Agenda
The Township of Cavan Monaghan
Committee of Adjustment

Thursday, August 14, 2025
9:00 a.m.
Zoom

Members in attendance are asked to please turn off all electronic devices during the Meeting. Any special needs requirements pertaining to accessibility may be directed to the Clerk's Office prior to the meeting. Please be reminded meeting are livestreamed and recorded. Members may be participating remotely.

Pages

1. Call to Order

2. Land Acknowledgement

   We respectfully acknowledge that the Township of Cavan Monaghan is located on the Treaty 20 Michi Saagiig territory, in the traditional territory of the Michi Saagiig Anishnaabeg. We offer our gratitude to First Nations for their care for and teachings about these lands. May we honour these teachings.

3. Disclosure of Pecuniary Interest and the General Nature Thereof

4. Minutes

   4.1 Minutes of the Committee of Adjustment meeting held May 29, 2025 — 3 - 6

5. Reports from Planner

   5.1 Report - Planning Report 2025-28 Minor Variance Application MV-04-25, 12 Distillery Street — 7 - 14

   5.2 Correspondence Received

   5.3 Questions/Comments from the Committee

   5.4 Questions/Comments from Members of the Public

   5.5 Consideration of Application by the Committee

   5.6 Report - Planning Report 2025-29 Minor Variance Application MV-05-25, 59 Dranoel Drive (MW) — 15 - 96

5.7 Correspondence Received

5.8 Questions/Comments from the Committee

5.9 Questions/Comments from Members of the Public

5.10 Consideration of Application by the Committee

6. Adjournment

Minutes
The Township of Cavan Monaghan
Committee of Adjustment Meeting
Thursday, May 29, 2025
9:00 a.m.
Zoom

Those members in attendance remotely were:

Michael Semple	Chair
Aaron Glover	Member
Dave Grant	Member

Staff members in attendance:

Mark Froment	Deputy Clerk
Matt Wilkinson	Planner

1. Call to Order

Chair Michael Semple called the meeting to order at 9:01 a.m.

2. Land Acknowledgement

Chair Michael Semple recited the land acknowledgement.

3. Disclosure of Pecuniary Interest and the General Nature Thereof

There were no pecuniary interests noted.

4. Minutes

4.1 Minutes of the Committee of Adjustment meeting held February 13, 2025

CA-2025-04
Moved by: Glover
Seconded by: Grant
That the minutes of the Committee of Adjustment meeting held February 13, 2025, be approved as presented.

Recorded	**For**	**Against**
Glover	X	
Semple	X	
Grant	X	
Results	**3**	**0**

Carried

5. Reports

5.1 Report – PEB 2025-25 Minor Variance Application MV-03-25, 1748 Syer Line

Matt Wilkinson, Planner, reviewed the Application. The Application applies to the property at 1748 Syer Line in part of Lot 23, Concession 8 (Cavan).

The subject property is an existing lot of record approximately 0.6 hectares (1.5 acres) in size with approximately 38 metres (125 feet) of frontage on Syer Line. There is currently a martial arts studio on the property.

The Application seeks to add a total of 140 square metres (1,500 square feet) of additional floor area to the existing martial arts studio. The proposal adds approximately 74.3 square metres (800 square feet) of interior floor area and approximately 62.4 square metres (672 square feet) of floor area for an outdoor martial arts ring.

The subject property is zoned Hamlet Residential Exception Five (HR-5) as shown on Map D-4 to By-law No. 2018-58, as amended. The property was rezoned in 2021 to permit the martial arts use in an existing dance studio. The property is currently developed with a single detached dwelling, a detached garage, swimming pool, shipping container and a detached building that is used as a marital arts studio. The property is serviced with a well and septic system. No shipping containers are permitted in the HR-5 Zone. The landowner has agreed to remove the shipping container after the addition to the studio is completed.

The purpose and effect of the minor variance is to increase the maximum floor space for the martial arts studio from 200 square metres (2,150 square feet) to 340 square metres (3,650 square feet) and increase the maximum number of employees who do not reside on site from two (2) to four (4) full time equivalent employees.

Notice of the Application was circulated by first class, prepaid mail to all assessed persons within 60 metres (200 feet) of the subject property and to all required ministries and agencies and posted on the Township Website. A sign was also posted on the Syer Line frontage of the property.

As of the date of drafting of this Report, no public comment had been received. Notice of the application was also circulated to all Township Department Directors. Township Building, Public Works and Fire Department Staff have no objection to the proposed variance. Otonabee Region Conservation Authority (ORCA) have confirmed the proposed development will not create new or aggravate any existing hazards.

5.2 Correspondence Received

Matt Wilkinson, Planner, spoke to the correspondence that was received. One comment supportive of the Application was received after the Report was published.

5.3 Questions/Comments from the Committee

Aaron Glover asked for clarification about the arrangement of the parking at the site.

Chair Michael Semple asked whether the proposed Minor Variance Application is only seeking to increase the floor space and the addition of two permitted employees in the building.

5.4 Questions/Comments from members of the Public

Mike Doherty, the applicant, was present and commented that they were in agreement with the facts presented in the report.

5.5 Consideration of the Application by the Committee

CA-2025-05
Moved by: Glover
Seconded by: Grant
That the Committee approve Application MV-03-25 without conditions.

Recorded	**For**	**Against**
Semple	X	
Grant	X	
Glover	X	
Results	**3**	**0**

Carried

6. Adjournment

CA-2025-06

Moved by: Grant
Seconded by: Glover
That the meeting adjourn at 9:17 a.m.

Recorded	**For**	**Against**
Grant	X	
Semple	X	
Glover	X	
Results	**3**	**0**

Carried

Michael Semple	**Mark Froment**
Chair	**Deputy Clerk**

Committee of Adjustment

To:	Committee of Adjustment
Date:	August 14, 2025
From:	Matt Wilkinson, Planner
Report Number:	Planning Report 2025-28
Subject:	Minor Variance Application MV-04-25, 12 Distillery Street

Recommendations:

1. That the Committee of Adjustment review and consider all verbal and written comments received regarding this Application; and

2. That the Committee approve Application MV-04-25 without conditions.

Overview:

Annika deWitt applied to the Township of Cavan Monaghan for approval of a minor variance to permit the construction of a deck measuring 2.7 metres (9 feet) by 6 metres (20 feet) and a porch 2.7 metres (9 feet) by 3 metres (10 feet) in size at 12 Distillery Street. As proposed, the existing 3-season sunroom at the front of the dwelling will be removed and replaced with a covered porch and an open deck which will be 3.1 metres (10.25 feet) from the front property line. A site plan of the proposed development is provided as Attachment No. 1 to this Report.

The subject property is an existing lot of record known municipally as 12 Distillery Street in part of Lot 12, Concession 4 (Millbrook). The property is approximately 0.09 hectares (0.23 acres) in size with approximately 22.3 metres (73.25 feet) of frontage on Distillery Street. A key map showing the location of the property and an aerial image of the surrounding area are provided as Attachment Nos. 2 and 3 to this Report

The property is zoned Urban Residential One (UR1) as shown on Map F-2A to By-law No. 2018-58, as amended. Accessory residential structures, including covered porches and open decks, are permitted in the UR1 Zone.

As proposed, the Application seeks to increase the distance a covered porch and open deck are permitted to encroach into the front yard setback from 1.5 metres (4 feet) to 2.9 metres (9.5 feet). All other requirements of the UR1 Zone will apply.

In 2005, the former owners of the property were granted a minor variance to construct a 3-season sunroom on the front of the dwelling. The variance permitted a reduced front yard setback of 3.35 metres (11 feet). The current owners wish to remove the existing 3-season sunroom and construct an open deck and covered porch on the front of the dwelling that will encroach into the front yard setback 2.9 metres (9.5 feet). The open deck and overed porch will be setback from the front property line 3.1 metres (10.25 feet).

Notice of the minor variance application was circulated, by first class prepaid mail, to all assessed persons within 60 metres (200 feet) of the subject property and to all required ministries and agencies and posted on the Township Website. A sign was also posted on the Distillery Street frontage of the property.

As of the date of drafting of this Report, no public comment had been received.

Notice of the application was also circulated to all Township Department Directors. The Township Building and Fire Departments Staff have no objection to the proposed variance.

The Township Public Works Department has confirmed that there is a watermain adjacent to the subject property within the road allowance at the shoulder of Distillery Street. The location of the proposed development will not interfere with Township infrastructure or the Township's ability to maintain the infrastructure. Therefore, The Township Public Works Department has no objection to the proposed development.

Otonabee Region Conservation Authority (ORCA) have confirmed the proposed development is not located within a known natural hazard but in land adjacent to a flooding hazard. The property would be rendered inaccessible to people and vehicles during times of flooding however the development is minor in nature, and the use is already established for this property. Therefore, it is the opinion of Otonabee Conservation that the application is consistent with the intent of Chapter 5 of the Provincial Planning Statement (PPS), referencing Natural Hazards. A permit from Otonabee Conservation is not required.

It was determined that the subject property is not located within a vulnerable area that is subject to Trent Source Protection Plan (SPP) policies. The subject property is located within the Intake Protection Zone 3. Significant drinking water threats are not possible, and a Restricted Land Use Notice is not required.

Planning Review

Section 45 of the Planning Act provides the tests that must be satisfied to support a minor variance application. The tests are as follows:

1. Does the minor variance maintain the general intent and purpose of the Official Plan?

The subject property is within the Millbrook Urban Settlement Area and is designated Community Core as shown on Schedule 'A-1' to the Official Plan for the Township of Cavan Monaghan Official Plan.

Lands designated Community Core reflect the historic Commercial Core of the Millbrook Urban Area (S. 4.2). Key objectives of the Commercial Core designation are to encourage streetscape and façade improvements that revitalize the cultural and historic character of Millbrook and protect the residential character of the areas within and adjacent to the Community Core. (S. 4.2.1).

Permitted uses in the Community Core designation include free-standing residential uses, block and stacked townhouses, four-plexes and apartments. Existing single-detached and semi-detached dwellings shall be recognized however, new low-density housing will be discouraged (S. 4.2.2).

In accordance with Section 3.1 of the Township Official Plan, uses normally accessory to permitted uses are also permitted. A deck and covered porch are considered normal accessory structures to a residential use. Therefore, a singe detached dwelling with an accessory deck and porch are permitted in the Community Core designation.

The application conforms to the Township of Cavan Monaghan Official Plan.

2. Does the minor variance maintain the general intent and purpose of the Zoning By-law?

The property is zoned Urban Residential One (UR1) as shown on Map F-2A to By-law No. 2018-58, as amended. A single detached dwelling with an accessory deck and porch is permitted in the UR1 Zone.

For lots on municipal services, the required minimum lot area and lot frontage in the UR1 Zone is 555 square metres (0.14 acres) and 15 metres (49 feet) respectively. The minimum front yard setback from a single detached dwelling in the UR1 Zone is 6 metres (19.68 feet).

The subject property has enough lot area and lot frontage to satisfy the minimum requirements of the UR1 Zone. However, the existing front yard setback is considered to be legal non-complying.

A review of a legal survey on file indicates that the existing dwelling is 5.85 metres (19.21 feet) from the front lot line at the northern corner of the building.

Section 11.41.1 f) of By-law No. 2018-58, as amended, permits a 1.5 metre (4 foot) encroachment into the required yard setback for a number of residential structures, including porches and decks.

As proposed, the Application seeks to increase the distance a deck and/or a porch is permitted to encroach into the front yard setback from 1.5 metres (4 feet) to 2.9 metres (9.5 feet).

The variance maintains the general intent and purpose of the Zoning By-law.

3. Is the proposed use desirable for the appropriate development or use of the land?

The subject lands are in a residential neighbourhood with single detached dwellings to the east, north and south. Distillery Street is a dead end street without a sidewalk. The property faces Baxter Creek and the Mill Pond across the street. The house is topographically elevated from the street.

The topography of the property is such that the increased encroachment into the front yard setback will not interfere with pedestrians or vehicular traffic. The property is currently developed with a 3-season sunroom within the front yard setback. With the removal of the sunroom, the look and use of property will not significantly change the surrounding land use.

The Township Public Works Department commented that the existing watermain is within the road at this location and the increased encroachment will not impact the Township's ability for servicing the infrastructure.

The property is zoned and designated to permit residential accessory structures.

The proposed use is appropriate development for the property.

4. Is the variance minor?

As proposed, the Application seeks to increase the distance a deck and porch are permitted to encroach into the front yard setback from 1.5 metres (4 feet) to 2.9 metres (9.5 feet). With the removal of the existing sunroom, the look and feel of the property will not change greatly. Therefore, the variance is minor in nature.

After hearing public comment and considering all written submissions, the Committee has the following options:

1. approve the minor variance with no conditions;
2. approve the minor variance with conditions;
3. defer the minor variance for further consideration at a later date; or
4. reject the minor variance.

Financial Impact:

The Applicant has paid the Minor Variance Fee as posted the User Fee and Charges By-law.

Attachments:

Attachment No. 1: Site Plan
Attachment No. 2: Key Map

Attachment No. 3: Aerial Image of the Subject Property

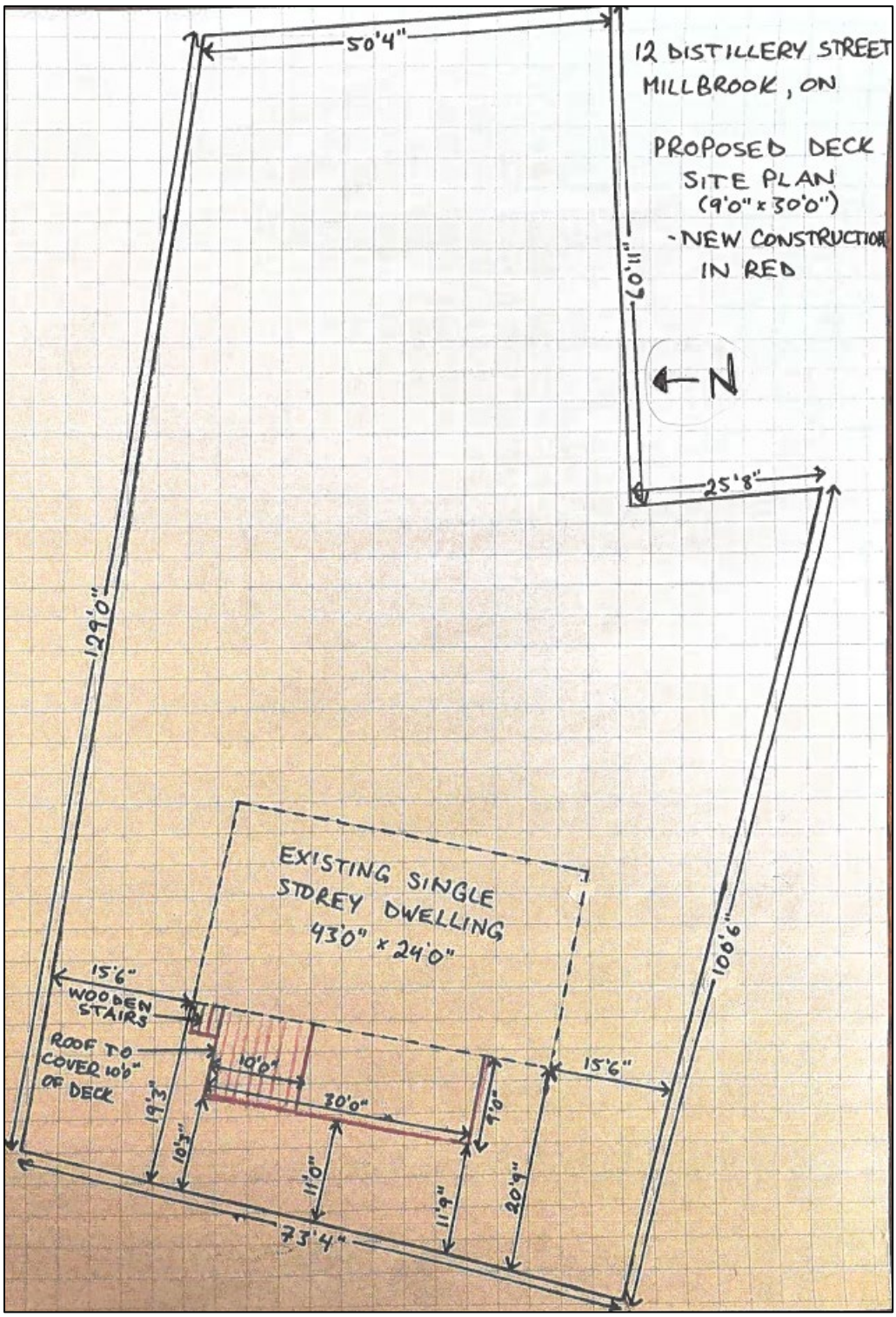
Respectfully Submitted by,

Matt Wilkinson,
Planner

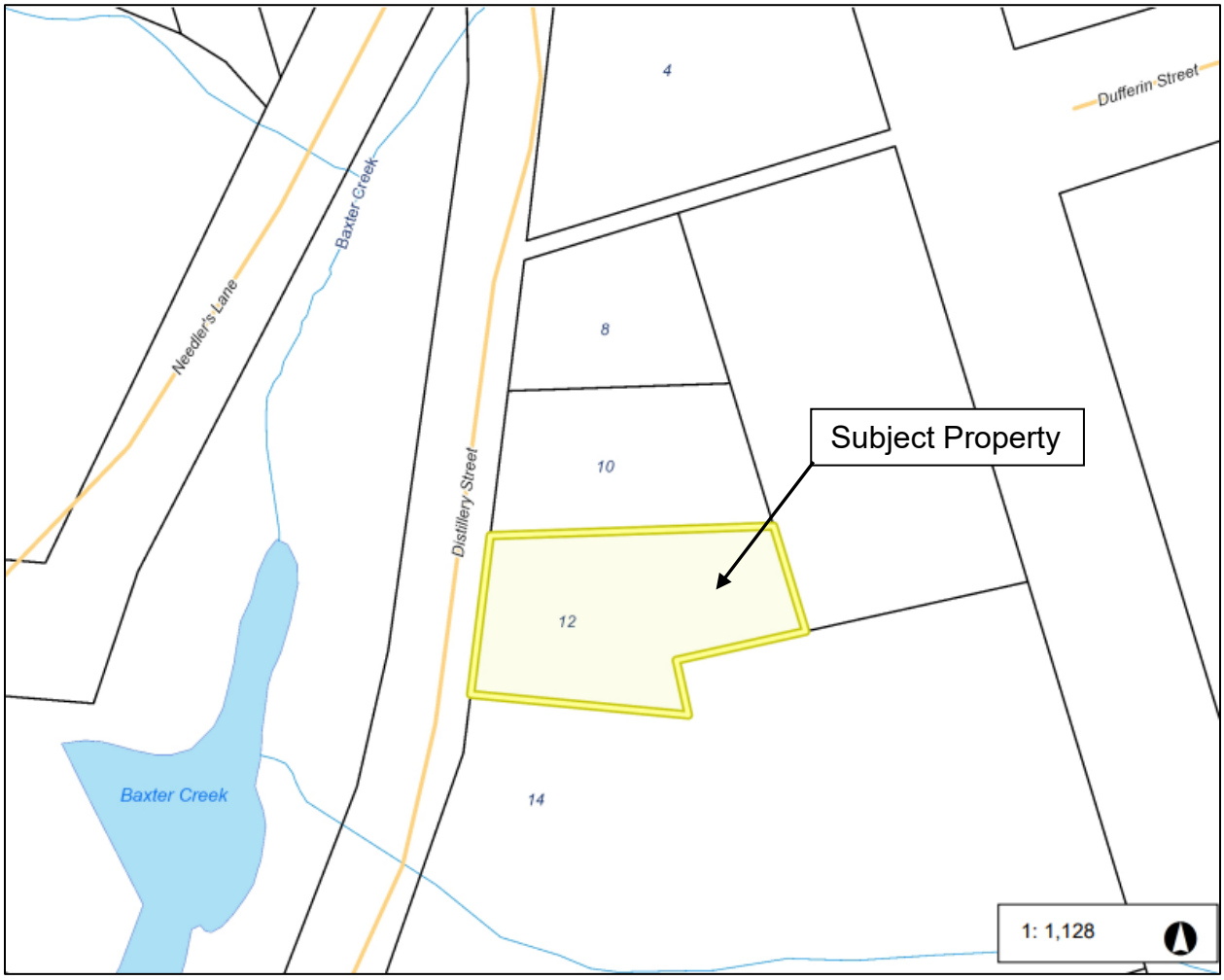
Reviewed by,

Yvette Hurley
Chief Administrative Officer

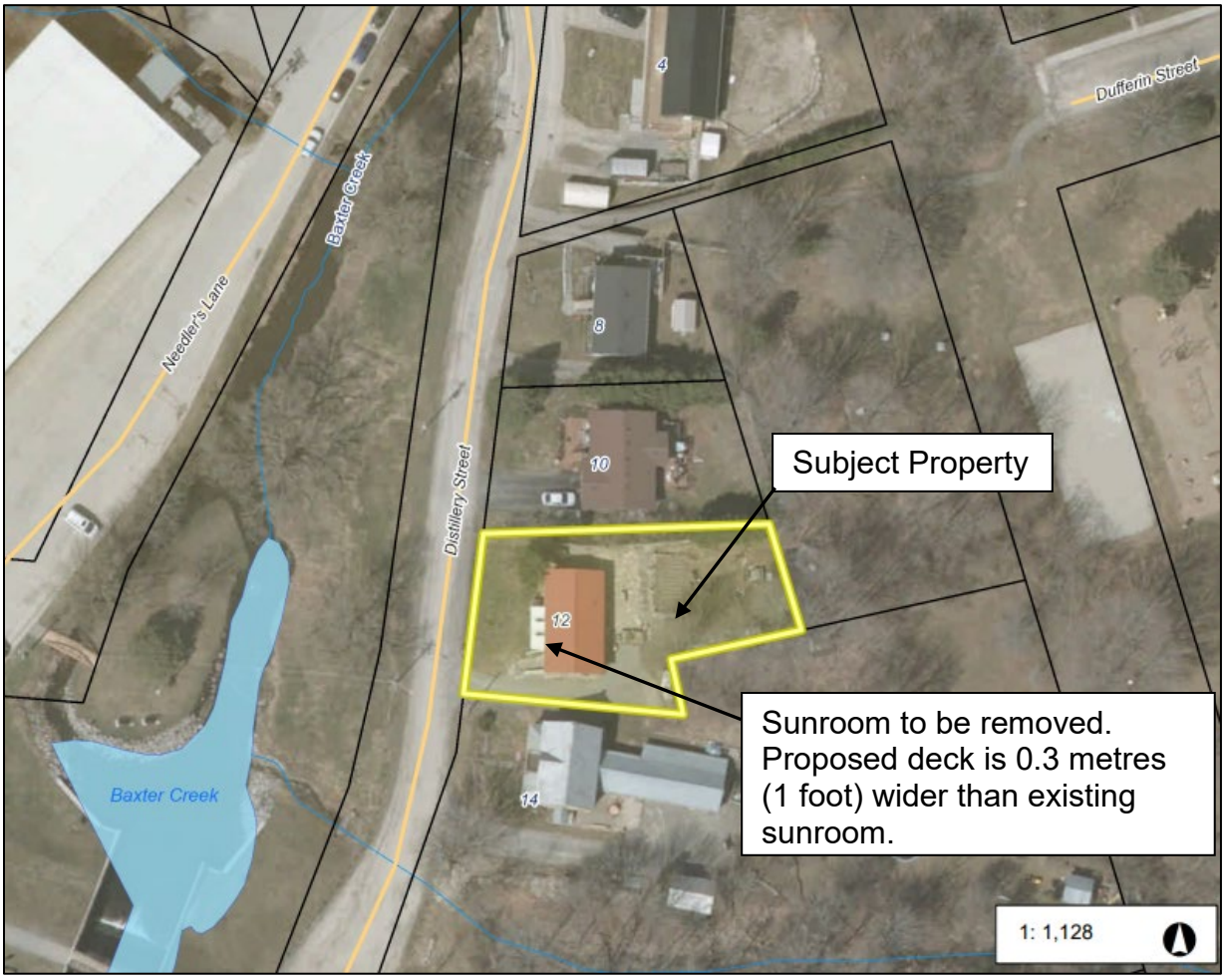
Attachment No. 1: Site Plan



Attachment No. 2: Key Map



Attachment No. 3: Aerial Image of the Subject Property



TOWNSHIP OF
CAVAN MONAGHAN
Have it all. Right here.

Committee of Adjustment

To:	Committee of Adjustment
Date:	August 14, 2025
From:	Matt Wilkinson, Planner
Report Number:	Planning Report 2025-29
Subject:	Minor Variance Application MV-05-25, 59 Dranoel Drive

Recommendations:

1. That the Committee of Adjustment review and consider all verbal and written comments received regarding this Application; and

2. That the Committee approve Application No. MV-05-25 with the following conditions:

   i. that the proposed development of the property occurs in accordance with the submitted Site Plan, dated June 26, 2025;

   ii. that the proposed development of the property occurs in accordance with Section 7 (recommendations and mitigations) of the scoped Natural Heritage Evaluation (sNHE), as approved by the Township of Cavan Monaghan;

   iii. that the two (2) existing shipping containers on the property will be removed within six (6) months of the date of which occupancy is granted; and

   iv. that the existing dwelling on the property will be removed within six (6) months of the date of which occupancy is granted.

Overview:

The owner of 59 Dranoel Drive, Peter DeVries, applied to the Township of Cavan Monaghan for approval of a minor variance to permit the construction of a 260.68 square metre (2806 square foot) replacement dwelling on the property. A site plan of the proposed construction is provided as Attachment No. 1 to this Report.

The subject property is an existing lot of record known municipally as 59 Dranoel Drive located at part Lot 1, Concession 8 (Cavan). The subject property is approximately 0.81 hectares (2.01 acres) in size with 0 metres of frontage on a year-round publicly maintained street.

The property is an existing lot of record developed with a single detached dwelling connected to private services and two (2) shipping containers. The existing dwelling and the shipping containers will be removed within six (6) months after the date that occupancy of the proposed dwelling is granted by the Township Building Department. A key map showing the location of the property and an aerial image of the surrounding area are provided as Attachment Nos. 2 and 3 to this Report.

The subject property is zoned Oak Ridges Moraine Environmental (ORME) as shown on Map D-1 to By-law No. 2018-58, as amended. A single detached dwelling is permitted in the ORME.

Section 11.1 c) of By-law No. 2018-58, as amended, states that unless otherwise specified by the By-law, no lot, or building or structure on said lot, may be constructed or used unless the lot fronts on a year-round maintained public street that was not established as a consequence of registering a plan of subdivision. The property has been accessed through the un-opened road allowance; effectively using it as a private driveway as early as 1974. 59 Dranoel Drive is the only developed lot being accessed from the un-opened road allowance.

As proposed, the Application seeks to permit a building or structure to be constructed or used on a lot which does not front on a year-round maintained public street. All other requirements of the ORME Zone will apply.

Notice of the minor variance application was circulated, by first class prepaid mail, to all assessed persons within 60 metres (200 feet) of the subject property and to all required ministries and agencies and posted on the Township Website. A sign was also posted at the front driveway of the property.

As of the date of drafting of this Report, no public comment had been received.

Notice of the application was circulated to all Township Department Directors.

The Township Fire and Public Works Departments have no objection to the proposal. However, if further development were to be considered in this area the un-opened road allowance would need to be brought to Township standards and assumed by the municipality.

The Township Building Department has no objection to the proposed variance.

Otonabee Region Conservation Authority (ORCA) have confirmed the proposed development is not within a hazardous area and will not create new or aggravate any existing hazards. Therefore, it is the opinion of Otonabee Conservation that the application is consistent with Chapter 5 of the Provincial Planning Statement (PPS), referencing Natural Hazards. The proposed development will not require a permit from the Conservation Authority.

Planning Review

Section 45 of the Planning Act provides the tests that must be satisfied to support a minor variance application. The tests are as follows:

1. Does the minor variance maintain the general intent and purpose of the Official Plan?

The subject property is designated Oak Ridges Moraine- Natural Core Area as shown on Schedule 'A' to the Official Plan for the Township of Cavan Monaghan Official Plan.

The Natural Core Area includes areas with the highest concentration of sensitive and/or significant natural features and functions. Lands that are within the Oak Ridges Moraine established by the Province of Ontario are identified as the ORM – Natural Core Area designation on Schedules A and A-1 of the Township Official Plan. These areas are to be managed as a connected and integrated natural heritage system recognizing the functional inter-relationships between them. This designation also applies to lands that form a natural 30 metre vegetative protective buffer zone for significant natural heritage features. The vegetation protection zone is measured from the outside boundary of the Key Natural Heritage or Key Hydrologic Feature.

Section 6.3.2 lists the permitted uses in the ORM – Natural Core Area designation which includes single-detached dwellings and accessory uses on existing lots of record if it is demonstrated that:

i) There is no alternative and the expansion, alteration or establishment is directed away from the feature to the maximum extent possible;

ii) The impact of the expansion or alteration on the feature and its functions is minimized to the maximum extent possible; and,

iii) The expansion or alteration is not located in a floodplain or erosion hazard area

The Application is supported by a scoped Natural Heritage Evaluation (sNHE) completed by Oakridge Environmental Ltd. (dated March 2025). The sNHE concluded that the proposed dwelling could be constructed in the area defined by Oakridge Environmental Ltd. provided the construction adheres to the recommendations and mitigations in section 7 of the sNHE. The sNHE is provided as Attachment No. 4 to this Report. The proposed site is not located in a floodplain or erosion hazard.

Section 2.2 of the Township Official Plan provides guidance to protect natural heritage and the Oak Ridges Moraine.

Provided the develop adheres to the recommendations and mitigations provided in Section 7 of the submitted sNHE, the development will not negatively effect the Oak Ridges Moraine or its unique landform characteristics, its significant function of

groundwater recharge and discharge, its significant natural heritage features or the ecological functions.

The proposed development will not interfere with the existing continuous natural heritage system throughout the Township or the groundwater resources. The development will be setback from natural hazards such as flooding and erosion. Therefore, the Application conforms to section 2.2a-d) of the Township Official Plan.

Section 3.1 of the Township Official Plan outlines the general development criteria to be included in all development. Prior to development occurring, it shall be established to the satisfaction of the Township and all other bodies having jurisdiction, that:

a) Soil and drainage conditions are suitable to permit the proper siting of buildings and other site improvements such as driveways, parking, and accessory structures and meet any applicable requirements of this Plan including Source Water Protection policies;

b) Suitable arrangements have or can be made for water supply, sewage disposal, storm drainage and all other necessary public services;

c) No traffic hazards will ensue because of excess traffic generation, or limited sight lines on curves or grades;

d) The development fronts on a road that is maintained year round and meets standards of design and safety established by the Township or authority having jurisdiction over the road;

e) The potential impact of the proposed use on adjacent lands and uses has been considered, and adequate mitigation, including design, buffers and setbacks are provided between the proposed use and adjacent uses in accordance with the policies of the Plan;

f) The Minimum Distance Separation formulae are complied with, if required as outlined in Section 3.27;

g) There will be no negative impacts on significant natural features or their ecological functions; and

h) The potential impact on public health and public safety from water related hazards such as flooding and erosion have been considered.

The Township Building and Public Works Departments have reviewed the proposed grading of the development and have no concerns at this time. The property is outside the area where Source Water Protection policies apply. Suitable arrangements have been made for water supply and sewage disposal on the site. No increase in traffic is expected due to the new single detached dwelling on Dranoel Drive.

The proposed dwelling does not front on a public road. However, the property has been legally developed with a single detached dwelling with the benefit of a building permit

since 1974. The proposed minor variance will recognize the continuation of the legally existing use.

There is an existing livestock facility on the lot to the west of the subject property. Township Building Staff have inspected the barn and confirmed it is housing horses. Using the Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA) AgriSuite software, Township Planning Staff calculated the minimum distance of separation required from non-agricultural uses to a livestock facility. The proposed development is beyond the minimum distance required from the existing barn.

The potential impact to the proposed use on adjacent lands was considered. As previously referenced in this Report, a scoped natural heritage evaluation (sNHE) was preformed in support of the Application. The sNHE concluded there is a suitable area outside the natural area and natural hazards. The site plan was reviewed to ensure a suitable minimum setback of 4.5 metres (15 feet) is in place from the neighbouring vacant lot to the south.

The application conforms to the Township of Cavan Monaghan Official Plan.

2. Does the minor variance maintain the general intent and purpose of the Zoning By-law?

The lands subject to the Application are zoned Oak Ridges Moraine Environmental (ORME) as shown on Map D-1 to By-law No. 2018-58, as amended. Single detached dwellings are permitted in the ORME Zone provided footnotes (1) and (2) of the Additional Regulations in Table 9A are met.

Footnote 1 of Table 9A states that notwithstanding any provision of this By-law, a single detached dwelling is a permitted use, as a principal use on lands:

a) where the use was a permitted use in Zoning By-law Nos. 2252, as amended and 91-16, as amended and existing as of November 15, 2001, or where the use was a permitted accessory use in the Zoning By-law Nos. 2252, as amended and 91-16, as amended and existing as of November 15, 2001, within the Oak Ridges Moraine Conservation Plan area;

b) provided the single detached dwelling complies with all other provisions of the applicable Zone; and,

c) the applicant submits information at the time of building permit application that the use, erection and location will not, to the extent possible, adversely affect the ecological integrity of the Oak Ridges Moraine.

Footnote 2 of Table 9A states that the expansion of legally existing buildings and structures constructed prior to November 15, 2001 is permitted on the same lot, provided that the applicant demonstrates that:

(i) there will be no change in use; and

(ii) the expansion will not adversely affect the ecological integrity of the Plan Area. b) Where the expansion of an existing building or structure or the establishment of an accessory use, building or structure intrudes on areas within the Oak Ridges Moraine Environmental (ORME) Zone or the Oak Ridges Moraine Environmental Plan Review Overlay as shown on Schedule "A", the applicant shall submit a natural heritage evaluation and/or a hydrological evaluation completed in accordance with the Oak Ridges Moraine Conservation Plan and will be approved in conjunction with the local Conservation Authority. Approval of the development is subject to site plan approval by the Township

As mentioned previously in this Report, the potential impact to the ecological integrity to the Oak Ridges Moraine was evaluated through a scoped Natural Heritage Evaluation (sNHE). While the sNHE identify natural features on and near the site, the sNHE provided recommendations and mitigations to protect the natural areas. The sNHE concluded there is a suitable building area that would not negatively impact the ecological integrity of the Oak Ridges Moraine.

There is no required minimum distance for lot frontage or listed minimum lot area for the ORME Zone. Rather, approval for development in the ORM is subject to site plan approval by the Township.

Township Planning Staff attended a site visit with the property owner to review appropriate setbacks. Suitable setbacks to the southern, and front lot lines were established with the property owners. The development setbacks shown on the site plan adhere to the findings of the sNHE.

The existing dwelling was legally constructed prior to the approval of the first Township Zoning By-law. The dwelling is considered legal non-complying. The existing dwelling will be removed within six (6) months of occupancy being granted by the Township Building Department for the proposed dwelling.

Section 11.1 c) of By-law No. 2018-58, as amended, states that unless otherwise specified by the By-law, no lot, or building or structure on said lot, may be constructed or used unless the lot fronts on a year-round maintained public street that was not established as a consequence of registering a plan of subdivision.

As proposed, the purpose and effect of the minor variance is to permit the construction and use of a replacement dwelling, notwithstanding that the lot does not front on a year-round maintained public street. All other requirements of the ORME Zone will apply.

Section 11.22 of By-law No. 2018, as amended requires that no residential, institutional, commercial, industrial or recreational use, located on a separate lot and permitted by this By-law shall be erected or altered unless it complies with the Minimum Distance Separation (MDS) as established by the province.

As stated previously in this Report, a minimum distance separation (MDS) calculation was completed for the small livestock facility currently on the neighbouring lot. The calculations established the proposed setback to be more than the minimum distance required.

The variance maintains the general intent and purpose of the Zoning By-law.

3. Is the proposed use desirable for the appropriate development or use of the land?

The minor variance will permit a replacement of a legal non-complying dwelling.

The subject lands are part of a registered rural subdivision plan with single detached dwellings and vacant/ agricultural parcels in the surrounding area. The property is accessed by essentially a long private driveway off Dranoel Drive.

The submitted scoped Natural Heritage Evaluation (sNHE) completed by Oakridge Environmental Ltd. concluded that the proposed development area is suitable for a single detached dwelling, provided the recommendations and mitigations are followed.

The proposed dwelling is beyond the required minimum distance to a neighbouring livestock facility.

Appropriate setbacks from the proposed development to the property lines and any natural features or hazards have been established.

The property is zoned and designated to permit the residential use.

The proposed use is appropriate development for the property.

4. Is the variance minor?

A single detached dwelling is permitted on the property.

As proposed, the variance will permit the use of the lot to continue as it was permitted when first constructed in 1974.

The variance will permit the construction and use of a replacement dwelling, notwithstanding that the lot does not front on a year-round maintained public street. All other requirements of the ORME Zone will apply.

Therefore, the variance is considered minor.

After hearing public comment and considering all written submissions, the Committee has the following options:

1. approve the minor variance with no conditions;
2. approve the minor variance with conditions;
3. defer the minor variance for further consideration at a later date; or

4. reject the minor variance.

Financial Impact:

The Applicant has paid the Minor Variance Fee as posted the User Fee and Charges By-law.

Attachments:

Attachment No. 1: Site Plan
Attachment No. 2: Key Map
Attachment No. 3: Aerial Image of the Subject Property
Attachment No. 4: Scoped Natural Heritage Evaluation

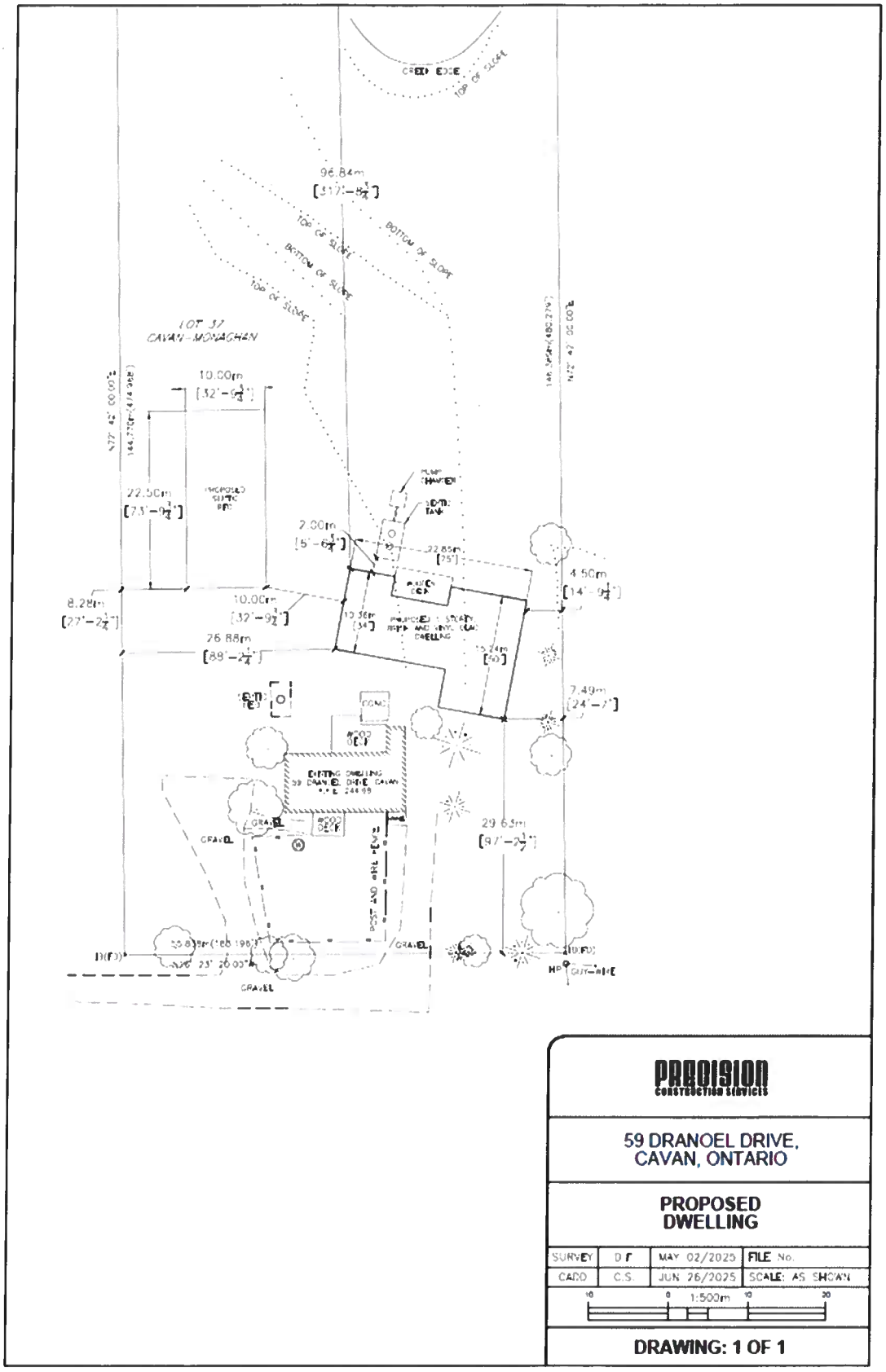
Respectfully Submitted by,

Matt Wilkinson,
Planner

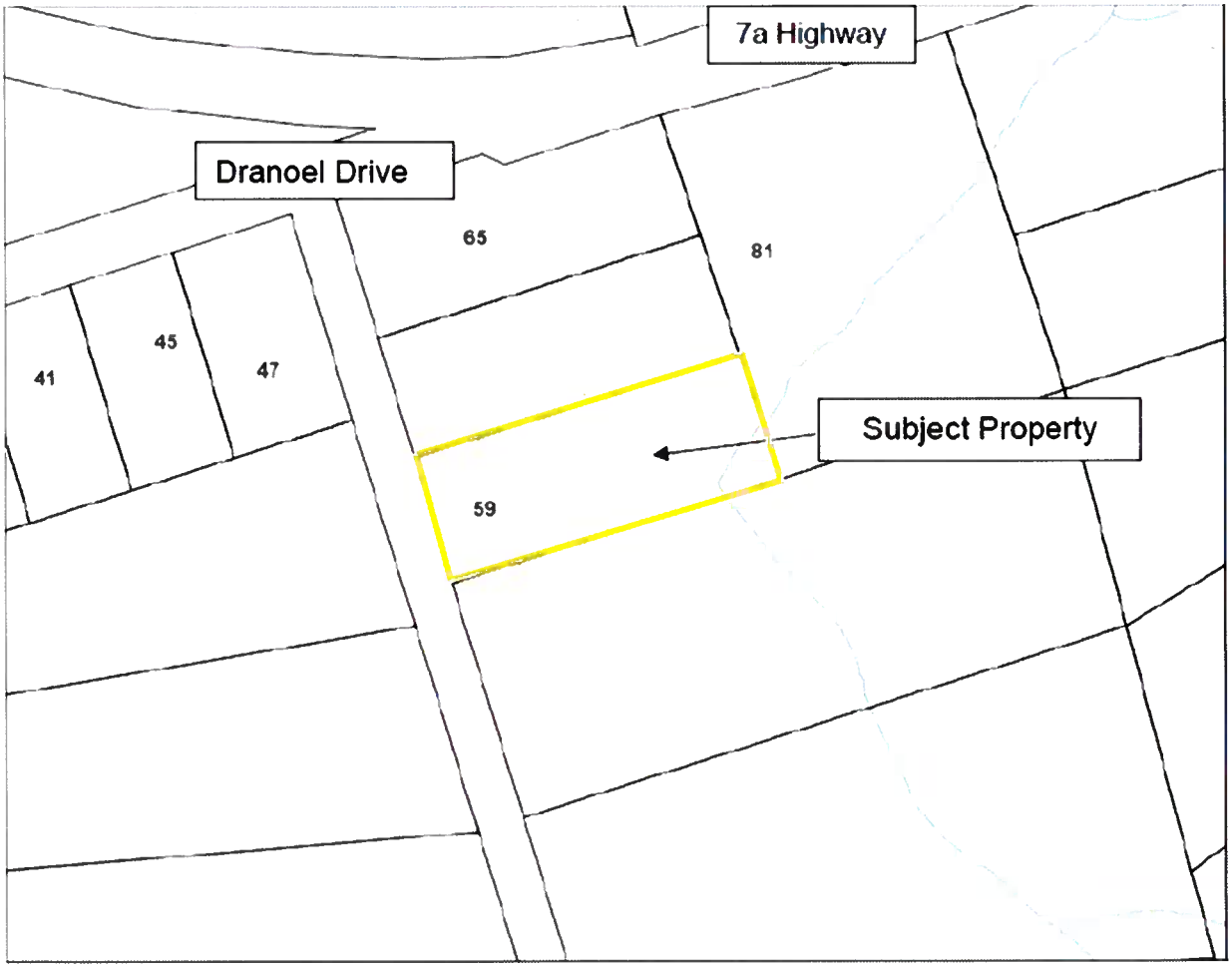
Reviewed by,

Yvette Hurley
Chief Administrative Officer

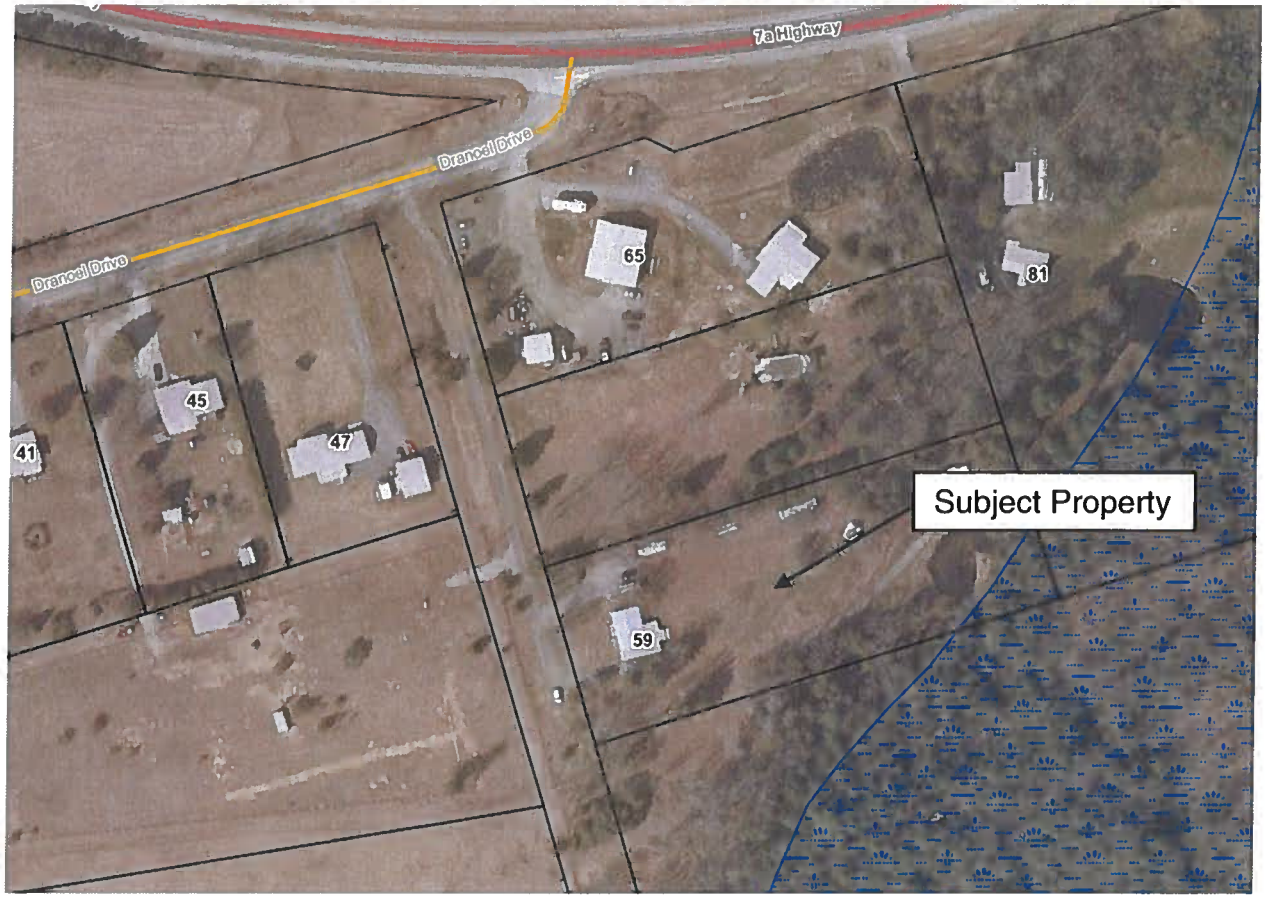
Attachment No. 1: Site Plan



Attachment No. 2: Key Map

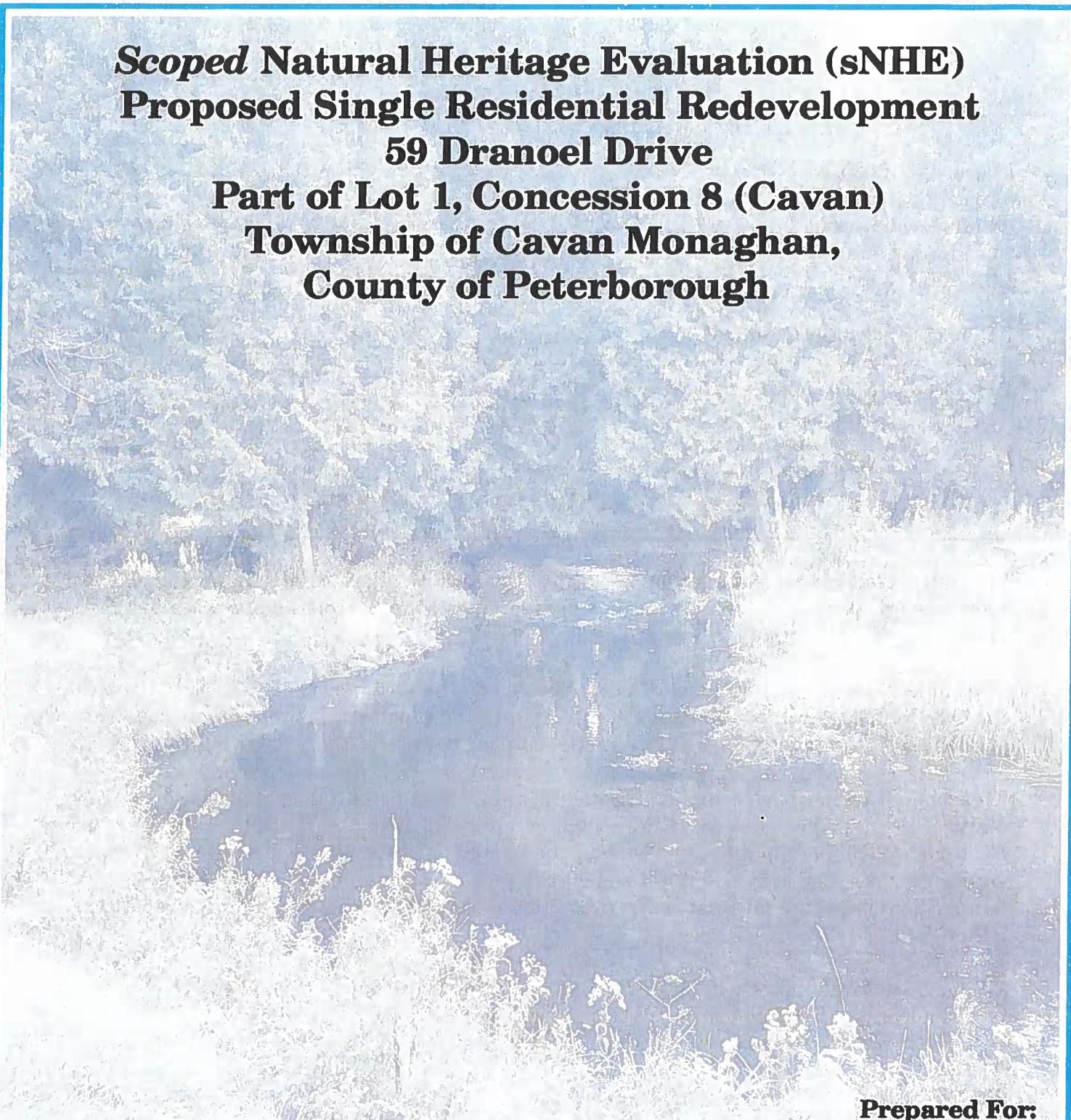


Attachment No. 3: Aerial Image of the Subject Property



Attachment No. 4: Scoped Natural Heritage Evaluation

Scoped Natural Heritage Evaluation (sNHE)
Proposed Single Residential Redevelopment
59 Dranoel Drive
Part of Lot 1, Concession 8 (Cavan)
Township of Cavan Monaghan,
County of Peterborough



Prepared For:

Susan Devries
48 Marlow Crescent
Markham, Ontario
L3R 4P5

ORE File No. 24-3491

March 2025

ORE
Oakridge Environmental Ltd.
Environmental and Hydrogeological Services

ORE
Oakridge Environmental Limited
Environmental and Hydrogeological Services

March 17th, 2025

48 Marlow Crescent
Markham, Ontario
L3R 4P5

Attention: **Susan Devries**

Re: *Scoped* Natural Heritage Evaluation (sNHE)
Proposed Single Residential Redevelopment
59 Dranoel Drive
Part of Lot 1, Concession 8 (Cavan)
Township of Cavan Monaghan, County of Peterborough
ORE File No. 24-3491

We are pleased to provide this Scoped Natural Heritage Evaluation (sNHE) for the above-referenced property. This report has been prepared as per our proposal of September 24th, 2024.

The subject site is an existing lot of record located on the south side of Dranoel Drive, within the Oak Ridges Moraine (ORM). The property owner (proponent) is proposing to construct a single residential home that will replace the existing residence.

This evaluation has been completed to identify and assess potential for impacts to any Key Natural Heritage Features (KNHF), including Species at Risk and Hydrologically Sensitive Features (HSF), proximal to the development. Based on our review and site inspection , it is our opinion that the proposed development can proceed with minimal impact to these features, provided the mitigation and protection measures recommended in this report are adhered to.

We trust that this report will be sufficient for any agency reviews. Should you have any questions or require clarification, please do not hesitate to contact our office.

Yours truly,
Oakridge Environmental Ltd.

Rob West, HBSc.
Senior Ecologist

Table of Contents

List of Figures

List of Appendices

Scoped Natural Heritage Evaluation (sNHE)
Proposed Single Residential Redevelopment
59 Dranoel Drive
Part of Lot 1, Concession 8 (Cavan)
Township of Cavan Monaghan, County of Peterborough

1.0 Introduction

1.1 General

Oakridge Environmental Ltd. (ORE) is pleased to present this report outlining the results of our Scoped Natural Heritage Evaluation (sNHE) in support of the above-referenced re-development on an existing residential lot of record, situated near Bethany, Ontario (Figure 1).

The property is situated on the Oak Ridges Moraine (ORM). As such, the main concern with respect to the proposed development is the potential for impacts to any Key Natural Heritage Features (KNHFs) and Hydrologically Sensitive Features (HSFs). Therefore, an NHE is required to support a Building Permit application and to demonstrate whether the proposed development can proceed without resulting in unacceptable impacts to those features.

The study area for this investigation includes the subject site and a high level review of the surrounding lands within 120 m.

1.2 Site Location and Access

The subject site is located at 59 Dranoel Drive, just south of Highway 7A, on the east side of Bethany. It can be accessed through an access road leading south from Dranoel Drive. The total land holdings consist of approximately 1.7 acres (0.69 ha) within Part of Lot 1, Concession 8 (Cavan), Township of Cavan Monaghan, County of Peterborough.

The subject lot currently contains an existing residence that will be torn down once the new residence is constructed. The lot is surrounded by other rural residential lots to the north.

1.3 Proposed Development

The proponent is proposing to construct a replacement residence and attached garage (residence to have dimensions 40 X 50 ft and the garage dimensions 40 X 30 ft = 3,200 sq. ft.), just east of the existing residence. The new residence will have a slightly larger footprint. It is understood that the existing private services will remain (well and septic).

2.0 Policy Framework

2.1 Provincial Planning Statement 2024

The updated 2024 Provincial Planning Statement (PPS) came into effect October 20th, 2024. The updated document is a streamlined province-wide land use planning policy framework that replaces the 2020 Provincial Policy Statement and A Place To Grow: Growth Plan for the Greater Golden Horseshoe, 2019, typically referred to as the "Growth Plan".

While we recognize that this development application will not require a Planning approval, this study has general regard for the PPS direction on matters of provincial interest related to Land Use Planning and development.

2.2 Oak Ridges Moraine

The subject site occurs within the Oak Ridges Moraine. Therefore, a study is required to comply with the Oak Ridges Moraine Conservation Plan (ORMCP) policies. This plan typically supercedes all other requirements with respect to environmental control on a property, as it is the most detailed with respect to protecting Key Natural Heritage and Hydrologically Sensitive Features.

The ORMCP provides land use and resource management planning direction to provincial ministers, ministries, municipalities, landowners, and other stakeholders on how to protect the Moraine's ecological and hydrological form and function. Through the ORMCP, the Ontario Government has set a clear policy framework for protecting the Oak Ridges Moraine. Municipalities are responsible for implementing the ORMCP via their Official Plans (OP) and zoning.

The ORMCP divides the Moraine into four (4) land use designations which regulate the uses that are permitted within them:

- Natural Core Areas are designated as lands with the greatest concentrations of Key Natural Heritage Features (KNHF) that are critical to preserving the integrity of the Moraine.

- Natural Linkage Areas are designated as lands which contain critical natural and open space linkages between the Natural Core Areas.

- Countryside Areas provide an agricultural and rural transition buffer between the Natural Core Areas and Natural Linkage Areas. Prime agricultural areas as well as natural features are protected.

- Settlement Areas reflect a range of existing communities planned by municipalities.

The above are arranged such that the most protected area designation is listed first and grades to the less protected areas where development is ultimately to be directed, in the Settlement Areas.

Section 22. (1) of the ORMCP states that the following are considered Key Natural Heritage Features (KNHF) that require protection:

> *"1. Wetlands.*
> *2. Significant portions of the habitat of endangered, rare and threatened species.*
> *3. Fish habitat.*
> *4. Areas of natural and scientific interest (life science).*
> *5. Significant valleylands.*
> *6. Significant woodlands.*
> *7. Significant wildlife habitat.*
> *8. Sand barrens, savannahs and tallgrass prairies."*

The following ORM land use designations and KNHFs may be relevant to the site, according to the ORMCP mapping (Appendix A):

- Low Aquifer Vulnerability;
- Natural Core Area;
- Landform Conservation Area - Category 2 (Moderately Complex), and
- Potentially Significant Woodland.

The subject site occurs within the Natural Core Area of the ORM. However, since the property is an existing lot of record, already possesses a residential zoning that pre-dates inception of the ORMCP and contains an existing residence, this would be reflected in the Township's Zoning By-Law. As such, the proponent should be able to re-develop on-site. However, any new development proposed on the property must attempt to adhere to the policies and setbacks/protection requirements outlined in the ORMCP.

2.3 Otonabee Region Conservation Authority (GRCA)

The property is located within 120 m of a hydrologic feature (Cavan Creek and the associated Cavan Creek Provincially Significant Wetland), therefore, may be subject to *Ontario Regulation 41/24: Prohibited Activities, Exemptions and Permits.*

As a result, a permit from ORCA may be required. In addition, a site inspection may be

deemed necessary by ORCA for the purpose of confirming any hydrologic or erosion hazard features and their associated setbacks. ORE staff did not contact ORCA in this regard.

That being said, the proposed redevelopment on the subject property will occur greater than 30 m from any feature that is regulated by ORCA. It will also occur outside any flood elevation hazard associated with the Cavan Creek system.

This report has been prepared to address the relevant sections of the Regulation, where applicable.

3.0 Physical Setting

3.1 Topography and Drainage

The subject property occurs on the east-facing flank of a large ridge, overlooking the valley of Cavan Creek (Figure 2). Total topographic relief on the site is approximately 14 m, as measured from the site's western boundary to the creek valley.

Cavan Creek enters the site from the south and exits along the eastern boundary, flowing generally northward. The site occurs roughly 300 m north of the confluence of two branches of the creek. The mapping indicates the presence of a small in-line pond within the site, one of several in the site area. It is not clear from the mapping whether the on-site pond is a man-made or a natural feature. Based on the topographic setting, it is expected that the creek receives considerable groundwater discharge (baseflow). As such, the ponds are also likely to be "spring-fed".

Cavan Creek flows primarily within the limits of the Provincially Significant Cavan Creek Wetland. The creek channel leaves the wetland boundary, flowing across the easternmost part of the site, exiting the site and re-entering the wetland at the site's eastern boundary. The creek similarly passes in and out of the wetland northeast of the site. The mapping does not indicate the presence of any unevaluated wetlands on the site or in the immediate vicinity. The closest unevaluated wetland occurs just north of Highway 7.

Based on the topography, creek and pond occurrences, it is likely that the water table will be shallow in the lower areas, likely occurring at about elevation 234 masl, rising as a subdued reflection of the topography to the west.

3.2 Geological Setting

As illustrated by Figure 3, the site geology is dominated by fine textured glaciolacustrine deposits. These are typically highly layered, clay, silt and fine to medium grained sands, typically exhibiting moderate to low permeability. The glaciolacustrine deposits represent the remnants of an ancient glacial lake that once inundated the area.

Along the subject site's eastern boundary, the mapping indicates the presence of modern alluvium, associated with the creek valley. Alluvium tends to be a layered sequence of sand, silt and minor gravel representing the bottom sediments of the creek, typically deposited during periods of flooding. Some of the layers can be rich in organic matter. The alluvium likely sits above the glaciolacustrine deposits, if they were not eroded away.

Roughly 1 km west of the site, extensive ice-contact deposits occur. These are the highly permeable sands and gravels of the ORM. Some of these could extend eastward, below the glaciolacustrine layers.

East of the creek and more distant to the north and south, elevated ridges of till are mapped, extending upward through the glaciolacustrine deposits. Although the mapping does not indicate the presence of drumlins in the immediate site area, we would expect the till to be somewhat drumlinized. Based on the mapping, it is likely that the till occurs as a substrate below the glaciolacustrine and ice-contact deposits. The till is referred to as the Newmarket Till, which is a dense, stone-poor, calcareous till comprised of mostly silt and sand, with small amounts of clay and fine gravel. The Newmarket Till is widely recognized as a regional aquitard due to its generally low matrix permeability.

Based on the elevation of the central creek, nearby wetlands and ponds, the water table is expected to occur at about 234 masl, although will likely be a subdued reflection of the topography, rising slightly below the elevated western part of the site. It is likely that groundwater discharge occurs at, or near the bottom of the on-site slope, above the creek.

It is not possible to determine the thickness of the soil layers from the published mapping. However, from perusal of the Ministry of the Environment, Conservation and Parks (MECP) well record database, we note that a nearby recorded well (No. 7148776) encountered an upper sequence of layered silt, clay and sand likely representing the glaciolacustrine deposits, extending to a depth of about 20 m. Below the glaciolacustrine deposits, a layer of water-bearing sand and gravel was encountered, possibly representing the buried ice-contact deposits. Another nearby well (No. 5118995) situated east of the site encountered 41.1 m of overburden (mostly till) above

limestone bedrock.

Perusal of the NHIC database indicates that an Earth Science ANSI is present roughly 200 m south of the subject site, referred to as the Bethany Crevasse Fillings. Meta data from the Province lists the ANSI as "Candidate ANSI" of Provincial Significance which is considered to be "non-Sensitive". As a potential constraint, the ANSI is also described as "No Restriction Needed". As illustrated by Figure 3, there is a cluster of Rogen Moraines mapped in the area of the ANSI (and many more to the north and east). It is not clear whether this group of moraines is associated with the ANSI, as crevasse fillings are also recognized as a series of ridges oriented at a right angle to the direction of ice movement and have other confounding similarities.

4.0 Information Resources

4.1 Natural Heritage Information Centre (NHIC)

The NHIC provides an online database managed by the Ministry of Natural Resources and Forestry (MNRF). Within the database, Ontario has been divided into a grid consisting of 1 km^2 areas or regional squares, each given a unique identifier. The squares can be searched for species of conservation concern, plant communities, wildlife concentration areas and natural areas. This search includes 120 m of adjacent lands around the property. The search area falls within one (1) of the 1 km^2 squares: 17PJ9694.

The query indicates that zero (0) Natural Areas and zero (0) Wildlife Concentration Areas are recorded in the area.

The query indicates that two (2) Species at Risk (SAR) have been recorded in the area:

Common Name	Scientific Name	SAR Status
Eastern Meadowlark	*Sturnella magna*	Threatened
Grasshopper Sparrow	*Ammodramus savannarum*	Special Concern

The query indicates that zero (0) provincially rare species of note (not a SAR but tracked by the ministry) have been recorded in the area.

Brief descriptions of the SAR species above and their preferred habitats are included in Appendix B. Our site inspection included targeted searches for potential SAR habitat of these species. An excerpt from the NHIC's website, illustrating the location of the squares relative to the 120 m search area around subject site, is also included in Appendix C.

4.2 Ontario Breeding Bird Atlas (OBBA)

The OBBA[1] provides up-to-date reliable information on birds within Ontario. The information includes species descriptions, habitats, range, documented sightings, etc. The subject site occurs within the 10 km^2 area mapped as 17TPJ99, Region 17, Northumberland. The Summary Sheets for this atlas area are provided in Appendix D.

From our review of the information, significant breeding species that could potentially be associated with habitats in the site area include the following:

Common Name	Scientific Name	SARO Status
Bank Swallow	*Riparia riparia*	Threatened
Barn Swallow	*Hirundo rustica*	Special Concern
Bobolink	*Dolichonyx oryzivorus*	Threatened
Canada Warbler	*Cardellina canadensis*	Special Concern
Chimney Swift	*Chaetura pelagica*	Threatened
Common Nighthawk	*Chordeiles minor*	Special Concern
Eastern Meadowlark	*Sturnella magna*	Threatened
Eastern Whip-poor-will	*Antrostomus vociferus*	Threatened
Eastern Wood-Pewee	*Contopus virens*	Special Concern
Golden-winged Warbler	*Vermivora chrysoptera*	Special Concern
Grasshopper Sparrow	*Ammodramus savannarum*	Special Concern
Least Bittern	*Ixobrychus exilis*	Threatened
Wood Thrush	*Hylocichla mustelina*	Special Concern
Yellow Rail	*Coturnicops noveboracensis*	Special Concern
Yellow-breasted Chat	*Icteria virens*	Endangered

Brief descriptions of the SAR species above and their preferred habitats are included in Appendix B. Our site inspections included targeted searches for potential SAR habitat of these species.

4.3 iNaturalist

The iNaturalist database provides a geographical site map which contains individual species occurrences. The NHIC and Species at Risk in Canada projects on the iNaturalist database is specific to those species tracked by the two projects. These include SAR as per those identified in the Species at Risk Ontario website and also provincially rare species that the NHIC tracks in their records. The occurrence data includes the professional/surveyors name, confirmation identification by other

[1] managed by Bird Studies Canada.

professionals, occurrence photos, and the date the species was observed. The search extent is an approximate 2 km radius from the on the approximate property boundary.

The iNaturalist database was reviewed to determine if any SAR sightings of research grade have occurred either on, or within the vicinity of the subject site. Zero (0) SAR species were reported either directly on or in the general vicinity of the subject site.

4.4 eBird

eBird is a citizen science database, whereby birding individuals can attend public areas referred to as "hotspots" and list species of bird they detect each time they visit the hotspot location. According to the eBird Geographic Information System (GIS) database, the nearest hotspot is the Fleetwood Creek Natural Area (L15557671) site, located approximately 5 km southwest of the site, which is a significant distance. A total of ninety-two (92) species were recorded at this hotspot (Appendix E). Of the 92, seven (7) are SAR, as listed below:

Common Name	Scientific Name	Status
Barn Swallow	*Riparia riparia*	Threatened
Eastern Meadowlark	*Sturnella magna*	Threatened
Eastern Whip-poor-will	*Antrostomus vociferus*	Threatened
Eastern Wood-Pewee	*Contopus virens*	Special Concern
Evening Grosbeak	*Coccothraustes vespertinus*	Special Concern
Grasshopper Sparrow	*Ammodramus savannarum*	Special Concern
Wood Thrush	*Hylocichla mustelina*	Special Concern

Brief descriptions of the SAR species above and their preferred habitats are included in Appendix B. Our site inspections included targeted searches for potential SAR habitat of these species.

4.5 Ontario Reptile & Amphibian Atlas

The Ontario Reptile & Amphibian Atlas provides broad information on turtles, snakes, frogs, salamanders, and lizards within Ontario. The information includes earliest and latest observations dates within the square. The Atlas ceased collecting data for the project in 2019. The subject site occurs within the 10 km^2 area mapped as 17PJ99.

SAR species within the square are listed below:

Common Name	Scientific Names	SAR Status
Blanding's Turtle	*Emydoidea blandingii*	Threatened
Eastern Milksnake	*Lampropeltis triangulum*	NAR[12]
Midland Painted Turtle	*Chrysemys picta marginata*	Special Concern[2]
Snapping Turtle	*Chelydra serpentina*	Special Concern

1 Not at Risk (NAR)
2 Special concern (SARA/COSEWIC)

Brief descriptions of the SAR species above and their preferred habitats are included in Appendix B. Our site inspections included targeted searches for potential SAR habitat of these species.

5.0 Ecological Findings

5.1 Site Inspection Summary

For this assessment, ORE staff conducted one (1) site inspection on the following date:

Date of Inspection	Time of Inspection	Temp. °C	Beaufort (Wind) Scale	Conditions
October 17th, 2024	9 AM to 11:30 AM	7	3 - Gentle Breeze	0% Cloud cover, completely clear. Photos of the site conditions were taken. Vegetation inspections were conducted in the area of the proposed residence, on the plateau where the existing residence is located. Inspections extended down the hillside to the pond, tributary of Cavan Creek and woodland acreage on the slope and base of the slope. ORE recorded all early migratory birds in the area of the property.

From the site inspection data, a map of the general vegetation communities and habitats occurring on the property has been prepared (Figure 4). During the inspection, faunal observations were also recorded. Standard methodologies were utilized for the mapping exercises and species identification.

5.2 Survey Methodologies/Protocols

5.2.1 Vegetation

The site has been characterized by its various vegetation communities using the methodologies included in the *Ecological Land Classification (ELC) - First Approximation and Its Applications* (1998). The 1998 Ecological Land Classification - First Approximation is a guide used by Ecologists to standardize the classification of different vegetation community types across Ontario. The classification system enables an ecologist to identify vegetation communities based on the species present, soil materials and moisture regimes.

There have been a number of updates to the ELC scheme to further refine the classification of Ecosites throughout Ontario. As a result, the 2008 *Draft* ELC Guide provides a further breakdown of the 1998 ELC Guide - First Approximation communities and includes many new communities to index from. The 2008 ELC scheme also provides a cross-reference to the 1998 guide communities. This report uses a combination of the 1998 ELC communities (which are considered the primary vegetation communities) and the 2008 Draft ELC, to supplement the vegetation community lists, when the 1998 ELC does not accurately define the habitat.

Prior to conducting the site inspection, aerial photography of the subject site was analysed to roughly delineate communities based on recognizable vegetation differences. Each identified vegetation community was subsequently inspected outside the growing season but when most trees still possess foliage. Dominant vegetation types were recorded and boundaries of the various communities mapped using a GPS (when the boundary of the ELC community is not recognizable on the air photo).

In addition to identifying and mapping the ELC communities, ORE staff assessed each vegetation community from the perspective of whether they are hydrologically sensitive, and/or whether they may represent SAR habitat. Considering the wetland and contributory seepage was easily defined by the wet/saturated conditions on the slope and creek meander belt at the base of the slope, it was not necessary to obtain soils data to determine the boundary of the sensitive hydrological features on-site.

5.2.2 Avifauna

ORE staff attended the site during the early fall season and attempted to detect all available avian species by sight, calls and notes, within and proximal to the site. The October survey was conducted outside the breeding and migratory bird period, which is the optimal time of year to detect avian. However, any potentially significant bird species would be associated with the PSW and/or wooded slope areas that contain the sensitive

seepage areas on the subject property.

When necessary, bird calling devices and "pishing and squeaking" were also used to attract bird species from within the densely vegetated areas to the edge of openings for identification purposes.

All species overheard and/or observed during the survey were noted. If a SAR bird was detected, the habitat was identified in relation to the proposed development and it was determined whether the proposed developments represent a potential risk to that avian SAR and/or its habitat.

5.2.3 Mammals

Mammals were detected utilizing the protocols outlined in the MNDMNRF's March 1998 - Wildlife Monitoring Programs and Inventory Techniques for Ontario. Mammals were generally identified by either visual encounters or via their tracks and/or scat droppings at the site.

The mammals surveys were targeted in areas that possess fresh exposed soils where recent tracks could easily be observed.

Bats are mammals, and the site possesses woodland habitat which can be utilized for roosting/nursery purposes in the spring and summer months. Bats will roost in woodpecker cavities, behind loose bark on dead trees, on the underside of deciduous tree species or within very furrowed bark on certain tree species. ORE staff observed only one (1) good quality bat snag tree along the north fencerow proximal to the existing residence. The trees along the slope and towards the edge of the pond were predominantly Eastern White Cedar, which is not considered a good quality snag tree type according to the MNRF criteria.[2]

5.2.4 Herptiles

The conditions were reviewed to determine if suitable SAR herptile habitat could be present on, or adjacent to, the subject site. If present, the habitat was identified in relation to the proposed development. ORE staff rolled over woody debris (etc.) to detect herptiles, as they could still be under cover/shelter (e.g., downed trees or artificial cover objects).

---

[2] Bats and Bat Habitats: Guidelines for Wind Power Projects, more specifically: Appendix A: Methods for Evaluating Bat Significant Wildlife Habitat.

5.3 Vegetation

ELC inspections focussed on the proposed development area and adjacent lands utilizing binoculars and unobstructed sight lines. The focus of the inspection outside of the subject site were to detect nearby watercourses, Species at Risk trees that are somewhat common (e.g., Butternuts - *Juglans cinerea* and Black Ash - *Fraxinus nigra*) and/or rare vegetation communities that could be impacted by any proposed alterations/construction on the subject property.

Figure 4 illustrates all of the ELC communities observed on-site. Photos illustrating the site conditions and these communities are provided in Figure 5.

Based on our observations, the following vegetation communities have been identified as per the 1998 Ecological Land Classification (ELC) for Southern Ontario Catalogue and supplemented with the 2008 ELC Catalogue:

Terrestrial Communities:

1. Single Family Residential (CVR_3)
2. Fresh – Moist White Cedar Coniferous Forest (FOC4-1)
3. Dry - Fresh Poplar Mixed Forest (FOM5-2)

Aquatic / Wetland Communities:

4. Open Water Aquatic (OAO)
5. White Cedar Mineral Coniferous Swamp Ecosite (SWC1)

Each of these communities are described below.

1. Single Family Residential (CVR_3)

No description is provided in the draft May 2008 Ecological Land Classification for Southern Ontario.

This type of community includes the anthropogenic-related areas such as the cleared/lawn areas, internal roads, existing residence, and outbuildings.

2. Fresh – Moist White Cedar Coniferous Forest (FOC4-1)

According to the ELC manual, a Fresh - Moist White Cedar Coniferous Forest (FOC4-1)

possesses 60% or more canopy cover, 75% of which must be dominated by a coniferous species. FOC4-1 is typically dominated entirely by Eastern White Cedar (*Thuja occidentalis*) and is typically fern rich.

This Eastern White Cedar dominated wooded area occurs along the entire slope where the seepage occurs. The seepage drains down the hillside to the base where it infiltrates the soils at the base, discharging to Cavan Creek on the subject property. There are some minor occurrences of Yellow Birch (*Betula alleghaniensis*) and Balsam Fir (*Abies balsamea*) towards the toe of the slope where it transitions to the wooded swamp habitat associated with the PSW at the base of the slope.

ORE staff did not obtain soils as the presence of seepage discharging from the slope/ embankment suggests this area is considered significant as it contributes groundwater to the creek and PSW at the base of the slope. The slopes did not contain more than 50% hydrophytic/wetland indicators as per the Ontario Wetland Evaluation System. Therefore, they cannot be considered a wetland according to the Conservation Authorities Act. As such, these areas were mapped as a Moist White Cedar Coniferous Forest. Even though the soils/surface can be saturated, it is likely moist throughout most of the year. Regardless, it has been mapped as part of the ANSI/Cavan Creek Headwater.

3. Dry - Fresh Poplar Mixed Forest (FOM5-2)

The ELC (2008) describes a Dry – Fresh Poplar Mixed Forest (FOM5-2) as having a mix of greater than 25% coniferous species and greater than 25% deciduous species which are comprised of primarily Trembling Aspen (*Populus tremuloides*) or Large-tooth Aspen (*Populus grandidentata*) with Balsam Fir, White Pine (*Pinus strobus*) and Eastern White Cedar (*Thuja occidentalis*). Substrate typically has moderately fresh to fresh soil moisture regimes.

This community occurs from the top-of-bank area and extends west towards the existing and proposed residence locations. It also contains minor occurrences of White Spruce (*Picea glauca*) where it starts to transition into open field/cultural meadow habitat on the adjacent/neighbouring parcel to the south.

Aquatic/Wetland Communities:

4. Open Water Aquatic (OAO)

The ELC (2008) describes OAO as an environment containing no macrophyte vegetation and no tree or shrub cover. This ecosite tends to be dominated by plankton and has a lake trophic status.

The OAO community corresponds to the tributary of Cavan Creek at the base of the hill on the subject property. This feature is void of vegetation and possesses braided sands and gravels that are constantly being reworked making it improbable for aquatic vegetation to adhere to the bottom sediments. The only species observed in the creek was Water-Cress (*Nasturtium officinale*), which stems from the embankment and typically floats at the sides of the creek is a groundwater/seepage indicator species.

5. White Cedar Mineral Coniferous Swamp (SWC1)

The ELC describes a White Cedar Mineral Coniferous Swamp (SWC1) as having tree cover present in greater than 25% of the ecosite. This ecosite is dominated almost entirely by Eastern White Cedar (*Thuja occidentalis*) with minor amounts of Eastern Hemlock (*Tsuga canadensis*) and Balsam Fir (*Abies balsamea*). Ground cover will vary with the degree of open canopy.

The SWC1 wooded swamp community is located at the base of the hill on the subject property and comprises the PSW. This wetland habitat will be unaffected by the proposed severance and remain in an unaltered, natural state, with the exception of the existing opening at the base of the hill directly adjacent to the creek.

ORE staff did not obtain soils ata as the abundance of standing water at surface draining into the creek and greater than 50% hydrophytic species was sufficient. The exposed embankments in the creek also contained both hydric soils and seepage that was draining into the tributary/PSW.

5.4 Fauna

5.4.1 General

The list of faunal species observed at the site is presented in Appendix F. Relevant observations of faunal activities on and adjacent to the site are briefly discussed below.

5.4.2 Database Species

There were a number of SAR, related to a Life Science ANSI (Cavan Creek headwater feature) and the Cavan Creek PSW detected during the database prescreen, directly on and/or in the immediate vicinity of the subject site, on the neighbouring properties.

5.4.3 Avifauna

ORE staff attended the site in the autumn which is outside the prime breeding bird/migratory bird period. However, the autumn conditions were suitable for detecting late migratory and winter birds. A number of woodland related birds were overheard within the wooded areas on-site.

The survey identified only common/secure species on the subject site and adjacent lands. No SAR avian species were detected during the inspections. That being said, it was completed outside the time of year to detect breeding bird species.

5.4.4 Herptiles

The inspection was conducted outside the optimal time to detect herptiles, however, it was completed while temperatures were above freezing during the evening and diurnal period. The site also contains wetlands and a watercourse directly on the subject property which receive an abundance of groundwater making the wet areas on-site warmer. The subject property includes a section of Cavan Creek which is known to contain SAR turtles. Therefore, we will assume the turtle species detected within the prescreen could migrate within the tributary. The site inspection was completed during the time of year that would enable ORE staff to visibly detect any turtle nesting sites and/or ephemeral pools on the subject parcel.

The site was reviewed to determine if any suitable herptile habitat is present. Based on the site conditions, it is possible that anyone of the turtles within the prescreen could migrate to the property for any part of their life cycle.

5.4.5 Mammals

The database searches did not indicate the presence of any SAR mammals in the general area and none were observed during the site inspections. A list of detected mammals within the subject property is presented in Appendix F.

5.5 Species at Risk

No Species at Risk (SAR) were detected on the subject site or within 25 m of the proposed development.

ORE staff specifically searched for Butternut and Black Ash on the subject property and within 25 m of the property boundary, as both are relatively common Endangered tree

species. None were identified. Some minor amounts of Red/Green Ash were identified in the area of the creek - Red/Green Ash is not Endangered.

ORE staff did not detect any SAR avian or SAR turtles as per those listed in the background databases. The inspections were completed outside the optimum period to detect both of these SAR.

As for the bird species, the only SAR avian that may find the subject site and surrounding residential development lands attractive in the database lists would be Canada Warbler or Evening Grosbeak. The site mainly contains secondary succession conifer dominated habitat which is exactly the type of habitat these two (2) Special Concern species prefer.

The creek may offer suitable habitat for turtles to migrate within and possibly nest within the lawn/cleared related shores of the subject property, even though there was no visible evidence of nesting during the site inspection.

5.6 ORMCP Land Use Designations

ORE staff reviewed the subject site with respect to the following land use designations and KNHFs that may be relevant to the site (and surrounding area), according to the ORMCP mapping:

- Significant Woodland - The on-site woodland would meet the criteria for "Significant" based on the definition outlined in the ORMCP, which follows the criteria in the Natural Heritage Reference Manual (NHRM). The criteria utilizes a blending of tree diameter (diameter at breast height - dbh) and number of stems within a 1 ha area to define whether a woodland meets the criteria of a woodland. If the wooded area meets the woodland density criteria outlined in the NHRM, then the definition of "Significant" must also apply for it to be considered a Significant Woodland.

  The on-site woodland contains a variety of mature large diameter and smaller diameter younger trees that meet the NHRM density criteria and are part of a large woodland expanse covering the valley slope and wooded swamp conditions associated with the PSW at the base of the slope. Any development proposed on the subject site would represent a risk to the Significant Woodland on the slope.

- Significant Wetlands - Both the Cavan Creek Provincially Significant Wetland and Cavan Creek Life Science ANSI are considered Significant Wetland and Hydrologically Sensitive Features (HSFs), which occur both on

and within the vicinity of the subject site on the neighbouring properties. The Significant Wetland/Hydrological features occur within 60 m of the existing residence.

The minimum watercourse/wetland setback according to the ORMCP is 30 m. The proposed residence's location will occur beyond the 30 m minimum setback, thereby meeting the ORMCP criteria.

- Natural Core Area - The subject site possesses a Natural Core designation, however, the lot was created prior to the inception of the ORMCP.

  Therefore, the residential land use designation supercedes the ORMCP in this case. However, the lot is still subject to retaining as much of the Key Natural Heritage Features as possible, thus maintaining/respecting the Natural Core Area ORMCP designation.

- Landform Conservation Areas - Category 2 (Moderately Complex) - The proposed development must attempt to adhere to the limitations outlined in the Category 2 designation.

  The single residential development will not require any large works/ development according to the ORMCP, and due to the size of the development, it will not cause any significant alterations/deteriorations to the Landform. The proponent will require some levelling of the area where the proposed residence is to be located, but this shall be minimized to reduce the footprint of the site alteration area within an existing clearing/opening on the subject parcel.

  The remaining requirements according to the ORMCP Category 2 (Moderately Complex) Landform Conservation Area are the limitations with respect to 50% alterations and 20% impermeable surfaces on the site. The site possesses the existing residence and garage buildings. However, these will be removed once the proposed residence and garage are constructed. Consequently, the new structures will constitute the only increase in impermeable surface area on-site (driveway to remain gravel). An assessment of the impacts by the proposed development is provided below with respect to the Category 2 (Moderately Complex) Landform limitations provided above.

- Aquifer Vulnerability - The site possesses a Low Aquifer Vulnerability

designation.

That being said, any new structures would not represent a significant risk to any aquifers below the site. All of the watercourses, wetlands or groundwater discharge features occur further down the slope on the subject property. The shallow water table most likely corresponds to the level of seepage on the hillside, which would be a few metres below the plateau area where the structures are to be constructed. ORE staff anticipate that the proponent will utilize the existing water well to obtain a potable water supply on the property. As such, a proposed residence/garage or its foundation should not intersect any shallow aquifers. The proposed residence/garage would occur at a similar level to the existing residence in which there appears to be no issues/concerns. According to the proponent, the existing residence contains a full basement below grade.

6.0 Impact Assessment

6.1 General Impact Considerations

ORE staff observed seeps, wetland and watercourse on the subject property. The nearest waterway feature is Cavan Creek, therefore, measures should be applied to the site to ensure eroded sediments from the development area/building footprint do not impact Cavan Creek during the site alteration stage.

The majority of the development will occur towards the west end of the property within the area illustrated on Figure 6. This area outside the woodland edge contains only a few trees and is entirely comprised of lawn-space. It should be possible to construct a development without removing the core woodland trees that occur further down the slope, thereby retaining all of significant woodland habitat used by wildlife to migrate through the Natural Core area.

Therefore, vegetation removal can be minimized to only a few sporadic trees in the open lawn area to establish a reasonable sized building envelope to construct a residential development in the proposed location on Figure 6, in accordance with the constraints outlined in this evaluation.

Consequently, the main potential impact from the construction would be to the Cavan Creek valley vegetated slopes. Excavating the foundation will disturb soils and vegetation directly within the footprint of the new residence. Therefore, mitigation in the form of containing soils and/or reapplying native vegetation to the areas impacted by machinery would be necessary to ensure that Cavan Creek and the somewhat steep wooded slope (landform) on the subject site are not impacted by the proposed works.

Recommendations to mitigate impacts to preserve the slope/landform and Cavan Creek - headwater discharge feature are provided in the following section.

6.2 Species at Risk

A search of five (5) databases was conducted, indicating the following SAR could be associated with the site and the surrounding lands.

NHIC

Only two (2) SAR avian were detected in the square area corresponding to the subject property - Eastern Meadowlark and Grasshopper Sparrow, which possess a Threatened and Special Concern status in Ontario, respectively.

The site does not contain suitable habitat for either species, as the majority of the property is wooded, other than the existing residential area. ORE staff expects these two (2) agricultural related SAR were detected within the farmfields to the west.

OBBA

Multiple SAR avian were identified in the OBBA datasheets to occur in the area of the subject parcel. Potential candidate species have been further rationalized based on types of habitats present on the subject site and neighbouring properties:

Species	Preferred Habitat	Habitat Present/Detected During Site Inspections
Bank Swallow	Bank Swallows prefer steeply cut banks to construct cavity nests within.	No, there is a relatively steep slope on the subject property, however, there are no Bank Swallow holes or exposed cut sandy faces that this species burrows within to nest. It is possible that nesting habitat may occur on one of the other neighbouring properties if there was a slope failure or cut within the farmfields to the west. Bank Swallow was not detected on-site during the survey.
Barn Swallow	Barn Swallow prefers open meadow fields and/or permanent watercourses and structures.	No, not observed within the subject property. There is a farm/agricultural operation to the west of the site along Dranoel Drive, but not on-site.

Bobolink	Bobolink prefers open field that appears to be either cut or grazed by livestock recently, similar to Barn Swallow, Eastern Meadowlark and Grasshopper Sparrow.	No, Bobolink was not detected during the survey and the habitat does not occur on-site.
Canada Warbler	Prefers conifer dominated woodland that front onto creeks, wetlands and lakes.	Yes, Canada Warbler was not detected during the survey, but it would not have been present during the October surveys. If it nests on-site, it would nest proximal to the creek in the conifer-rich rim habitat, which is not in the area where any site alterations are proposed.
Chimney Swift	Prefers either hollowed trees or chimneys in residential/commercial settings.	No, it was not detected during the survey, however, the survey was conducted outside the period to detect this species. Chimney Swift was likely detected closer to Bethany and/or on one of the nearby farms. The subject property's habitat would be considered marginal for this species.
Common Nighthawk	Prefers relatively open scrubby rock barren thicket habitats overlooking waterways. This type of habitat is not present within 120 m of the proposed lot addition. Many Common Nighthawk migrate through the Peterborough area in the spring and fall seasons, however, very few stay to breed.	No, it was not detected during the surveys, however, the survey was outside the period to detect this species. There is also no suitable habitat on or directly adjacent to the subject property.
Eastern Meadowlark	Prefers similar habitat to Bobolink.	No, it was not detected during the survey, however, the survey was conducted outside the period to detect this species. There is also no suitable habitat directly on-site.
Eastern Whip-poor-will	Prefers relatively mature wooded areas adjacent to wetlands and watercourses. The woodland habitat is present on-site but not the hydrological feature.	Yes, both the woodland and Cavan Creek habitats combined are favourable for this species. If it were present on or in the vicinity of the site, it would stay within the wooded areas and periodically come to the tall trees on the slope to call. It would not nest in the area where the proposed redevelopment is proposed.
Golden-winged Warbler	Prefers thicket swamp areas that contain dogwoods, willows and sometimes speckled alder.	No, some minor fringe thicket swamp towards the base of the slope associated with the cedar-rich swamp areas, not large enough to support this species.

Grasshopper Sparrow	Prefers similar habitat to Bobolink and Eastern Meadowlark.	No, it was not detected during the surveys, however, the survey was conducted outside the period to detect this species. There is also no suitable habitat directly on-site.
Least Bittern	Prefers large marsh areas that contain emergent aquatic vegetation such as cattails/reeds. It often nests within the interspersion area within these wetlands.	No, it was not detected during the surveys, however, the survey was conducted outside the period to detect this species. There is also no suitable habitat directly on-site. There are cattail marsh areas further south and directly north of Highway 7A.
Wood Thrush	Prefer secondary succession deciduous or mixed woodland types.	No, the site is dominated by cedar-rich tracts that are not typically used by Wood Thrush for nesting purposes. If there are deciduous-rich or mixed woodlands, they would likely nest in these areas.
Yellow Rail	Prefers large marsh areas that contain emergent aquatic vegetation such as cattails/reeds. It often nests within the interspersion area within these wetlands.	No, it was not detected during the surveys, however, the survey was conducted outside the period to detect this species. There is also no suitable habitat directly on-site. There are cattail marsh areas further south and directly north of Highway 7A.
Yellow-breasted Chat	Prefers thicket swamp/dense brushy areas.	No, the small tufts of thicket/brushy areas is too small for this species. The occurrence of this Endangered species is very rare in Peterborough area.

Among the SAR birds above, the Canada Warbler could be in the general area of the subject property based on the presence of the conifer-rich lined Cavan Creek habitat. Both Wood Thrush and Eastern Whip-Poor-Will prefer woodland regimes, however, they typically nest in deciduous dominated and mixed type woodland habitats, which the site does not possess.

iNaturalist

The iNaturalist database did not possess any local SAR occurrence results in the database.

eBird

eBird identified several avian SAR in the vicinity of the subject site, however, the majority had also been listed in the OBBA. The only species not listed within the OBBA that were in the eBird database were:

Species	Preferred Habitat	Habitat Present/Detected During Site Inspections
Eastern Wood-Pewee	Prefer secondary or late succession deciduous or mixed woodland types.	No, the site is dominated by cedar-rich tracts that are not typically used by Wood Thrush for nesting purposes. If there are deciduous-rich or mixed woodlands, they would likely nest in these areas.
Evening Grosbeak	Prefers conifer dominated woodland that front onto creeks, wetlands and lakes.	Yes, Evening Grosbeak was not detected during the surveys, but sometimes remains throughout the fall and winter season in Ontario. If it nests on-site, it would nest proximal to the creek in the conifer-rich rim habitat, which is not in the area where any site alterations are proposed within the redevelopment.

Among the SAR birds above, the Evening Grosbeak could be in the general area of the subject property according to the conifer-rich lined Cavan Creek habitat.

Ontario Reptile & Amphibian Atlas

Species	Preferred Habitat	Habitat Present/Detected During Site Inspections
Midland Painted Turtle	Prefers wetland and waterways. Cavan Creek is known to possess this species. It typically occurs within the wider section of creeks and rivers where it can dive to depths and be undetected by predators.	No, the section of creek on the subject property is extremely shallow and this species would not be able to dive to depths and avoid detection/predation.

Blanding's Turtle	Prefers wetland and waterways. Cavan Creek is known to possess this species. It typically occurs within the wider section of creeks and rivers where it can dive to depths and be undetected by predators. It will however migrate great distances within creeks to relocate for mating and nesting purposes.	No, the section of creek on the subject property is extremely shallow and this species would not be able to dive to depths and avoid detection/predation. Therefore, it would not be the primary habitat of Blanding's Turtle. Yes, it could occur within the creek at any point throughout the breeding period while it migrates to ponded locations in the creek to mate and lay its eggs.
Snapping Turtle	Prefers wetland and waterways. Cavan Creek is known to possess this species. It typically occurs within the wider/slower section of creeks and rivers where it can dive to depths and be undetected by predators. It will however migrate great distances within creeks to relocate for mating and nesting purposes.	Yes, Similar to Blanding's Turtle, the section of creek on the subject property would not be the primary habitat of this species but it could migrate within the creek to find suitable mates and/or lay its eggs.
Eastern Milksnake	Prefers farmland type regimes where it can access the foundations of barns, residences, etc.	No, the subject site would be considered marginal as it does not possess farmfield/ hayfield where this species tends to conceal itself within. It often prefers to be associated with livestock as the feed tends to attract mice and insects which are its preferred food source.

Among the herptiles listed above, there is the off-chance that Blanding's or Snapping Turtle could nest within the embankments of the river towards the base of the property. The exposed sunlit sandy embankments would be ideal for nesting purposes. The creek habitat would, however, not be the primary slower moving deeper primary habitat that these two (2) turtles require throughout the remainder of the year. They would not overwinter in this section of the creek either due to the sandy braided stream environment.

6.3 ORMCP Land Use Designations

6.3.1 Aquifer Vulnerability

As outlined above, the site possesses Low Aquifer Vulnerability designations, as per the ORMCP mapping. As such, the proponent and their contractor(s) should implement standard safety controls to ensure the receiving aquifer below the construction area is not impacted by machinery, unless it is for the specific purpose of drilling a water well for

potable water to service the residence.

6.3.2 Landform Conservation

The subject site is located within a Category 2 (Moderately Complex) - Landform Conservation Area. Sections 30 of the ORMCP provide direction on how landform conservation principles will be applied on the ORM.

Section 30(6) states:

"Section 30(6) requires: "An application for development or site alteration with respect to land in a landform conservation area (Category 2) shall identify planning, design and construction practices that will keep disturbance to landform character to a minimum, including,

> *(a) maintaining significant landform features such as steep slopes, kames, kettles, ravines and ridges in their natural undisturbed form;*
>
> *(b) limiting the portion of the net developable area of the site that is disturbed to not more than 50 per cent of the total area of the site; and*
>
> *(c) limiting the portion of the net developable area of the site that has impervious surfaces to not more than 20 percent of the total area of the site."*

According to the property size of 1.7 acres (0.69 ha), the limit for the allowable disturbed/altered area is 50%, or 0.85 acres (0.35 ha). The total allowable area for any proposed impervious surface (limited to 20% of the total property area) would be 0.34 acres or 14,810.4 sq. ft.

Therefore, the proponent would have to demonstrate that the proposed development will meet the 50% disturbed area and 20% impervious surface limitations imposed by the ORMCP, thus complying with the Category 2 requirements. According to the proponent, they intend to construct the new residence/garage that has a maximum area of 3,200 sq. ft. The existing residence has an approximate area of 1,000 sq. ft. Consequently, if we were to combine the total impermeable surfaces to include both the proposed and the existing it would be on the order of 4,200 sq. ft., which is well below the 14,810.4 sq. ft. allowance under the ORMCP. Once the new residence is constructed and the existing residence is removed, it will be well below the allowable limit. As for the allowable disturbance area, the existing disturbed/open area on the subject property is 1.16 acres which is a little larger than the allowable 0.85 acre disturbed area under the Category 2 limitation. That being said, no new site alterations are proposed within the natural areas on-site and the total disturbed area will remain unchanged. The proposed development and constraints are provided on Figure 6.

7.0 Conclusions and Recommendations

7.1 The following sections provide a brief summary of the recommended mitigation for the proposed residential development. Based on our findings, it is our conclusion that there are three (3) Key Natural Heritage Features (KNHFs) in the vicinity of the subject property. These include the Significant Valleyland/Slope, Significant Woodland, and Cavan Creek - ANSI/PSW HSF, which are downgradient of the proposed building location/envelope. There is also a potential for Canada Warbler, Evening Grosbeak and certain SAR turtles (Blanding's Turtle and/or Snapping Turtle) to occur on, or within 120 m, of the subject property during certain stages of their life cycle.

Regardless, any potential construction impacts associated with the proposed residential redevelopment within, or adjacent to, the KNHF/HSF should be mitigated to an undetectable level. Therefore, the proposed Building Permit application should be subject to the recommendations provided herein and as illustrated on Figure 6. Please note that other constraints may also be imposed through Municipal Building requirements. These conclusions and recommendations have been based on the protocols and policy documents available as of the date indicated on this report. Environmental constraints are subject to change based on local planning/building departments and provincial requirements. The proponent should contact the Municipal Building Department to review these requirements.

7.2 The property contains an existing residence. Cavan Creek is the only watercourse proximal to the subject property and it occurs 30 m or more away from the proposed new residence location. The majority of the hillside (associated with the creek valley slope) overlooking the Cavan Creek PSW possesses a relatively mature conifer-rich secondary succession woodland habitat. The woodland is considered significant based on it being larger than 4 ha and meeting the spatial criteria of 1,000 stems per hectare of any diameter size as per the Natural Heritage Reference Manual (NHRM).

Typically, a 30 m setback would be applied to the relatively steep slope's top-of-bank (Significant Valleyland), the wetland boundary, ANSI boundary and the drip-line of the Significant Woodland. However, it would not be possible to apply a 30 m setback off the Valleyland, Woodland drip-line, and/or ANSI boundary due to the property constraints. That being said, a 30 m setback can be maintained from the wetland boundary of the Cavan Creek PSW which satisfies the ORMCP requirement for this KHFs. Therefore, at a minimum, the creek and associated wetland can be protected via the required setback in the ORMCP on this existing lot of record.

As for the top-of-bank setback typically associated with the relatively steep gradient of the Significant Valleyland/Slope, a setback is not being applied to this feature. Even though a setback is not being applied, the proposed location of the residence/garage will be atop the

plateau area and not proximal to any steep slopes associated with the valleyland. There is no area outside this existing lot of record that can meet the ORMCP criteria with respect to the Significant Valleyland/Slope.

In regards to the Significant Woodland, the proposed residence/garage will occur several metres outside the drip-line of this feature. Figure 6 illustrates where the proposed redevelopment is located within the existing lawn area on the subject property, which will not require the removal of any trees along the Significant Woodland edge. A few trees may be removed that occur within the existing lawn/residential area, however, these trees are not part of the Significant Woodland.

The proponent will need to contain any/all development within the approximate area identified on Figure 6 (or similar) to comply with the ORMCP Category 2 - Landform Conservation requirements. The 50% disturbance area can be modified/adjusted according to the development plan, as long as the 50% disturbance limitation is adhered to. Similarly, the site has a 20% impervious surface limitation, and therefore any proposed new residence, garage and/or outbuildings proposed to be constructed on-site would have to meet this limitation to comply with the ORMCP criteria.

According to the calculations provided above, the proposed residence and garage can easily meet the ORMCP criteria for total disturbed areas and impervious surfaces.

Consequently, any proposed residential development must adhere to a "least impact" approach with respect to the three (3) identified KNHFs. The proponent should not require a permit from ORCA from the perspective of any hydrological features as the proposed development will occur greater than 30 m from Cavan Creek PSW, and given the difference in elevation, the proposed development area will likely be situated outside the floodplain of this feature. However, the proponent should contact ORCA to confirm whether a Permit is required from a top-of-bank/erosion hazard perspective. The proponent should consider obtaining more accurate elevation data for the property when a survey is necessary. The survey with topographic information will better identify how proximal the proposed residence will be to the top-of-bank This sNHE should be included with the Building Permit application, submitted to the Township.

7.3 Neither Canada Warbler nor Evening Grosbeak were detected during the site inspection. However, either of these species could be nesting within 120 m of the subject site during the breeding bird period. Both these SAR birds possess a Special Concern status in Ontario and are not protected under the Endangered Species Act (ESA).

Special Concern species are mitigated/protected under the provisions outlined in the Significant Wildlife Habitat Mitigation Support Tool (SWHMiST). Considering both species would nest within the conifer-rich woodland, the proposed building development

will completely avoid this habitat. As this is the primary mitigation measure in the SWHMiST, the development will comply with the recommendations to avoid the habitat of Special Concern species.

7.4 To mitigate potential impacts to the KNHFs, the following construction measures shall apply to the property:

- Proper Erosion and Sediment Controls (ESC) will be required at all times if heavy equipment will be in operation, including during the placement of any clean fill or top cover materials. Heavy-Duty Silt Fence shall be installed across the base of the slope as illustrated on Figure 6, to prevent soils from eroding down the slope towards the ANSI Seepage areas and/or Cavan Creek PSW. The proponent is responsible for maintaining the site alteration areas and slope so that eroded materials do not impact the ANSI or the PSW.

- The proponent shall enlist the services of a contractor familiar with the installation of ESCs to include the necessary controls on the Site Plan. It may be necessary to install both interim (during construction controls) and/or permanent controls to be sure the KNHFs are not impacted by the construction and integration of the proposed residential development into the property. Any/all ESC shall be installed on-site prior to any vegetation removal/alterations commencing.

- Construction should not continue during heavy precipitation events. After any such events, the ESC should be checked to ensure their effectiveness. The Ontario Provincial Standard Drawings (OPSD) for installing heavy-duty silt fence ESC is provided in Appendix G.

  ORE staff recommend installing the heavy-duty silt fence rather than the light-duty silt fence to exclude any herptiles from the site alteration area. As previously mentioned, there is the potential for herptile species such as Blanding's Turtle and Snapping Turtle to migrate within Cavan Creek and nest within the lawn areas of the property. Presumably, the turtles would nest within the sandy materials at the base of the slope in the meander belt of the creek, however, any loose/unconsolidated sandy fill or excavated/stock piled material would be attractive to these two (2) turtle species. As such, the heavy-duty silt fence is considered an interim exclusion fence material that would prevent turtles and most snakes from entering the work area during the construction period. Provided, the heavy-duty silt fence is erected around the edge of the site alteration area, the SAR turtles could not enter the work area and risk being either harmed or harassed by equipment or workers.

- Only clean fill materials should be imported to the site and only if necessary. The fill should not contain organic materials such as plant debris or topsoil that may contain exotic or invasive species. It is important that any imported fill materials match the permeability of the native soils on-site, to maintain infiltration and runoff conditions. If imported topsoil is required, then screened topsoil should be the only material applied as top dressing. Preferably, any existing top soil materials would be removed, piled next to the fill area and reapplied after the filling event. Seeding and/or sodding will likely be necessary afterwards to cover the bare/exposed soil materials.

- If construction equipment must relocate to the subject property to complete the construction each unit should be subjected to the 2016 (updated) Clean Equipment Protocol for Industry - Inspecting and cleaning equipment for the purposes of invasive species prevention.

- Following the construction, disturbed areas possessing bare soils should be quickly seeded or sodded with native grass species to re-establish the root structure within the upper soils. Once the seeding or sodding is determined to be a success and the soils are stable, the interim ESC can be removed. If permanent ESC is necessary, the construction should not be deemed complete until the ESC is installed.

- It is recommended that these measures be included in the condition section of the Site Plan/Building Sketch and submitted with the Building Permit application to the Township.

The Municipal Building Inspector will likely monitor the development to ensure that the construction does not result in any adverse conditions to the site as prescribed in this sNHE and as illustrated on Figure 6.

7.5 ORE staff made a concerted effort to detect Butternut and/or Black Ash in the area of the subject site. No Butternut or Black Ash were observed on site or within 25 m of the subject property (which is the maximum setback distance MECP enforces with respect to a healthy Butternut tree's root zone and Black Ash boles). If either tree species is determined to be unhealthy, there are no ESA implications and the tree can either be left standing or it can be removed, if necessary.

7.6 The proposed residential development will comply with the ORMCP designations provided the following is adhered to:

- The proposed disturbance area on-site has already exceeded the allowable 50% limit under the Category 2 - Landform Conservation Area criteria. However, no new disturbed areas will result from the construction of the proposed residence/garage, thus complying with the Category 2 requirements.

- The total impermeable surface area (inclusive of the new residential development) will not exceed the allowable 20% limit to comply with the Category 2 - Landform Conservation Area requirements.

- Three (3) KNHFs have been identified either on or adjacent to the proposed residential development/disturbance area, therefore, any proposed development should attempt to comply with the ORMCP requirements. Considering this is an existing lot of record in the Natural Core Area of the ORM, a *least impact* approach should be sufficient. The residence is proposed to occur proximal to the existing residence and will, therefore, not infringe on the portion of the lot that contains the majority of the Significant Woodland species. Consequently, both the edge and core woodland areas which comprise the Natural Linkage area will be untouched, thereby retaining the integrity of the Natural Linkage swath across the entire subject property.

- The site possesses a Low Aquifer Vulnerability designation on the subject property. Regardless, the receiving aquifer below the proposed residential development would be sensitive to spills, etc. The contractor should have in their possession during the construction, a spill kit in the event the machinery used to excavate the foundation (etc.) leaks and/or spills fuel, hydraulic fluid or other lubricants. The absorption materials should be left in place as long as possible to extract as much of the spill material as possible. If the spill is significant, the Ministry of Environment, Conservation and Parks should be contacted. It may also be beneficial to have the Ontario Spill Response Unit's Number readily available. Containing spills are of particular importance with respect to preventing potential impacts the potable water supply of the residence.

7.7 The proponent must obtain a Building Permit prior to completing any work on-site which includes clearing of vegetation. In addition, the proponent should verify whether a permit needs to be obtained from the Otonabee Region Conservation Authority (ORCA) prior to proceeding to the construction phase. The proposed development does not fall within 30 m of a watercourse or wetland which represents an ORCA regulated feature. That being said, ORE staff do not possess the floodplain data for the subject property, although we

would not expect flood levels to impose on the proposed building envelope atop the valley. It is possible the authority may need to be informed of the proposed erosion-sedimentation controls on-site to be sure any erosion hazards associated with the slope directly upgradient of the flood and hydrological features are not impacted by any disturbance/works. If ORCA determines the proposed location is proximal to the top-of-bank, they may require the proponent to obtain the services of an engineer to ensure the construction/development does not pose an erosion/instability risk. Therefore, the proponents should verify that a permit is not required from the conservation authority.

7.8 The recommendations provided in this report should be incorporated into the Building Permit application and form part of the conditions between the Township and proponent. The Building Department (and possibly the Conservation Authority) may provide recommendations that the proponent should incorporate into their site plan and implement during the construction stage.

It is the applicant's responsibility to ensure that the recommended mitigation measures outlined in this report are implemented. The contractor can be asked to adhere to the conditions, however, the proponent is ultimately responsible to ensure that the conditions are met. ORE staff can be contacted during any phase of the construction to provide direction/recommendations in regards to mitigation measures outlined in this sNHE.

* end of sNHE report *

Sincerely,
Oakridge Environmental Ltd.

Rob West, HBSc.
Senior Ecologist

Selected References

Argus, G.W. and K.M. Pryer. 1982-1987, *"Atlas of the Rare Vascular Plants of Ontario"*. Four Parts. National Museum of Natural Sciences, Ottawa, Ontario.

Austen, M.J. et. al. 1995. *"Ontario Birds at Risk Program"*. Federation of Ontario Naturalists and Long Point Observatory. 165 pp. OBAR website.

Bartlett, J.R., Moore, J.M. 1985. *Geology of Belmont, Marmora, and Southern Methuen Townships, Peterborough and Hastings Counties*; Ontario Geological Survey, Open File Report 5537, 236p.

Bezener.A. 2000. *"Birds of Ontario"*.Lone Pine Publishing.. 376 pp.

Bakowsky, W., 1995. *"S-ranks for Southern Ontario Vegetation Communities"*. OMNR, Natural Heritage Information Centre, Peterborough, ON. 11 pp.

Bellrose F.C. 1976. *"Ducks, Geese and Swans of North America"*. Stackpole Books

Cadman, M.D. et. al., 2007, *"Atlas of Breeding Birds of Ontario"*, OBBA website, 2nd Edition (2001-2005).

Cheskey, E.D. 1995. *"Towards Conserving Birds of Ontario"*. Federation of Ontario Naturalists. 48 pp.

Gill F.B. 2007. *"Ornithology - Third Edition"*. National Audobon Society, W.H. Freeman and Company.

Habib, L., Bayne, E. M. & Boutin, S. *"Chronic Industrial Noise Affects Pairing Success and Age Structure of Ovenbirds Seiurus Aurocapilla."* Journal of Applied Ecology 44 (2007): 176-84.

Holmes et. al. 1991. *"The Ontario Butterfly Atlas"*. Toronto Entomologists Association, Toronto, Ontario.

Holmgren, Noel H., *"Manual of Vascular Plants of Northeastern United States and Adjacent Canada - Second Edition"*, The New York Botanical Garden, 1998.

Jones et. al. 2008. *"The Dragonflies and Damselfies of Algonquin Park and the Surrounding Area."* The Friends of Algonquin Park. 263 pp.

Lee, H.D. et. al.. 1998. *Ecological Land Classification for Southern Ontario -First Approximation and it's Application - SCSS FieldGuide: FG-02*. OMNR, North Bay, Ontario.

Lee, H.D. et. al.. 2008. *Ecological Land Classification for Southern Ontario -Second Approximation and it's Application - Ecosystems Catalogue*. Conservation Ontario website.

Newcomb, L., "Nerwcomb's Wildflower Guide". Little Brown and Company(Canada) Limited, 1977.

Oldham, M.J., 1996, *"Natural Heritage Resources of Ontario, Amphibians and Reptiles"* ,Ontario Herpetofaunal Survey (OHS),, 1996, OHS website contacted August 2012.

Ontario Ministry of Natural Resources and Forestry. 2015. *"Significant Wildlife Habitat Criteria Schedules for Ecoregion 6E"*; Regional Operations Division, Peterborough, Ontario.

Ontario Ministry of Natural Resources and Forestry. 2014. *"Significant Wildlife Habitat Mitigation Support Tool"*; Peterborough, Ontario.

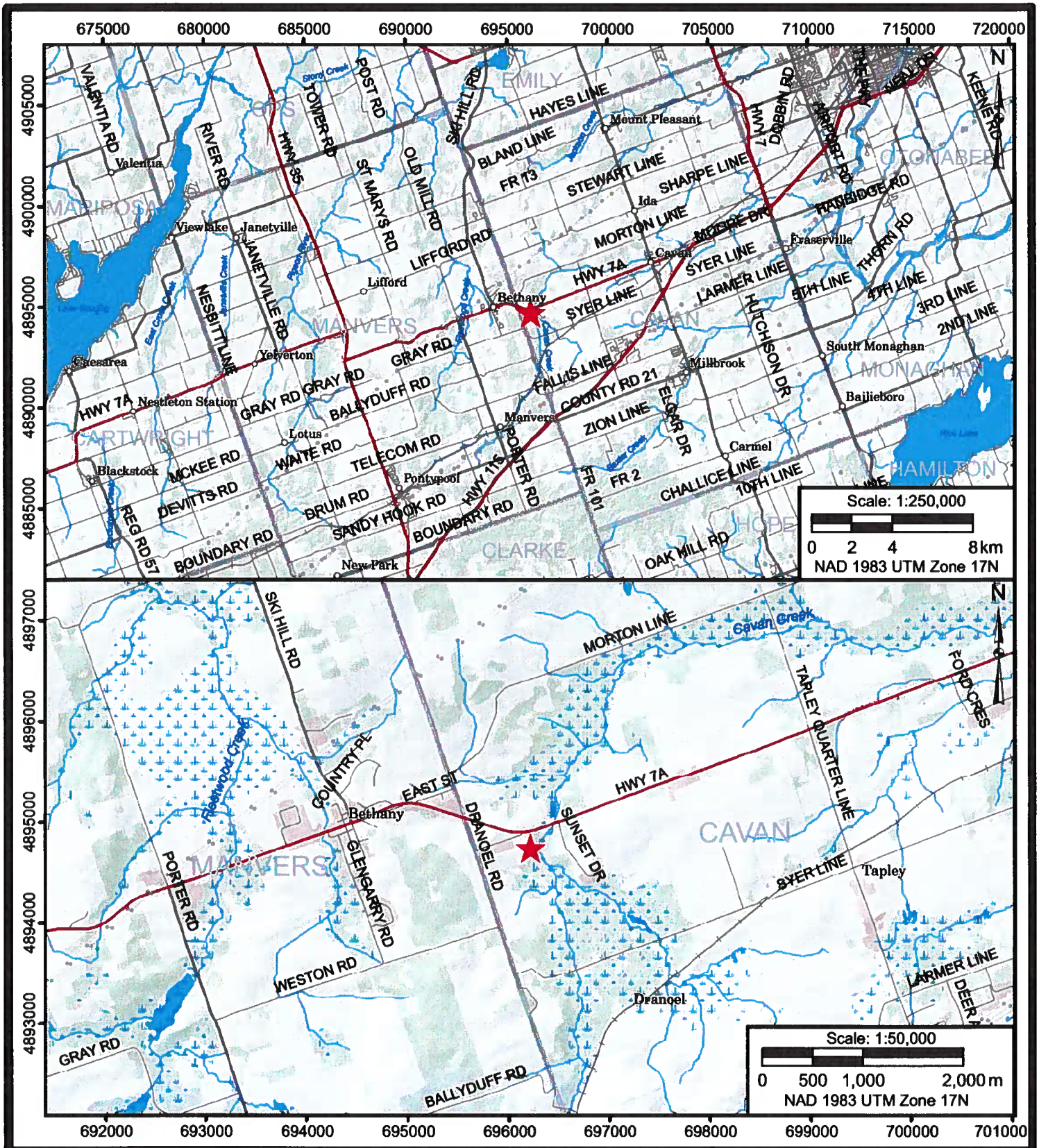
Peck G.K. & James R.D. 1983, *"Breeding Birds of Ontario Nidiology and Distribution Volume 1 : Nonpasserines and Volume 2: Passerines"*. Royal Ontario Museum, Toronto.

Sibley, D.A. 2003, *"The Sibley Field Guide to Birds of Eastern North America"*. New York: Alfred A. Knopf.

"Species at Risk in Ontario List." Ontario.ca. N.p., November 2015. <http://www.ontario.ca/environment-and-energy/species-risk-ontario-list>.

Voss, Edward G., *"Michigan Flora - Part I to Part III"*; Cranbrook Institute of Science Bulletin 55 and The University of Michigan Herbarium, 1972.

Figures



Approximate Site Location: ★

Notes:
Base mapping provided by the Ontario Ministry of Natural Resources and Forestry (MNRF) Land Information Ontario (LIO) database, copyright the King's Printer

Optimized for Oakridge Environmental Ltd. printing

Scoped Natural Heritage Evaluation (sNHE)
Proposed Single Residential Redevelopment
59 Dranoel Drive
Part of Lot 1, Concession 8 (Cavan)
Township of Cavan Monaghan, County of Peterborough

ORE Oakridge Environmental Ltd.
Environmental and Hydrogeological Services

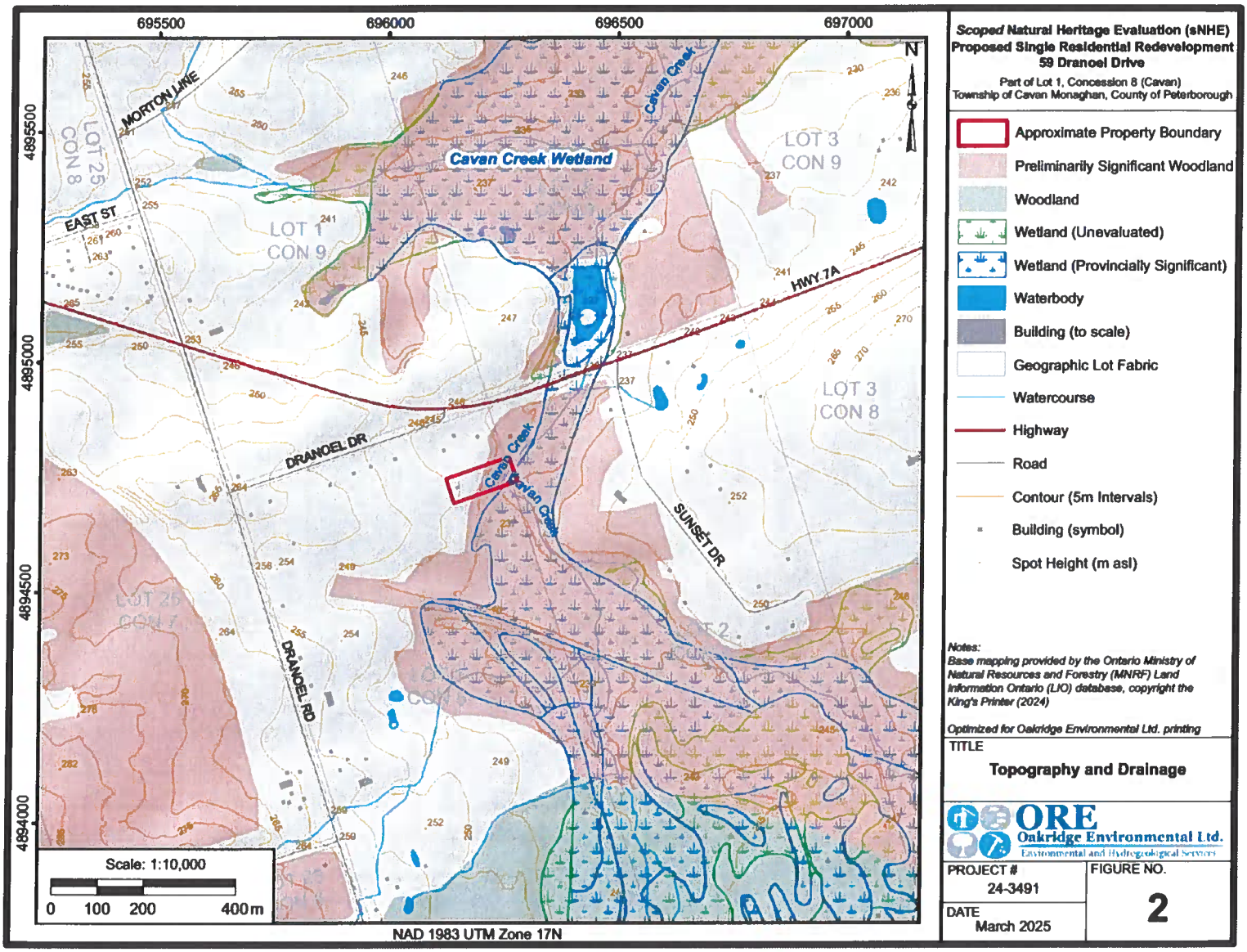
North American Datum (NAD) 1983

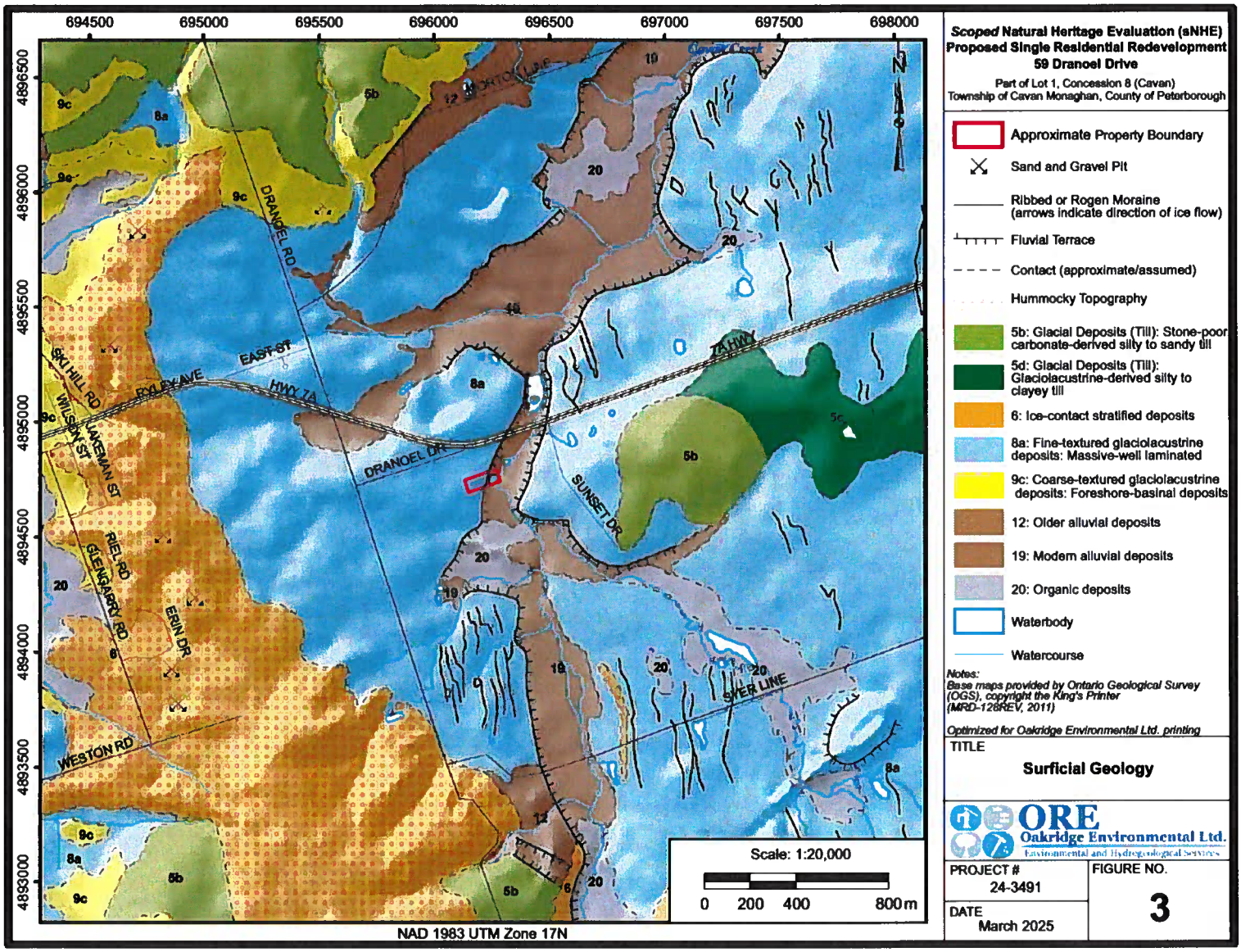
TITLE
General Location

PROJECT # 24-3491

DATE March 2025

FIGURE NO. 1


695500
696000
696500
697000
4895500
4895000
4894500
4894000
N
MORTON LINE
EAST ST
LOT 25
CON 8
LOT 1
CON 9
Cavan Creek Wetland
Cavan Creek
LOT 3
CON 9
HWY 7A
DRANOEL DR
Cavan Creek
Cavan Creek
LOT 3
CON 8
SUNSET DR
DRANOEL RD
LOT 25
CON 7
Scale: 1:10,000
0 100 200 400 m
NAD 1983 UTM Zone 17N
Scoped Natural Heritage Evaluation (sNHE)
Proposed Single Residential Redevelopment
59 Dranoel Drive
Part of Lot 1, Concession 8 (Cavan)
Township of Cavan Monaghan, County of Peterborough
Approximate Property Boundary
Preliminarily Significant Woodland
Woodland
Wetland (Unevaluated)
Wetland (Provincially Significant)
Waterbody
Building (to scale)
Geographic Lot Fabric
Watercourse
Highway
Road
Contour (5m Intervals)
Building (symbol)
Spot Height (m asl)
Notes:
Base mapping provided by the Ontario Ministry of Natural Resources and Forestry (MNRF) Land Information Ontario (LIO) database, copyright the King's Printer (2024)
Optimized for Oakridge Environmental Ltd. printing
TITLE
Topography and Drainage
ORE
Oakridge Environmental Ltd.
Environmental and Hydrogeological Services
PROJECT #
24-3491
FIGURE NO.
2
DATE
March 2025


694500
695000
695500
696000
696500
697000
697500
698000
4896500
4896000
4895500
4895000
4894500
4894000
4893500
4893000
N
DRANOEL RD
EAST ST
HWY 7A
RYLEY AVE
SKI HILL RD
WILSON ST
LAKEMAN ST
RIEL RD
GLENGARRY RD
ERIN DR
DRANOEL DR
SUNSET DR
SYER LINE
WESTON RD
7A HWY
Scale: 1:20,000
0 200 400 800 m
NAD 1983 UTM Zone 17N
Scoped Natural Heritage Evaluation (sNHE)
Proposed Single Residential Redevelopment
59 Dranoel Drive
Part of Lot 1, Concession 8 (Cavan)
Township of Cavan Monaghan, County of Peterborough
Approximate Property Boundary
Sand and Gravel Pit
Ribbed or Rogen Moraine (arrows indicate direction of ice flow)
Fluvial Terrace
Contact (approximate/assumed)
Hummocky Topography
5b: Glacial Deposits (Till): Stone-poor carbonate-derived silty to sandy till
5d: Glacial Deposits (Till): Glaciolacustrine-derived silty to clayey till
6: Ice-contact stratified deposits
8a: Fine-textured glaciolacustrine deposits: Massive-well laminated
9c: Coarse-textured glaciolacustrine deposits: Foreshore-basinal deposits
12: Older alluvial deposits
19: Modern alluvial deposits
20: Organic deposits
Waterbody
Watercourse
Notes:
Base maps provided by Ontario Geological Survey (OGS), copyright the King's Printer (MRD-126REV, 2011)
Optimized for Oakridge Environmental Ltd. printing
TITLE
Surficial Geology
ORE
Oakridge Environmental Ltd.
Environmental and Hydrogeological Services
PROJECT #
24-3491
FIGURE NO.
3
DATE
March 2025

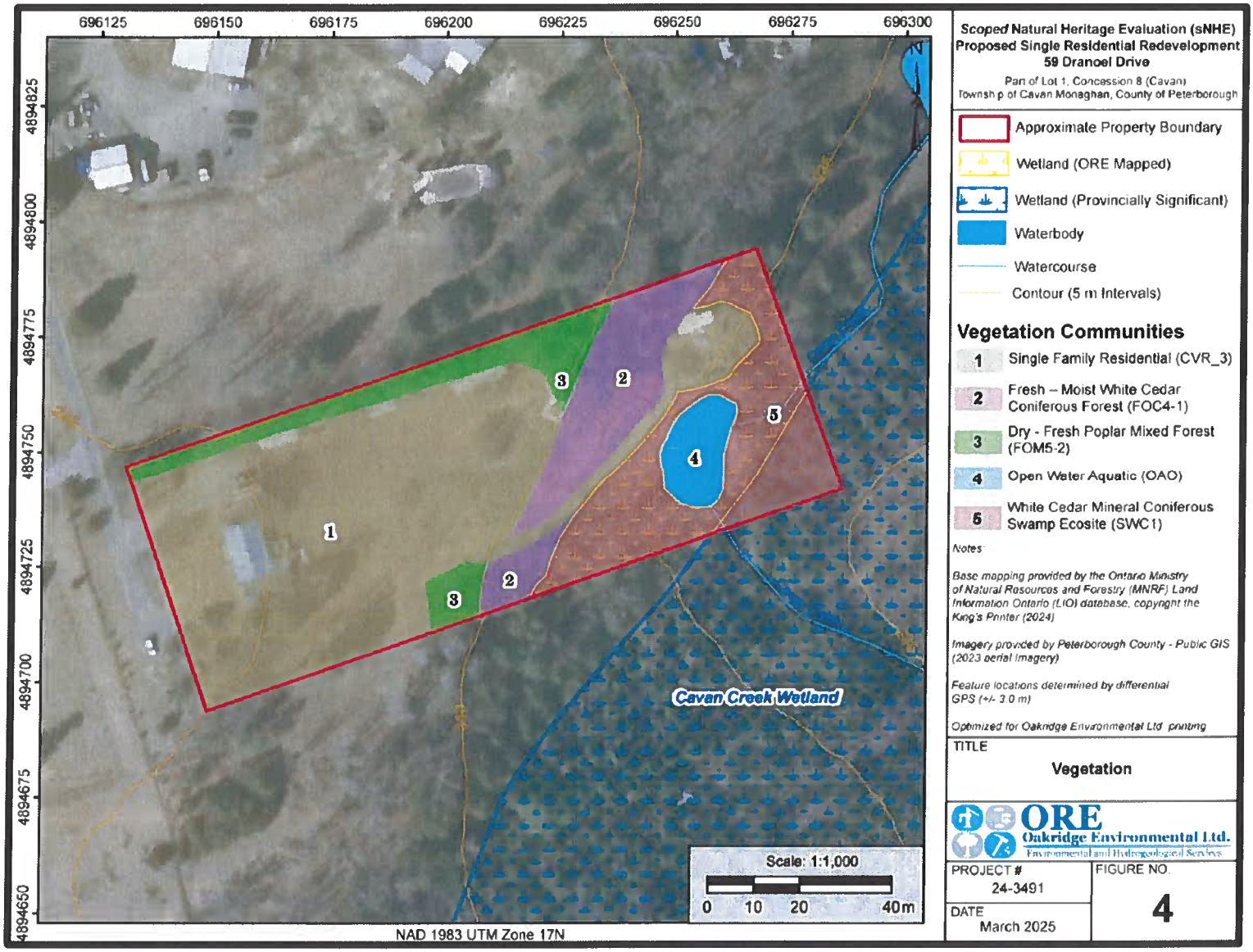

696125
696150
696175
696200
696225
696250
696275
696300
4894825
4894800
4894775
4894750
4894725
4894700
4894675
4894650
1
2
3
4
5
Cavan Creek Wetland
Scale: 1:1,000
0 10 20 40m
NAD 1983 UTM Zone 17N
Scoped Natural Heritage Evaluation (sNHE)
Proposed Single Residential Redevelopment
59 Dranoel Drive
Part of Lot 1, Concession 8 (Cavan)
Township of Cavan Monaghan, County of Peterborough
Approximate Property Boundary
Wetland (ORE Mapped)
Wetland (Provincially Significant)
Waterbody
Watercourse
Contour (5 m Intervals)
Vegetation Communities
1 Single Family Residential (CVR_3)
2 Fresh – Moist White Cedar Coniferous Forest (FOC4-1)
3 Dry - Fresh Poplar Mixed Forest (FOM5-2)
4 Open Water Aquatic (OAO)
5 White Cedar Mineral Coniferous Swamp Ecosite (SWC1)
Notes
Base mapping provided by the Ontario Ministry of Natural Resources and Forestry (MNRF) Land Information Ontario (LIO) database, copyright the King's Printer (2024)
Imagery provided by Peterborough County - Public GIS (2023 aerial imagery)
Feature locations determined by differential GPS (+/- 3.0 m)
Optimized for Oakridge Environmental Ltd. printing
TITLE
Vegetation
ORE
Oakridge Environmental Ltd.
Environmental and Hydrogeological Services
PROJECT # 24-3491
FIGURE NO. 4
DATE March 2025

Photo A (Above): was taken looking west toward the existing residence in the background. The tributary of Cavan Creek would be behind the photographer.

Photo B (Above): was taken looking east towards the Cavan Creek tributary at the base of the slope in the foreground. The proposed new residence would be directly behind the photographer and this would be the easterly view.

Photo C (Above): was taken at the base of the slope (background of Photo B) looking south towards a meander in the Cavan Creek tributary.

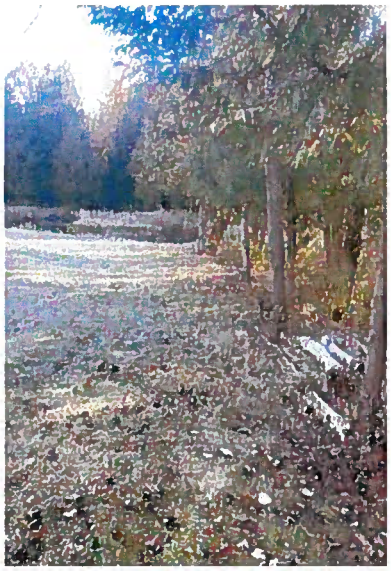
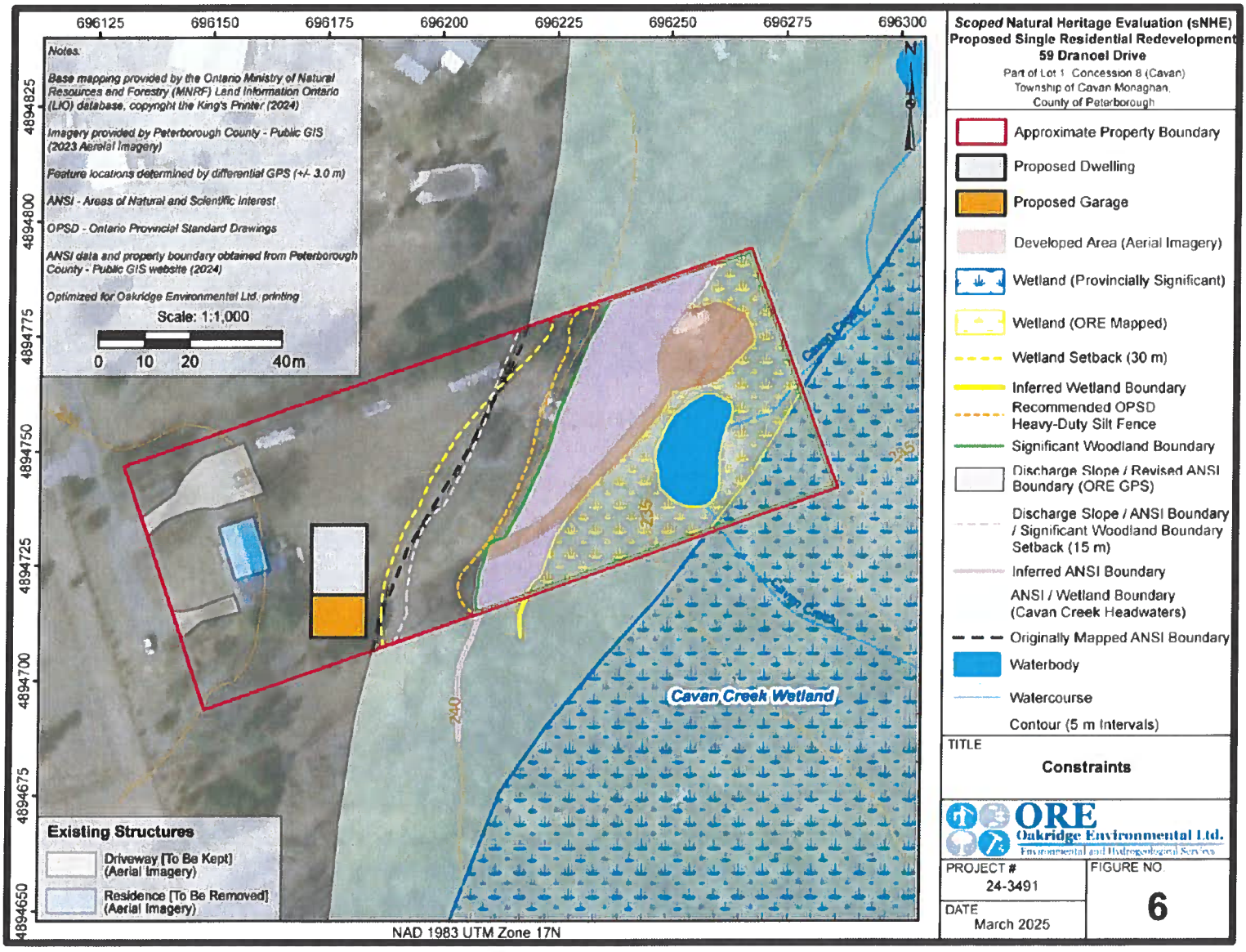


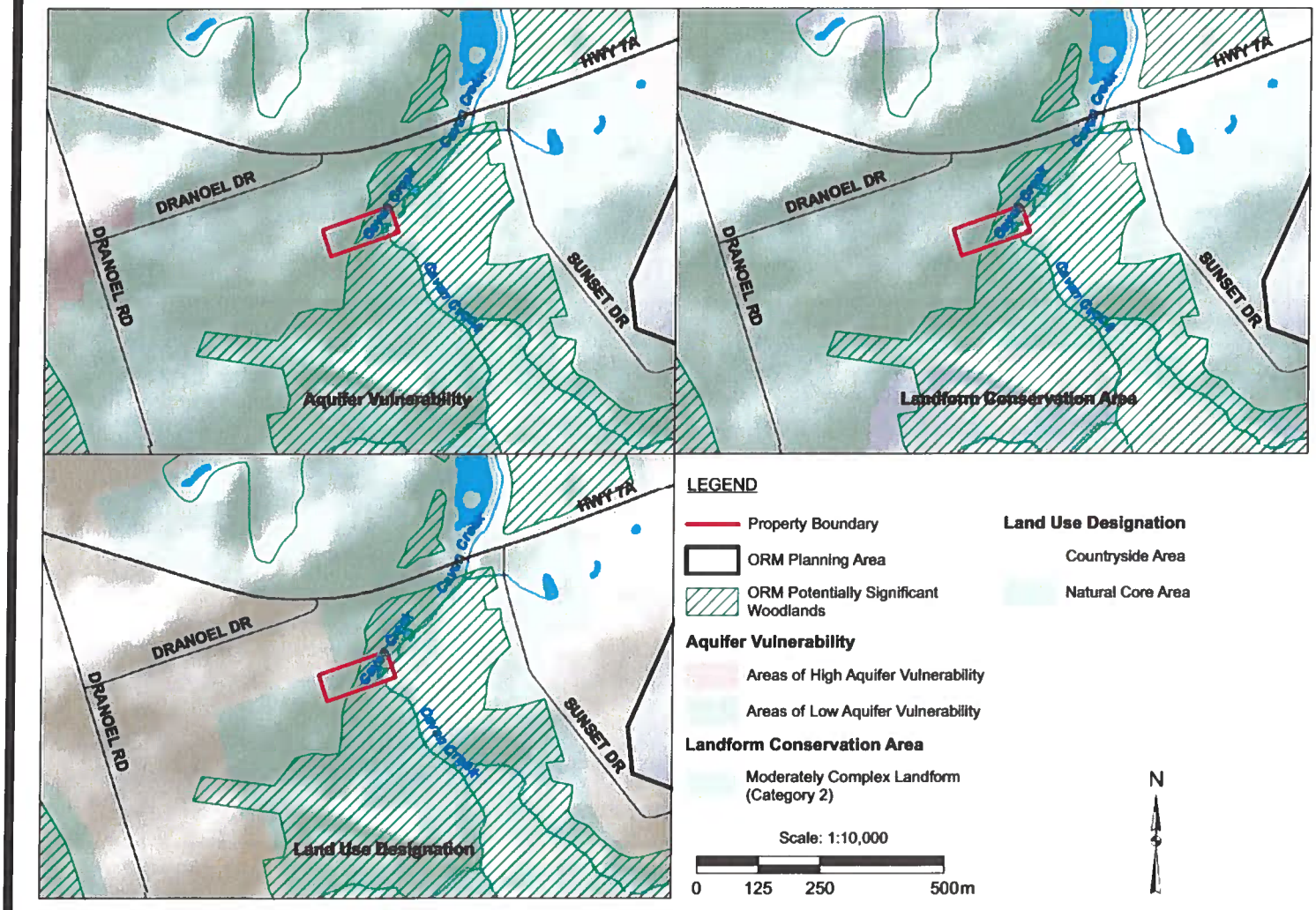
Photo D (Above): was taken toward the base of the slope overlooking the wooded swamp to the right and creek meander in the background.

Site photos were taken on ***October 17th, 2024***	***Scoped* Natural Heritage Evaluation (sNHE)** **Proposed Single Residential Redevelopment** **59 Dranoel Drive** Part of Lot 1, Concession 8 (Cavan) Township of Cavan Monaghan, County of Peterborough	TITLE **Site Photos**
	ORE Oakridge Environmental Ltd. Environmental and Hydrogeological Services	PROJECT # 24-3491 DATE March 2025 FIGURE NO. **5**


696125
696150
696175
696200
696225
696250
696275
696300
4894825
4894800
4894775
4894750
4894725
4894700
4894675
4894650
Notes:
Base mapping provided by the Ontario Ministry of Natural Resources and Forestry (MNRF) Land Information Ontario (LIO) database, copyright the King's Printer (2024)
Imagery provided by Peterborough County - Public GIS (2023 Aerial Imagery)
Feature locations determined by differential GPS (+/- 3.0 m)
ANSI - Areas of Natural and Scientific Interest
OPSD - Ontario Provincial Standard Drawings
ANSI data and property boundary obtained from Peterborough County - Public GIS website (2024)
Optimized for Oakridge Environmental Ltd. printing
Scale: 1:1,000
0 10 20 40m
N
Cavan Creek
Cavan Creek Wetland
240
245
Existing Structures
Driveway [To Be Kept] (Aerial Imagery)
Residence [To Be Removed] (Aerial Imagery)
NAD 1983 UTM Zone 17N
Scoped Natural Heritage Evaluation (sNHE)
Proposed Single Residential Redevelopment
59 Drancel Drive
Part of Lot 1 Concession 8 (Cavan)
Township of Cavan Monaghan,
County of Peterborough
Approximate Property Boundary
Proposed Dwelling
Proposed Garage
Developed Area (Aerial Imagery)
Wetland (Provincially Significant)
Wetland (ORE Mapped)
Wetland Setback (30 m)
Inferred Wetland Boundary
Recommended OPSD Heavy-Duty Silt Fence
Significant Woodland Boundary
Discharge Slope / Revised ANSI Boundary (ORE GPS)
Discharge Slope / ANSI Boundary / Significant Woodland Boundary Setback (15 m)
Inferred ANSI Boundary
ANSI / Wetland Boundary (Cavan Creek Headwaters)
Originally Mapped ANSI Boundary
Waterbody
Watercourse
Contour (5 m Intervals)
TITLE
Constraints
ORE
Oakridge Environmental Ltd.
Environmental and Hydrogeological Services
PROJECT #
24-3491
FIGURE NO.
6
DATE
March 2025

Appendix A

ORMCP Designations



ORM Designation Mapping

ORE Oakridge Environmental Ltd.
Environmental and Hydrogeological Services

North American Datum 1983
Transverse Mercator Projection

Note: Base map provided by the Ministry of Natural Resources and Forestry (2018), copyright the Queen's Printer for Ontario (2024) where applicable.

Appendix B

Species Descriptions

Birds

Bank Swallow (*Riparia riparia*) is listed as "Threatened" by *Species at Risk Ontario* (SARO) and is protected under the *Endangered Species Act* (ESA). This avian species nests in burrows into the banks of silt and sand deposits. Nests tend to be found on the shorelines of rivers and lakes. The Bank Swallow may also inhabit sand and gravel pits. Typically, this species forages on insects in flight, but will also glean insects off the water.

Barn Swallow (*Hirundo rustica*) is listed as "Special Concern" by SARO and is not protected under the ESA. The Barn Swallow inhabits open-rural and urban sites where buildings are situated near watercourses. Nesting is typically sporadic within loose colonies on building structures, bridges and other suitable overhanging structures. The cup-like mud nest is adhered to areas beneath the roof of the structure to conceal the nest from predators and keep it dry. The Barn Swallow feeds on insects by catching them on the wing.

Bobolink (*Dolichonyx oryzivorus*) is listed as "Threatened" by SARO and is protected under the ESA. The Bobolink prefers large tracts of tallgrass areas, either true prairies or hay fields, as it forages low to the ground in search of larvae and seeds.

Canada Warbler (*Cardellina canadensis*) is listed as "Special Concern" by SARO, and is not protected under the ESA. It prefers large tracts of mixed forests on bottomlands within wetlands or drainage courses. The species nests within the upper extremities of the canopy in deciduous and coniferous trees. The Canada Warbler feeds on beetles, caterpillars and common insects. Typically, this species prefers creeks and mixed forests with a coniferous edge along a moving creek, tributary or river system.

Chimney Swift (*Chaetura pelagica*) is listed as "Threatened" by SARO and is protected under the ESA. The Chimney Swift is a somewhat generalist species. It will utilize empty cavity nests found in dead trees within fencerows or may utilize unused chimneys as suggested by its common name. This species is most active in early morning and early evening (i.e., dawn and dusk). It will venture outside of the nesting area and feast on insects during those times. It then flies back to the nesting site, entering the nest one after another in an orderly funnel-shaped sequence.

Common Nighthawk (*Chordeiles minor*) is listed as "Special Concern" by SARO, and is not protected under the ESA. The Common Nighthawk is part of the Nightjar family which prefers forest openings, bogs and sometimes open field/meadow areas. Nesting is on bare ground where both adults feed the young. Feeding can take place during day or night, while the species constantly forages for all types of insects.

Eastern Meadowlark (*Sturnella magna*) is listed as "Threatened" by SARO and is protected under the ESA. The Eastern Meadowlark is similar to Bobolink, as this species also prefers large tracts of agricultural fields or tallgrass prairies to nest within. Eastern Meadowlark is a ground nester, thus requires the tall grass to conceal its nest and eggs. Feeding includes beetles, crickets and spiders.

Eastern Whip-poor-will (*Anthrostomus vociferus*) is listed as "Threatened" by SARO and is protected under the ESA. The Whip-poor-will prefers a combination of large natural tracts of secondary succession forest, watercourses and edge habitat consisting of meadow areas, with open deciduous and pine woodlands. The Whip-poor-will does not construct a nest, but rather uses the soft leaf litter on the ground to form a nest and lay the eggs directly on the ground. The Whip-poor-will is a nighttime hunter, calling its own name while searching for large flying insects, beetles, moths, mosquitos and sometimes grasshoppers. The Whip-poor-will often choose pine species adjacent to waterways to call from.

Eastern Wood-Pewee (*Contopus virens*) is listed as "Special Concern" by SARO and is not protected under the ESA. This species prefers mixed deciduous and coniferous woodlands which are open or considered edge habitat. Nesting occurs on a tree branch as the species catches insects from a perch.

Evening Grosbeak (*Coccothraustes vespertinus*) is listed as "Special Concern" by SARO and is not protected under the ESA. During the breeding season, Evening Grosbeak is generally found in open, mature mixed-wood forests dominated by fir species, White Spruce and/or Trembling Aspen. Its abundance is strongly linked to the cycle of its primary prey, the Spruce Budworm. Outside the breeding season, the species depends mostly on seed crops.

Golden-winged Warbler (*Vermivora chrysoptera*) is listed as "Special Concern" by SARO and is not protected under the ESA. The Golden-winged Warbler prefers woodland edge habitat with young successional tree species and moist shrubby fields. This species gleans insects on shrubs and the forest floor and nesting occurs on the ground.

Grasshopper Sparrow (*Ammodramus savannarum*) is listed as "Special Concern" by SARO and is not protected under the ESA. The Grasshopper Sparrow prefers large (greater than 5 ha) grassland habitats where it breeds. Grassland habitats include pastures, hayfields, natural prairies, alvars. Nests are typically hidden within the grassland and its preferred diet in the summer is large insects (i.e., Grasshoppers).

Least Bittern (*Ixobrychus exilis*) is listed as "Threatened" by SARO and is protected under the ESA. The Least Bittern inhabits freshwater marshes where tall, impenetrable stands of emergent vegetation are utilized for coverage. The Least Bittern may build up a hunting platform in search of small fish, insects, and amphibians.

Wood Thrush (*Hylocichia mustelina*) is listed as "Special Concern" by SARO and is not protected under the ESA. The Wood Thrush enjoys relatively undisturbed, mature woodlands. Nesting occurs low in the fork of a tree as this species forages for berries and insects at ground level. Similar to the Eastern Wood-Pewee, this species prefers large tracts of woodland.

Yellow Rail (*Coturnicops noveboracensis*) is listed as "Special Concern" by SARO and is not protected under the ESA. The Yellow Rail is a small marsh bird that appears quail-like. Their body is yellowish brown with dark streaks of brown and wide black stripes crossed with white bars. They have a brown crown and a dark stripe through their eyes. The males have a song which sounds like stones tapping together in a 'click-click-click-click-click' pattern, which is generally heard at night. Yellow Rails prefer shallow wetlands and marshes. They prefer the cover of reeds, sedges to blend into and will tend to run and hide rather than fly away when spooked. They will also nest in dense vegetated areas on mats of dead vegetation, also using it as a roof for the nests.

Yellow-breasted Chat (*Icteria virens virens*) is listed as "Endangered" by SARO and is protected under the ESA. The Yellow-breasted Chat, like the name suggests, posses a distinctive yellow belly, greenish-brown back, and long tail. This species is considered a medium sized songbird, reaching an average length of around 18 cm. The habitat will typically be found in areas of thicket or scrub, with a particular preference for overgrown clearings. In the winter, the Yellow-breasted Chat will often migrate south to coastal marshes.

Amphibians & Reptiles

Blanding's Turtle (*Emydoidea blandingii*) is listed as "Threatened" by SARO and is protected under the ESA. It tends to inhabit shallow waters within large wetlands or shallow lakes that have lots of aquatic plants. However, they have been known to travel hundreds of metres from a main body of water for nesting or mating. This species is most easily identified by its bright yellow throat and chin.

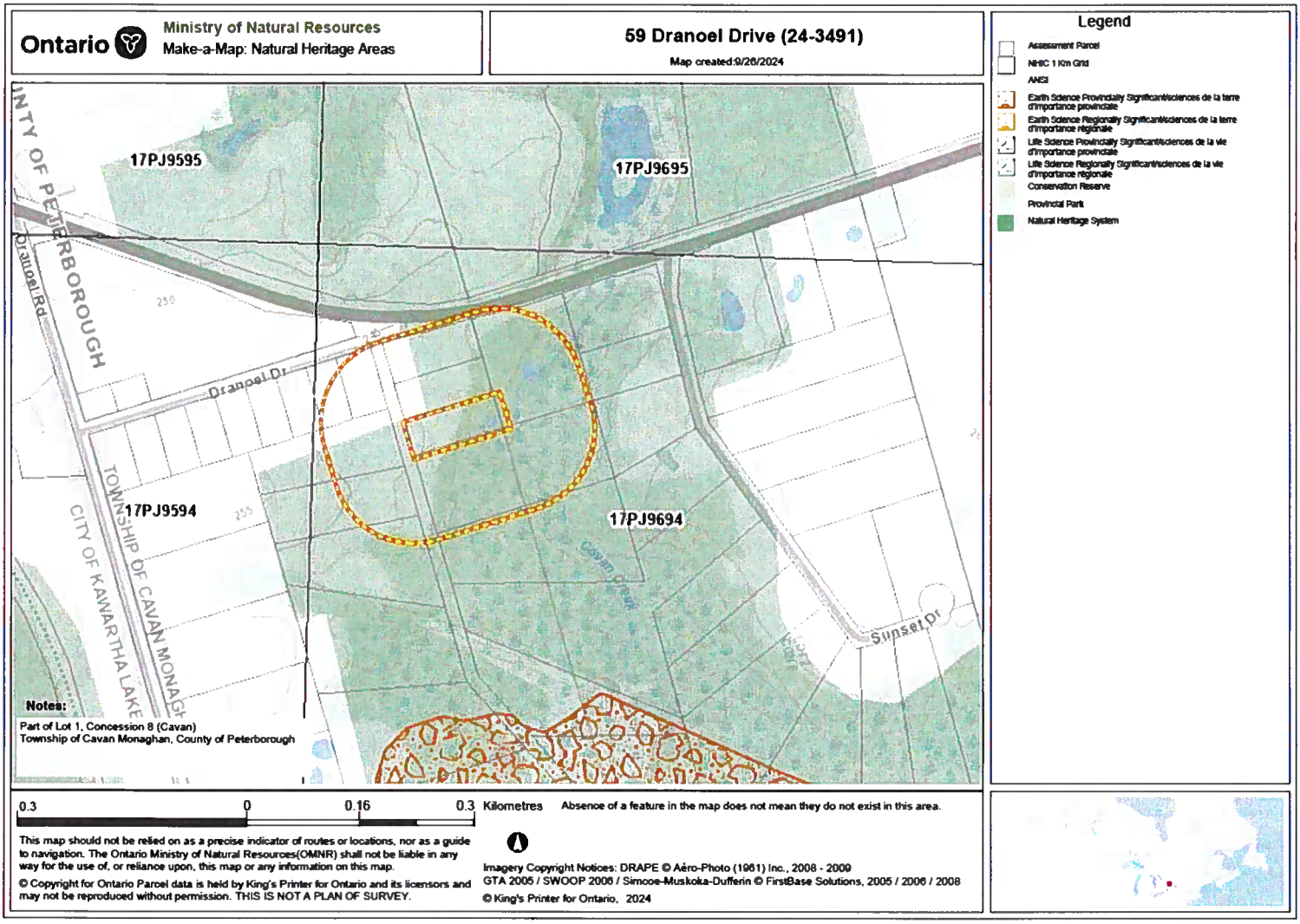
Eastern Milksnake (*Lampropeltis triangulum*) is listed as "Not at Risk" by SARO however, it is listed as "Special Concern" under COSEWIC. Gray or tan in colour, with alternating reddish brown patches that have a black outline, the Eastern Milksnake commonly has a distinct Y shape on the top of the head. They prefer open areas for their habitat such as rocky areas, forest and field edges.

Midland Painted Turtle (*Chrysemys picta marginata*) is listed as "Special Concern" by COSEWIC and is currently under review by COSSARO. Midland Painted Turtles spend the majority of their lives in water. They prefer shallow water with aquatic vegetation, soft mud, and leaf litter at the bottom. Typically found basking on logs, rocks, and shorelines in sunlight. Midland Painted Turtles nest between mid-spring and early summer. They tend to choose gravely, sandy and loam soils for nesting.

Snapping Turtle (*Chelydra serpentina*) is listed as "Special Concern" by SARO and is not protected under the ESA. Snapping Turtles spend most of their lives in water. They prefer shallow waters so they can hide under the soft mud and leaf litter, with only their noses exposed to the surface to breathe. During the nesting season, from early to mid summer, females travel overland in search of a suitable nesting site, usually gravelly or sandy areas along streams. Snapping Turtles often take advantage of man-made structures for nest sites, including roads (especially gravel shoulders), dam and aggregate pits.

Appendix C

NHIC Data


Ontario
Ministry of Natural Resources
Make-a-Map: Natural Heritage Areas
59 Dranoel Drive (24-3491)
Map created:9/26/2024
17PJ9595
17PJ9695
17PJ9594
17PJ9694
Dranoel Rd
Dranoel Dr
Sunset Dr
TOWNSHIP OF CAVAN MONAGHAN
CITY OF KAWARTHA LAKES
Notes:
Part of Lot 1, Concession 8 (Cavan)
Township of Cavan Monaghan, County of Peterborough
Legend
Assessment Parcel
NHIC 1 Km Grid
ANSI
Earth Science Provincially Significant/sciences de la terre d'importance provinciale
Earth Science Regionally Significant/sciences de la terre d'importance régionale
Life Science Provincially Significant/sciences de la vie d'importance provinciale
Life Science Regionally Significant/sciences de la vie d'importance régionale
Conservation Reserve
Provincial Park
Natural Heritage System
0.3
0
0.16
0.3
Kilometres
Absence of a feature in the map does not mean they do not exist in this area.
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 Natural Resources(OMNR) shall not be liable in any way for the use of, or reliance upon, this map or any information on this map.
© Copyright for Ontario Parcel data is held by King's Printer for Ontario and its licensors and may not be reproduced without permission. THIS IS NOT A PLAN OF SURVEY.
Imagery Copyright Notices: DRAPE © Aéro-Photo (1961) Inc., 2008 - 2009
GTA 2005 / SWOOP 2006 / Simcoe-Muskoka-Dufferin © FirstBase Solutions, 2005 / 2006 / 2008
© King's Printer for Ontario, 2024

NHIC Data

To work further with this data select the content and copy it into your own word or excel documents.

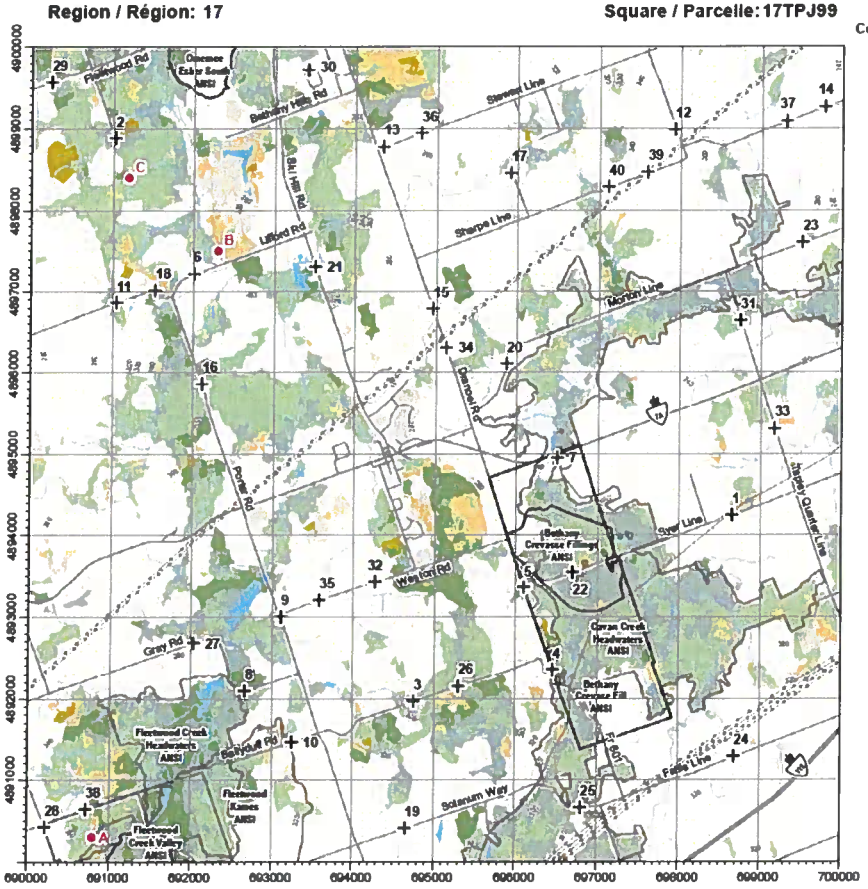
OGF ID	Element Type	Common Name	Scientific Name	SRank	SARO Status	COSEWIC Status	ATLAS NAD83 IDENT	COMMENTS
1052698	SPECIES	Grasshopper Sparrow	Ammodramus savannarum	S4B	SC	SC	17PJ9694	
1052698	SPECIES	Eastern Meadowlark	Sturnella magna	S4B,S3N	THR	THR	17PJ9694	

Appendix D

OBBA Data

Region / Région: 17

Square / Parcelle: 17TPJ99



Predefined point count coordinates
Coordonnées des points d'écoute prédéterminés

POINT +	EASTING UTM Est	NORTHING UTM Nord
1	698649	4894251
2	691026	4898888
3	694752	4891964
4	696456	4892354
5	696103	4893363
6	692010	4897221
7	696502	4894958
8	692668	4892094
9	693109	4893003
10	693249	4891465
11	691049	4896871
12	697925	4898993
13	694340	4898781
14	699776	4899266
15	694959	4896791
16	692115	4895869
17	695915	4898451
18	691530	4897019
19	694657	4890405
20	695875	4896115
21	693508	4897307
22	696698	4893550
23	699513	4897606
24	698687	4891288
25	696810	4890661
26	695300	4892149
27	692033	4892683
28	690213	4890426
29	690242	4899576
30	693400	4899720
31	698746	4896647
32	694272	4893434
33	699177	4895314
34	695133	4896310
35	693583	4893206
36	694810	4898948
37	699306	4899092
38	690721	4890640
39	697588	4898465
40	697115	4898289

Number of off-road point counts
Nombre de points d'écoute hors route

Broadleaf forest:	3	Grassland:	0
Coniferous forest:	1	Wetland:	0
Mixed forest:	1	Shrubland:	0

Predefined / Prédéterminés: 20
Off-road / Hors route: 5

Atlas-2 off-road point ● Point hors route Atlas-2

0 1 km

Atlas des oiseaux nicheurs de l'Ontario
Ontario Breeding Bird Atlas

Legend	Légende
Expressway or highway	Autoroute ou route nationale (asphaltée)
Regional or local road	Route régionale ou locale (asphaltée ou non)
Resource / Recreation	Ressource / route récréative
Rail line	Chemin de fer
Utility corridor	Ligne de transport d'énergie
Watercourse	Rivière ou ruisseau
Protected or conserved area	Zone protégée ou conservée
Fire disturbance since 2000	Incendie perturbé depuis 2000
Broadleaf forest 10	Forêt de feuillus
Coniferous forest 3	Forêt de conifères
Mixed forest 6	Forêt mixte
Shrubland 3	Milieu arbustif
Grassland	Prairie
Barren 2	Dénudé
Wetland 1	Milieu humide
Agriculture 68	Milieu agricole
Water 1	Eau
Developed area 6	Zone développée
Unclassified	Non classifié

The approximate percent coverage of each habitat type is indicated by the numbered box in the legend.

La couverture approximative est indiquée en pourcentage dans le rectangle coloré de la légende.

Cartographic production by Birds Canada
Production cartographique par oiseaux Canada

Note: The project partners are in no way responsible for any inaccuracies, mistakes or omissions in the information that appears on this map.

Avis : Les responsables du projet d'atlas ne peuvent être tenus responsables de toute inexactitude, erreur ou omission concernant les informations apparaissant sur cette carte.

6° Universal Transverse Mercator (UTM) Projection, Zone 17, Central Meridian -81°, North American Datum 1983 (NAD 83)

Projection universelle transverse de Mercator (UTM) 6° Zone 17, meridien central -81°, Système de référence géodésique nord-américain 1983 (NAD 83)

BIRDS CANADA OISEAUX CANADA

March 2021 / mars 2021

https://www.birdsontario.org/

17TPJ99

Northumberland

Region / Région: 17

BIRDS CANADA
OISEAUX CANADA

Square Summary (17TPJ99) [change]

	#species				#hours		#pc done	
	poss	prob	conf	total	total	peak	road	offrd
Curr.	38	39	30	107	38.8	19.4	27	2
Prev.	38	28	52	118	64.1	—	28	

Region summary (#17: Northumberland, ON)

#squares	#sq with data	#species	#squares (pc)	
			target	compl.
41	45	179	41	24
41	41	187	0	40

Target number of point counts in this square: 25 in total: 20 road side, 5 off road (Broadleaf Forest in 3, Coniferous Forest in 1, Mixed Forest in 1). Please try to ensure that each off-road station is located such that the entire 100m radius circle is within the prescribed habitat **Predef. completed:** [01, 02, 03, 04, 05, 06, 07, 08, 09, 10, 11, 13, 15, 16, 18, 19, 20, 21, 22, 24, 25, 26, 27, 29, 32, 34, 35, B, C]

SPECIES	Prev.	Code	%
Canada Goose	FY	FY	96
Mute Swan			31
Trumpeter Swan		H	36
Wood Duck	AE	P	77
Blue-winged Teal §			17
Northern Shoveler ‡			0
Gadwall			5
American Wigeon ‡			4
Mallard	FY	FY	84
American Black Duck ‡			4
Northern Pintail ‡			2
Green-winged Teal ‡	FY		4
Redhead †			0
Hooded Merganser		FY	42
Common Merganser ‡			11
Red-breasted Merganser ‡			2
Ruddy Duck ‡			0
Wild Turkey	FY	FY	95
Ruffed Grouse	FY	S	82
Ring-necked Pheasant ‡			15
Pied-billed Grebe			40
Rock Pigeon (Feral Pigeon)	AE	V	84
Mourning Dove	NB	D	100
Yellow-billed Cuckoo	T		42
Black-billed Cuckoo	T	S	84
Common Nighthawk §	H	H	22
Eastern Whip-poor-will §	S		28
Chimney Swift §	FY		37
Ruby-throated Hummingbird	FY	H	66
King Rail †			2
Virginia Rail	H		57
Sora	H		22
Common Gallinule §	P		24

SPECIES	Prev.	Code	%
American Coot ‡			2
Sandhill Crane ‡			26
Killdeer §	FY	S	88
Piping Plover †			2
Upland Sandpiper †	S		11
American Woodcock	T		84
Wilson's Snipe	T		48
Spotted Sandpiper	NE	H	50
Ring-billed Gull §			13
Herring Gull §			8
Great Black-backed Gull † §			0
Caspian Tern ‡			6
Black Tern † §			4
Common Tern § ‡			2
Common Loon			28
Double-crested Cormorant §			13
American Bittern		P	42
Least Bittern †	H	S	31
Black-crowned Night-Heron † §			4
Green Heron §	H	H	82
Great Egret † §			4
Great Blue Heron §	H	H	48
Turkey Vulture	H	V	93
Osprey		H	64
Northern Harrier	T	D	57
Sharp-shinned Hawk	T		22
Cooper's Hawk	H	A	48
American Goshawk ‡	NE		8
Bald Eagle ‡			15
Red-shouldered Hawk	NB	H	26
Broad-winged Hawk	H	H	80
Red-tailed Hawk	P	D	80
Eastern Screech-Owl	P	T	40

SPECIES	Prev.	Code	%
Great Horned Owl	S	T	35
Barred Owl	NY	A	51
Long-eared Owl ‡			2
Northern Saw-whet Owl	S		2
Belted Kingfisher	FY	P	88
Yellow-bellied Sapsucker	FY	AE	88
Red-headed Woodpecker †			37
Red-bellied Woodpecker		S	93
Downy Woodpecker	FY	A	97
Hairy Woodpecker	FY	S	93
Pileated Woodpecker	S	S	91
Northern Flicker	FY	T	97
American Kestrel §	FY	P	75
Merlin	T		71
Peregrine Falcon ‡			4
Olive-sided Flycatcher §			2
Eastern Wood-Pewee §	S	T	95
Yellow-bellied Flycatcher ‡			2
Alder Flycatcher	A	T	88
Willow Flycatcher	S	S	68
Least Flycatcher	H	S	75
Eastern Phoebe	T	AE	93
Great Crested Flycatcher	S	T	97
Eastern Kingbird	FY	A	100
Yellow-throated Vireo ‡		S	22
Blue-headed Vireo	S	S	35
Warbling Vireo	T	S	93
Red-eyed Vireo	T	T	100
Loggerhead Shrike †			0
Blue Jay	FY	T	97
American Crow	FY	FY	97
Common Raven	H	FY	97
Black-capped Chickadee	FY	CF	100

Breeding Bird Atlas - Summary Sheet for Square 17TPJ99 (page 2 of 2)

SPECIES	Prev.	Code	%
Horned Lark §	S		24
Bank Swallow §	H		42
Tree Swallow	CF	AE	97
Purple Martin §			40
Northern Rough-winged Swallow			57
Barn Swallow §	AE	CF	91
Cliff Swallow §	H		46
Golden-crowned Kinglet		S	28
White-breasted Nuthatch	FY	S	93
Red-breasted Nuthatch	FY	S	84
Brown Creeper	S	S	60
Blue-gray Gnatcatcher			13
House Wren	CF	FY	97
Winter Wren		S	73
Pacific Wren ±	S		0
Sedge Wren ‡			4
Marsh Wren		S	60
Carolina Wren ‡			28
European Starling	AE	CF	93
Gray Catbird	T	CF	97
Brown Thrasher	FY	CF	100
Northern Mockingbird ‡			15
Eastern Bluebird	FY	CF	84
Veery	T	A	88
Hermit Thrush	S	T	57
Wood Thrush §	S	T	95
American Robin	NY	CF	100
Cedar Waxwing	P	NB	95
House Sparrow	AE	P	88
House Finch	NY		55
Purple Finch	FY	S	73
Red Crossbill ‡			13
White-winged Crossbill ‡			0

SPECIES	Prev.	Code	%
Pine Siskin ‡			2
American Goldfinch	T	NY	100
Grasshopper Sparrow §	S	S	75
Chipping Sparrow	CF	FY	100
Clay-colored Sparrow		S	46
Field Sparrow §	T	CF	95
Dark-eyed Junco ±			0
White-throated Sparrow	A	A	88
Vesper Sparrow	S	CF	80
Savannah Sparrow	CF	T	95
Song Sparrow	CF	CF	100
Lincoln's Sparrow ‡			0
Swamp Sparrow	AE	CF	91
Eastern Towhee §	S	S	82
Bobolink §	S	S	86
Eastern Meadowlark §	T	P	93
Orchard Oriole			40
Baltimore Oriole	FY	AE	97
Red-winged Blackbird	FY	CF	100
Brown-headed Cowbird	P	V	91
Common Grackle	FY	CF	95
Ovenbird	S	T	91
Louisiana Waterthrush †			0
Northern Waterthrush	CF	S	77
Golden-winged Warbler †	T		15
Blue-winged Warbler	T	S	46
Brewster's Warbler (hybrid) ‡	A		0
Black-and-white Warbler	A	S	88
Nashville Warbler	S	S	51
Mourning Warbler	FY	A	71
Common Yellowthroat	CF	CF	100
Hooded Warbler ‡			8
American Redstart	S	A	95

SPECIES	Prev.	Code	%
Cerulean Warbler †			2
Northern Parula ‡			0
Magnolia Warbler			26
Blackburnian Warbler	S		28
Yellow Warbler	CF	CF	93
Chestnut-sided Warbler	S	T	88
Black-throated Blue Warbler		S	26
Pine Warbler	FY	T	84
Yellow-rumped Warbler	P	H	55
Black-throated Green Warbler	S	T	75
Canada Warbler §	S	S	40
Scarlet Tanager	FY	T	71
Northern Cardinal	T	T	95
Rose-breasted Grosbeak	FY	T	95
Indigo Bunting	FY	CF	97

Appendix E

*e*Bird

eBird

Change Region

Fleetwood Creek Natural Area Kawartha Lakes, Ontario, Canada

HOTSPOT NAVIGATION

Bird List

Updated ~10 seconds ago

92	61	0
All Years	This Year	This Month

Last Observed | First Observed | High Count | Custom Time Period

	SPECIES NAME	COUNT	DATE	OBSERVER	LOCATION
1.	**Pileated Woodpecker** *Dryocopus pileatus*	1	19 Nov 2024	Scott McKinlay	Fleetwood Creek Natural Area
2.	**Blue Jay** *Cyanocitta cristata*	2	19 Nov 2024	Scott McKinlay	Fleetwood Creek Natural Area
3.	**Black-capped Chickadee** *Poecile atricapillus*	2	19 Nov 2024	Scott McKinlay	Fleetwood Creek Natural Area
4.	**White-breasted Nuthatch** *Sitta carolinensis*	1	19 Nov 2024	Scott McKinlay	Fleetwood Creek Natural Area
5.	**Yellow-bellied Sapsucker** *Sphyrapicus varius*	1	3 Oct 2024	Luke Berg	Fleetwood Creek Natural Area
6.	**Red-bellied Woodpecker** *Melanerpes carolinus*	1	3 Oct 2024	Luke Berg	Fleetwood Creek Natural Area
7.	**Downy Woodpecker** *Dryobates pubescens*	1	3 Oct 2024	Luke Berg	Fleetwood Creek Natural Area
8.	**Eastern Phoebe** *Sayornis phoebe*	1	3 Oct 2024	Luke Berg	Fleetwood Creek Natural Area

9.	**Blue-headed Vireo** *Vireo solitarius*	1	3 Oct 2024	Luke Berg	Fleetwood Creek Natural Area
10.	**Common Raven** *Corvus corax*	2	3 Oct 2024	Luke Berg	Fleetwood Creek Natural Area
11.	**Ruby-crowned Kinglet** *Corthylio calendula*	12	3 Oct 2024	Luke Berg	Fleetwood Creek Natural Area
12.	**Golden-crowned Kinglet** *Regulus satrapa*	8	3 Oct 2024	Luke Berg	Fleetwood Creek Natural Area
13.	**Red-breasted Nuthatch** *Sitta canadensis*	2	3 Oct 2024	Luke Berg	Fleetwood Creek Natural Area
14.	**Brown Creeper** *Certhia americana*	1	3 Oct 2024	Luke Berg	Fleetwood Creek Natural Area
15.	**Winter Wren** *Troglodytes hiemalis*	2	3 Oct 2024	Luke Berg	Fleetwood Creek Natural Area
16.	**Hermit Thrush** *Catharus guttatus*	1	3 Oct 2024	Luke Berg	Fleetwood Creek Natural Area
17.	**Dark-eyed Junco** *Junco hyemalis*	1	3 Oct 2024	Luke Berg	Fleetwood Creek Natural Area
18.	**White-throated Sparrow** *Zonotrichia albicollis*	5	3 Oct 2024	Luke Berg	Fleetwood Creek Natural Area
19.	**American Redstart** *Setophaga ruticilla*	1	3 Oct 2024	Luke Berg	Fleetwood Creek Natural Area
20.	**Yellow-rumped Warbler** *Setophaga coronata*	1	3 Oct 2024	Luke Berg	Fleetwood Creek Natural Area
21.	**Hairy Woodpecker** *Dryobates villosus*	2	9 Jul 2024	Jason Lush	Fleetwood Creek Natural Area
22.	**Eastern Kingbird** *Tyrannus tyrannus*	1	9 Jul 2024	Jason Lush	Fleetwood Creek Natural Area
23.	**Gray Catbird** *Dumetella carolinensis*	1	9 Jul 2024	Jason Lush	Fleetwood Creek Natural Area

24.	**American Robin** *Turdus migratorius*	2	9 Jul 2024	Jason Lush	Fleetwood Creek Natural Area
25.	**Grasshopper Sparrow** *Ammodramus savannarum*	2	9 Jul 2024	Jason Lush	Fleetwood Creek Natural Area
26.	**Field Sparrow** *Spizella pusilla*	2	9 Jul 2024	Jason Lush	Fleetwood Creek Natural Area
27.	**Vesper Sparrow** *Pooecetes gramineus*	1	9 Jul 2024	Jason Lush	Fleetwood Creek Natural Area
28.	**Song Sparrow** *Melospiza melodia*	2	9 Jul 2024	Jason Lush	Fleetwood Creek Natural Area
29.	**Eastern Towhee** *Pipilo erythrophthalmus*	3	9 Jul 2024	Jason Lush	Fleetwood Creek Natural Area
30.	**Nashville Warbler** *Leiothlypis ruficapilla*	1	9 Jul 2024	Jason Lush	Fleetwood Creek Natural Area
31.	**Mourning Dove** *Zenaida macroura*	1	8 Jul 2024	Jason Lush	Fleetwood Creek Natural Area
32.	**Red-eyed Vireo** *Vireo olivaceus*	1	8 Jul 2024	Jason Lush	Fleetwood Creek Natural Area
33.	**American Crow** *Corvus brachyrhynchos*	22	8 Jul 2024	Jason Lush	Fleetwood Creek Natural Area
34.	**Veery** *Catharus fuscescens*	2	8 Jul 2024	Jason Lush	Fleetwood Creek Natural Area
35.	**Chipping Sparrow** *Spizella passerina*	1	8 Jul 2024	Jason Lush	Fleetwood Creek Natural Area
36.	**Ovenbird** *Seiurus aurocapilla*	1	8 Jul 2024	Jason Lush	Fleetwood Creek Natural Area
37.	**Black-and-white Warbler** *Mniotilta varia*	1	8 Jul 2024	Jason Lush	Fleetwood Creek Natural Area
38.	**Mourning Warbler** *Geothlypis philadelphia*	1	8 Jul 2024	Jason Lush	Fleetwood Creek Natural Area
39.	**Blackburnian Warbler** *Setophaga fusca*	1	8 Jul 2024	Jason Lush	Fleetwood Creek Natural Area

40.	**Pine Warbler** *Setophaga pinus*	1	8 Jul 2024	Jason Lush	Fleetwood Creek Natural Area
41.	**Rose-breasted Grosbeak** *Pheucticus ludovicianus*	3	8 Jul 2024	Jason Lush	Fleetwood Creek Natural Area
42.	**Indigo Bunting** *Passerina cyanea*	1	8 Jul 2024	Jason Lush	Fleetwood Creek Natural Area
43.	**Black-billed Cuckoo** *Coccyzus erythropthalmus*	1	7 Jul 2024	Annette Lambert	Fleetwood Creek Natural Area
44.	**Turkey Vulture** *Cathartes aura*	2	7 Jul 2024	Annette Lambert	Fleetwood Creek Natural Area
45.	**Sharp-shinned Hawk** *Accipiter striatus*	1	7 Jul 2024	Annette Lambert	Fleetwood Creek Natural Area
46.	**Northern Flicker** *Colaptes auratus*	1	7 Jul 2024	Annette Lambert	Fleetwood Creek Natural Area
47.	**Eastern Wood-Pewee** *Contopus virens*	2	7 Jul 2024	Annette Lambert	Fleetwood Creek Natural Area
48.	**Great Crested Flycatcher** *Myiarchus crinitus*	1	7 Jul 2024	Annette Lambert	Fleetwood Creek Natural Area
49.	**Barn Swallow** *Hirundo rustica*	1	7 Jul 2024	Annette Lambert	Fleetwood Creek Natural Area
50.	**Northern House Wren** *Troglodytes aedon*	1	7 Jul 2024	Annette Lambert	Fleetwood Creek Natural Area
51.	**Wood Thrush** *Hylocichla mustelina*	1	7 Jul 2024	Annette Lambert	Fleetwood Creek Natural Area
52.	**Cedar Waxwing** *Bombycilla cedrorum*	1	7 Jul 2024	Annette Lambert	Fleetwood Creek Natural Area
53.	**American Goldfinch** *Spinus tristis*	4	7 Jul 2024	Annette Lambert	Fleetwood Creek Natural Area
54.	**Clay-colored Sparrow** *Spizella pallida*	1	7 Jul 2024	Annette Lambert	Fleetwood Creek Natural Area
55.	**Common Yellowthroat** *Geothlypis trichas*	2	7 Jul 2024	Annette Lambert	Fleetwood Creek Natural Area

56.	**Chestnut-sided Warbler** *Setophaga pensylvanica*		1	7 Jul 2024	Annette Lambert	Fleetwood Creek Natural Area
57.	**Scarlet Tanager** *Piranga olivacea*		3	7 Jul 2024	Annette Lambert	Fleetwood Creek Natural Area
58.	**Northern Cardinal** *Cardinalis cardinalis*		2	7 Jul 2024	Annette Lambert	Fleetwood Creek Natural Area
59.	**Yellow-billed Cuckoo** *Coccyzus americanus*		1	6 Jul 2024	Matthew Tobey	Fleetwood Creek Natural Area
60.	**Red-winged Blackbird** *Agelaius phoeniceus*		1	6 Jul 2024	Matthew Tobey	Fleetwood Creek Natural Area
61.	**Black-throated Green Warbler** *Setophaga virens*		1	6 Jul 2024	Matthew Tobey	Fleetwood Creek Natural Area
62.	**Red-tailed Hawk** *Buteo jamaicensis*		1	20 Dec 2023	Dominic Cormier	Fleetwood Creek Natural Area
63.	**Brown Thrasher** *Toxostoma rufum*		2	8 May 2022	Kyle Blaney	Fleetwood Creek Natural Area
64.	**Black-throated Blue Warbler** *Setophaga caerulescens*		2	8 May 2022	Kyle Blaney	Fleetwood Creek Natural Area
65.	**Wild Turkey** *Meleagris gallopavo*		8	27 Mar 2022	George Henry Stirrett	Fleetwood Creek Natural Area
66.	**Rock Pigeon** *Columba livia*	*	7	16 Feb 2022	Greg Jaski	Fleetwood Creek Natural Area
67.	**European Starling** *Sturnus vulgaris*	*	14	16 Feb 2022	Greg Jaski	Fleetwood Creek Natural Area
68.	**Pine Grosbeak** *Pinicola enucleator*		12	16 Feb 2022	Greg Jaski	Fleetwood Creek Natural Area
69.	**Fox Sparrow** *Passerella iliaca*		1	26 Nov 2021	Rob Stavinga	Fleetwood Creek Natural Area
70.	**Ruffed Grouse** *Bonasa umbellus*		2	19 Sep 2021	Michelle Young	Fleetwood Creek Natural Area

71.	**Broad-winged Hawk** *Buteo platypterus*	5	19 Sep 2021	Michelle Young	Fleetwood Creek Natural Area	■
72.	**Barred Owl** *Strix varia*	1	21 Aug 2021	Lori Buhlman	Fleetwood Creek Natural Area	■
73.	**Least Flycatcher** *Empidonax minimus*	1	21 Aug 2021	Lori Buhlman	Fleetwood Creek Natural Area	■
74.	**Yellow Warbler** *Setophaga petechia*	2	21 Aug 2021	Lori Buhlman	Fleetwood Creek Natural Area	
75.	**Eastern Whip-poor-will** *Antrostomus vociferus*	1	5 Jun 2021	Iain Bryant	Fleetwood Creek Natural Area	■
76.	**Brown-headed Cowbird** *Molothrus ater*	1	5 Jun 2021	George Henry Stirrett	Fleetwood Creek Natural Area	
77.	**Bay-breasted Warbler** *Setophaga castanea*	1	16 May 2021	George Henry Stirrett	Fleetwood Creek Natural Area	
78.	**Bohemian Waxwing** *Bombycilla garrulus*	1	15 Feb 2021	George Henry Stirrett	Fleetwood Creek Natural Area	■
79.	**Rough-legged Hawk** *Buteo lagopus*	1	12 Feb 2021	George Henry Stirrett	Fleetwood Creek Natural Area	
80.	**Evening Grosbeak** *Coccothraustes vespertinus*	6	29 Nov 2020	Michelle Young	Fleetwood Creek Natural Area	■
81.	**Canada Goose** *Branta canadensis*	10	27 Nov 2020	Lucas Sofroniou	Fleetwood Creek Natural Area	
82.	**Mallard** *Anas platyrhynchos*	4	27 Nov 2020	Lucas Sofroniou	Fleetwood Creek Natural Area	
83.	**Ring-billed Gull** *Larus delawarensis*	3	27 Nov 2020	Lucas Sofroniou	Fleetwood Creek Natural Area	
84.	**House Finch** * *Haemorhous mexicanus*	8	27 Nov 2020	Lucas Sofroniou	Fleetwood Creek Natural Area	
85.	**Merlin** *Falco columbarius*	1	14 Oct 2019	Taylor Brown	Fleetwood Creek Natural Area	
86.	**Cooper's Hawk** *Astur cooperii*	1	11 Jun 2019	Ken Fulsang	Fleetwood Creek Natural Area	■

87. **Warbling Vireo** *Vireo gilvus*	2	11 Jun 2019	Ken Fulsang	Fleetwood Creek Natural Area	
88. **Pine Siskin** *Spinus pinus*	2	24 Mar 2018	Tyler L. Hoar	Fleetwood Creek Natural Area	
89. **American Kestrel** *Falco sparverius*	4	27 Apr 1980	Richard Knapton	Fleetwood Creek Natural Area	
90. **Horned Lark** *Eremophila alpestris*	6	27 Apr 1980	Richard Knapton	Fleetwood Creek Natural Area	
91. **Savannah Sparrow** *Passerculus sandwichensis*	3	27 Apr 1980	Richard Knapton	Fleetwood Creek Natural Area	
92. **Eastern Meadowlark** *Sturnella magna*	4	27 Apr 1980	Richard Knapton	Fleetwood Creek Natural Area	

EXOTIC: ESCAPEE (1)

Red Junglefowl *Gallus gallus*	1	3 Oct 2020	Hannah Maciver	Fleetwood Creek Natural Area	

ADDITIONAL TAXA (1)

crow/raven sp. *Corvus sp.*	2	27 Nov 2020	Lucas Sofroniou	Fleetwood Creek Natural Area	

Appendix F

Species List

Species List

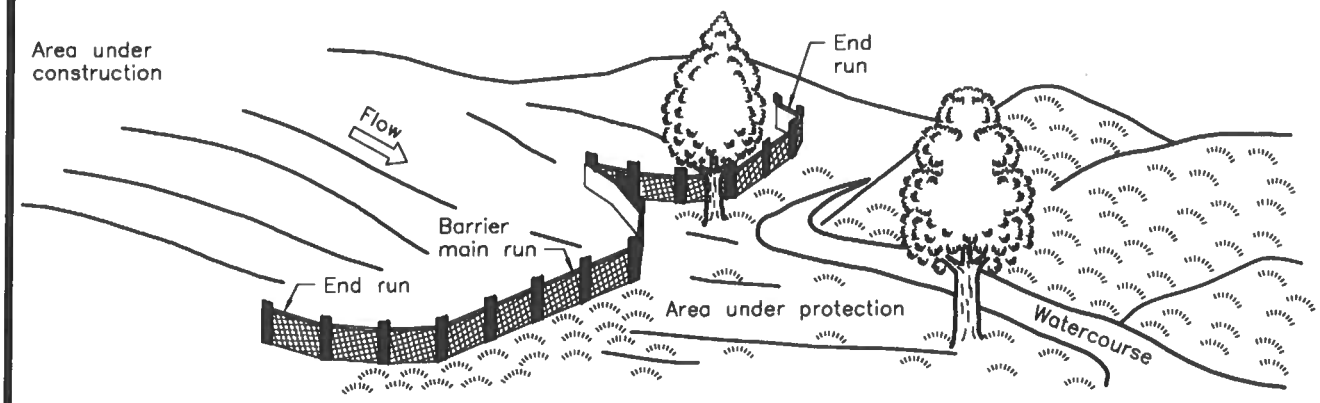
KINGDOM	Common Name	Scientific Name	SARO	SARA
Animalia				
	American Crow	Corvus brachyrhynchos		
	American Goldfinch	Spinus tristis		
	American Kestrel	Falco sparverius		
	American Robin	Turdus migratorius		
	Black-capped Chickadee	Poecile atricapillus		
	Common Grackle	Quiscalus quiscula		
	Common Raven	Corvus corax		
	Eastern Cottontail	Sylvilagus floridanus		
	Northern Cardinal	Cardinalis cardinalis		
	Northern Raccoon	Procyon lotor		
	White-tailed Deer	Odocoileus virginianus		
	Wild Turkey	Meleagris gallopavo		
	Yellow-bellied Sapsucker	Sphyrapicus varius		
Plantae				
	Alternate-leaved Dogwood	Cornus alternifolia		
	Annual Bluegrass	Poa annua		
	Annual Canarygrass	Phalaris canariensis		
	Annual Fleabane	Erigeron annuus		
	Balsam Fir	Abies balsamea		
	Balsam Poplar	Populus balsamifera		
	Basswood	Tilia americana		
	Black Cherry	Prunus serotina var. serotina		
	Black Locust	Robinia pseudoacacia		
	Blue Spruce	Picea pungens		
	Bluejoint Reedgrass	Calamagrostis canadensis		
	Brownish Sedge	Carex brunnescens		

KINGDOM	Common Name	Scientific Name	SARO	SARA
	Bull Thistle	Cirsium vulgare		
	Butter-and-eggs	Linaria vulgaris		
	Canada Goldenrod	Solidago canadensis		
	Coltsfoot	Tussilago farfara		
	Common Apple	Malus pumila		
	Common Buttercup	Ranunculus acris		
	Common Dandelion	Taraxacum officinale		
	Common Eelgrass	Zostera marina		
	Common Hop	Humulus lupulus		
	Common Lilac	Syringa vulgaris		
	Common Mare's-tail	Hippuris vulgaris		
	Common Plantain	Plantago major		
	Common Self-heal	Prunella vulgaris		
	Common St. John's-wort	Hypericum perforatum		
	Common Timothy	Phleum pratense		
	Common Vetch	Vicia sativa		
	Common Viper's Bugloss	Echium vulgare		
	Common Yarrow	Achillea millefolium		
	Eastern Bracken Fern	Pteridium aquilinum ssp. latiusculum		
	Eastern Hop-hornbeam	Ostrya virginiana		
	Eastern Poison Ivy	Toxicodendron radicans var. radicans		
	Eastern Star Sedge	Carex radiata		
	Eastern White Cedar	Thuja occidentalis		
	Eastern White Pine	Pinus strobus		
	European Buckthorn	Rhamnus cathartica		
	Flat-top White Aster	Doellingeria umbellata		
	Hairy Goldenrod	Solidago hispida		
	Large-toothed Aspen	Populus grandidentata		
	New England Aster	Symphyotrichum novae-angliae		
	Northern Red Oak	Quercus rubra		

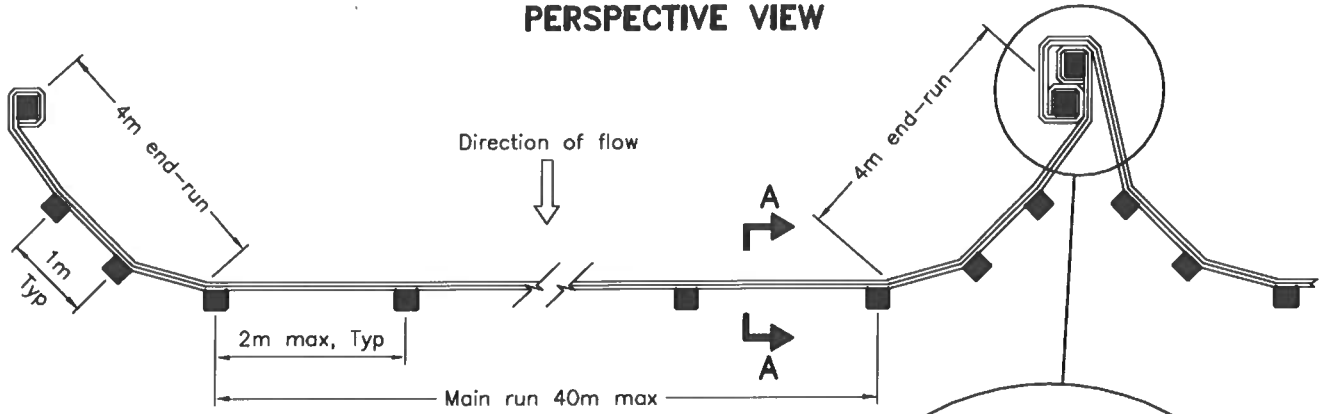
KINGDOM	Common Name	Scientific Name	SARO	SARA
	Norway Spruce	Picea abies		
	Paper Birch	Betula papyrifera		
	Pussy Willow	Salix discolor		
	Red Ash	Fraxinus pennsylvanica		
	Red-osier Dogwood	Cornus sericea		
	Sugar Maple	Acer saccharum		
	Tall Goldenrod	Solidago altissima		
	Tamarack	Larix laricina		
	Tatarian Honeysuckle	Lonicera tatarica		
	Trembling Aspen	Populus tremuloides		
	Tufted Vetch	Vicia cracca		
	Upright Brome	Bromus erectus		
	Watercress	Nasturtium officinale		
	White Ash	Fraxinus americana		
	White Elm	Ulmus americana		
	White Heath Aster	Symphyotrichum ericoides		
	White Poplar	Populus alba		
	White Spruce	Picea glauca		
	Wild Carrot	Daucus carota		
	Wild Sarsaparilla	Aralia nudicaulis		
	Wild Strawberry	Fragaria virginiana		
	Yellow Avens	Geum aleppicum		
	Yellow Birch	Betula alleghaniensis		
	Yellow Trout-lily	Erythronium americanum		
	Zigzag Goldenrod	Solidago flexicaulis		

Appendix G

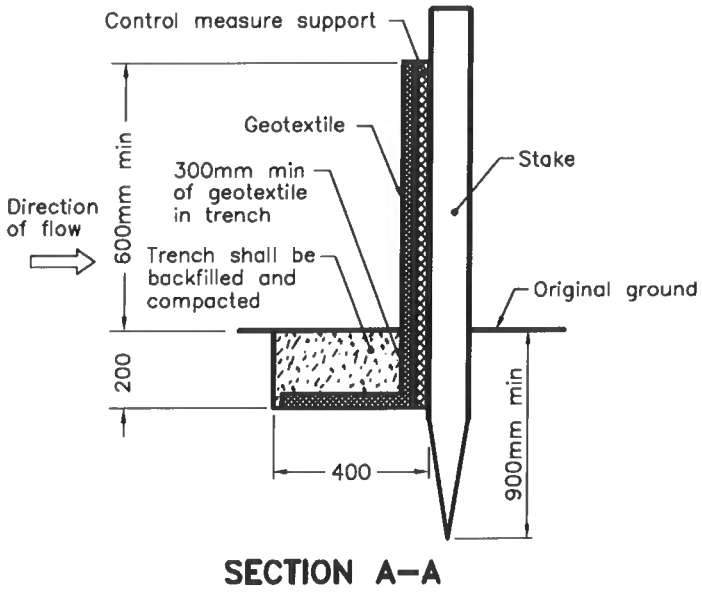
OPSD Silt Fence Drawing



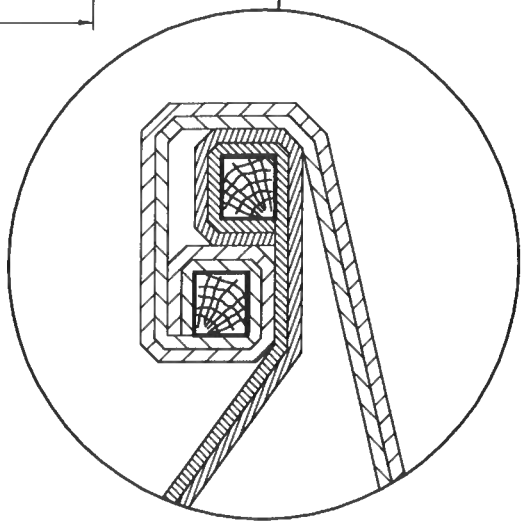
PERSPECTIVE VIEW



PLAN



SECTION A–A



JOINT DETAIL

NOTE:

A All dimensions are in millimetres unless otherwise shown.

ONTARIO PROVINCIAL STANDARD DRAWING	Nov 2015	Rev 2
HEAVY–DUTY SILT FENCE BARRIER		OPSD 219.130