detached, one-storey bungalow, brick house with decorative stone facing. Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.






Address	Image	Brief Description	CHVI Status
7776 8 Line, Chatham		Single detached, storey-and-a-half, vinyl siding clad house with one-storey extension to south and three metal outbuildings to south. Earlier wooden house was constructed on property by early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
22100 Bloomfield Road, Chatham		Single detached, one-storey bungalow, brick house with metal outbuilding to south. Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
7664 6 Line East, Chatham		Single detached, storey-and-a-half, vinyl siding clad house and separate garage to south. Earlier wooden house was constructed further south on property by early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
7506 6 Line East, Chatham		Single detached, storey-and-a-half, brick and vinyl siding clad house with one wooden barn, two metal outbuildings and silos to the south. Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
7424 6 Line East, Chatham		Obstructed by tree cover but appears to be a single detached, storey-and-a-half, vinyl siding clad house with metal outbuilding to south. Earlier wooden house was constructed on property by	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.






Address	Image	Brief Description	CHVI Status
		early 20th century topographical mapping.	
7362 6 Line East, Chatham		Obstructed by tree cover but satellite imager suggests two detached houses with associated barns, outbuildings and silos to south. Earlier wooden house was constructed on property by early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
6058 5 Line East, Chatham		Single detached, one-storey bungalow, brick house with decorative stone facing. Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
5984 Queen's Line, Chatham		Single detached, one-storey, vinyl siding clad house with metal outbuilding and silos to south. Earlier wooden house was constructed on property by early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
5984 Queen's Line, Chatham		Single detached, one-storey, vinyl siding clad house with metal outbuilding and silos to south. Earlier wooden house was constructed on property by early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
5525 McDougall Line, Tilbury		Single detached, two-storey, brick house with silos and large complex of metal outbuildings to south. Earlier wooden house was constructed on property by	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction





Address	Image	Brief Description	CHVI Status
		early 20th century topographical mapping.	expertise, and has no historical associations.
5472 Queen's Line, Tilbury		Single detached, one-storey bungalow, brick house. Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
5468 Queen's Line, Tilbury		Single detached, one-storey bungalow, brick and vinyl siding clad house. Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
5460 Queen's Line, Tilbury		Single detached, one-storey, brick house. Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
5460 Queen's Line, Tilbury		Single detached, one-storey bungalow, brick house. Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
5442 Queen's Line, Tilbury		Single detached, one-storey, vinyl siding clad house. Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.






Address	Image	Brief Description	CHVI Status
5434 Queen's Line, Tilbury		Single detached, one-storey bungalow, brick and vinyl siding clad house. Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
5428 Queen's Line, Tilbury		Single detached, one-storey bungalow, brick house. Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
5426 Queen's Line, Tilbury		Single detached, one-storey bungalow, brick and vinyl siding clad house. Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
5418 Queen's Line, Tilbury		Single detached, one-storey bungalow, brick house. Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
24352 Baert Road, Tilbury		Single detached, one-storey bungalow, brick house. Not visible on early 20th century topographical mapping. Initial wooden house constructed on the property by early 20th century topographical mapping, however, it appears to have been demolished as	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and no longer has any historical associations.


Address	Image	Brief Description	CHVI Status
		current house exhibits all new construction.	
4257 Industrial Park Road, Tilbury		Single detached, one-storey bungalow, brick house. Earlier wooden house visible on property by early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
4224 Industrial Park Road, Tilbury		Single detached, two-storey, brick house with metal outbuildings and silos to west. Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
4157 Industrial Park Road, Tilbury		Single detached, storey-and-a-half, brick and vinyl siding clad house. Earlier wooden house visible on property by early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
23708 Jeanettes Creek Road, Tilbury		Single detached, storey-and-a-half, vinyl siding clad house and metal outbuilding to west. Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.






Address	Image	Brief Description	CHVI Status
5159 Industrial Park Road, Tilbury		Single detached, storey-and-a-half, brick house. Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
4906 Queen's Line, Tilbury		Single detached, one-storey, vinyl siding clad house. Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
5016 Queen's Line, Tilbury		Single detached, one-storey, vinyl siding clad house with associated metal barn to east labeled "M. Marcus & Son". Initial brick house constructed on the property by early 20th century topographical mapping, however, it appears to have been demolished as current house exhibits all new construction.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and no longer has any historical associations.
6212 9 Line, Merlin		Single detached, one-storey bungalow, brick house with outbuildings to south. Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
5757 9 Line, Merlin		Single detached, one-storey bungalow, brick house. Initial brick house constructed on the property by early 20th century topographical mapping, however, it appears to have been demolished as current	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and no longer






Address	Image	Brief Description	CHVI Status
		house exhibits all new construction.	has any historical associations.
5609 9 Line, Merlin		Single detached, storey-and-a-half, brick house. Earlier wooden house constructed further east on property by early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
5125 Girard Line, Merlin		Metal barn complex (no visible residence on property for Girard Family Farms. Earlier wooden structure constructed on property by early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
4885 Pollard Line, Merlin		Single detached, storey-and-a-half, vinyl siding clad house. Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
4718 Pollard Line, Merlin		Single detached, storey-and-a-half, vinyl siding clad house with small wooden gable roof barn metal outbuilding to west. Earlier wooden house constructed on property by early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
4985 Finn Line, Merlin		Single detached, storey-and-a-half, vinyl siding clad house with farm complex of one wooden barn and three large metal outbuildings to east. Earlier wooden house constructed on property by	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.

Address	Image	Brief Description	CHVI Status
		early 20th century topographical mapping.	
22483 Cooper Road, Merlin		Single detached, one-storey bungalow, brick house. Initial wooden house constructed on the property by early 20th century topographical mapping, however, it appears to have been demolished as current house exhibits all new construction.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and no longer has any historical associations.
4416 Morris Line, Merlin		Single detached, storey-and-a-half, vinyl siding clad house. Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
4612 Morris Line, Merlin		Single detached, storey-and-a-half, vinyl siding clad house with associated metal barns and silos to south. Earlier wooden house visible on property by early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
4338 Pollard Line, Tilbury		Single detached, two-storey, stucco/ plaster faced house. Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.

Address	Image	Brief Description	CHVI Status
4216 Pollard Line, Tilbury		Single detached, two-storey, brick house. Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
3743 Quinn Line, Tilbury		Single detached, one-storey, vinyl siding clad house. Earlier wooden house constructed further north on property by early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
3405 Hornick Line, Tilbury		Single detached, one-storey, vinyl siding clad house with metal outbuildings to north. Earlier wooden house constructed on property by early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
3309 Hornick Line, Tilbury		Single detached, one-storey bungalow, brick house. Initial wooden house constructed on the property by early 20th century topographical mapping, however, it appears to have been demolished as current house exhibits all new construction.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and no longer has any historical associations.
22924 King & Whittle Road, Tilbury		Single detached, one-storey, vinyl siding clad house. Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction

Address	Image	Brief Description	CHVI Status
			expertise, and has no historical associations.
22928 King & Whittle Road, Tilbury		Single detached, one-storey, vinyl siding clad house. Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
22928 King & Whittle Road, Tilbury		Single detached, storey-and-a-half, vinyl siding clad house with hipped gable roof and one-storey extension to west. Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
22928 King & Whittle Road, Tilbury		Single detached, one-storey, vinyl siding clad house. Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
3447 Gray Line, Tilbury		Single detached, storey-and-a-half, vinyl siding clad house. Earlier wooden house constructed on property by early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.

Address	Image	Brief Description	CHVI Status
3394 Gray Line, Tilbury		Obstructed by tree cover but appears to be single detached, storey-and-a-half, vinyl siding clad house with gable roof. Earlier wooden house constructed on property by early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
2935 Gray Line, Tilbury		Single detached, storey-and-a-half, vinyl siding clad house. Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
23606 Wheatley Road, Tilbury		Single detached, one-storey bungalow, brick house. Initial wooden house constructed on the property by early 20th century topographical mapping, however, it appears to have been demolished as current house exhibits all new construction.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and no longer has any historical associations.
6295 Wheatley Road, Tilbury		Single detached, two-storey, metal or vinyl siding clad commercial building. Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
6625 Wheatley Road, Tilbury		Obstructed by tree cover but appears to be single detached, brick house with vinyl siding clad extension and metal barn to north.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.

Address	Image	Brief Description	CHVI Status
3036 Rosedale Line, Tilbury		Single detached, one-storey, vinyl siding clad house. Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
3184 Rosedale Line, Tilbury		Single detached, one-storey bungalow, brick house. Initial wooden house constructed on the property by early 20th century topographical mapping, however, it appears to have been demolished as current house exhibits all new construction.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and no longer has any historical associations.
23100 King and Whittle Road, Tilbury		Isolated complex of metal barns and silo, no associated residences on property. Earlier wooden structure constructed on property by early 20th century topographical mapping,	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
20500 Gray Line, Tilbury		Single detached, storey-and-a-half, vinyl siding clad house with hipped gable roof. Earlier wooden house constructed on property by early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.
21725 Desimpel Road, Tilbury		Single detached, one-storey, vinyl siding clad house. Not visible on early 20th century topographical mapping.	The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.

Address	Image	Brief Description	CHVI Status
19800 Desimpel Road, Tilbury		<p>Isolated wooden barn with metal clad gambrel roof. Satellite imagery indicates was once associated with red brick gable house, now demolished.</p>	<p>The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and no longer has any historical associations.</p>
7500 Richardson Side Road, Comber		<p>Single detached, one-storey bungalow, brick house with associated metal outbuildings to north. Initial wooden house constructed on the property by early 20th century topographical mapping, however, it appears to have been demolished as current house exhibits all new construction.</p>	<p>The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and no longer has any historical associations.</p>
16300 Lakeshore Road 308, Comber		<p>Single detached, one-storey, vinyl siding clad house with one-storey extension to south. Not visible on early 20th century topographical mapping.</p>	<p>The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.</p>
16200 Lakeshore Road 308, Comber		<p>Single detached, one-storey bungalow, brick house with associated metal outbuildings to north. Not visible on early 20th century topographical mapping.</p>	<p>The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.</p>

Address	Image	Brief Description	CHVI Status
<p>14568 Lakeshore Road 308, Comber</p>		<p>Single detached, one-storey, vinyl siding clad house with one-storey extension to south. Earlier wooden house visible on property by early 20th century topographical mapping.</p>	<p>The property does not contain CHVI as it exhibits common architectural styles and materials, demonstrates an average level of construction expertise, and has no historical associations.</p>

APPENDIX E

Registration of Heritage By-Law
267-2008 Buxton National Historic
Site of Canada and Museum



An agency of the Government of Ontario



Un organisme du gouvernement de l'Ontario

This document was retrieved from the Ontario Heritage Act e-Register, which is accessible through the website of the Ontario Heritage Trust at **www.heritagetrust.on.ca**.

Ce document est tiré du registre électronique, tenu aux fins de la *Loi sur le patrimoine de l'Ontario*, accessible à partir du site Web de la Fiducie du patrimoine ontarien sur **www.heritagetrust.on.ca**.



MUNICIPALITY OF CHATHAM-KENT

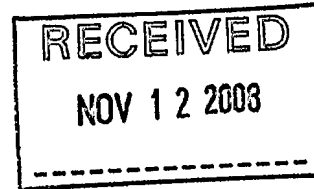
315 KING STREET WEST • P.O. BOX 640 • CHATHAM, ONTARIO • N7M 5K8

COMMUNITY AND DEVELOPMENT SERVICES PLANNING SERVICES

TELEPHONE: (519) 360-1998 FAX: (519) 436-3250

Chatham-Kent: Celebrating 10 years as a Community of Communities

November 5, 2008



Ontario Heritage Trust
10 Adelaide Street East
TORONTO ON M5C 1J3

Re: Registration of Heritage By-law 267-2008
Buxton National Historic Site and Museum
21975 A.D. Shadd Road, Community of Raleigh

Attached is a certified copy of By-law 267-2008, that was registered as Instrument No. CK31176 on November 4, 2008 for the above-noted property.

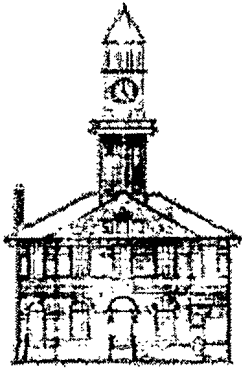
Sincerely,

Charlie Tomah
Development Planner

CT:kc
Attachment

c Municipal Heritage Committee

Heritage\Letters\Ont Heri Reg Bylaw 267-2008 Buxton Nov 5-08.ltr



Heritage Chatham-Kent

Municipal Heritage Committee

Municipality of Chatham-Kent

In the Matter of the Ontario Heritage Act
Notice of Passing of By-law

TAKE NOTICE that The Ontario Heritage Act, R.S.O., 1990, Chapter 0.18 as amended, provides that the Municipal Council may pass a by-law designating property within the boundaries of the municipality to be of cultural heritage value and interest.

AND TAKE NOTICE that The Council of the Municipality of Chatham-Kent passed By-law 267-2008 to designate the property known as the Buxton National Historic Site and Museum, located on Part Lot 10, Concession 8, municipally known as 21975 A.D. Shadd Road, Community of Raleigh, in the Municipality of Chatham-Kent, as a property of cultural heritage value and interest.

Description of Property:

The 7.98 acre property contains a restored 1861 timber frame house, wood sided school house, a restored log house, a c. 1967 museum interpretation building, numerous Federal and Provincial plaques, a reproduction freedom bell and a park area.

Statement of Cultural Heritage Value or Interest:

In 1849, Rev. William King established the Elgin Settlement for refugees from slavery. known as the Elgin Settlement. Of national context, is the Buxton School House SS #13, with its historical association to slavery, the underground railroad, the Civil War, and other noted events, and is the only known remaining school house in Canada with these associations. As well, there is a museum, a original designed log building, a barn, a freedom bell and numerous plaques. Most importantly is the international and renowned annual homecoming event held each Labour Day weekend, which began in 1926.

Description of Heritage Attributes:

EXTERIOR/INTERIOR	Contextual
<p><u>Raleigh SS#13 School House:</u> restored to its appearance c. 1914, is a one-storey steep pitched front gable timber frame style building, exterior is bevelled tongue & groove wood siding with a 3 bay façade, centre double wooden doors with an open columned & raised front portico; etc.</p> <p><u>Museum Building:</u> one-storey frame building with a 3 bay centre section of round log wooden cladding with flanking winds extending from the centre forming 2 obtuse angles;</p> <p><u>Colbert-Henderson Log Home:</u> side gable log structure with gently sloped "salt box: shaped roof line, 3 bay façade with hop-roofed veranda; northern exposure has a large brick chimney.</p>	<p>The property is located next to the Church and Cemetery; the school house, along with the adjacent Church, is the tallest building in the Community that dominates the approach from the south along A.D. Shadd Road; this spatial relationship between the spiritual and the social & education components of the property is fundamental to the understanding and appreciation of the culture.</p>

The complete By-law is available for inspection in the Clerk's Office, Civic Centre, 2nd Floor, 315 King Street West, Chatham, during regular business hours.

Dated at the Municipality of Chatham-Kent this 12th day of November, 2008.

The applicant(s) hereby applies to the Land Registrar.

yyyy mm dd Page 1 of 1

Properties

PIN 00872 - 0098 LT
Description PT LT 10, CON 8 (RALEIGH) AS IN 200881 & 152480 RALEIGH
Address 21975 A.D. SHADD ROAD
 NORTH BUXTON

Applicant(s)

This Order/By-law affects the selected PINs.

Name THE CORPORATION OF THE MUNICIPALITY OF CHATHAM-KENT
Address for Service 315 King Street West
 P.O. Box 640
 Chatham, ON
 N7M 5K8

This document is being authorized by a municipal corporation Steve Matheson, Municipal Solicitor.

This document is not authorized under Power of Attorney by this party.

Statements

This application is based on the Municipality By-Law No. 267-2008 dated 2008/10/27.

Schedule: See Schedules

Signed By

Jennifer Ann Wiseman 315 King St. W. acting for Signed 2008 11 04
 Chatham Applicant(s)
 N7M 5K8
 Tel 5193601998
 Fax 5194363237

Submitted By

MUNICIPALITY OF CHATHAM KENT 315 King St. W. 2008 11 04
 Chatham
 N7M 5K8
 Tel 5193601998
 Fax 5194363237

Fees/Taxes/Payment

Statutory Registration Fee \$60.00
Total Paid \$60.00

BY-LAW NUMBER 267-2008

OF THE CORPORATION OF THE MUNICIPALITY OF CHATHAM-KENT

A By-law to designate the property known as **21975 A.D. Shadd Road, Community of Raleigh**, as being of historical and architectural value or interest.

PASSED the 27th day of October, 2008

WHEREAS the Ontario Heritage Act, R.S.O. 1990, Chapter 0.18 as amended, provides that the Council of the Municipality of Chatham-Kent may designate a property within the boundaries of the Municipality to be of cultural heritage value or interest;

AND WHEREAS Council of the Corporation of the Municipality of Chatham-Kent has appointed the Heritage Chatham-Kent Advisory Committee and the said committee has recommended that the Municipality designate the hereinafter described property pursuant to The Ontario Heritage Act;

AND WHEREAS Council of the Corporation of the Municipality of Chatham-Kent has given Notice of Intention to Designate the hereinafter described property to be of cultural heritage value and interest pursuant to The Ontario Heritage Act;

AND WHEREAS no Notice of Objection to the proposed designation has been received by the Corporation of the Municipality of Chatham-Kent;

AND WHEREAS the reasons for designation are set out in Schedule "A" annexed hereto;

NOW THEREFORE the Municipality of Chatham-Kent enacts as follows:

1. That the property municipally known as 21975 A.D. Shadd Road, Community of Raleigh, and more particularly described in the attached Schedule "B" be designated to be of cultural heritage value and interest pursuant to The Ontario Heritage Act.
2. The Clerk be authorized to register the by-law against the property described in Schedule "A" hereto in the proper Land Registry Office.
3. The Clerk be directed to cause a copy of this by-law to be served on the owner of the aforesaid property and on the Ontario Heritage Foundation and cause notice of the passing of this by-law to be published in a newspaper having general circulation in the municipality.

THIS By-law shall come into full force and effect upon the final passing thereof.

READ A FIRST, SECOND AND THIRD TIME this 27th day of October, 2008.

I hereby certify this to be a true copy of By-law
Number 267-2008 passed by Municipality of
Chatham-Kent Council at its' meeting
Held on October 27, 2008
And the same is now in full force and effect.

Elinor Mifflin
Elinor Mifflin, Clerk
The Corporation of the Municipality of
Chatham-Kent

Randy R. Hope
Mayor - Randy R. Hope

Elinor Mifflin
Clerk - Elinor Mifflin

SCHEDULE "A"

REASONS FOR DESIGNATION

BUXTON NATIONAL HISTORIC SITE AND MUSEUM PROPERTY North Buxton

Description of Property

The Buxton National Historical Site and Museum property municipally known as 21975 A.D. Shadd Road, on Part Lot 10, Concession 8, Community of Raleigh, is comprised of 7.98 acres. The property contains a restored 1861 timber frame house, wood sided school house, a restored log house, a c. 1967 museum interpretation building, numerous federal and provincial plaques, a reproduction freedom bell, and a park area with baseball diamonds, playground equipment, and a covered open sided pavilion.

Statement of Cultural Heritage Value or Interest

Historical/Associative (OHA Reg 9/06):

In 1849, Rev. William King brought fifteen US slaves to Canada in order for them to live as free people. Soon after this, he was able to acquire 9000 acres in Raleigh Township for the purpose of creating a settlement for refugees from slavery that would provide them the opportunity to create a new life as self sufficient land owners and business people.

What became known as the Elgin Settlement was and continues to be a successful and vibrant community and the entire 9000 acres was recognized as an area of national significance by Parks Canada in 2000. The three specific reasons for national significance are that the site is:

- A designed landscape created as a social experiment
- A continuing cultural landscape which retains an active social role in contemporary society closely associated with the traditional way of life and in which the evolutionary process is still in progress
- An associative landscape that has a sense of place highly evocative of its historic roots with strong associations for residents and visitors as a place of meaning and memories

One of the greatest accomplishments of the settlement that contribute to its long lasting success and its importance in a national and international context was the establishment of schools with fine teachers that quickly generated a reputation of excellence. The reputation was proven justified as graduates from the Elgin Settlement schools went on to become doctors, lawyers, and teachers. Many returned to the United States after the Civil War and became leading politicians and social leaders that helped shape the future of that country during the reconstruction.

The Buxton School House SS # 13, Raleigh, was built in 1861 and was the building where much of this fine education took place. It has direct historical associations to slavery, the underground railroad, the Civil War, reconstruction, and, of course, the many outstanding accomplishments that students from this school contributed to Canada and Chatham-Kent. It is the only known remaining school house in Canada with these associations.

Building from this strong historical base, the property as a whole has been, and continues to be, the focal point of community events, cultural chronicling/preservation, sports, and pride. The site has long been a centre of community sports with a playground and baseball diamonds. It was selected as the site of the Raleigh Township Museum, a Centennial project of the mid-1960s that has evolved into the present museum complex. This includes the 1960s interpretive centre, the school house, the recently re-located Colbert-Henderson house, the only surviving log building in the settlement and one that conforms to Rev. King's strict criteria for settler's homes. An early barn moved to the site is another heritage attribute. The freedom bell and national and provincial plaques pertaining to the Elgin Settlement grace the property.

Perhaps most importantly is that this property has been the site of the internationally renowned annual homecoming event that has been held on Labour Day weekend since 1926 and epitomizes and illustrates, better than any explanation, the associative value of place that Parks Canada has identified as being of such fundamental significance.

Design/Physical (OHA Reg 9/06):

The property's physical significance is greater than the sum of its parts as each feature/component relates to each other to create a cultural "place." Hence, the design of this community "centre" should be interpreted first as a whole that includes the baseball diamonds, the Freedom Bell and historic plaques, and their placement on the property in addition and relation to the buildings.

Buildings:

Raleigh Township SS #13 School House: This building was the subject of a well researched professional restoration in 2000 – 2002 and reflects its appearance c. 1914. It is a one storey steep pitched front gable timber frame vernacular style building. The exterior is bevelled tongue and groove wood siding with a three bay façade, centre double wooden doors with an open columned and raised front portico and a five sided cupola with conforming conical roof. The north and south exposures are each composed of three equally spaced large windows while the rear (east) exposure has a small centred 'salt box' shaped wood shed extension.

Museum Building: A one storey frame building with a three bay centre section of round log wooden cladding with flanking wings that extend from the centre forming two obtuse angles.

Colbert-Henderson Log Home: This building has also been the subject of an extensive restoration. It is a side gabled log structure with gently sloped salt box-shaped roof line, three bay façade with hip-roofed veranda. The Northern exposure has a prominent exposed chimney.

Contextual:

The Buxton National Historic Site and Museum property, although it continues to evolve, has exceptional contextual significance located, as it is, next to the church and cemetery. This spatial relationship between the spiritual centre of the community (the church) and the social and educational components of the property is fundamental to the understanding and appreciation of the culture.

The school house, restored in 2000-2002 to its c. 1914 appearance, is along with the adjacent church, the tallest building in the community that dominates the approach from the south along A. D. Shadd Road and from the west along the 9th Concession.

Description of Heritage Attributes/Character Defining Elements

Key elements of the property include:

Raleigh SS #13 School House

Exterior:

- Brick single stack chimney with heavy built out cornice
- Steep pitched roof clad in cedar shingles
- Projecting eaves
- Plain soffit
- Plain frieze
- Five sided cupola including
 - wooden vents
 - decorative brackets
 - conforming conical cedar clad roof
 - decorative ball finial
- Window placement
- Window casement/exterior surround with low pitched moulded headers
- Plain wood lug window sills

- Double hung wooden four over four window sash
- Window boxes
- Double tongue and groove front doors
- Door casement/surround with low pitched moulded peaked header
- Decorative centre wooden medallion bearing the wording "SCHOOL SECTION No. 13 A D 1861"
- Front portico including
 - raised wooden landing and steps
 - four wooden Doric support columns
 - heavy entablature
 - extended and moulded soffit
 - decorative surmounting railing
- Wooden vent on upper eastern exposure

Interior:

- Room layout/floor plan
- Tongue and groove wood flooring throughout
- Terrazzo floor in entrance hall
- Tin ceiling, cove and wall covering throughout
- Wainscot and chair rail throughout
- Window casements/surrounds and interior sills throughout
- Five panel wooden doors including hardware throughout
- Interior door casement/surrounds
- Black boards including decorative surrounding trim

Colbert-Henderson log home

Exterior:

- End gable gently sloped 'salt box' shaped roof line
- Cedar shingle roof cladding
- Single stack brick inset chimney with built out cornice
- Large exposed brick chimney (northern exposure)
- Plain soffits
- Window placement
- Window casements and plain wood sills
- Wood six over six pane window sash
- Dovetailed square log walls
- Cedar lap sided second floor exterior cladding on gable ends
- Door casements
- Cedar hip-roof veranda

Raleigh Township SS #13 School House



Colbert-Henderson log home



SCHEDULE 'B'

Part Lot 10, Concession 8, Community of Raleigh, now in the Municipality of Chatham-Kent.

Instrument No. 200881

PIN No. 008720098



golder.com

Appendix C3 Official Plan Schedules



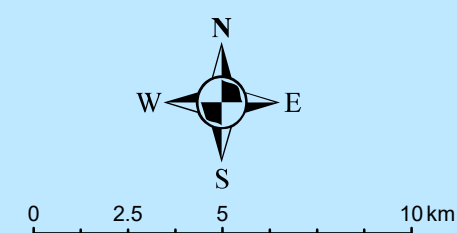
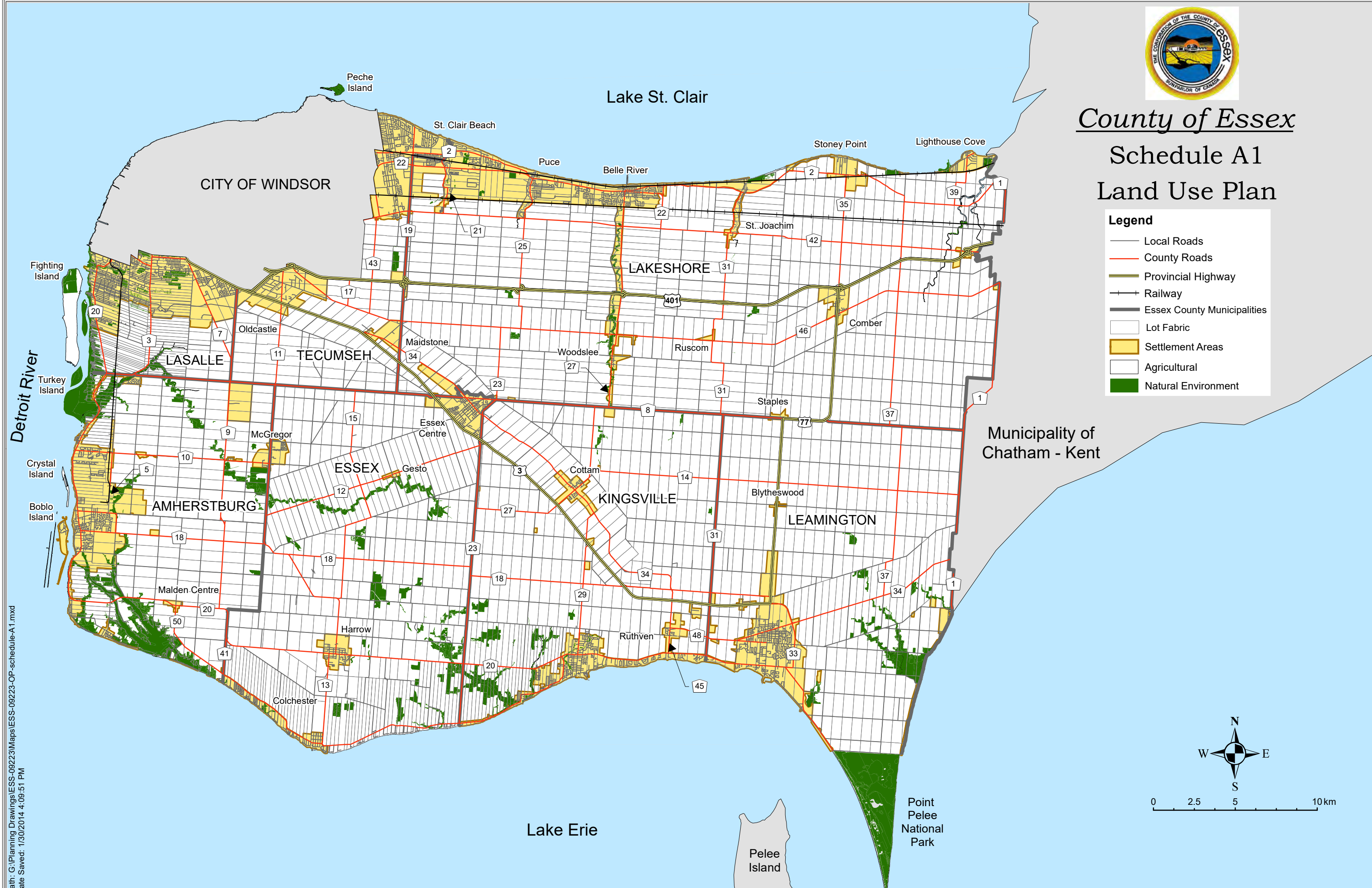
County of Essex

Schedule A1

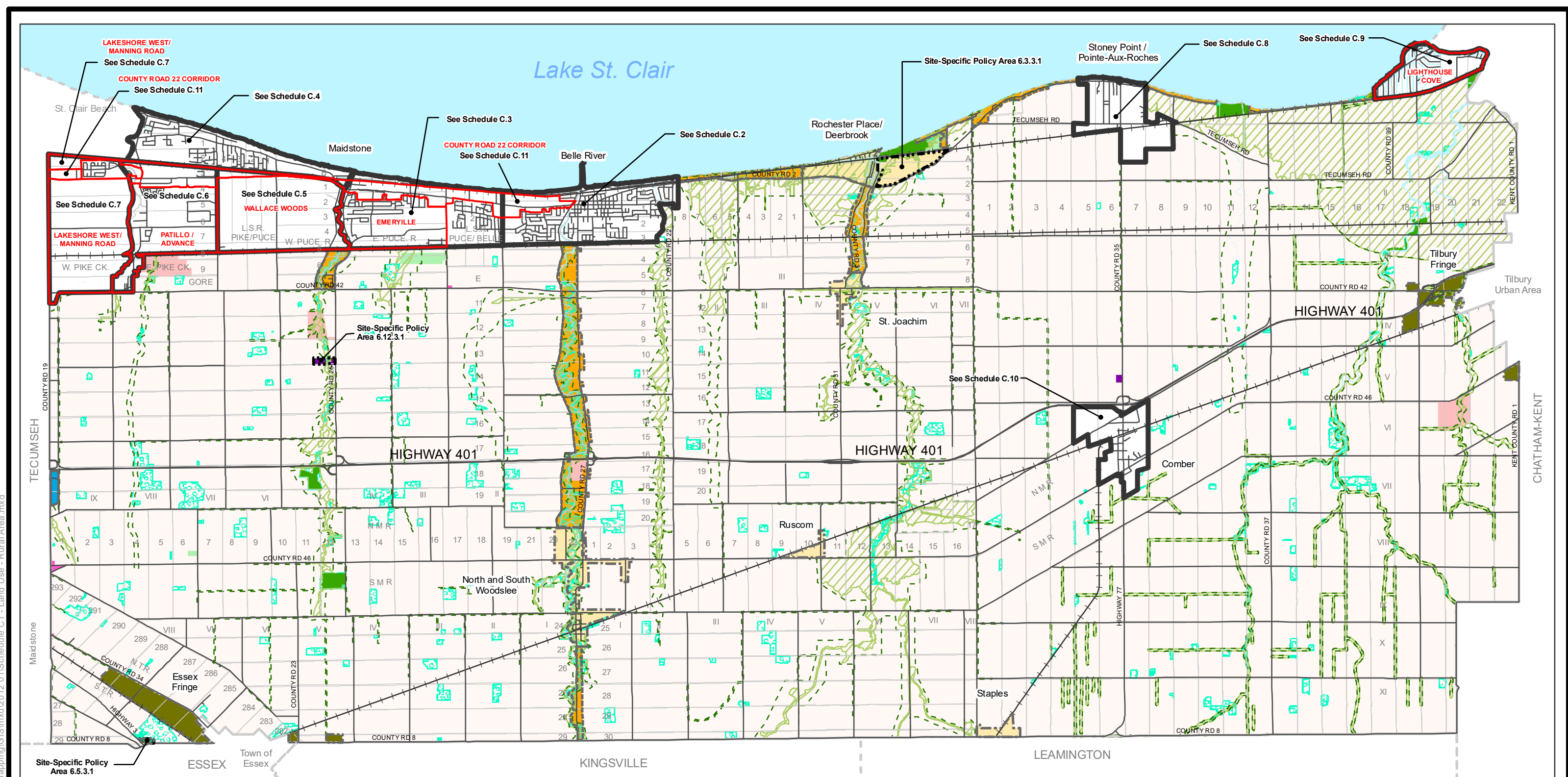
Land Use Plan

Legend

- Local Roads
- County Roads
- Provincial Highway
- Railway
- Essex County Municipalities
- Lot Fabric
- Settlement Areas
- Agricultural
- Natural Environment



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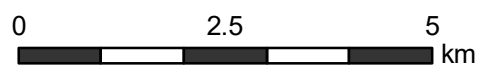


LAND USE DESIGNATION (SECTION 6.0)

- | | | | |
|--|-------------------------------------|--|----------------------------------|
| | Agricultural Designation | | Mixed Use Designation |
| | Hamlet Designation | | Central Area Designation |
| | Waterfront Residential Designation | | Employment Designation |
| | Urban Fringe Designation | | Major Institutional Designation |
| | Residential Designation | | Natural Conservation Designation |
| | Service Commercial Designation | | Parks and Open Space Designation |
| | Recreational Commercial Designation | | Urban Reserve Designation |

LEGEND

- | | | | |
|--|----------------------------|--|---|
| | Urban Area Boundary | | Lake St. Clair Floodprone Areas/ Inland Floodplain Development Control Area |
| | Hamlet Area Boundary | | Limit of the Regulated Area |
| | Waterfront Area Boundary | | Woodlands |
| | Urban Fringe Area Boundary | | |
| | Town Boundary | | |
| | Site-Specific Policy Area | | |
| | Special Planning Area | | |



Interpretation Note: This Schedule will be read and interpreted in conjunction with the Official Plan in its entirety. Land Use Designations on this Schedule must be interpreted in conjunction with Schedule B.2 (Natural Heritage Features).

Town of Lakeshore OFFICIAL PLAN



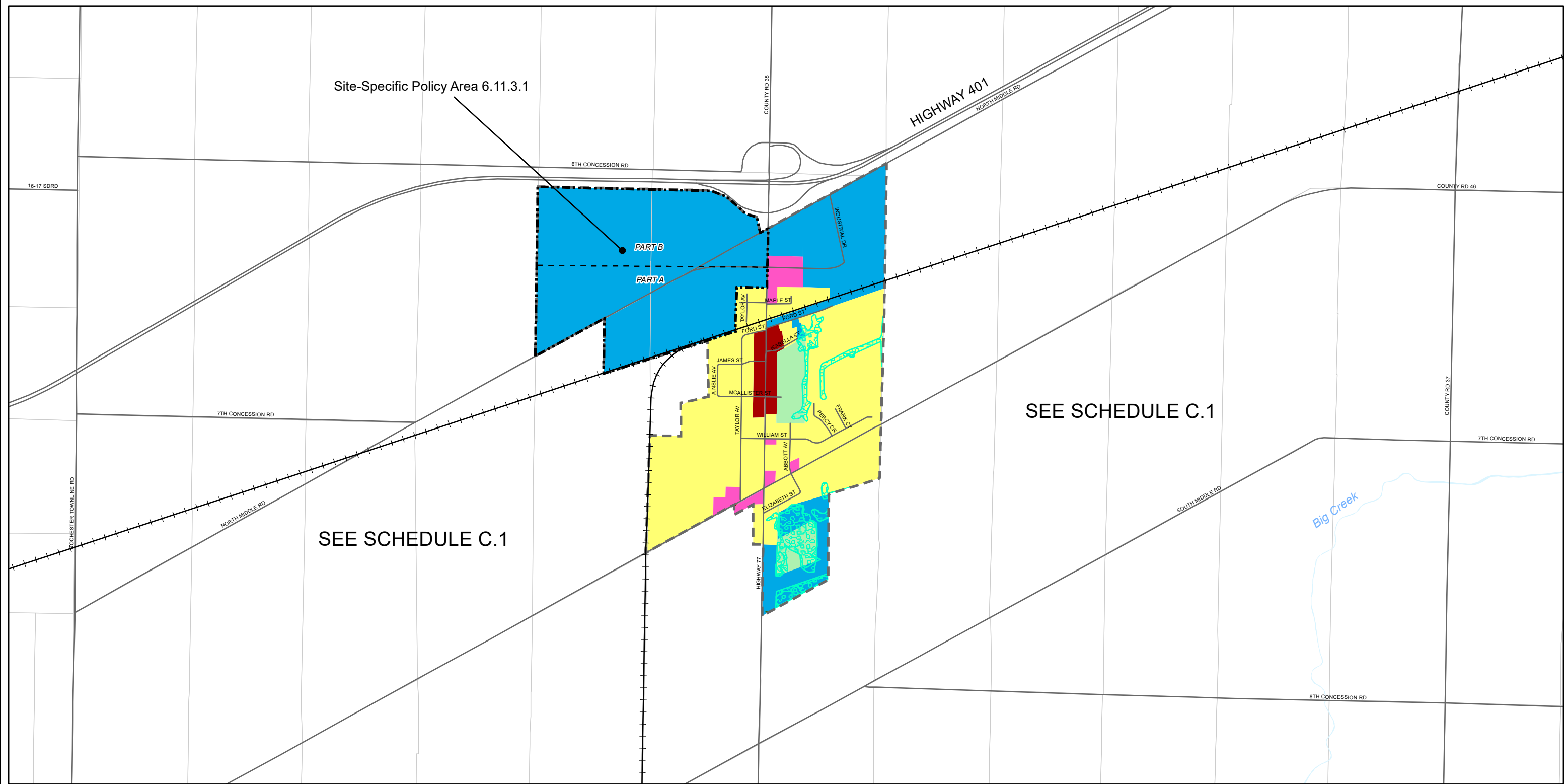
SCHEDULE "C.1" LAND USE (RURAL AREA)



Revision Date: January 10, 2012

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M:\Jobs\2009\14_09208.001_P01 - Town of Lakeshore\Mapping\GIS\mxd\2016_11\Schedule C10 - Land Use - Comber.mxd

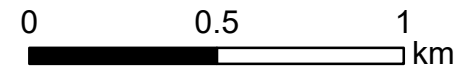


LAND USE DESIGNATION (SECTION 6.0)

- | | | | |
|--|-------------------------------------|--|----------------------------------|
| | Agricultural Designation | | Mixed Use Designation |
| | Hamlet Designation | | Central Area Designation |
| | Waterfront Residential Designation | | Employment Designation |
| | Urban Fringe Designation | | Major Institutional Designation |
| | Residential Designation | | Natural Conservation Designation |
| | Service Commercial Designation | | Parks and Open Space Designation |
| | Recreational Commercial Designation | | Urban Reserve Designation |

LEGEND

- | | | | |
|--|--|--|--|
| | Urban Area Boundary (Primary) | | Lake St. Clair Floodprone Area/ Inland Floodprone Area |
| | Urban Area Boundary (Secondary) | | Limit of the Regulated Area |
| | Hamlet Area Boundary (Secondary) | | Woodlands |
| | Waterfront Area Boundary (Secondary) | | |
| | Urban Fringe Area Boundary (Secondary) | | |
| | Town Boundary | | |
| | Site-Specific Policy Area | | |
| | Special Planning Area | | |



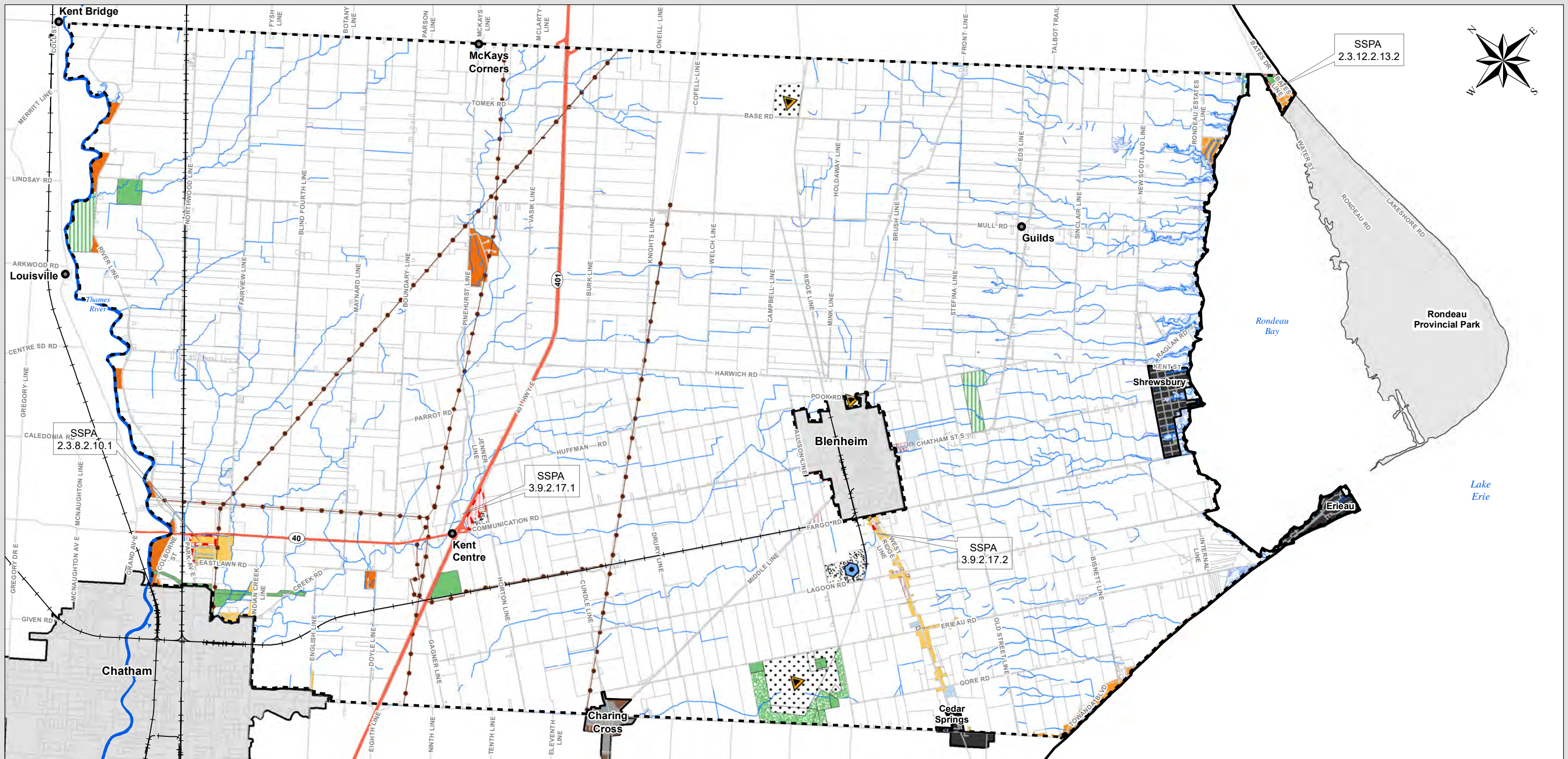
Interpretation Note: This Schedule will be read and interpreted in conjunction with the Official Plan in its entirety. Land Use Designations on this Schedule must be interpreted in conjunction with Schedule B.2.1 (Natural Heritage Features).

Town of Lakeshore
OFFICIAL PLAN

SCHEDULE "C.10" LAND USE
(COMBER)
DRAFT



Revision Date: November 2016

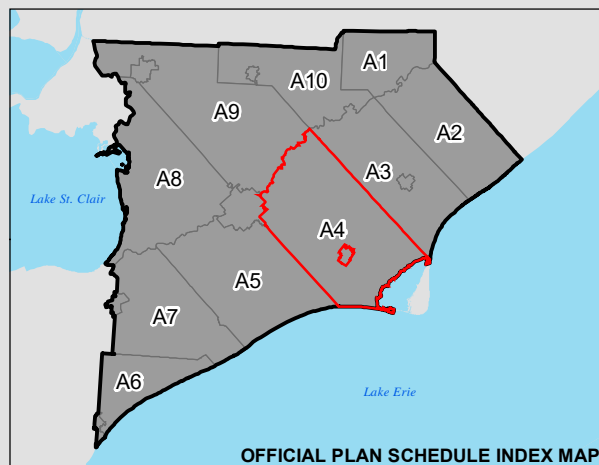


SSPA
2.3.12.2.13.2

SSPA
2.3.8.2.10.1

SSPA
3.9.2.17.1

SSPA
3.9.2.17.2



Legend		Land Use Designations		Commercial / Industrial		Other	
	Municipal Boundary		Agricultural		Employment Area		Public Facility
	Schedule Boundary		Agricultural Buffer		Industrial Rural		Sanitary Sewage Treatment Works
	Primary Urban Centre		Residential		Business Park		Urban Reserve
	Secondary Urban Centre		Suburban Residential		Future Development		Open Space / Conservation Lands
	Hamlet		Recreational Residential		Downtown / Main St		Recreational Area
	Rural Settlement Area		Estate Residential		Power Centre		Waste Management Site
	Local Road		Mobile Home Park		Shopping Centre Commercial		Airport
	Provincial Highway				Community Commercial Centre		Provincially Significant Wetland
	Future CWTL						
	Railway						
	Hydro Electric Power Commission						
	Water Course						
	Property Not Included in Official Plan						
	Special Policy Area						
	Site Specific Policy Area						
	Site Specific Policy Area 2.3.7.2.14.1						

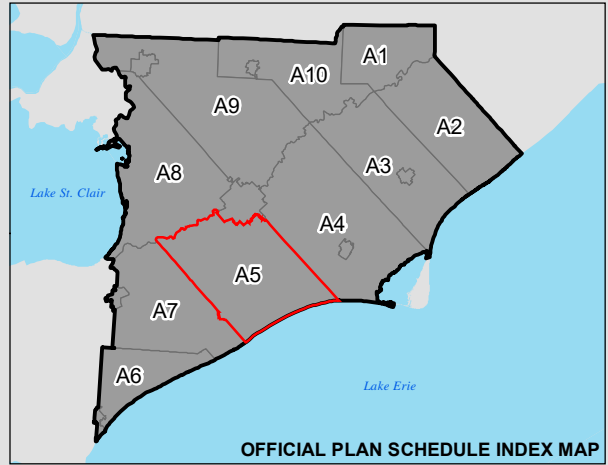
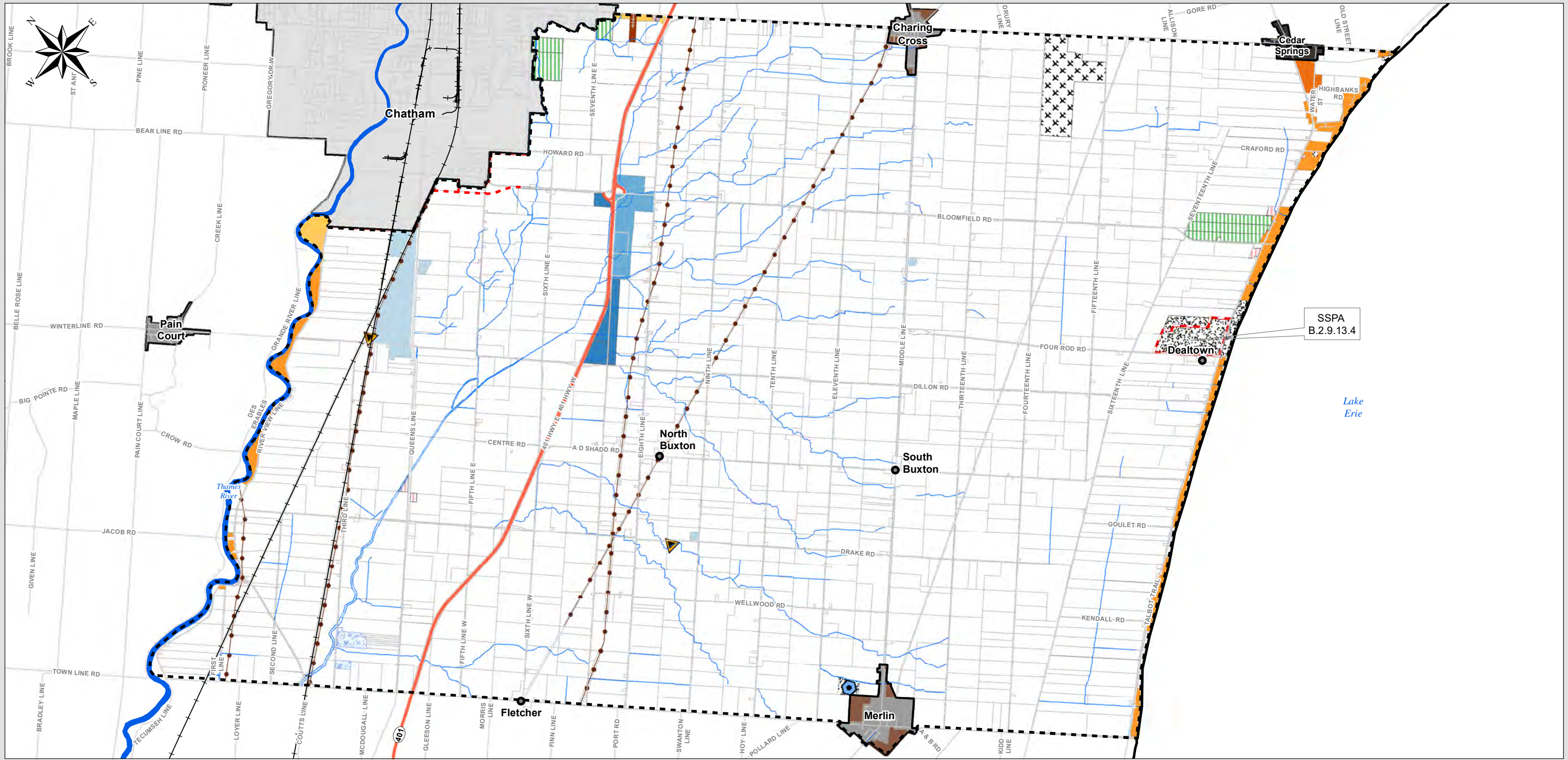
MUNICIPALITY OF CHATHAM-KENT
LAND USE SCHEDULE

A4
COMMUNITY OF HARWICH TOWNSHIP

Date Printed: December 17, 2015
Projection: NAD 83 Zone 17N

0 0.5 1 2 3 Kilometers

Disclaimer: The Municipality of Chatham-Kent takes every precaution to put up-to-date and correct information on all maps published by Corporate Applications. However, it does not expressly warranty that the information contained in the map is accurate on the date of publication. All users may use this information at their own risk. The Municipality will not entertain any claims arising out of the use of this map or information.



Legend		Land Use Designations		Commercial / Industrial		Other	
	Municipal Boundary		Agricultural		Employment Area		Highway Commercial
	Schedule Boundary		Agricultural Buffer		Industrial Rural		Public Facility
	Primary Urban Centre		Residential		Business Park		Sanitary Sewage Treatment Works
	Secondary Urban Centre		Suburban Residential		Future Development		Urban Reserve
	Hamlet		Recreational Residential		Downtown / Main St		Open Space / Conservation Lands
	Rural Settlement Area		Estate Residential		Power Centre		Recreational Area
	Local Road		Mobile Home Park		Shopping Centre Commercial		Waste Management Site
	Provincial Highway				Community Commercial Centre		Airport
	Future CWTL						Provincially Significant Wetland
	Railway						
	Hydro Electric Power Commission						
	Water Course						
	Property Not Included in Official Plan						
	Special Policy Area						
	Site Specific Policy Area						
	Site Specific Policy Area 2.3.7.2.14.1						

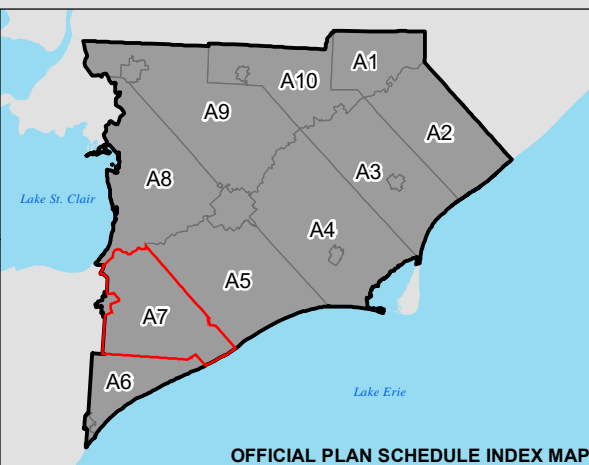
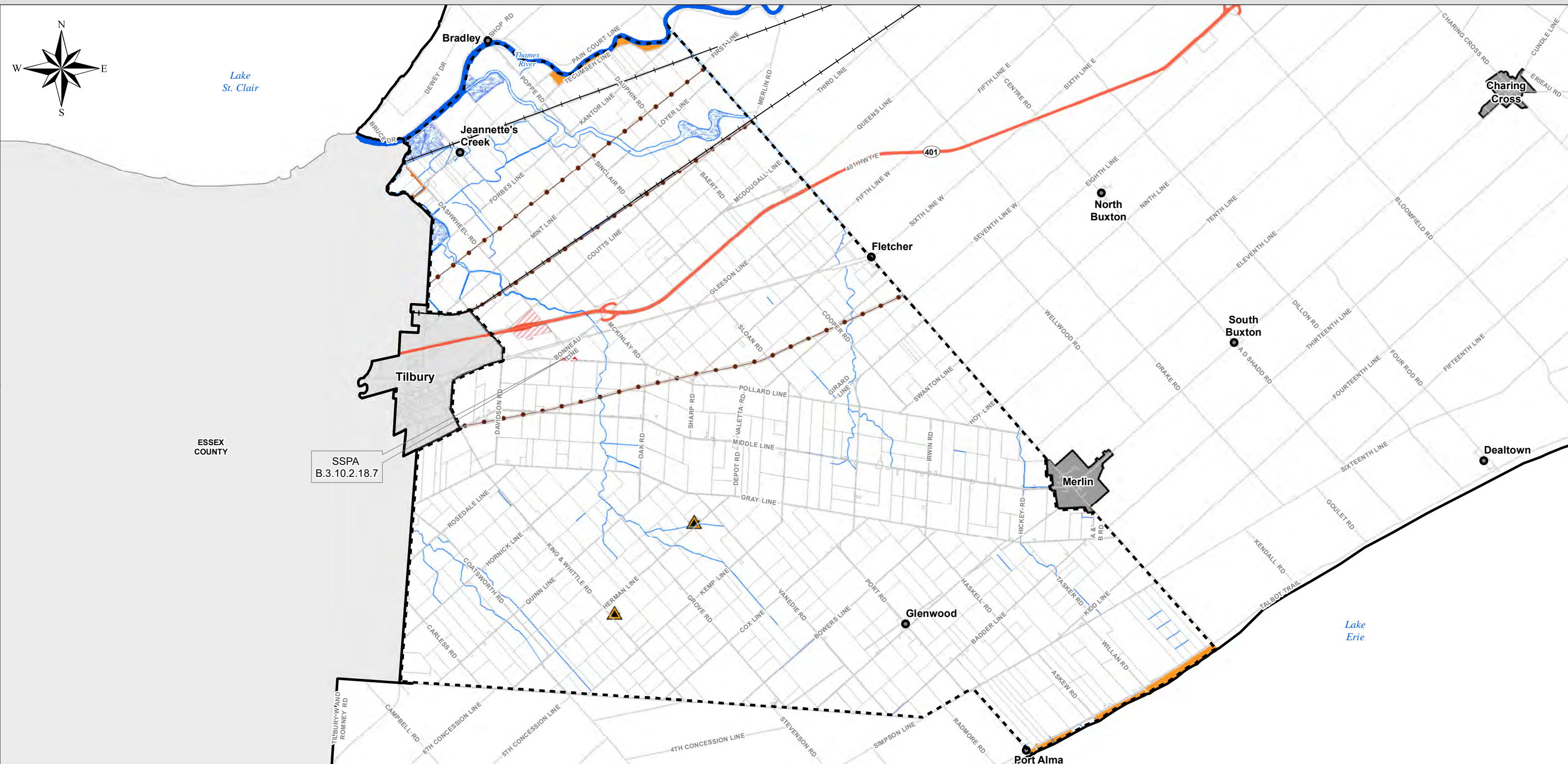
MUNICIPALITY OF CHATHAM-KENT
LAND USE SCHEDULE

A5
COMMUNITY OF RALEIGH TOWNSHIP

Date Printed: February 12, 2016
 Projection: NAD 83 Zone 17N

0 0.5 1 2 3 Kilometers

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Legend		Land Use Designations		Commercial / Industrial		Other	
	Municipal Boundary		Agricultural		Employment Area		Highway Commercial
	Schedule Boundary		Agricultural Buffer		Industrial Rural		Public Facility
	Primary Urban Centre		Residential		Business Park		Sanitary Sewage Treatment Works
	Secondary Urban Centre		Suburban Residential		Future Development		Urban Reserve
	Hamlet		Recreational Residential		Downtown / Main St		Open Space / Conservation Lands
	Rural Settlement Area		Estate Residential		Power Centre		Recreational Area
	Local Road		Mobile Home Park		Shopping Centre Commercial		Waste Management Site
	Provincial Highway				Community Commercial Centre		Airport
	Future CWTL				Provincially Significant Wetland		
	Railway						
	Hydro Electric Power Commission						
	Water Course						
	Property Not Included in Official Plan						
	Special Policy Area						
	Site Specific Policy Area						
	Site Specific Policy Area 2.3.7.2.14.1						

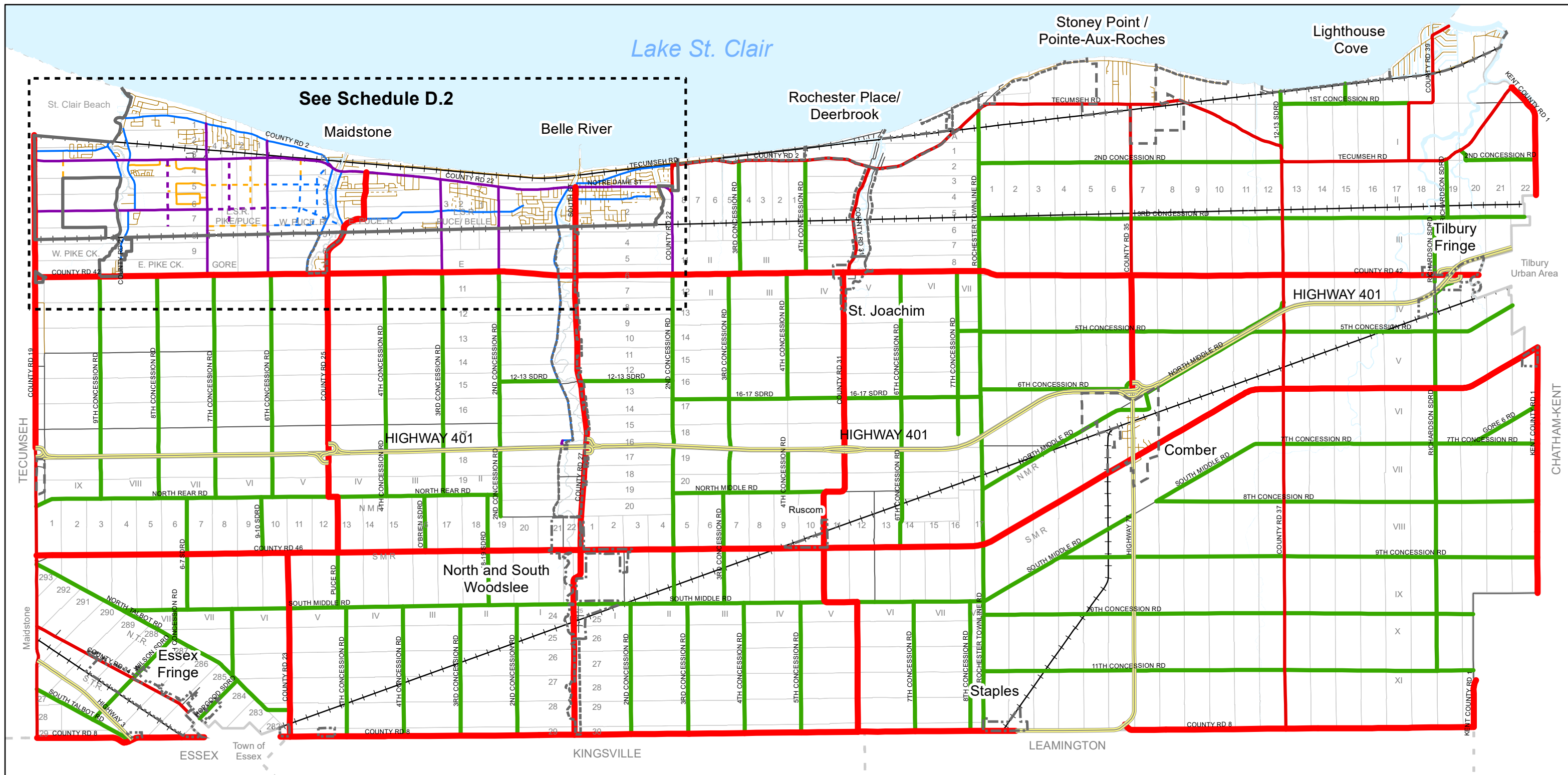
MUNICIPALITY OF CHATHAM-KENT
LAND USE SCHEDULE

A7
COMMUNITY OF TILBURY-EAST TOWNSHIP

Date Printed: December 17, 2015
Projection: NAD 83 Zone 17N

0 0.75 1.5 3 4.5 Kilometers

Disclaimer: The Municipality of Chatham-Kent takes every precaution to put up-to-date and correct information on all maps published by Corporate Applications. However, it does not expressly warranty that the information contained in the map is accurate on the date of publication. All users may use this information at their own risk. The Municipality will not entertain any claims arising out of the use of this map or information.



HIERARCHY AND CLASSIFICATION OF ROADS (SECTION 7.2.2.1)

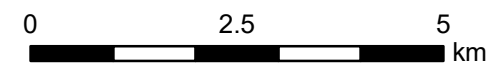
- Provincial Highway
- Rural Regional Road
- Rural Secondary Road
- Rural Collector Road
- Rural Local Road
- Urban Arterial Road
- Urban Residential/Collector Road
- Urban Commercial/Employment Collector Road
- Urban Residential Local Road
- Urban Commercial/Employment Local Road

- Existing Road
- Planned Road *

* Note: Planned Roads are Illustrated Conceptually. Refer to the relevant Secondary Plans for planned roadway network developments, road classifications and intersections

LEGEND

- Urban Area Boundary (Primary)
- Urban Area Boundary (Secondary)
- Hamlet Area Boundary (Secondary)
- Waterfront Area Boundary (Secondary)
- Urban Fringe Area Boundary (Secondary)
- Town Boundary



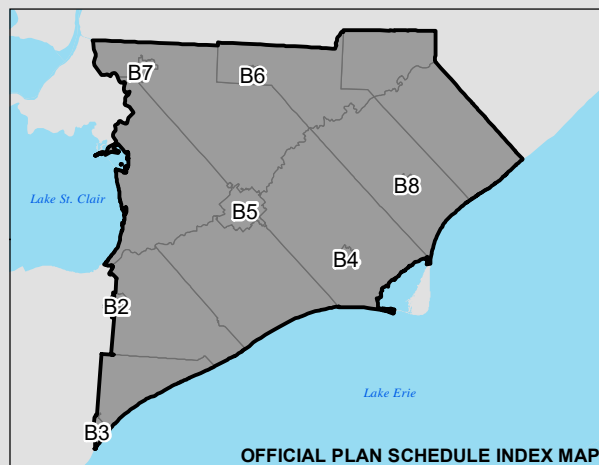
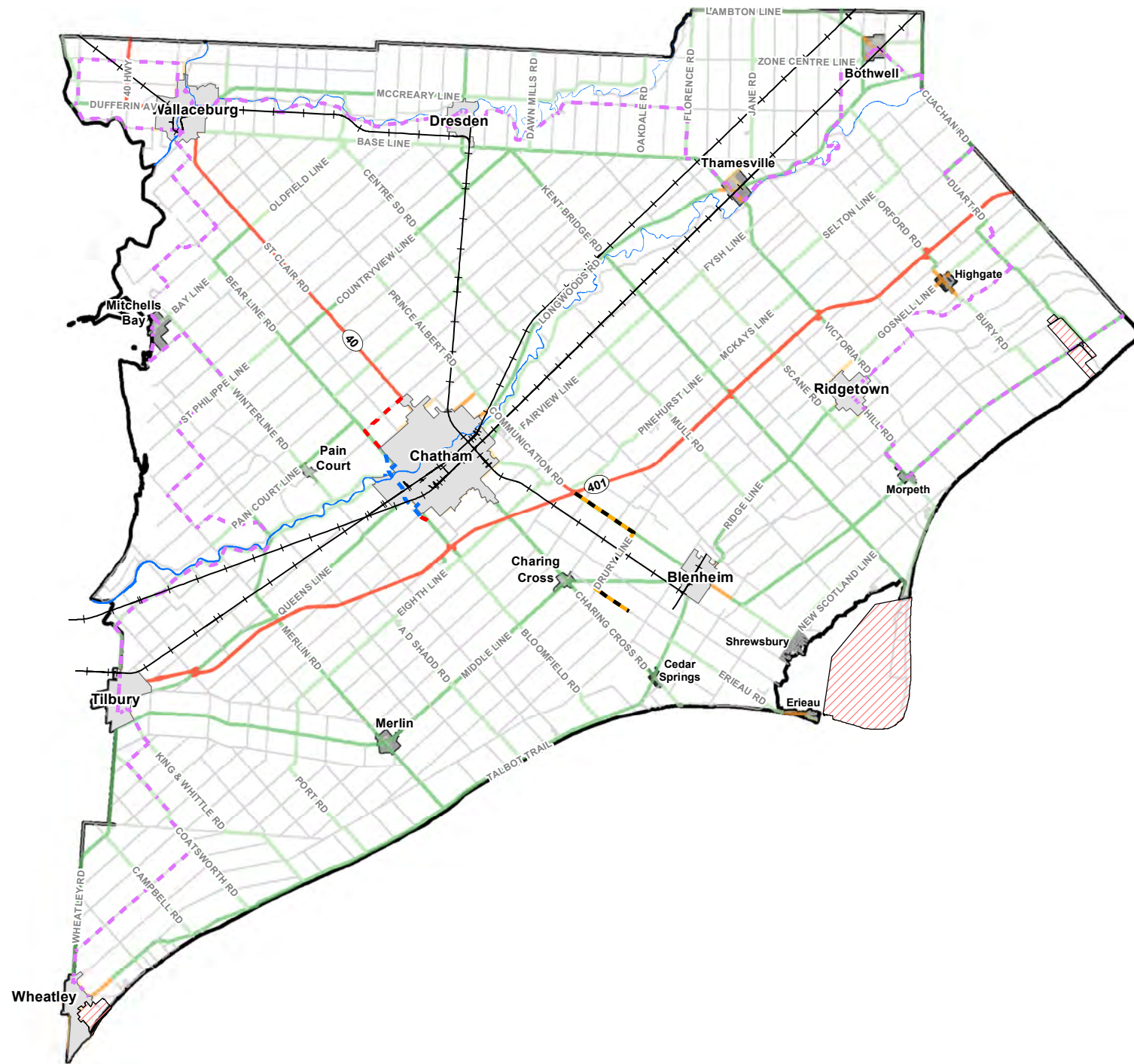
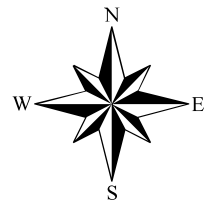
Interpretation Note: This Schedule will be read and interpreted in conjunction with the Official Plan in its entirety.

Town of Lakeshore
OFFICIAL PLAN



SCHEDULE "D.1"
ROAD CLASSIFICATION
(Rural Area)
DRAFT





Legend

- | | | |
|-------------------------|--------------------|------------------------------|
| Municipal Boundary | Local Road | Ridge Landfill Truck Route |
| Settlement Areas | Rural Arterial | Trans Canada Trail |
| Primary Urban Centre | Rural Collector | CWTL (Future Rural Arterial) |
| Secondary Urban Centre | Urban Arterial | CWTL (Future Urban Arterial) |
| Hamlet | Urban Collector | |
| Railway | Provincial Highway | |

**MUNICIPALITY OF CHATHAM-KENT
ROAD NETWORK**



**B1
CHATHAM-KENT OVERVIEW**

Date Printed: January 22, 2016
Projection: NAD 83 Zone 17N

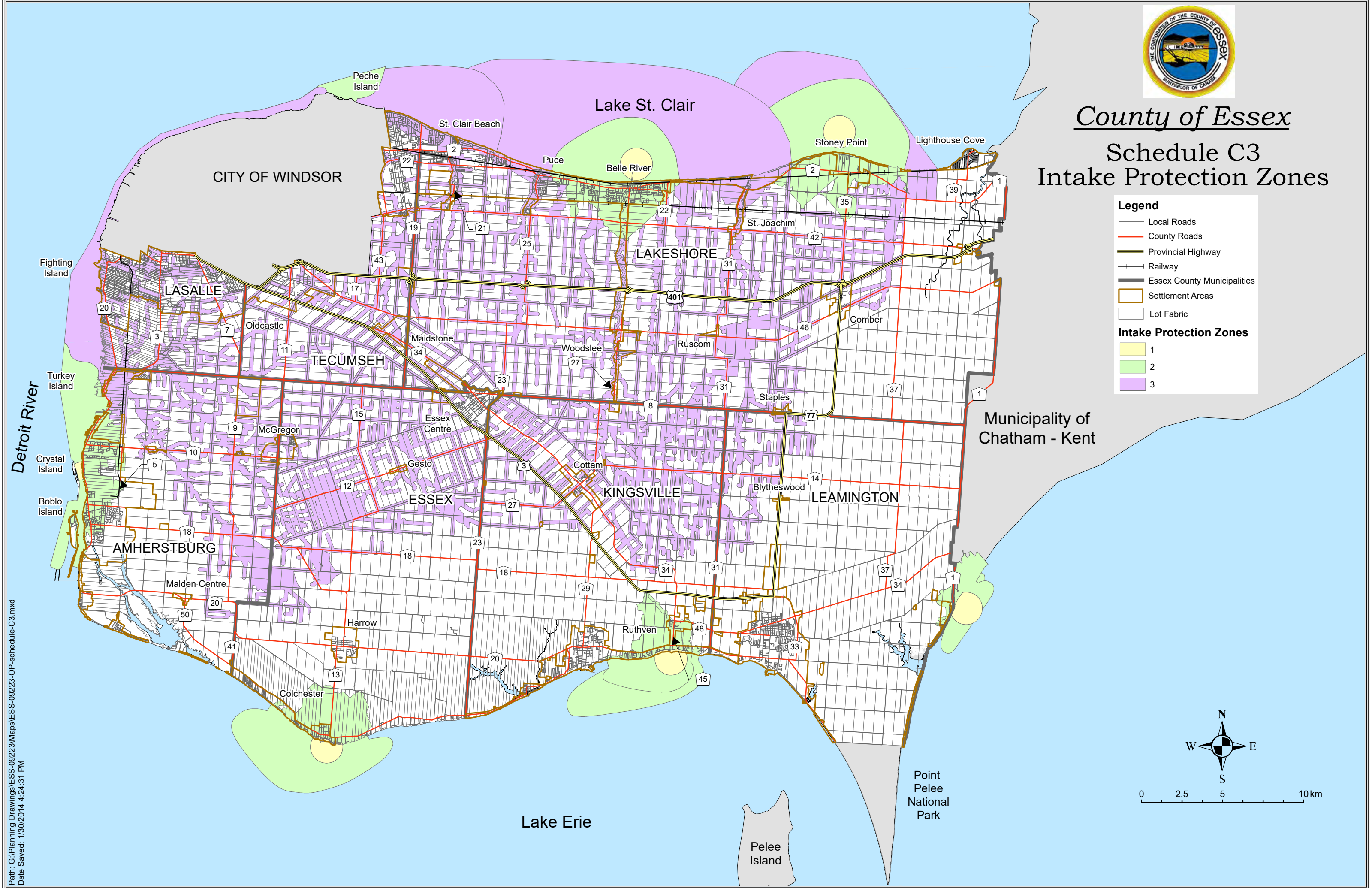


Disclaimer: The Municipality of Chatham-Kent takes every precaution to put up-to-date and correct information on all maps published by Corporate Applications. However, it does not expressly warranty that the information contained in the map is accurate on the date of publication. All users may use this information at their own risk. The Municipality will not entertain any claims arising out of the use of this map or information.



County of Essex

Schedule C3 Intake Protection Zones

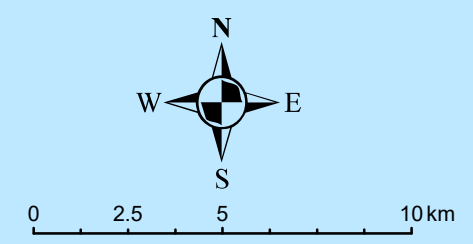


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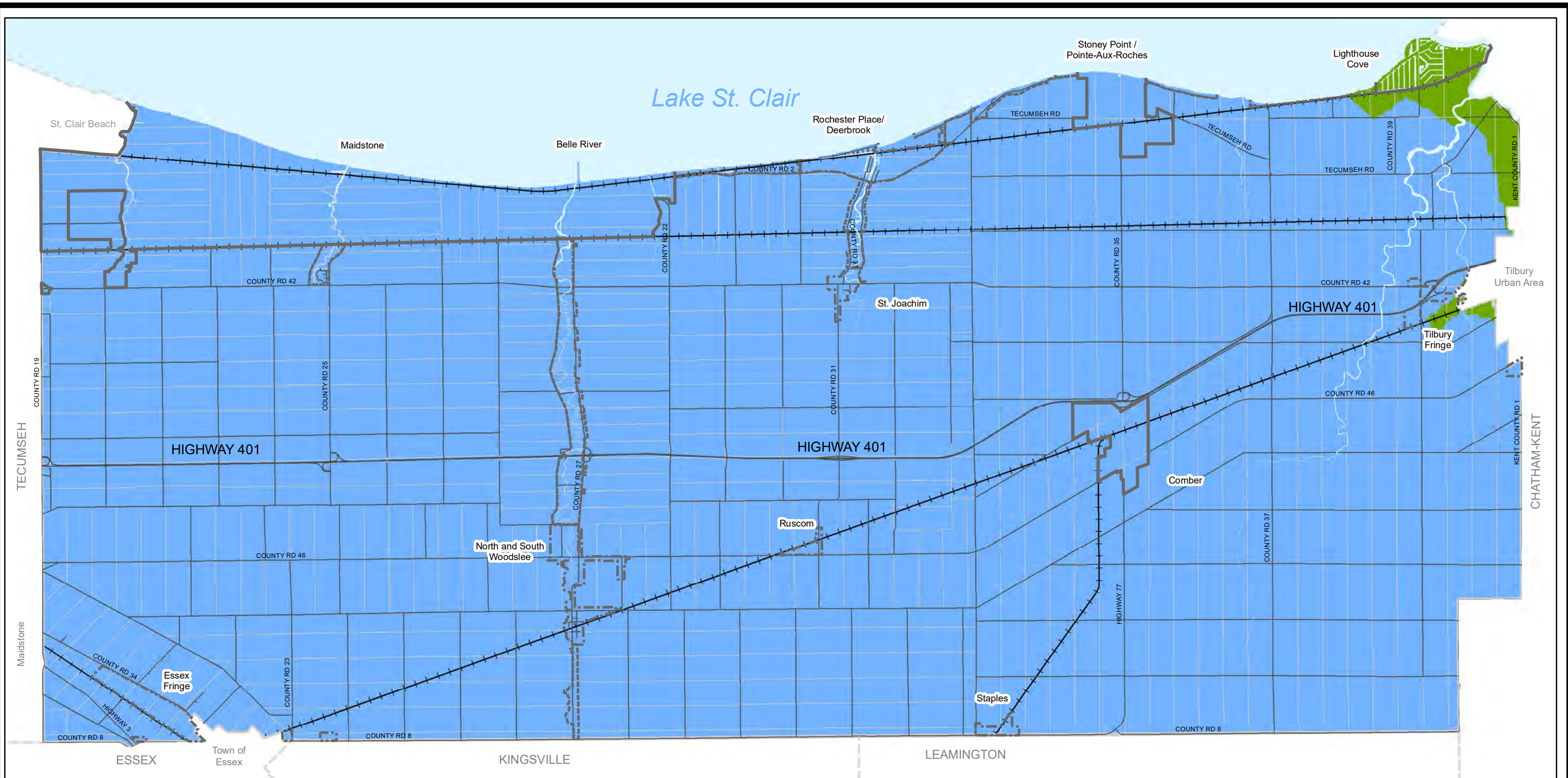
- Local Roads
- County Roads
- Provincial Highway
- Railway
- Essex County Municipalities
- Settlement Areas
- Lot Fabric

Intake Protection Zones

- 1
- 2
- 3



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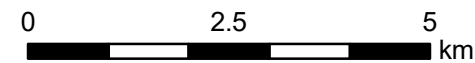


AQUIFER INTRINSIC SUSCEPTIBILITY (SECTION 5.1)

- High Susceptibility
- Medium Susceptibility
- Low Susceptibility

LEGEND

- Urban Area Boundary
- Hamlet Area Boundary
- Waterfront Area Boundary
- Urban Fringe Area Boundary
- Town Boundary



Interpretation Note: This Schedule will be read and interpreted in conjunction with the Official Plan in its entirety.

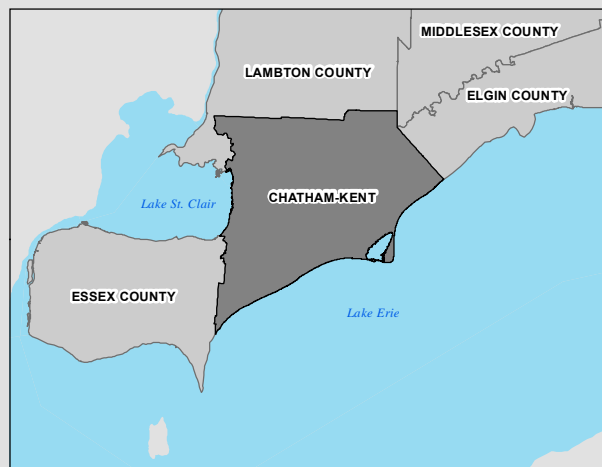
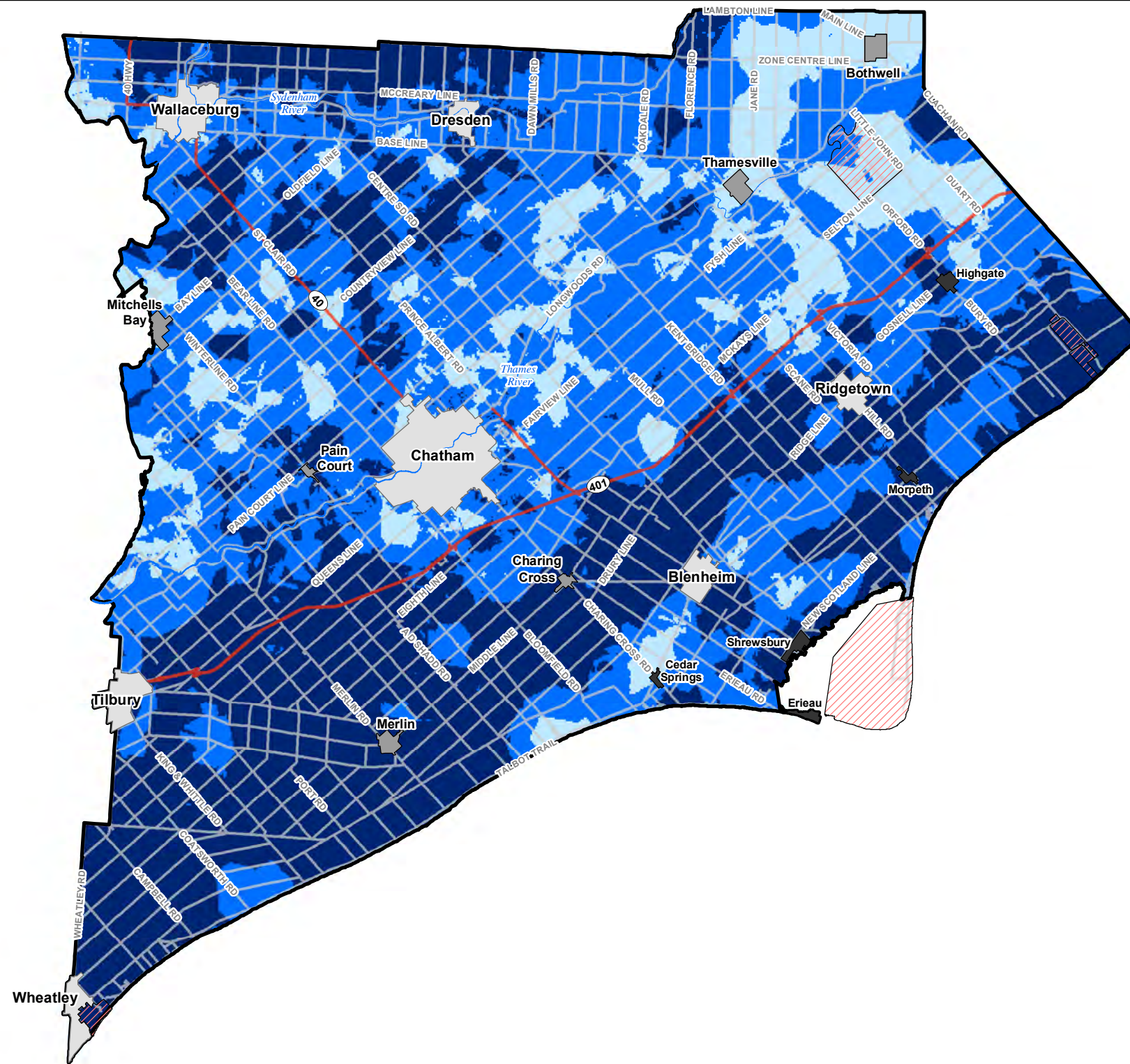
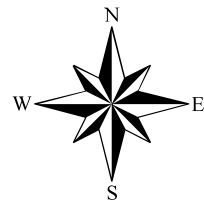
**Town of Lakeshore
OFFICIAL PLAN**



**SCHEDULE "B.1"
AQUIFER INTRINSIC
SUSCEPTIBILITY**



Revision Date: July 6, 2010
(as approved by the Ontario Municipal Board)



Legend

- | | | |
|--|-------------------------|----------------------------|
| Municipal Boundary | Settlement Areas | High Susceptibility Area |
| Property Not Included in Official Plan | Primary Urban Centre | Medium Susceptibility Area |
| Road Network | Secondary Urban Centre | Low Susceptibility Area |
| Provincial Highway | Hamlet | |

Data Source Acknowledgements: St. Clair Region Conservation Authority, Lower Thames Valley Conservation Authority, Dillon Consulting Limited, Ministry of Natural Resources, Municipality of Chatham-Kent

MUNICIPALITY OF CHATHAM-KENT



**D2
INTRINSIC SUSCEPTIBILITY
TO GROUND WATER CONTAMINATION**

Date Printed: December 9, 2015
Projection: NAD 83 Zone 17N



Disclaimer: The Municipality of Chatham-Kent takes every precaution to put up-to-date and correct information on all maps published by Corporate Applications. However, it does not expressly warranty that the information contained in the map is accurate on the date of publication. All users may use this information at their own risk. The Municipality will not entertain any claims arising out of the use of this map or information.



County of Essex

Schedule B1

Natural Heritage System Natural Environment Designation

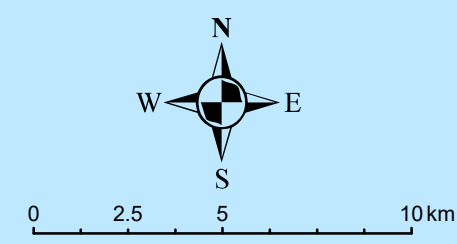
Legend

- Local Roads
- County Roads
- Provincial Highway
- Railway
- Essex County Municipalities
- Settlement Areas
- Lot Fabric
- Significant Terrestrial Features
- Provincially Significant Wetlands



Municipality of Chatham - Kent

Note*
The current mapping does not differentiate between those features which are related to components of Table 3. Specifically, existing natural features identified as Significant Terrestrial Features may represent multiple Significant Natural Heritage Features as indicated in Table 3, i.e., Significant habitat of Endangered Species or Threatened Species, lands designated in local Official Plans for natural heritage protection, other high priority existing natural features, fish habitat, significant woodlands, Areas of Natural and Scientific Interest, Significant Wildlife Habitat, or Significant Valleylands.



Chatham to Lakeshore 230 kV Transmission Line Class Environmental Assessment
Draft Environmental Study Report

Municipality of Chatham-Kent

Municipality of Lakeshore

County of Essex

Appendix C4 Mineral and Mining Mapping

The Atlas of Canada - Minerals and Mining




















Appendix C5 Southwestern Ontario Gas Line Mapping


Appendix C6 Secondary Watersheds



Legend

-  Assessment Parcel
-  Secondary Watershed
-  Tertiary Watershed
-  Quaternary Watershed
-  Great Lakes - St. Lawrence Basin
-  Hudson - James Bay Basin
-  Nelson River Basin
-  Diversions
-  Waterbody Outlet
-  Conservation Authority Dam
-  Provincial Dam
-  Federal Dam
-  OPG Dam
-  Other Dam
-  HYDAT Gauge
-  HYDAT Gauge (RHBN)
-  Virtual Flow Segment

Land Cover Compilation

-  Other
-  Cloud/Shadow
-  Clear Open Water
-  Turbid Water
-  Shoreline
-  Mudflats
-  Marsh
-  Swamp
-  Fen
-  Bog
-  Heath
-  Sparse Tree
-  Treed Upland
-  Deciduous Tree
-  Mixed Tree
-  Coniferous Tree
-  Plantations - Treed Cultivated
-  Hedge Rows
-  Disturbance
-  Open Cliff and Talus
-  Alvar
-  Sand Barren and Dune
-  Open Tallgrass Prairie
-  Tallgrass Savannah
-  Tallgrass Woodland
-  Sand/Gravel/Mine
-  Tailings/Extraction
-  Bedrock
-  Community/Infrastructure
-  Agriculture and Undifferentiated Rural Land Use

20.9 0 km 10.45 20.9

Scale: 1 : 411,312

Projection: Web Mercator



The Ontario Ministry of Natural Resources and Forestry shall not be liable in any way for the use of, or reliance upon, this map or any information on this map. This map should not be used for: navigation, a plan of survey, routes, nor locations.

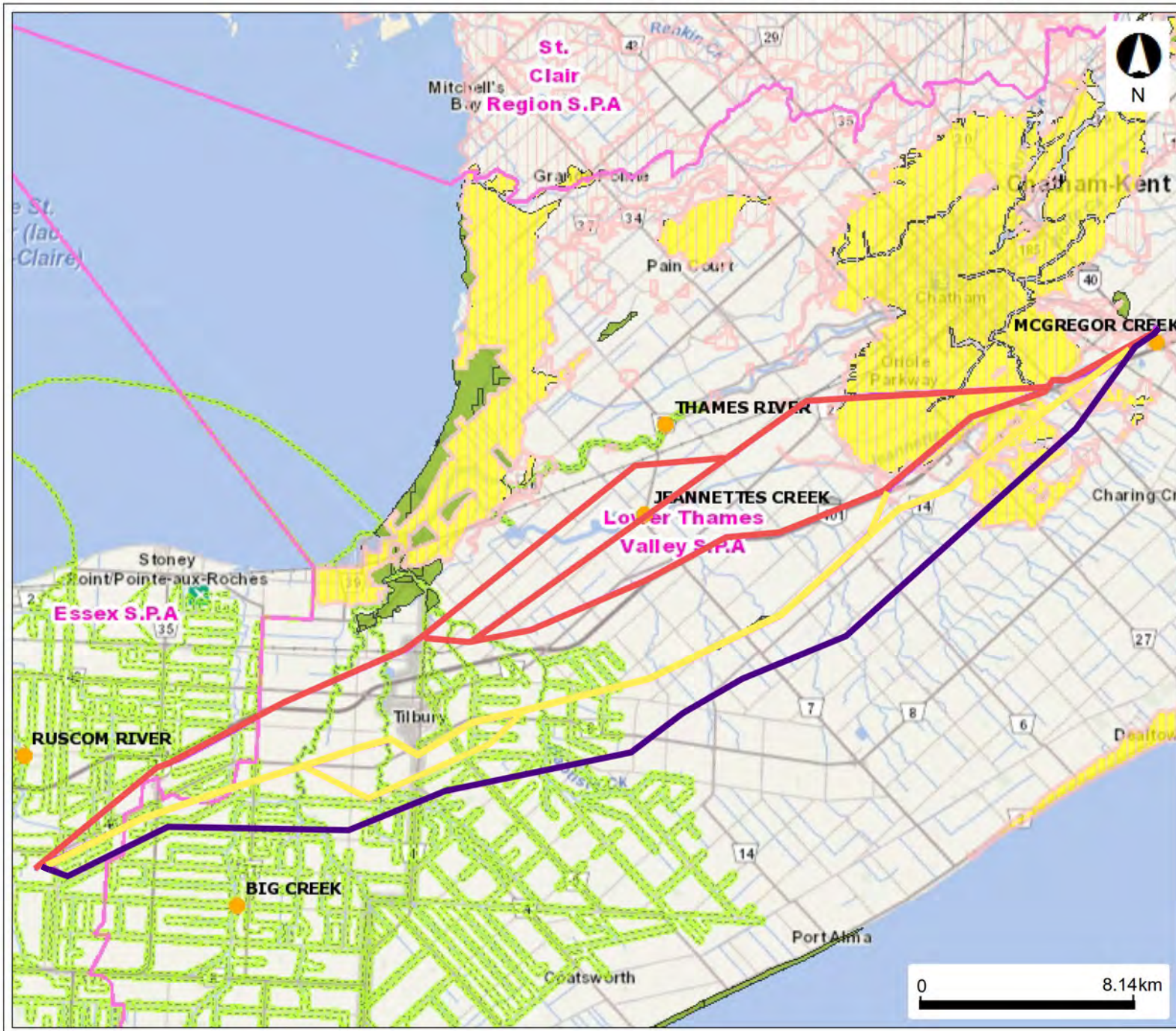
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Appendix C7 MECP Source Water Protection and PWQS Stations Mapping

Source Water Protection Mapping



- Legend**
- PWQMN Active Stations
 - Source Protection Areas
 - Highly Vulnerable Aquifers
 - Significant Groundwater Recharge Area
 - Event Based Areas
 - Vulnerable Scoring Area - Surface Water
- | Significant Groundwater Recharge Area |
|---------------------------------------|
| 0 |
| 2 |
| 4 |
| 6 |
- | Vulnerable Scoring Area - Surface Water |
|---|
| 0 - 3.9 |
| 4 - 7.9 |
| 8 - 8.9 |
| 9 - 10 |

This map should not be relied on as a precise indicator of routes or locations, nor as a guide to navigation. The Ontario Ministry of Environment, Conservation and Parks (MECP) shall not be liable in any way for the use or any information on this map. of, or reliance upon, this map.

Appendix C8 Well Records Mapping and Summaries

Map: Well records

This map allows you to search and view well record information from reported wells in Ontario.

Full dataset is available in the [Open Data catalogue](#).

You may search by **Well ID**, **Well Tag #** or see [help](#) for advanced options.

Search

Clear

Search current map display only

You may also enter a location, e.g. address, in the **Enter a location** input box on the map below and press **Enter** key to navigate the map and explore the wells in that location.



Latitude:42.16844, Longitude:-82.20154 (UTM Zone:17, Easting:400753, Northing:4669177)

Recommended for you

[How to use a Ministry of the Environment map](#)

[Technical documentation: Metadata record](#)

UTM 1172 3168191410 E
 15R 46174151010 N
 Elev. 15R 016104



NOV 21 1958 No. 3039

Basin ²³ DIE ROAD SOUTH
 Lot 2

The Ontario Water Resources Commission Act, 1957

WATER WELL RECORD

County or District Essex Township, Village, Town or City Tilbury West
 Con. Mitchell M.R.S. Lot 2 2 Date completed 30 May 59
 (day month year)
 Owner [Redacted] Address Comber
 (print in block letters)

Casing and Screen Record

Pumping Test

Inside diameter of casing 3
 Total length of casing 109
 Type of screen [Handwritten]
 Length of screen [Handwritten]
 Depth to top of screen [Handwritten]
 Diameter of finished hole 3 in

Static level 20
 Test-pumping rate 300 gal per hr G.P.M.
 Pumping level 20 ft
 Duration of test pumping 3 hrs
 Water clear or cloudy at end of test clear
 Recommended pumping rate 200 57 gal G.P.M.
 with pumping level of 20 ft

Well Log

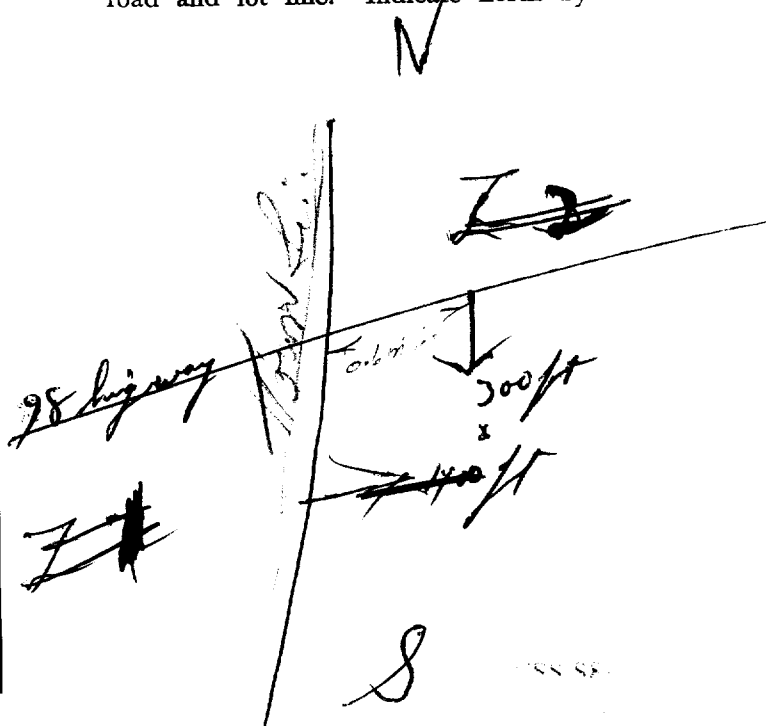
Water Record

Overburden and Bedrock Record	From ft.	To ft.	Depth(s) at which water(s) found	No. of feet water rises	Kind of water (fresh, salty, sulphur)
<u>clay</u>	<u>0</u>	<u>107</u>			
<u>hardpan</u>	<u>107</u>	<u>109</u>	<u>101 ft</u>	<u>87</u> <u>91'</u>	<u>sulfur</u>
<u>Gang limestone</u>	<u>109</u>	<u>119</u>			

For what purpose(s) is the water to be used? Stock
 Is well on upland, in valley, or on hillside? NO
 Drilling Firm _____
 Address _____
 Licence Number 245-
 Name of Driller Mr J. Williams
 Address Lindsay P.A. 5-
 Date May 30
[Signature]
 (Signature of Licensed Drilling Contractor)

Location of Well

In diagram below show distances of well from road and lot line. Indicate north by arrow.





21 No 3012

UTM 17 2 3 7 2 1 1 0 1 0 E

05 R 4 6 7 2 1 5 0 N

The Ontario Water Resources Commission Act

Elev. 15 R 0 6 0 8

WATER WELL RECORD

Basin 213 County or District ESSEX

Township, Village, Town or City TILBURY West

Con. X Lot 7

Date completed 13 Aug 62
(day month year)

Address COMBER

Casing and Screen Record

Inside diameter of casing 4"
Total length of casing 115'
Type of screen Home made
Length of screen 5'
Depth to top of screen 115'
Diameter of finished hole 4"

Pumping Test

Static level 9
Test-pumping rate 5 G.P.M.
Pumping level 15'
Duration of test pumping 1 1/2 days
Water clear or cloudy at end of test clear
Recommended pumping rate 250 G.P.M.
with pump setting of 25' feet below ground surface

Well Log

Water Record

Overburden and Bedrock Record

	From ft.	To ft.	Depth(s) at which water(s) found	Kind of water (fresh, salty, sulphur)
<u>stoney gravel</u>	<u>0</u>	<u>114</u>		
<u>blue clay</u>	<u>114</u>	<u>120</u>	<u>114-120</u>	<u>fresh</u>
<u>dark grey lime</u>	<u>120</u>	<u>122</u>	<u>121</u>	<u>trace of sulphur in the rock water</u>

For what purpose(s) is the water to be used? farm

Is well on upland, in valley, or on hillside? upland

Drilling or Boring Firm

HARRY LECLAIRE
COMBER
ONT.

Licence Number 407

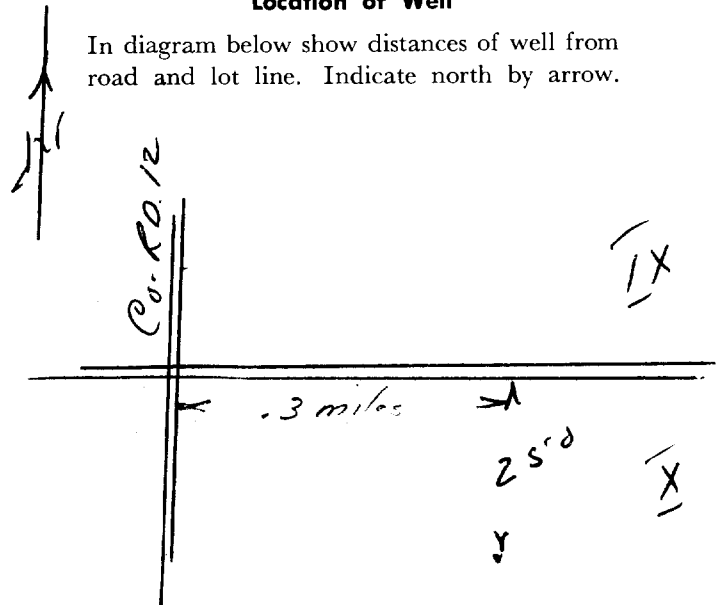
Name of Driller or Borer Same as firm

Address Same as firm
Date Dec. 12/62

Harry Leclaire
(Signature of Licensed Drilling or Boring Contractor)

Location of Well

In diagram below show distances of well from road and lot line. Indicate north by arrow.



UTM: 17Z 31713161010E
 15R 4161716191510N
 Elev. 15R 0161010



GROUP 21 WATER BRANCH 8036
 1961 (12)
 ONTARIO WATER RESOURCES COMMISSION

The Ontario Water Resources Commission Act, 1957

Basin 123
 MIDDLE RD N
 Lot 9

WATER WELL RECORD

County or District ESSEX Township, Village, Town or City Tilbury West
 Date completed 27 Jan 61
 (day month year)
 Address Conover

Casing and Screen Record

Pumping Test

Inside diameter of casing..... <u>4"</u>	Static level..... <u>28'</u>
Total length of casing..... <u>128'</u>	Test-pumping rate..... <u>1000</u> G.P.M.
Type of screen.....	Pumping level..... <u>40'</u>
Length of screen.....	Duration of test pumping..... <u>3 hrs</u>
Depth to top of screen.....	Water clear or cloudy at end of test..... <u>clear</u>
Diameter of finished hole..... <u>4"</u>	Recommended pumping rate..... <u>500</u> G.P.M.
	with pumping level of..... <u>40'</u>

Well Log

Water Record

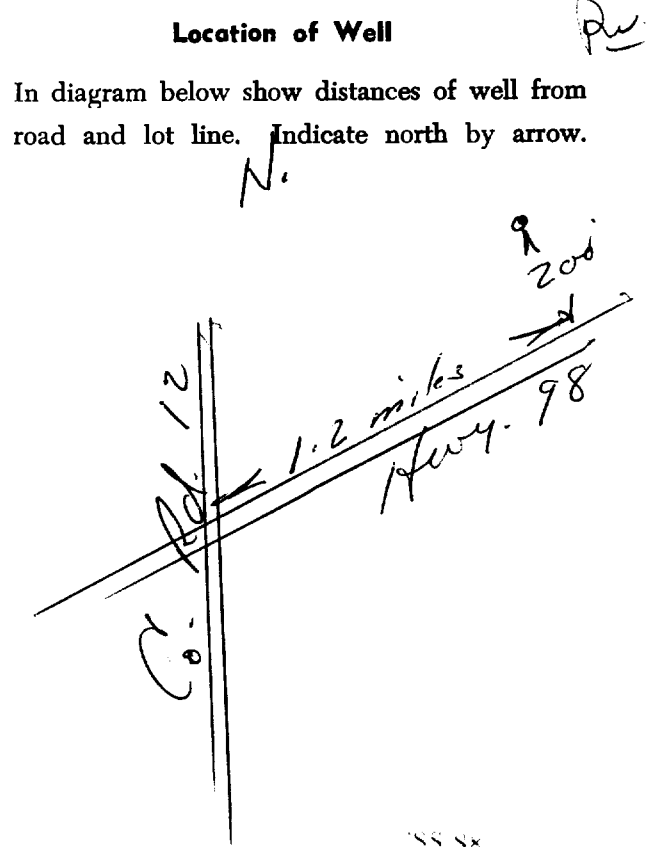
Overburden and Bedrock Record	From ft.	To ft.	Depth(s) at which water(s) found	No. of feet water rises	Kind of water (fresh, salty, sulphur)
<u>blue clay</u>	<u>0</u>	<u>128</u>			
<u>gravel</u>	<u>128</u>	<u>128' 3"</u>	<u>128</u>	<u>100</u>	<u>sulphur</u>
<u>grey lime rock</u>	<u>128' 3"</u>	<u>153</u>			

For what purpose(s) is the water to be used?
livestock

Is well on upland, in valley, or on hillside?

Drilling Firm M. H. WILLIAMS
 Address R. R. 5
Leamington

Licence Number.....
 Name of Driller Same as firm
 Address.....
 Date April 24/61
[Signature]
 (Signature of Licensed Drilling Contractor)



172 | 31810101010 | E
 9 | R | 4673 | 1110 | N
 Elev. | 9 | R | 061010 |
 Basin | 23 | | | |



21 No 2993



The Well Drillers Act
 Department of Mines, Province of Ontario

Water Well Record

County or Territorial District *Cass* Township, Village, Town or City *Tilbury North*
 Town or City *Comber B.P.H.S.*
 Date Completed *Aug 17/51* Cost of well (excluding pump)

Pipe and Casing Record

Pumping Test

Casing diameter(s) <i>3</i>	Date <i>Aug 17/51</i>
Length(s) of casing(s) <i>142</i>	Static level <i>112 ft</i>
Type of screen <i>2</i>	Pumping level <i>110 ft</i>
Length of screen <i>2</i>	Pumping rate <i>1 1/2 gpm</i>
Distance from top of screen to ground level <i>2</i>	Duration of test <i>3 hrs</i>
Is well a gravel-wall type? <i>2</i>	Distance from cylinder or bowls to ground level

Water Record

Kind (fresh or mineral)	Depth(s) to Water Horizon(s)	Kind of Water	No. of Feet Water Rises
<i>fresh</i>	<i>142</i>	<i>fresh</i>	<i>134</i>
Quality (hard, soft, contains iron, sulphur, etc.) <i>soft</i>			
Appearance (clear, cloudy, coloured) <i>clear</i>			
For what purpose(s) is the water to be used? <i>stock to house</i>			
How far is well from possible source of contamination? <i>2</i>			
What is the source of contamination? <i>2</i>			
Enclose a copy of any mineral analysis that has been made of water.			

Well Log

Overburden and Bedrock Record

From To

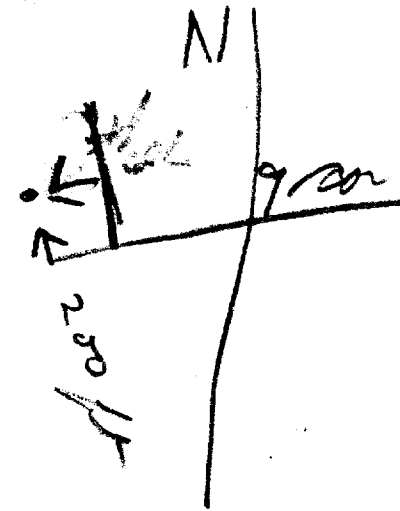
0 ft.ft.

clay 0 *142*

sandstone

Location of Well

In diagram below show distances of well from road and lot line. Indicate north by arrow.



Situation: Is well on upland, in valley, or on hillside?
 Drilling Firm
 Address
 Name of Driller *M. W. Sullivan* Address *Leamington 33 Victoria*
 Date *Aug 17/51* Licence Number
 Signature of Licensee *M. W. Sullivan*

Stay at home except for essential travel and follow the **restrictions and public health measures** (<https://covid-19.ontario.ca/zones-and-restrictions>).



Map: Well records

This map allows you to search and view well record information from reported wells in Ontario.

Full dataset is available in the Open Data catalogue (<https://data.ontario.ca/dataset/well-records>).

[Go Back to Map\(\)](#)

Well ID

Well ID Number: 7232108

Well Audit Number: Z158505

Well Tag Number: A162125

This table contains information from the original well record and any subsequent updates.

Well Location

Address of Well Location	189 QUEEN ST N
Township	TILBURY TOWN
Lot	

Concession	
County/District/Municipality	KENT
City/Town/Village	TILBURY
Province	ON
Postal Code	n/a
UTM Coordinates	NAD83 — Zone 17 Easting: 381972.00 Northing: 4681519.00
Municipal Plan and Sublot Number	
Other	

Overburden and Bedrock Materials Interval

General Colour	Most Common Material	Other Materials	General Description	Depth From	Depth To
WHIT			HARD	0 m	.4 m
BRWN	SAND	GRVL	SOFT	.4 m	1 m
BRWN	SILT	CLAY	SOFT	1 m	3 m
GREY	CLAY	SILT	SOFT	3 m	6 m

Annular Space/Abandonment Sealing Record

Depth From	Depth To	Type of Sealant Used (Material and Type)	Volume Placed
0 m	.31 m	CONCRETE	
.31 m	2.7 m	BENTONITE	

2.7 m

6 m

SILICA SAND

Method of Construction & Well Use

Method of Construction	Well Use
Rotary (Convent.)	
	Monitoring and Test Hole

Status of Well

Test Hole

Construction Record - Casing

Inside Diameter	Open Hole or material	Depth From	Depth To
5.2 cm	PLASTIC	0 m	3 m

Construction Record - Screen

Outside Diameter	Material	Depth From	Depth To
6.1 cm	PLASTIC	3 m	6 m

Well Contractor and Well Technician Information

Well Contractor's Licence Number: 7241

Results of Well Yield Testing

After test of well yield, water was

If pumping discontinued, give reason

Pump intake set at

Pumping Rate

Duration of Pumping

Final water level

If flowing give rate

Recommended pump depth

Recommended pump rate

Well Production

Disinfected?

Draw Down & Recovery

Draw Down Time(min)	Draw Down Water level	Recovery Time(min)	Recovery Water level
SWL			
1		1	
2		2	
3		3	
4		4	
5		5	
10		10	

15	15
20	20
25	25
30	30
40	40
45	45
50	50
60	60

Water Details

Water Found at Depth	Kind

Hole Diameter

Depth From	Depth To	Diameter
0 m	6 m	15 cm

Audit Number: Z158505

Date Well Completed: October 21, 2014

Date Well Record Received by MOE: November 21, 2014

Updated: April 30, 2021

Published: April 16, 2021

Related

How to use a Ministry of the Environment map (/page/how-use-ministry-environment-map#wells)

Technical documentation: Metadata record (<https://data.ontario.ca/dataset/well-records/resource/3031344e-e3f2-48d5-888c-c1deadfd2f77>)

[about Ontario \(https://www.ontario.ca/page/about-ontario\)](https://www.ontario.ca/page/about-ontario).

[accessibility \(https://www.ontario.ca/page/accessibility\)](https://www.ontario.ca/page/accessibility).

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WATER WELL RECORD

40 5/8c

1. PRINT ONLY IN SPACES PROVIDED
2. CHECK CORRECT BOX WHERE APPLICABLE

11

3305828

MUNICIP. 33009

CON. EGN

VI

COUNTY OR DISTRICT: **Kent** TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE: **Tillamoy East** CON., BLOCK, TRACT, SURVEY, ETC.: **4 VI** LOT: **25-27, 004**

DATE COMPLETED: DAY **01** MO **07** YR **73**

RC. ELEVATION: **4684114** RC. BASIN CODE: **4 582 4 23** MAR 20, 1975 54

LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET	
				FROM	TO
			Hard Clay.	1	20
			Soft Clay.	20	50
			Hard Perm	50	110
			Loose Stone	110	115

31 1000 105 0080 05 0110 14 0115 17

32

41 WATER RECORD

WATER FOUND AT - FEET	KIND OF WATER
10-15	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL
15-18	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL
20-23	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL
25-28	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL
30-33	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL

51 CASING & OPEN HOLE RECORD

INSIDE DIAM. INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET
4	1 <input type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input type="checkbox"/> OPEN HOLE	4	110
17-18	1 <input type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input type="checkbox"/> OPEN HOLE		110 115
24-25	1 <input type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input type="checkbox"/> OPEN HOLE		27-30

SCREEN

SIZE(S) OF OPENING (SLOT NO.)	DIAMETER	LENGTH
	INCHES	FEET
		41-44
		80

MATERIAL AND TYPE: _____ DEPTH TO TOP OF SCREEN: _____

61 PLUGGING & SEALING RECORD

DEPTH SET AT - FEET	MATERIAL AND TYPE	CEMENT GROUT, LEAD PACKER, ETC.
10-13	14-17	
18-21	22-25	
26-29	30-33	80

71 PUMPING TEST

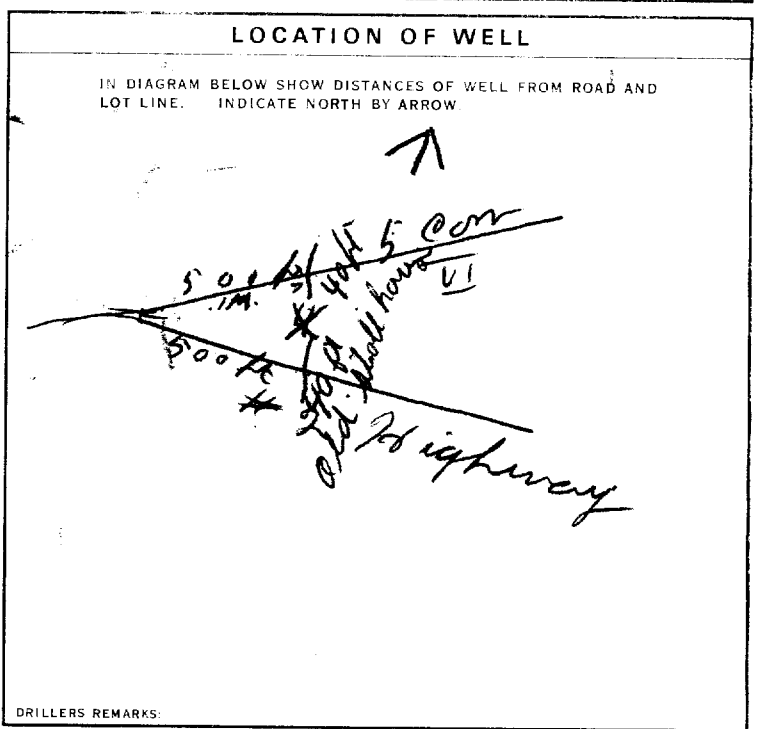
PUMPING TEST METHOD: 1 PUMP 2 BAILER

PUMPING RATE: _____ GPM. DURATION OF PUMPING: _____ HOURS _____ MINS.

STATIC LEVEL	WATER LEVEL END OF PUMPING	WATER LEVELS DURING			
19-21	22-24	15 MINUTES	30 MINUTES	45 MINUTES	60 MINUTES
FEET	FEET	FEET	FEET	FEET	FEET
		26-28	29-31	32-34	35-37

IF FLOWING GIVE RATE: _____ GPM. PUMP INTAKE SET AT: _____ FEET. WATER AT END OF TEST: _____ FEET.

RECOMMENDED PUMP TYPE: 1 SHALLOW 2 DEEP. RECOMMENDED PUMP SETTING: _____ FEET. RECOMMENDED PUMPING RATE: _____ GPM.



FINAL STATUS OF WELL

1 WATER SUPPLY 5 ABANDONED - INSUFFICIENT SUPPLY
2 OBSERVATION WELL 6 ABANDONED - POOR QUALITY
3 TEST HOLE 7 UNFINISHED
4 RECHARGE WELL 8 OTHER

Handwritten note: *Casing bailed*

WATER USE

1 DOMESTIC 5 COMMERCIAL
2 STOCK 6 MUNICIPAL
3 IRRIGATION 7 PUBLIC SUPPLY
4 INDUSTRIAL 8 COOLING OR AIR CONDITIONING
9 NOT USED

METHOD OF DRILLING

1 CABLE TOOL 6 BORING
2 ROTARY (CONVENTIONAL) 7 DIAMOND
3 ROTARY (REVERSE) 8 JETTING
4 ROTARY (AIR) 9 DRIVING
5 AIR PERCUSSION

CONTRACTOR

NAME OF WELL CONTRACTOR: **Orval Leuyer** LICENCE NUMBER: **3308**

ADDRESS: **236 Grand ave E, Tillamoy**

NAME OF DRILLER OR BORER: **Orval Leuyer** LICENCE NUMBER: _____

SIGNATURE OF CONTRACTOR: *Orval Leuyer* SUBMISSION DATE: DAY **1** MO **7** YR **73**

OFFICE USE ONLY

DATA SOURCE: **1** CONTRACTOR: **3308** DATE RECEIVED: **09 11 73**

DATE OF INSPECTION: **9, 9, 74** INSPECTOR: **7**

REMARKS: _____

P **7**
WI

ECR
 3304832
 3 9
 1 7 Z 4 1 3 5 0 0
 4 R 4 6 9 1 9 9 0
 E CODED
 21
 Water management in Ontario

40 J 1 8 E
 77
 APR 1 1969
 HARWICH

lev. 5 R 0 6 3 0
 The Ontario Water Resources Commission Act
 WATER WELL RECORD

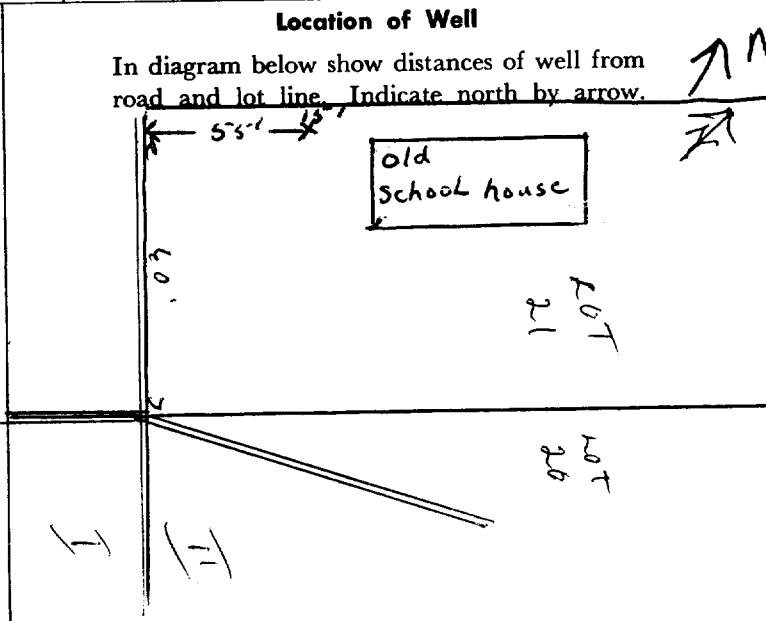
County or District KENT Township, Village, Town or City HARWICH
 Con. 2 E.C.R. Lot PART 20&21 Date completed 14 4 69
 (day month year)
 Address 101 WELLINGTON WEST *Chatham*

Casing and Screen Record
 Inside diameter of casing 4"
 Total length of casing 100'
 Type of screen NIL
 Length of screen NIL
 Depth to top of screen NIL
 Diameter of finished hole 4"

Pumping Test
 Static level 50'
 Test-pumping rate 3 G.P.M.
 Pumping level 55'
 Duration of test pumping 3 hrs.
 Water clear or cloudy at end of test CLOUDY
 Recommended pumping rate 3 G.P.M.
 with pump setting of 75 feet below ground surface

Well Log	Water Record			
	From ft.	To ft.	Depth(s) at which water(s) found	Kind of water (fresh, salty, sulphur)
Overburden and Bedrock Record				
CLAY & STONES	0	15		
BLUE CLAY & STONES	15	98		
GRAVEL	98	99	98-99	FRESH

For what purpose(s) is the water to be used? HOUSE
 Is well on upland, in valley, or on hillside? UPLAND
 Drilling or Boring Firm MARVIN JOHNSTON
 Address R.R. # 1 PAINCOURT
 Licence Number 3359
 Name of Driller or Borer MARVIN JOHNSTON
 Address R.R. # 1 PAIN COURT
 Date April 14 69
Marvin Johnston
 (Signature of Licensed Drilling or Boring Contractor)





33 No 2640

UTM 17R 41915010E

5R 46931010N

Elev. 5R 206100

Basin 231 Kent

Con. 1 W.C.R. Lot 27

The Ontario Water Resources Commission Act

WATER WELL RECORD

Township, Village, Town or City *Harwich*
Date completed *March 15th* 19*62*
(day month year)

Address *R.R. 3 Chatham Ont.*

Casing and Screen Record

Inside diameter of casing *4"*
Total length of casing *70 ft*
Type of screen *X*
Length of screen *X*
Depth to top of screen *—*
Diameter of finished hole *4"*

Pumping Test

Static level *15 ft*
Test-pumping rate *150 gpm* G.P.M.
Pumping level *45 ft*
Duration of test pumping *1 hour*
Water clear or cloudy at end of test *clear*
Recommended pumping rate *150 gpm* G.P.M.
with pump setting of *5.0 ft* feet below ground surface

Well Log

Water Record

Overburden and Bedrock Record	From ft.	To ft.	Depth(s) at which water(s) found	Kind of water (fresh, salty, sulphur)
<i>Hard Clay</i>	<i>1</i>	<i>15</i>	<i>70</i>	<i>Fresh</i>
<i>Soft Clay</i>	<i>15</i>	<i>35</i>		
<i>Hard Pan</i>	<i>35</i>	<i>68</i>		
<i>Hard gravel</i>	<i>68</i>	<i>70</i>		

For what purpose(s) is the water to be used? *Domestic*

Is well on upland, in valley, or on hillside? *Level*

Drilling or Boring Firm *Arval Steyer*

Address *236 Grand E.*

Licence Number *2511*

Name of Driller or Borer *Arval Steyer*

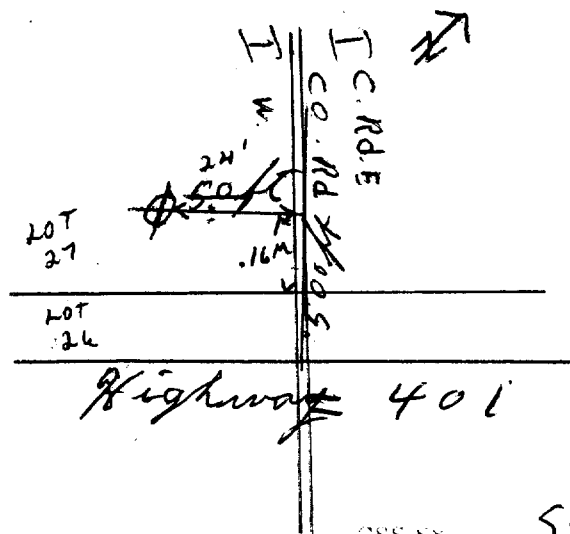
Address *236 Grand E.*

Date *March 15*

Arval Steyer
(Signature of Licensed Drilling or Boring Contractor)

Location of Well

In diagram below show distances of well from road and lot line. Indicate north by arrow.





Ontario

WATER WELL RECORD

405/8E

1. PRINT ONLY IN SPACES PROVIDED
2. CHECK CORRECT BOX WHERE APPLICABLE

11

3306048

MUNICIP. 33.004

CON. C.R. W. 01

COUNTY OR DISTRICT: Kent
TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE: Harwich
CON., BLOCK, TRACT, SURVEY, ETC.: CON 1 WCR. 022
DATE COMPLETED: 48-53
DAY 12 NO. 10 YR. 74
ELEVATION: 622
BASIN CODE: 23
MAY 05, 1976

LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET	
				FROM	TO
Brown	Sand		Hard	1	10
Blue	Clay	Pebbles	Soft	10	94
Black	Gravel		Hard	94	95

31 0.010628 0.09430512 0.095811

41 WATER RECORD

WATER FOUND AT - FEET	KIND OF WATER			
10-13	<input checked="" type="checkbox"/> FRESH	<input type="checkbox"/> SALTY	<input type="checkbox"/> SULPHUR	<input type="checkbox"/> MINERAL
15-18	<input type="checkbox"/> FRESH	<input type="checkbox"/> SALTY	<input type="checkbox"/> SULPHUR	<input type="checkbox"/> MINERAL
20-23	<input type="checkbox"/> FRESH	<input type="checkbox"/> SALTY	<input type="checkbox"/> SULPHUR	<input type="checkbox"/> MINERAL
25-28	<input type="checkbox"/> FRESH	<input type="checkbox"/> SALTY	<input type="checkbox"/> SULPHUR	<input type="checkbox"/> MINERAL
30-33	<input type="checkbox"/> FRESH	<input type="checkbox"/> SALTY	<input type="checkbox"/> SULPHUR	<input type="checkbox"/> MINERAL

51 CASING & OPEN HOLE RECORD

INSIDE DIAM. INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET
10-11	<input checked="" type="checkbox"/> STEEL	1/4"	0-0095
17-18	<input type="checkbox"/> STEEL		
24-25	<input type="checkbox"/> STEEL		

SCREEN

SIZE(S) OF OPENING (SLOT NO.)	DIAMETER INCHES	LENGTH FEET

61 PLUGGING & SEALING RECORD

DEPTH SET AT - FEET	MATERIAL AND TYPE
10-13	
18-21	
26-29	

71 PUMPING TEST

PUMPING TEST METHOD: PUMP SAILER

PUMPING RATE: 0006 GPM

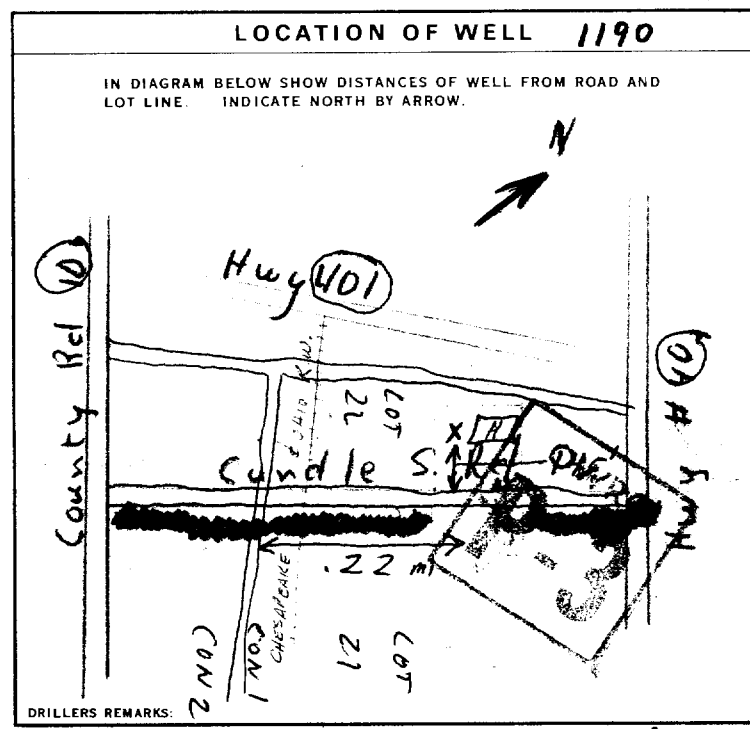
DURATION OF PUMPING: 02 HOURS 30 MINS

STATIC LEVEL FEET	WATER LEVEL END OF PUMPING FEET	WATER LEVELS DURING
020	030	030 (15 min), 030 (30 min), 030 (45 min), 030 (60 min)

RECOMMENDED PUMP TYPE: SHALLOW DEEP

RECOMMENDED PUMP SETTING: 080 FEET

RECOMMENDED PUMPING RATE: 0006 GPM



FINAL STATUS OF WELL 1

WATER USE 01

METHOD OF DRILLING 1

CONTRACTOR

NAME OF WELL CONTRACTOR: A. Bushey
ADDRESS: RR#1 Chatham
LICENCE NUMBER: 1448

NAME OF DRILLER OR BORER: P.G. Bushey
LICENCE NUMBER: 1448

SIGNATURE OF CONTRACTOR: [Signature]
SUBMISSION DATE: DAY 15 MO. 10 YR. 74

OFFICE USE ONLY

DATE OF INSPECTION: July 29/75
INSPECTOR: [Signature]

REMARKS: COVERED. LEFT SIDE OF HOUSE. N.H.

Appendix C9 **Essex Region/Chatham-Kent Region
Groundwater Study Volume 1:
Geologic/Hydrogeologic Evaluation**

ESSEX, CHATHAM-KENT GROUNDWATER STUDY

- Legend
- Water Table (masl)**
- 174 - 175
 - 176 - 180
 - 181 - 185
 - 186 - 190
 - 191 - 195
 - 196 - 200
 - 201 - 205
 - 206 - 210
 - 211 - 215
 - 216 - 220
 - 221 - 225
 - 226 - 230
 - 10m Contour

WATER TABLE

Note:
The information conveyed by this map is regional in nature and is not suited for the use in site specific evaluations. Map should only be interpreted in conjunction with accompanying written report.

Digital Mapping Sources:
Base Mapping Features - Ministry of the Environment
Water Well Information - Ministry of the Environment

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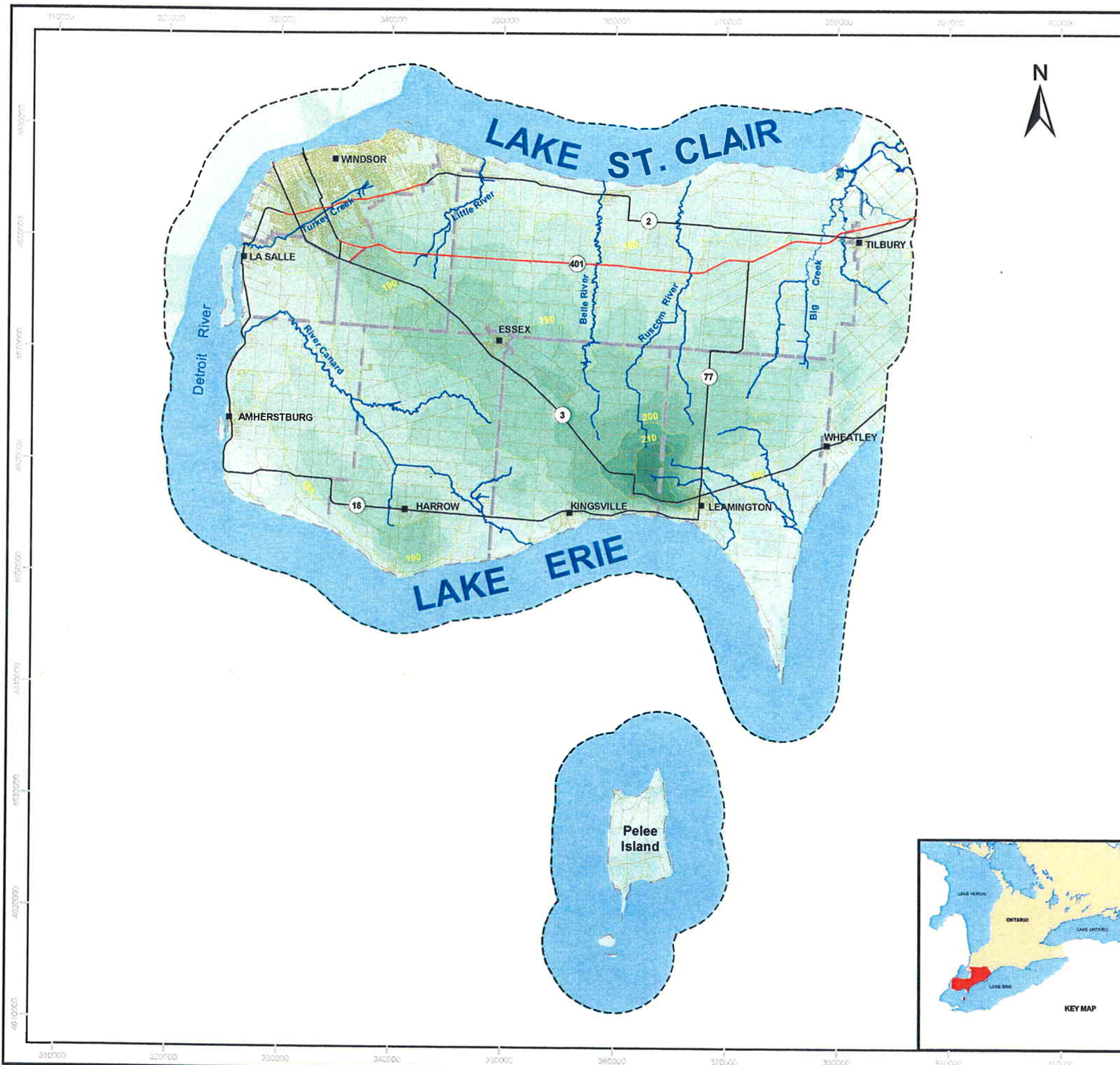


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14A

JANUARY 2004

Projection: UTM NAD83 ZONE 17





ESSEX, CHATHAM-KENT GROUNDWATER STUDY

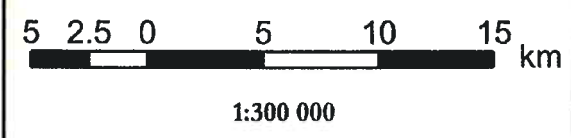
- Legend
- Water Table (masl)**
- 174 - 175
 - 176 - 180
 - 181 - 185
 - 186 - 190
 - 191 - 195
 - 196 - 200
 - 201 - 205
 - 206 - 210
 - 211 - 215
 - 216 - 220
 - 221 - 225
 - 226 - 230
 - 10m Contour

WATER TABLE

Note:
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Water Well Information - Ministry of the Environment

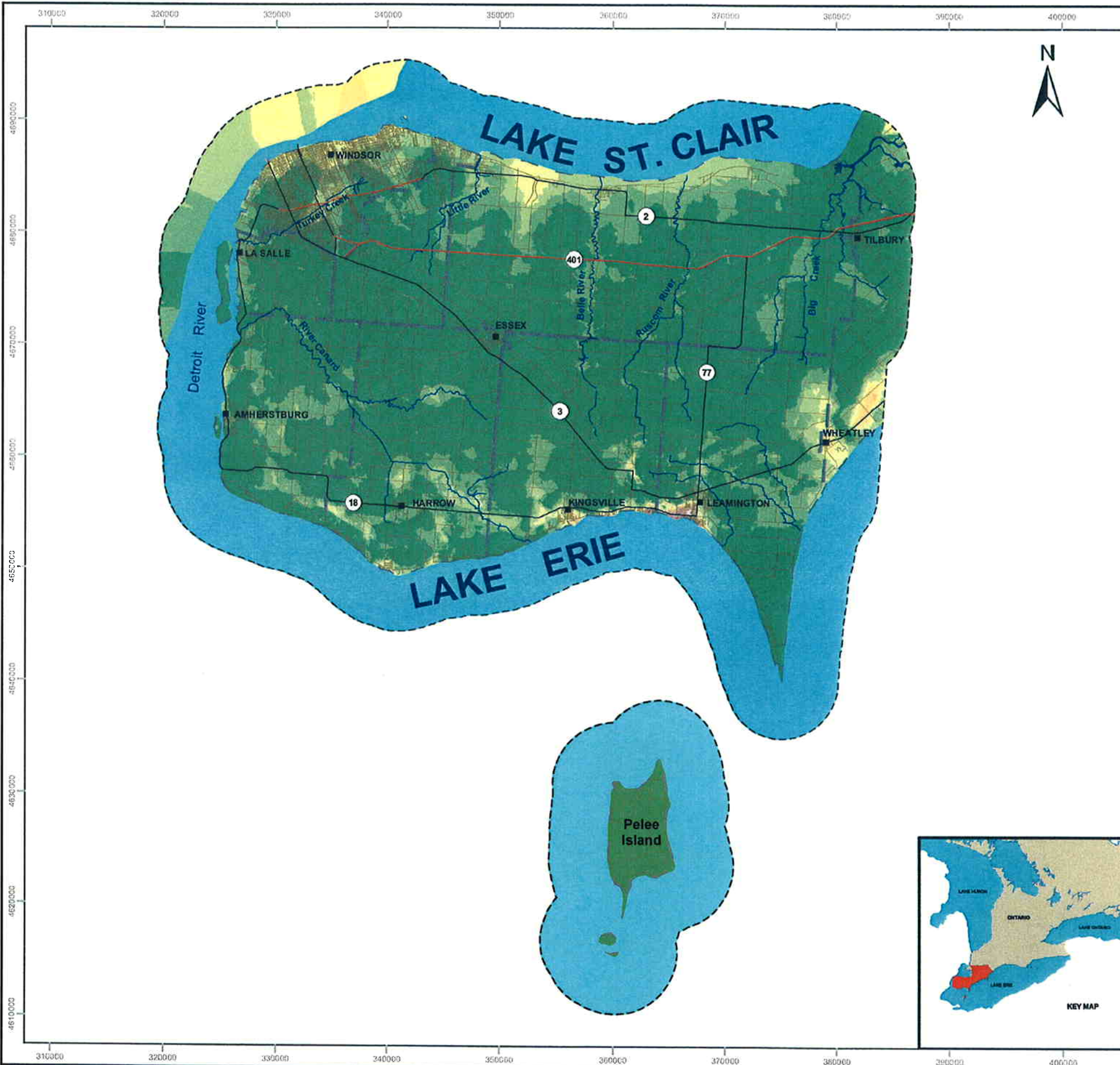
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14B
JANUARY 2004



Projection: UTM NAD83 ZONE 17



Essex Region
Conservation
Authority



ESSEX, CHATHAM-KENT GROUNDWATER STUDY

Legend

Water Table Depth (m)

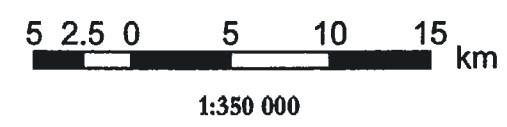
- 0 - 2
- 2 - 4
- 4 - 6
- 6 - 8
- 8 - 10
- 10 - 12
- 12 - 14
- 14 - 16
- 16 - 18
- 18 - 20
- 20 - 22

WATER TABLE DEPTH

Note:
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Digital Mapping Sources:
Base Mapping Features - Ministry of the Environment
Water Well Information - Ministry of the Environment

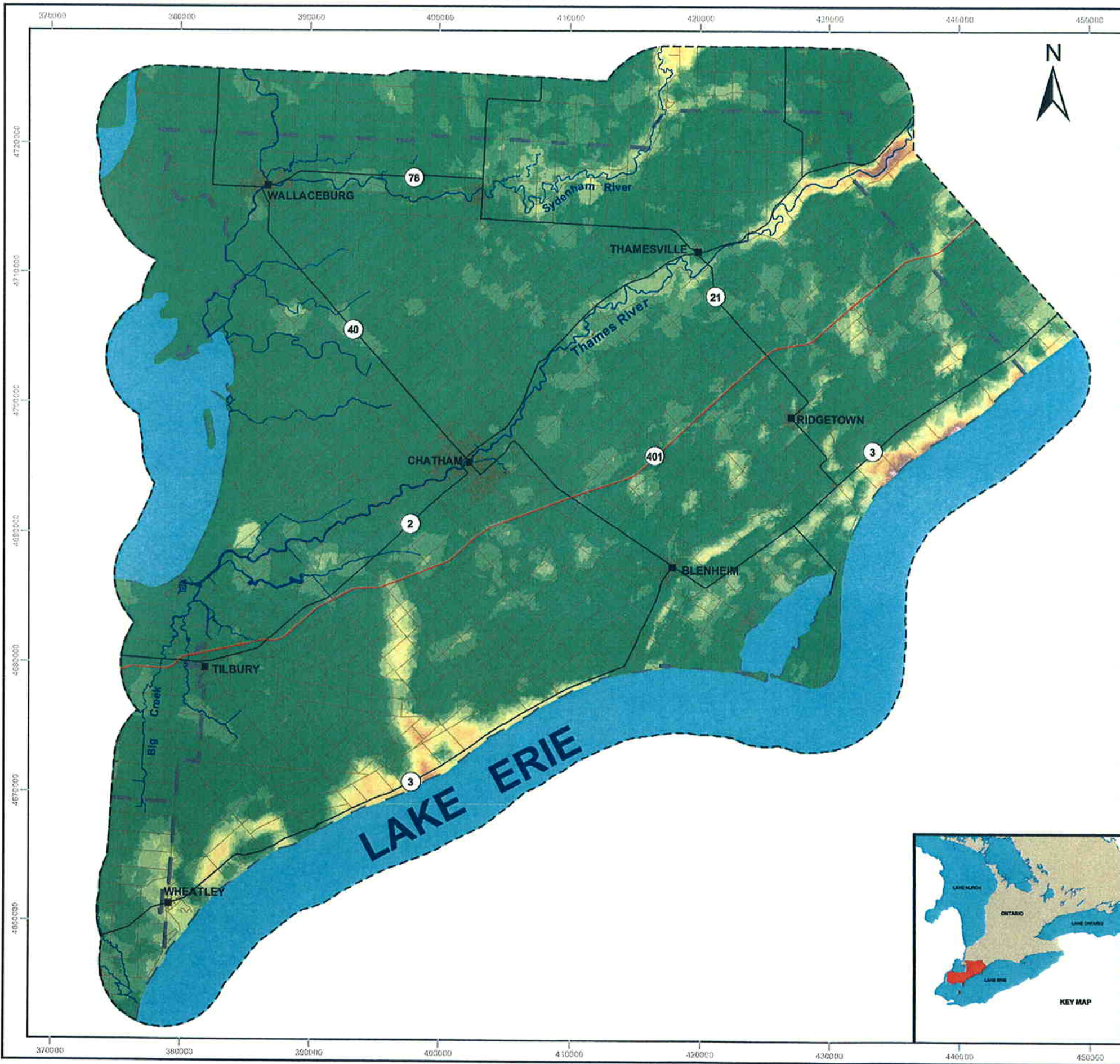
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15A
NOVEMBER 2004



Projection: UTM NAD83 ZONE 17



ESSEX, CHATHAM-KENT GROUNDWATER STUDY

Legend Water Table Depth (m)

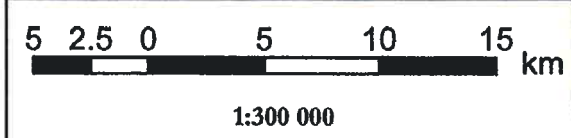
- 0 - 2
- 2 - 4
- 4 - 6
- 6 - 8
- 8 - 10
- 10 - 12
- 12 - 14
- 14 - 16
- 16 - 18
- 18 - 20
- 20 - 22
- 22 - 24
- 24 - 26
- 26 - 28

WATER TABLE DEPTH

Note:
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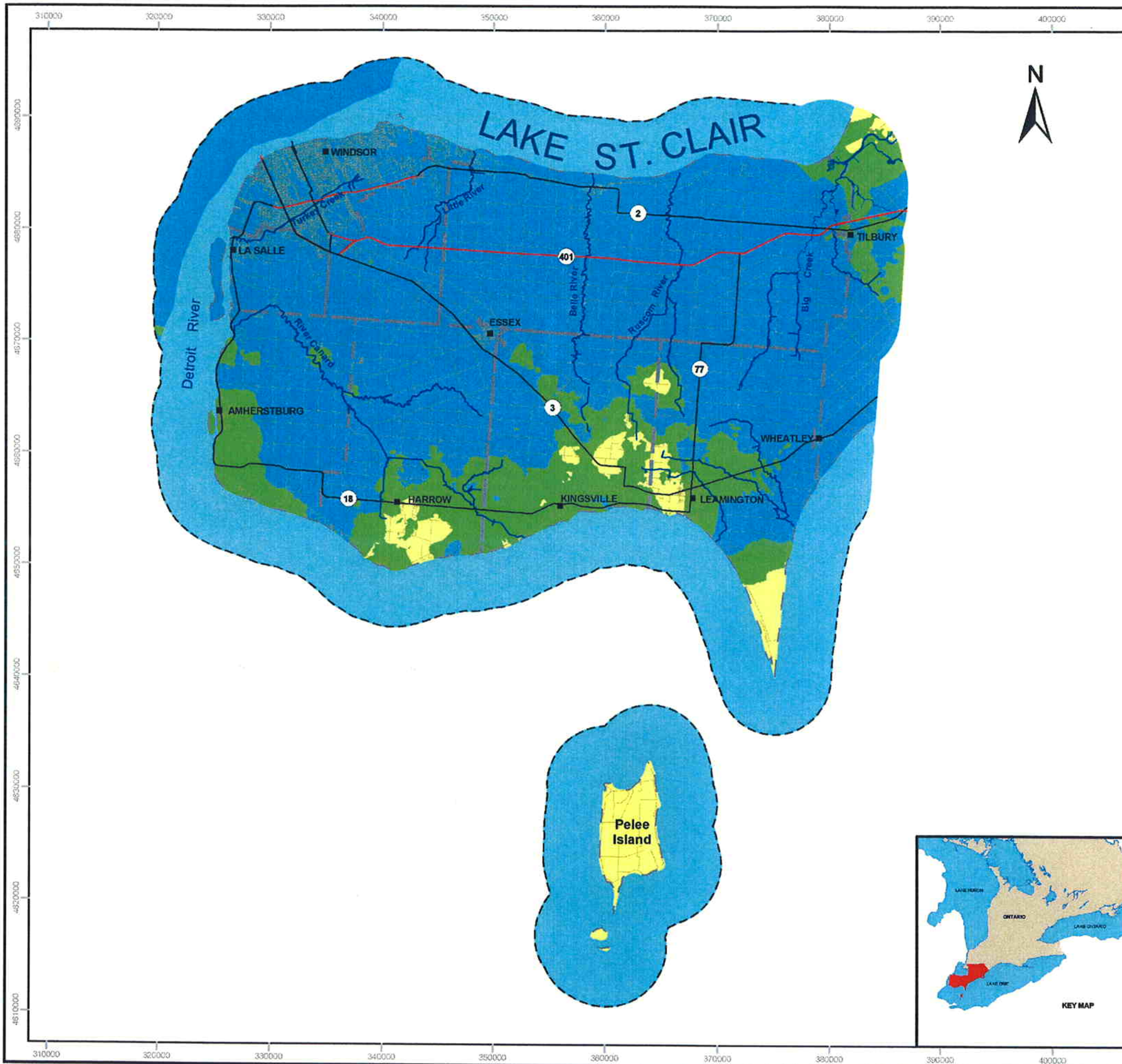
Digital Mapping Sources:
Base Mapping Features - Ministry of the Environment
Water Well Information - Ministry of the Environment

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15B
NOVEMBER 2004

Projection: UTM NAD83 ZONE 17



ESSEX, CHATHAM-KENT GROUNDWATER STUDY

Legend

Aquifer Intrinsic Susceptibility

- Low Susceptibility
- Medium Susceptibility
- High Susceptibility

AQUIFER INTRINSIC SUSCEPTIBILITY

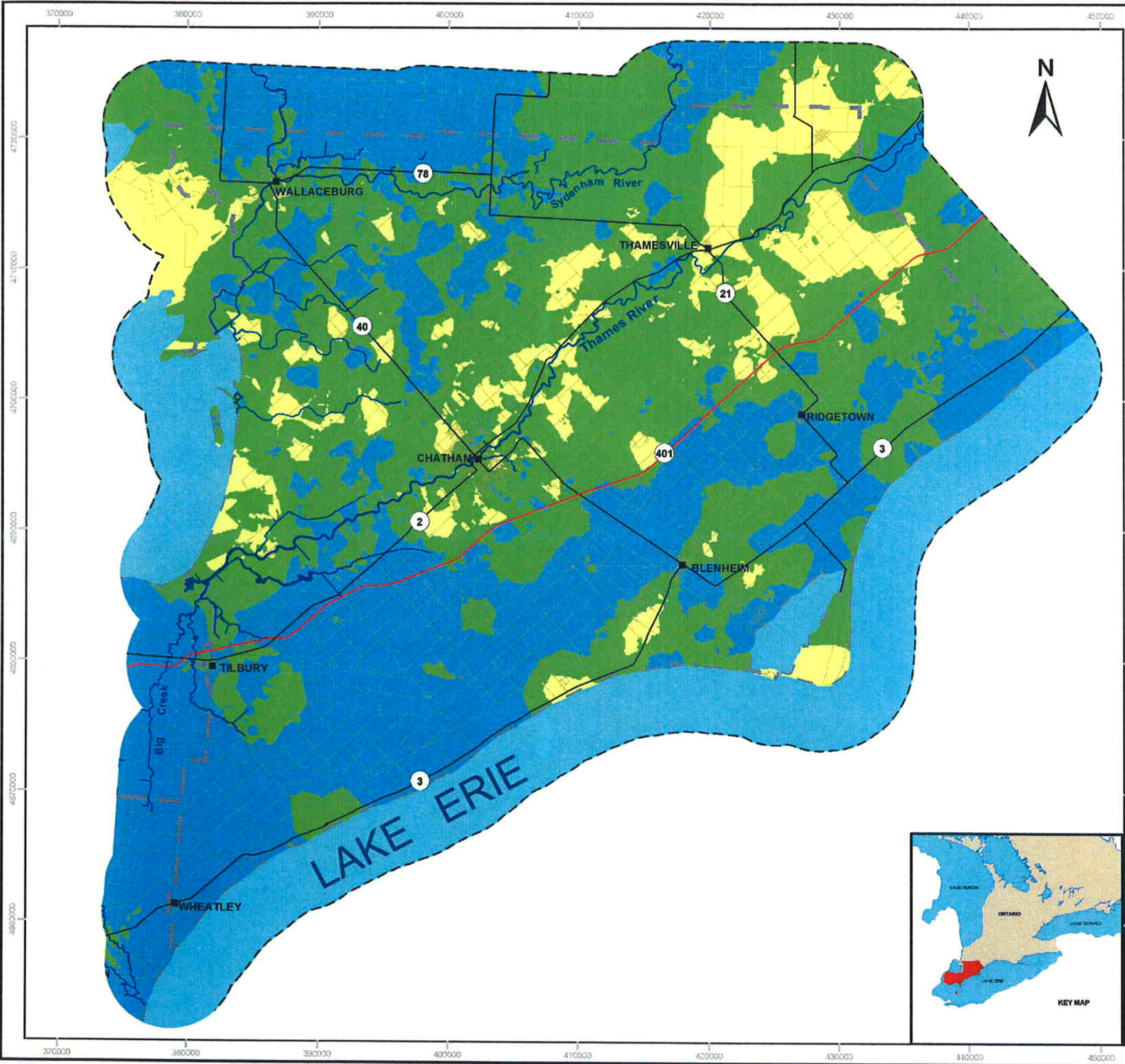
Note:
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Digital Mapping Sources:
Base Mapping Features - Ministry of the Environment
Water Well Information - Ministry of the Environment

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27A
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ESSEX, CHATHAM-KENT GROUNDWATER STUDY

Legend

Aquifer Intrinsic Susceptibility

- Low Susceptibility
- Medium Susceptibility
- High Susceptibility

AQUIFER INTRINSIC SUSCEPTIBILITY

Note:
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Base Mapping Features - Ministry of the Environment
Water Well Information - Ministry of the Environment

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1:300 000

27B

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Appendix C10 MECP and DFO Drainage Mapping

DFO Drainage Mapping



Legend

Drain Classification

- A
- B
- C
- D
- E
- F
- Not Rated

This map should not be relied on as a precise indicator of routes or locations, nor as a guide to navigation. The Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA) shall not be liable in any way for the use or any information on this map. of, or reliance upon, this map.

Appendix D Health Canada Electric and Magnetic Fields (EMF) Fact Sheet



Health
Canada

Santé
Canada

Your health and
safety... our priority.

Votre santé et votre
sécurité... notre priorité.

Electric and Magnetic Fields

Updated: November 2012

Original: November 2001

IT'S YOUR HEALTH

Electric and Magnetic Fields from Power Lines and Electrical Appliances

THE ISSUE

Some people are concerned that daily exposure to electric and magnetic fields may cause health problems.



ELECTRICITY AND ELECTRIC AND MAGNETIC FIELDS (EMFS)

Electricity delivered through power lines is important in today's society. It is used to light homes, prepare food, run computers and operate other household appliances, such as TVs and radios. In Canada, appliances that plug into a wall socket use electric power that travels back and forth at a frequency of 60 cycles per second (60 hertz). The frequency used with the distribution of electricity from power lines and electrical appliances is different than the frequencies used for [Wi-Fi](#), [cell phones](#), and [smart meters](#).

Every time you use electricity and electrical appliances, you are exposed to electric and magnetic fields (EMFs) at extremely low frequencies (ELFs). The term "extremely low" is described as any frequency below 300 hertz. EMFs produced by the transmission and use of electricity belong to this category.

EMFs are invisible forces that surround electrical equipment, power cords, and wires that carry electricity, including outdoor power lines.

- *Electric Fields:* These are formed whenever a wire is plugged into an outlet, even when the appliance is not turned on. The higher the voltage, the stronger the electric field.
- *Magnetic Fields:* These are formed when electric current is flowing within a device or wire. The greater the current, the stronger the magnetic field.

EMFs can occur separately or together. For example, when you plug the power cord for a lamp into a wall socket, it creates an electric field along the cord. When you turn the lamp on, the flow of current through the cord creates a magnetic field. Meanwhile, the electric field is still present.

Canada

POWER LINES AND YOUR HOME

EMFs are strongest when close to their source. As you move away from the source, the strength of the field fades rapidly. This means you are exposed to stronger EMFs when standing close to a source (e.g., right beside a transformer box or under a high voltage power line), and you are exposed to weaker fields as you move away.

When you are inside your home, the magnetic field from high voltage power lines and transformer boxes are often weaker than those from household electrical appliances.

Electric fields can be shielded using materials such as metal. Things like buildings and trees—and even the ground when power lines are buried—can block electric

CANADIANS EXPOSURE TO EMFS AT EXTREMELY LOW FREQUENCIES (ELFS)

On a daily basis, most Canadians are exposed to EMFs generated by household wiring, lighting, and any electrical appliance that plugs into the wall, including hair dryers, vacuum cleaners and toasters. In the workplace, common sources of EMFs include computers, air conditioning units, photocopiers, fax machines, fluorescent lights, electric heaters, and electric tools in machine shops, such as drills, power saws, lathes and welding machines.

EXPOSURE IN CANADIAN HOMES, SCHOOLS AND OFFICES PRESENT NO KNOWN HEALTH RISKS

There have been many studies on the possible health effects from exposure to EMFs at ELFs. While it is known that EMFs can cause weak electric currents to flow through the human body, the



intensity of these currents is too low to cause any known health effects. Some studies have suggested a possible link between exposure to ELF magnetic fields and certain types of childhood cancer, but at present this association is not established.

The International Agency for Research on Cancer (IARC) has classified ELF magnetic fields as “possibly carcinogenic to humans”. The IARC has noted the fact that some limited evidence exists that ELF magnetic fields might be a risk factor for childhood leukemia. However, the vast majority of research to date does not support a link between ELF magnetic field exposure and human cancers. At present, the evidence of a possible link between ELF magnetic field exposure and cancer risk is far from conclusive and more research is needed to clarify this “possible” link.

Health Canada is in agreement with both the World Health Organization and IARC that additional research in this area is warranted.

REDUCE YOUR RISK

Health Canada does not consider that any precautionary measures are needed regarding daily exposures to EMFs at ELFs. There is no conclusive evidence of any harm caused by exposures at levels found in Canadian homes and schools, including those

located just outside the boundaries of power line corridors.

THE GOVERNMENT OF CANADA'S ROLE

Health Canada, along with the World Health Organization, monitors research on EMFs and human health as part of its mission to help Canadians maintain and improve their health.

International exposure guidelines for exposure to EMFs at ELFs have been established by the International Commission on Non-Ionizing Radiation Protection (ICNIRP). These guidelines are not based on a consideration of risks related to cancer. Rather, the point of the guidelines is to make sure that exposures to EMFs do not cause electric currents or fields in the body that are stronger than the ones produced naturally by the brain, nerves and heart. EMF exposures in Canadian homes, schools and offices are far below these guidelines.

FOR MORE INFORMATION

- Health Canada’s [Electric and magnetic fields](http://www.hc-sc.gc.ca/ewh-semt/radiation/cons/electri-magnet/index-eng.php) at: www.hc-sc.gc.ca/ewh-semt/radiation/cons/electri-magnet/index-eng.php
- The World Health Organization – [Electromagnetic fields and public health](http://www.who.int/mediacentre/factsheets/fs322/en/index.html):
 - [Exposure to extremely low frequency magnetic fields](http://www.who.int/mediacentre/factsheets/fs322/en/index.html) at: www.who.int/mediacentre/factsheets/fs322/en/index.html
 - [Extremely low frequency magnetic fields and cancer](http://www.who.int/docstore/peh-mf/publications/facts_press/efact/efs205.html) at: www.who.int/docstore/peh-mf/publications/facts_press/efact/efs205.html
 - [Extremely low frequency magnetic fields and cancer](http://www.who.int/docstore/peh-emf/publications/facts_press/efact/efs263.html) at: www.who.int/docstore/peh-emf/publications/facts_press/efact/efs263.html



Health
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Santé
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Electric and Magnetic Fields

Updated: November 2012

Original: November 2001

IT'S YOUR HEALTH

FOR INDUSTRY AND PROFESSIONALS

- The International Agency for Research on Cancer (IARC) *Volume 80 – Non-ionizing Radiation, Part 1: Static and Extremely Low-Frequency (ELF) Electric and Magnetic Fields* at: <http://monographs.iarc.fr/ENG/Monographs/vol80/volume80.pdf>
- IARC Carcinogen at: <http://monographs.iarc.fr/ENG/>

RELATED RESOURCES

- Health Canada, *It's Your Health*:
 - Safety of Wi-Fi Equipment at: www.hc-sc.gc.ca/hl-vs/iyh-vsv/prod/
 - Safety of Cell Phones and Cell Phone Towers at: www.hc-sc.gc.ca/hl-vs/iyh-vsv/prod/cell-eng.php
- For safety information about food, health and consumer products, visit the [Healthy Canadians](http://www.healthycanadians.gc.ca) website at: www.healthycanadians.gc.ca
- For more articles on health and safety issues go to the *It's Your Health* web section at: www.health.gc.ca/iyh

You can also call toll free at
1-866-225-0709 or TTY at
1-800-267-1245*

Updated: November 2012
Original: November 2001

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Canada