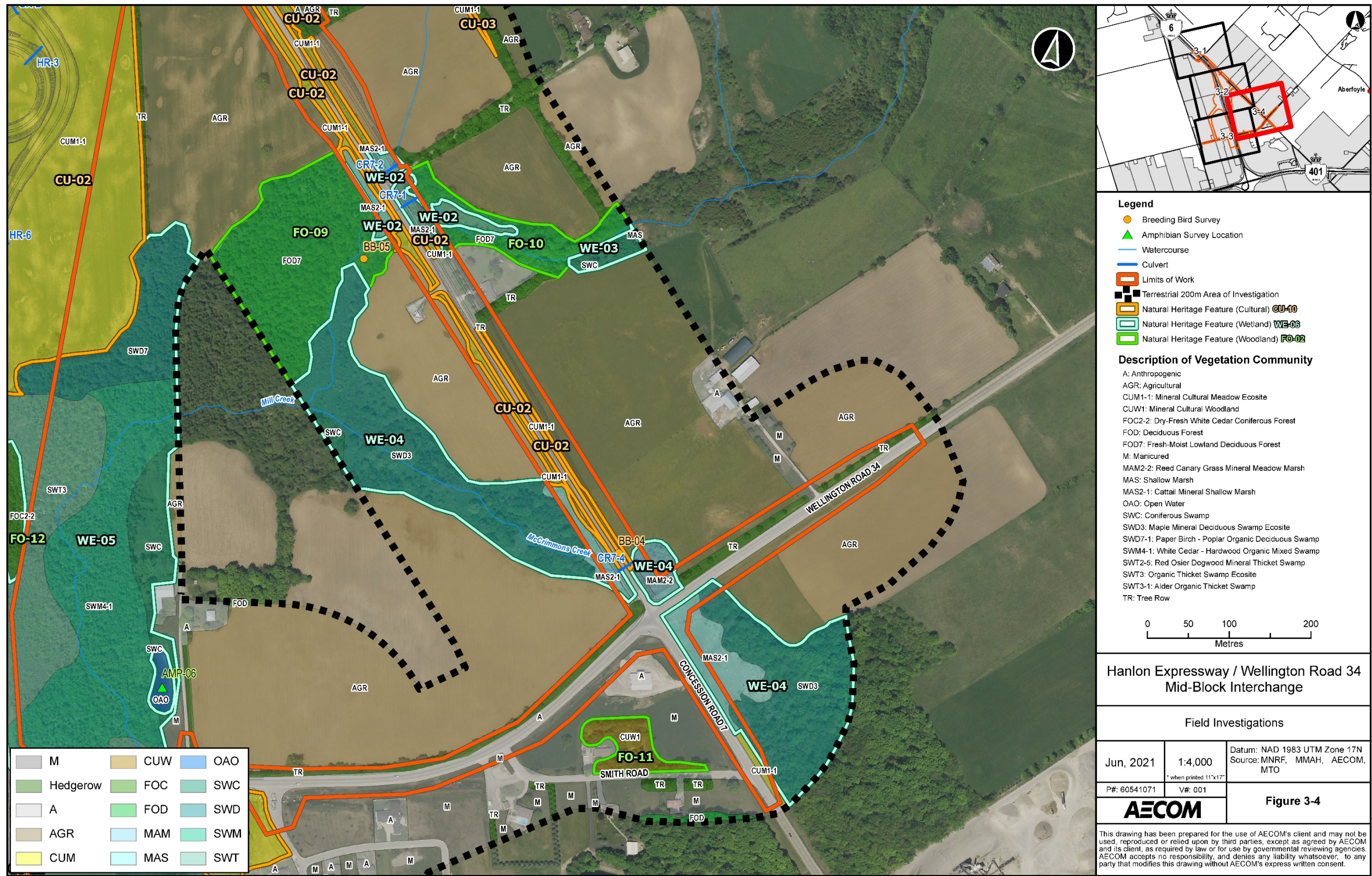


Figure 3: Field Investigations



A total of 321 plant species were observed throughout the entire Study Area, of which 68% are considered native. A detailed plant inventory list for the Study Area can be found in **Appendix C2**. The Study Area had a combined Floristic Quality Index (FQI) score of 64 with 33% of species observed falling within the lowest CC sensitivity ranking, 52% in the moderate sensitivity ranking, 13% in the high sensitivity ranking, and 2% in the highest sensitivity ranking. The high overall FQI score and percentage of species with moderate, high or highest sensitivity ratings indicate that, on average, species observed within the Study Area are likely to have more specific habitat requirements and be more sensitive to disturbance. A total of 19 species observed in the Study Area have a Weediness Index Value of -3, indicating a high potential for invasiveness. Examples of species with a Weediness Index Value of -3 observed in the Study Area include common buckthorn (*Rhamnus cathartica*), glossy buckthorn (*Frangula alnus*) and Tatarian honeysuckle (*Lonicera tatarica*). It should also be noted that European reed (*Phragmites australis* ssp. *australis*) was also observed within the Study Area; this species has a high potential for invasiveness but does not have an associated Weediness Index Value. **Table 4** below highlights the key findings from the overall botanical inventory within the Study Area.

Table 4: Summary of Botanical Inventory Results

Species Diversity	# of Species
Total Species:	321
Native Species:	219
Exotic Species	102
Regionally Significant Species	13
S1-S3 Species ¹	3
S4 Species ¹	5
S5 Species ¹	203
Co-efficient of Conservatism (CC)	# of Species
CC 0 to 3 (lowest sensitivity)	71
CC 4 to 6 (moderate sensitivity)	114
CC 7 to 8 (high sensitivity)	29
CC 9 to 10 (highest sensitivity)	4
Average CC value	4.34
FQI value	64.07

¹ **S rank:** The natural heritage provincial ranking system (provincial S-rank) is used by the MNRF Natural Heritage Information Centre (NHIC) to set protection priorities for rare species and natural communities. The following status definitions were taken from NatureServe Explorer's (2015) National and Subnational Conservation Status Definitions available at <http://explorer.natureserve.org/nsranks.htm>:

S1 – Critically Imperiled—Critically imperilled in the province because of extreme rarity (often 5 or fewer occurrences) or because of some factor(s) such as very steep declines making it especially vulnerable to extirpation from the province.

S2—Imperiled—Imperiled in the province because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the province.

S3 - Vulnerable—Vulnerable in the province due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation.

S4 – Apparently Secure—Uncommon but not rare; some cause for long-term concern due to declines or other factors.

S5 – Secure—Common, widespread, and abundant in the nation or state/province.

In addition to the vegetation information described above, a tree inventory was also completed. The *Hanlon Expressway / Wellington Road 34 Midblock Interchange (G.W.P. 3059-20-00) Tree Inventory Report* (AECOM, 2021) is provided in **Appendix D**.

4.2.3 Determination of Significance

Of the 321 plant species observed within the Study Area, no SAR plants were observed. However, three (3) plant SOCC were recorded. These included: honey locust (*Gleditsia triacanthos*), hispid buttercup (*Ranunculus hispidus* var. *hispidus*) and field sedge (*Carex conoidea*). These species are ranked either as S2 or S3 but are not designated as Special Concern, Threatened or Endangered on the SARO list (Refer to **Table 5**). The habitats of these plants will be addressed as SWH in **Section 4.3**.

A total of 13 plant species considered regionally rare in Wellington County were also observed in the Study Area. These provincially and regionally rare plants are documented in **Table 5**. No Provincially rare vegetation communities were identified within the Study Area.

Table 5: Significant Vegetation Communities and Flora

Provincial or Regional	Species	Significance	Property Observed
Provincially Rare Species	honey locust (<i>Gleditsia triacanthos</i>)	S2?	P009, P010, P014, P019 and P029
Provincially Rare Species	hispid buttercup (<i>Ranunculus hispidus</i> var. <i>hispidus</i>)	S3	P018, P019, P020, P021, P027 and P029
Provincially Rare Species	field sedge (<i>Carex conoidea</i>)	S3	P010, P012, P018 and P028
Regionally Rare Species – Wellington County	marsh horsetail (<i>Equisetum palustre</i>)	R (Wellington County)	P028
Regionally Rare Species – Wellington County	meadow horsetail (<i>Equisetum pratense</i>)	R (Wellington County)	P018 and P028
Regionally Rare Species – Wellington County	wood horsetail (<i>Equisetum sylvaticum</i>)	R (Wellington County)	P010, P014, P017, P018, P028 and P030
Regionally Rare Species – Wellington County	red pine (<i>Pinus resinosa</i>)	R (Wellington County)	P10
Regionally Rare Species – Wellington County	blue cohosh (<i>Caulophyllum giganteum</i>)	R (Wellington County)	P009
Regionally Rare Species – Wellington County	wild coffee (<i>Triosteum aurantiacum</i>)	R (Wellington County)	P014
Regionally Rare Species – Wellington County	hobblebush (<i>Viburnum lantanoides</i>)	R (Wellington County)	P028

Provincial or Regional	Species	Significance	Property Observed
Regionally Rare Species – Wellington County	one-sided shinleaf (<i>Orthilia secunda</i>)	R (Wellington County)	P009
Regionally Rare Species – Wellington County	ninebark (<i>Physocarpus opulifolius</i>)	R (Wellington County)	P010, P011, P014 and P027
Regionally Rare Species – Wellington County	northern bedstraw (<i>Galium boreale</i>)	R (Wellington County)	P014, P019 and P020
Regionally Rare Species – Wellington County	hairy beard-tongue (<i>Penstemon hirsutus</i>)	R (Wellington County)	P009, P010, P014, P017, P018, P019, P021, P027, P028, P029 and P031,
Regionally Rare Species – Wellington County	silvery sedge (<i>Carex canescens</i> ssp. <i>Canescens</i>)	R (Wellington County)	P018 and P027
Regionally Rare Species – Wellington County	pointed broom sedge (<i>Carex scoparia</i>)	R (Wellington County)	P017, P018, P024 and P028

4.3 Wildlife and Wildlife Passage

4.3.1 Background Data

The background information review identified the presence of deer winter areas (Stratum 2) within the Study Area. This type of SWH is identified and designated by the MNRF. The response to the request for information did not include any other information pertaining to wildlife habitat within the Study Area. MNRF recommended conducting a botanical inventory and ELC surveys of areas that may be affected by the proposed works in order to identify and classify potential SAR habitat.

4.3.2 Field Investigations

4.3.2.1 Breeding Bird Surveys

Breeding bird surveys were conducted in various habitats representative of the Study Area, including forest, woodland, thicket, meadow and marsh. A total of 49 point count stations were established within the Study Area. While habitat is concentrated along riparian corridors, migratory birds may also nest within the ROW where trees, shrubs or dense ground vegetation cover exist.

A total of 56 species were observed during the breeding bird surveys (Refer to **Appendix E**) and incidentally during other field investigations conducted within the Study Area (refer to **Appendix F**). Species observed includes the following migratory birds listed as Threatened under the *ESA* and/or Schedule 1 of the *SARA*: barn swallow (*Hirundo rustica*), bobolink, and eastern meadowlark.

Eastern wood-pewee (*Contopus virens*), a SOCC, was also observed within the Study Area. Eastern wood-pewee were heard calling in deciduous forest communities near point count stations BB-06 and BB-07 and within the deciduous forest community located within properties P021, P021a, P022 and P023. The habitats of these SOCC are considered SWH and are discussed in the SWH subsection below.

Structure Survey for Nesting Birds

The following existing culverts are located within the Study Area: H6-2, CR7-1, CR7-2, CR7-3, CR7-4, SR-4, SR-5

SR-6, SR-7 (A&B). Field investigations confirmed that these culverts were corrugated steel pipes (CSPs). CSPs do not typically support barn swallow nesting habitat as the species cannot affix their nests to this material type and shape. As well, no other nesting birds were noted at any of the culverts assessed.

Amphibian Surveys: Vernal Pool Assessment and Amphibian Calling Surveys

A total of six (6) locations within the Study Area were identified as potential amphibian breeding habitats based on aerial photo interpretation and the SWH assessment. One (1) site, AMP-06, could not be surveyed due to property access restrictions. The remaining five (5) sites were confirmed potentially suitable breeding habitat, either containing permanent or possibly seasonal standing water, during a daytime site visit in early 2018. Amphibian night call surveys were performed at the remaining five (5) monitoring stations, of which the results are summarized in **Table 6**. The location of each station is shown in **Figure 3**.

Spring peeper (*Pseudacris crucifer*), wood frog (*Lithobates sylvaticus*), gray treefrog (*Hyla versicolor*), northern leopard frog (*Lithobates pipiens*), green frog (*Rana clamitans*) and American toad (*Anaxyrus americanus*) were heard calling during at least one (1) round of survey at the following monitoring stations: AMP-01, AMP-02, AMP-03, AMP-04 and AMP-05. However, only AMP-01 and AMP-02 exhibited a sufficient number and abundance of indicator species to meet the significant amphibian breeding habitat criteria as defined in the Significant Wildlife Habitat Criteria Schedule for Ecoregion 6E (MNR, 2015).

Table 6: Summary of Amphibian Survey Conditions and Results

Monitoring Station ID and Property ID	Date, Time and Weather Conditions	Amphibian Night Call Survey Results Round 1	Amphibian Night Call Survey Results Round 2	Amphibian Night Call Survey Results Round 3
AMP-01 (P010)	<i>Date:</i> 2018-04-25 <i>Start – End Time:</i> 21:44 – 21:48 <i>Beaufort Wind Scale:</i> 4 <i>Cloud Cover (%):</i> 100 <i>Background Noise:</i> 2 <i>Air Temperature (°C):</i> 2 <i>Precipitation:</i> None	2018-04-25 21:44 – 21:48 0 0 1 18 None	2018-05-23 21:43 – 21:48 0 0 1 18 None	2018-06-18 21:54 – 21:57 5 60 2 22 None
AMP-01 (P010)	<i>Results</i>	Two (2) wood frogs heard calling. Full chorus of spring peepers heard calling outside of the 100 m survey area.	Full chorus of spring peepers heard calling. As well, a chorus of gray tree frog were heard calling outside of the 100 m survey area.	Full chorus of spring peepers heard calling outside of the 100 m survey area.
AMP-02 (P010)	<i>Date:</i> 2018-04-25 <i>Start – End Time:</i> 21:54 – 21:58 <i>Beaufort Wind Scale:</i> 4 <i>Cloud Cover (%):</i> 100 <i>Background Noise:</i> 2 <i>Air Temperature (°C):</i> 2 <i>Precipitation:</i> None	2018-04-25 21:54 – 21:58 4 0 1 20 None	2018-05-23 21:32 – 21:37 0 0 1 20 None	2018-06-18 21:41 – 21:44 5 60 2 22 None
AMP-02 (P010)	<i>Results</i>	A chorus of spring pepper, one (1) northern leopard frog, four (4) wood frogs heard calling.	Choruses of spring pepper and grey treefrog heard calling. Another chorus of gray tree frog heard calling outside of the 100 m Study Area.	Three (3) grey treefrog heard calling. Another single gray tree frog heard calling outside of the 100 m Study Area.
AMP- 03 (P012a)	<i>Date:</i> 2018-04-25 <i>Start – End Time:</i> 22:15 – 22:18 <i>Beaufort Wind Scale:</i> 2 <i>Cloud Cover (%):</i> 100 <i>Background Noise:</i> 3 <i>Air Temperature (°C):</i> 2 <i>Precipitation:</i> None	2018-04-25 22:15 – 22:18 2 0 2 20 None	2018-05-23 21:12 – 21:17 0 0 2 20 None	2018-06-18 21:17 – 21:23 4 70 3 23 None
AMP- 03 (P012a)	<i>Results</i>	No amphibians calling	Chorus of spring peepers and eight (8) gray treefrog heard calling. Another chorus of spring peeper and four (4) additional gray treefrogs also heard calling outside of the 100 m Study Area.	No amphibians calling. Pond was found to be dry.

Ministry of Transportation

Hanlon Expressway / Wellington Road 34 Midblock Interchange (G.W.P. 3059-20-00)

Terrestrial Ecosystem Existing Conditions and Impact Assessment Report

Monitoring Station ID and Property ID	Date, Time and Weather Conditions	Amphibian Night Call Survey Results Round 1	Amphibian Night Call Survey Results Round 2	Amphibian Night Call Survey Results Round 3
AMP-04 (P014)	<i>Date:</i> 2018-04-25 <i>Start – End Time:</i> 22:32 – 22:36 <i>Beaufort Wind Scale:</i> 4 <i>Cloud Cover (%):</i> 100 <i>Background Noise:</i> 3 <i>Air Temperature (°C):</i> 2 <i>Precipitation:</i> None	2018-04-25 22:32 – 22:36 4 100 3 2 None	2018-05-23 22:00 – 22:03 0 0 4 18 None	2018-06-18 21:16 – 21:19 5 70 4 22 None
AMP-04 (P014)	<i>Results</i>	A chorus of spring peeper was heard calling.	No amphibians calling	No amphibians calling
AMP-05 (P028)	<i>Date:</i> 2018-04-26 <i>Start – End Time:</i> 21:48 – 21:51 <i>Beaufort Wind Scale:</i> 1 <i>Cloud Cover (%):</i> 100 <i>Background Noise:</i> 4 <i>Air Temperature (°C):</i> 5 <i>Precipitation:</i> None	2018-04-26 21:48 – 21:51 1 100 4 5 None	2018-05-23 22:09 – 22:14 0 0 2 18 None	2018-06-18 22:25 – 22:28 4 70 3 22 None
AMP-05 (P028)	<i>Results</i>	No amphibians calling within the 100 m Study Area. Northern leopard frog and wood frog heard calling outside of the 100 m Study Area.	One (1) American toad heard calling.	Three (3) green frog heard calling.
AMP-06 (P018)	–	Site access to this location was not granted.	Site access to this location was not granted.	Site access to this location was not granted.
AMP-06 (P018)	<i>Results</i>	N/A	N/A	N/A

Notes: Background noise is indicated using the following background noise codes reproduced from the Marsh Monitoring Program Participants Handbook (BSC, 2008)

0 – No appreciable effect (e.g., owl calling)

1 – Slightly affecting sampling (e.g., distant traffic, dog barking, car passing)

2 – Moderately affecting sampling (e.g., distant traffic, 2 to 5 cars passing)

3 – Seriously affecting sampling (e.g., continuous traffic nearby, 6 to 10 cars passing)

4 – Profoundly affecting samplings (e.g., continuous traffic passing, construction noise)

Significant Wildlife Habitat

Several candidate and confirmed SWH types were identified within the Study Area through both desktop review and field investigations. **Table 7** presents a summary of the identified candidate and confirmed SWH and their associated property IDs. A description of all SWH within the Study Area, including those identified as candidate SWH is provided in **Appendix G**. The locations of confirmed SWH are illustrated in **Figure 4**.

Table 7: Candidate and Confirmed Significant Wildlife Habitats Within the Study Area

Habitats	Significant Wildlife Habitat	Candidate Features by Property ID	Confirmed Features by Property ID
Seasonal Concentration Areas of Animals	Bat Maternity Colonies	P006, P015, P016, P018, P018a, P018b, P018c, P019, P022, P022a, P027, P027a, P028, P029, P030, P030a, P031, P031a.	P007, P008, P009, P009a, P009b, P010, P010a, P011, P012, P012a, P014, P014a, P017, P017a, P018, P018a and P018d, P019, P019a, P019b, P024, P028, P029, P029a.
Seasonal Concentration Areas of Animals	Turtle Wintering Areas	P010, P015, P016 and P018	-
Seasonal Concentration Areas of Animals	Reptile Hibernacula	P005, P006, P007, P008, P009, P009a, P009b, P010, P011, P012, P012a, P012b, P012c, P014, P014a, P018a, P019, P019a, P019b, P027, P027a, P028, P029, P029a, P030, P030a, P031 and P031a.	-
Seasonal Concentration Areas of Animals	Deer Winter Areas		P028, P029, P029a, P030, P030a, P031 and P031a ¹
Specialized Habitat for Wildlife	Amphibian Breeding Habitat (Woodland)	-	P010, P010a & P011 (i.e., AMP-01 & AMP-02)
Specialized Habitat for Wildlife	Waterfowl Nesting Area	P010 & P10a	-
Habitats for Species of Conservation Concern	Marsh Breeding Bird Habitat	P009, P009a, P012, P012a, P012b, P014, P014a, P015, P016, P017, P017a, P018, P018a, P018c, P018d, P020a, P021, P021a, P022, P022a, P024, P027, P027a, P028, P029, P030, P030a, P031 and P031a	-

1. This feature type is identified and confirmed by MNRF.

Ministry of Transportation

Hanlon Expressway / Wellington Road 34 Midblock Interchange (G.W.P. 3059-20-00)

Terrestrial Ecosystem Existing Conditions and Impact Assessment Report

Habitats	Significant Wildlife Habitat	Candidate Features by Property ID	Confirmed Features by Property ID
Habitats for Species of Conservation Concern	Terrestrial Crayfish	P010, P014, P014a, P015, P016, P017, P017a, P021, P021a, P024, P027, P027a, P028, P029, P030, P030a, P031 and P031a	-
Special Concern and Rare Wildlife Species	Eastern Ribbonsnake	P009, P009a, P010, P012a, P014, P014a, P015, P016, P017, P017a, P018, P018a, P018b, P018c, P018d, P024, P027, P027a, P028, P029, P030, P030a, P031 and P031a.	-
Special Concern and Rare Wildlife Species	Monarch	P005, P006, P009, P009a, P010, P010a, P014 and P014a.	P012, P012a, P012b, P012c, P018a, P018c, P027 and P027a
Special Concern and Rare Wildlife Species	West Virginia White	P007, P008, P009, P009b, P018, P018c and P018d.	-
Special Concern and Rare Wildlife Species	Canada Warbler	P018, P018b, P018c, P018d, P024, P028, P029, P030, P030a, P031 and P031a	-
Special Concern and Rare Wildlife Species	Golden-Winged Warbler	P018, P018a, P018b, P018c and P018d.	-
Special Concern and Rare Wildlife Species	Eastern Wood-Pewee	P012a, P015, P016, P018, P018a, P018b, P018c, P018d, P024, P028, P029, P030, P030a, P031 and P031a	P007, P008, P009, P009a, P009b, P014, P014a, P021, P021a, P022, P022a, and P023
Special Concern and Rare Wildlife Species	Plant SOCC (honey locust, hispid buttercup and field sedge)	-	P009, P010, P014, P018, P019, P020, P021, P027, and P029.
Special Concern and Rare Wildlife Species	Red-Headed Woodpecker	P018, P018c and P018d.	-
Special Concern and Rare Wildlife Species	Snapping Turtle	P010, P012, P015, P016 and P018	-

Figure 4a&b: Confirmed and Candidate SWH

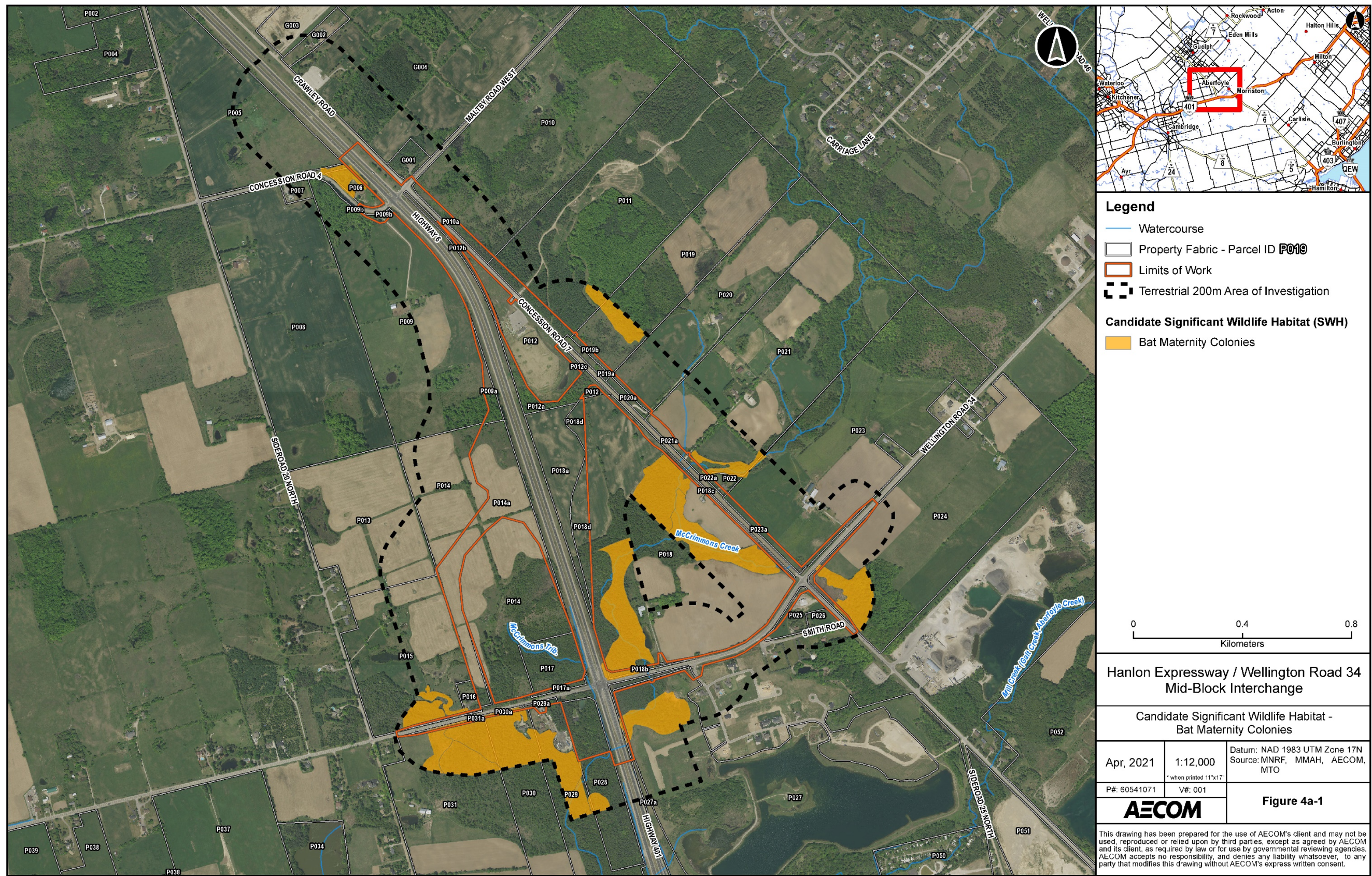


Figure 4a: Confirmed and Candidate SWH

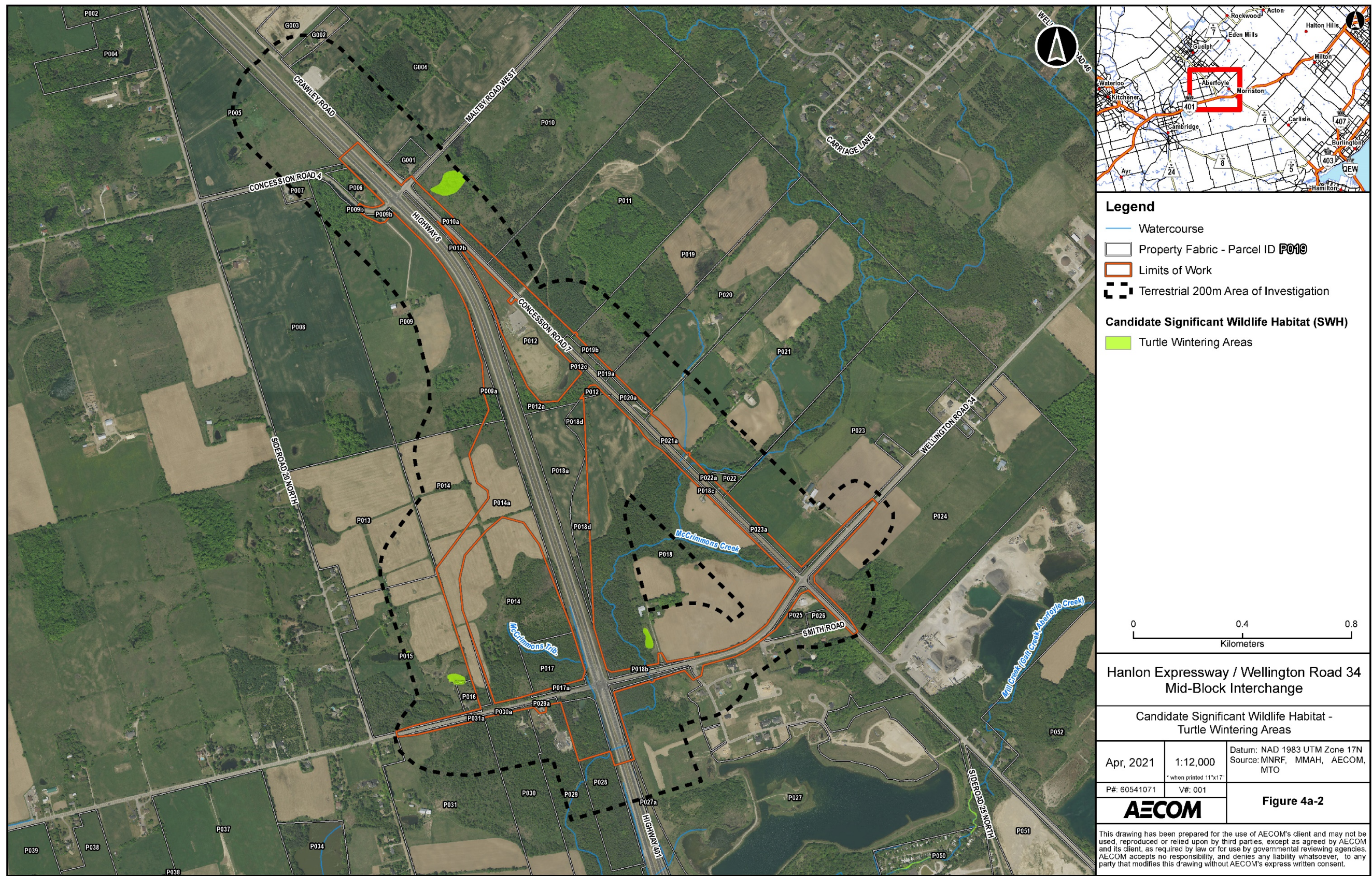


Figure 4a: Confirmed and Candidate SWH

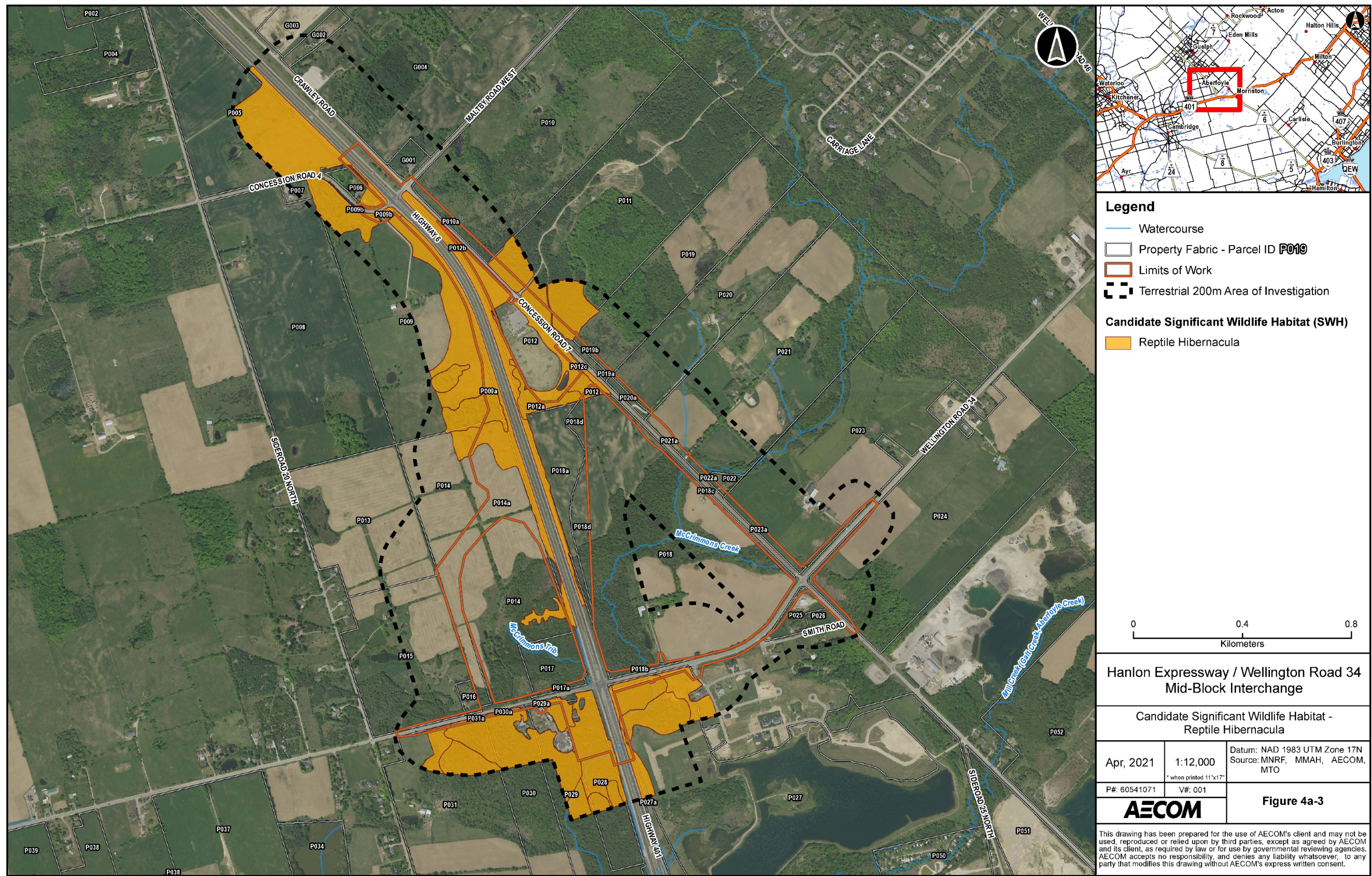


Figure 4a: Confirmed and Candidate SWH

