ENVIRONMENTAL IMPACT STUDY

Draft Plan of Subdivision – Flato East

December 2015

RIVERSTONE

ENVIRONMENTAL SOLUTIONS INC.

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December 9, 2015
RS# 2015-103

Shakir Rehmatullah
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SUBJECT: Environmental Impact Study
Flato East Draft Plan of Subdivision
Community of Dundalk, Township of Southgate

Dear Mr. Rehmatullah,

RiverStone Environmental Solutions Inc. is pleased to provide you with the attached report.

Please contact us if there are any questions regarding the report, or if further information is required.

Best regards,

RiverStone Environmental Solutions Inc.

Report prepared by:

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Principal / Senior Ecologist

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Ecologist / Botanist

ENVIRONMENTAL ASSESSMENT NON-TECHNICAL SUMMARY

Type of Study Environmental Impact Study (EIS)		**Date** December 9, 2015
Project Manager Bev Wicks	**Legal Description** Part of Lot 233 and 234, Concession 1 Southwest of Toronto and Sydenham Road.	**Development Proposed** Plan of Subdivision (Flato East)
	Planning Authorities Grand River Conservation Authority, Township of Southgate	**Owner** Flato Dundalk Meadows Inc.

Report Summary

The purpose of this study was to address municipal, provincial, and federal requirements pertaining to the protection of significant natural heritage features, including the habitat of threatened and endangered species, wetlands, fish habitat, significant woodlands, and significant wildlife habitat. Based on both desktop and on-site evaluations, RiverStone determined that the development plan conforms with all applicable environmental policies.

To ensure that significant natural heritage features are appropriately protected, RiverStone has put forth a number of recommendations that are presented below.

RECOMMENDATIONS

WETLANDS

- **Wetland restoration of an area of the same size or greater should occur in the area identified on Figure 5. A detailed planting plan for this wetland should be implemented once its location and size is agreed to (in principle) by GRCA. This wetland should be graded to the elevations that would permit the establishment of a thicket swamp community to ensure that wetland habitat restored is similar in form and function to the identified wetland removed.**
- **The *Hydrogeological Study and Groundwater Monitoring* study currently underway assess the seasonal height of the groundwater table, groundwater flow directions, and the relative contribution of surface and groundwater contributions to wetlands on adjacent lands (to the extent possible). The study should also provide recommendations pertaining to how the on-site water balance will be maintained post project completion.**
- **The proposed stormwater management ponds must be designed in a way that protects the adjacent Provincially Significant Melancthon Wetland Complex #1 from negative impacts associated with potential alterations to water quantity and quality following implementation of the development plan.**
- **All sediment and erosion control measures should conform to the Erosion and Sediment Control guidelines for Urban Construction (December 2006).**

- **When native soil is exposed sediment and erosion control works, in the form of heavy-duty sediment fencing, be positioned along the edge of the areas to be developed, graded, and otherwise disturbed.**
- **Sediment fencing must be constructed of heavy material and solid posts, and be properly installed (trenched in) to maintain its integrity during inclement weather events.**
- **Additional sediment fencing and appropriate control measures must be available on site so that any breach can be immediately repaired.**
- **Regular inspection and monitoring will be necessary to ensure that the structural integrity and continued functioning of the sediment control measures is maintained (i.e., proper installation is not the only action necessary to satisfy the mitigation requirements).**
- **An onsite supervisor should be responsible for daily inspections of the sediment and erosion control measures and record the time and date of inspections, the status of the mitigation measures, and any repairs undertaken.**
- **Best Management practices should be utilized with all machinery and fill being imported to the subject property to ensure that material and tracks are free from invasive species (*Phragmites australis*, etc.).**
- **Machinery should arrive on site in clean condition and is to be checked and maintained free of fluid leaks.**
- **Machinery must be refueled, washed and serviced a minimum of 30 m from wetlands that occur near the subject property boundary on adjacent lands.**
- **Locate all fuel and other potentially deleterious substances a minimum of 30 m from wetlands and watercourses that occur near the subject property boundary on adjacent lands. Minimize fuels and chemicals stored onsite and ensure a spills management plan and the associated spill response equipment is available on-site at all times for implementation in the event of a spill of deleterious material.**
- **Temporary storage locations of aggregate/fill material should be located no less than 30 m from wetlands and watercourses that occur near the subject property boundary on adjacent lands. This material is to be contained by heavy-duty sediment fencing.**
- **Offloading of construction and aggregate/fill materials should be completed during fair weather conditions.**
- **All stockpiled topsoil/overburden should be piled in low piles and stabilized as quickly as possible (e.g., erosion-prone areas covered with textile) to minimize the potential for runoff and wind erosion.**
- **Removal of non-biodegradable erosion and sediment control materials once construction is complete and the site is stabilized.**
- **Streetlights within the subdivision should be directed towards the ground and away from the surrounding landscape.**

- **The streetlight network should be designed in a way to produce as minimal light as possible (such as by maximizing spacing and using low wattage bulbs), while ensuring that all mandatory lighting requirements are adhered to.**

- **Landscaping plans for the SWM facility should contain only native species that are suitable to site conditions (i.e., moisture regimes, light, etc.).**

FISH HABITAT

- **Machinery must be refueled, washed and serviced a minimum of 30 m from any watercourse or wetland feature.**

- **Qualified personnel should monitor all near-water construction activities.**

- **Installed culverts should be open-bottom and span the bankfull width of the James Foley Drain and drainage feature to allow fish at all life stages to pass up and downstream under all flow conditions. Culverts should not generate backwater effects or increase stream velocity. Culverts must be embedded into the substrate.**

- **Culvert installation must respect the warm-water timing window (beginning July 1 and ending March 31)**

- **Any work associated with the James Foley Drain should be reviewed and approved by the Drainage Superintendent.**

- **Fencing should be erected along the rear lot line of lots that back onto the floodplains/buffer zones of the James Foley Drain and drainage feature.**

SIGNIFICANT WOODLAND

- **A 30 m setback from the dripline of the Significant Woodland be established from all residential lots and roads as indicated on the proposed draft plan of subdivision (see Appendix 1).**

- **The dripline of the Significant Woodland should be staked and surveyed prior to the commencement of any development or site alteration activities.**

- **Sediment fencing should be erected along the dripline of the Significant Woodland to ensure that no vehicle movement or placement of fill/aggregate stockpiles occurs within the primary rooting zone of trees along the edge of the Significant Woodland.**

- **No grading should occur within the 30 m buffer from the dripline of the Significant Woodland with the exception of the stormwater blocks (Block 354 and 355), where grading should be restricted from the dripline and minimized within 30 m of the dripline.**

- **Stormwater management facilities (i.e., ponds) within the stormwater blocks (Block 354 and 355) should be situated as far from the edge of the Significant Woodland as possible.**

- **Access roads that will provide entry points to the stormwater management ponds by maintenance vehicles and equipment be aligned on the north side of the ponds (i.e., adjacent to the residential lots rather than the Significant Woodland).**

- **Landscaping plans for the SWM facility should contain only native species that are suitable to site conditions (i.e., moisture regimes, light, etc.). Tree species that are planted adjacent to the Significant Woodland (i.e., south side of the stormwater management blocks) should consist of species present in the adjacent Significant Woodland. Planting material should be sourced from the hardiness zone where the subject property is located (5a).**

CANDIDATE SIGNIFICANT WILDLIFE HABITAT

- **The recommendations offered to protect the Significant Woodland in Section 4.2.4 be implemented in full.**

- **Should any congregation (i.e., 2 or more) of snakes be observed on the subject property during construction activities within the same general location during spring (April-early May) or fall (October), suggesting that an active hibernaculum may be present nearby, MNRF should be contacted for further advice.**

- **The recommendations provided to protect wetlands in Section 4.2.2 be implemented in full.**

NATURAL HERITAGE FEATURES AND FUNCTIONS

- **Vegetation removal and disturbance outside of the development envelopes should be minimized to the extent possible.**

- **During construction, a defined access route should be used as the primary path for accessing the property and the internal lots to minimize vegetation removal.**

- **Implement a dust prevention strategy to reduce the development and spread of dust from the site. This may include dust suppression measures, such as promptly watering exposed areas when visible dust is observed.**

- **Vegetation removal (e.g., tree/shrub clearing, grading of existing meadows/hayfields, etc.) should be completed outside of the primary breeding bird nesting window (i.e., between April 15 and July 31). If vegetation removal occurs during this period, a nest survey should be conducted by a qualified biologist within 5 days of commencement of construction activities to identify and locate active nests of bird species covered by the federal *Migratory Bird Convention Act, 1994* or provincial *Fish and Wildlife Conservation Act, 1997*. If a nest is located or evidence of breeding noted, a mitigation plan should be developed to avoid any potential impacts on birds or their active nests. Mitigation may require establishing appropriate buffers around active nests or delaying construction activities until the conclusion of the nesting season.**

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1 BACKGROUND

RiverStone Environmental Solutions Inc. (hereafter, "RiverStone") was retained to complete an Environmental Impact Study (EIS) for lands that abut the southern settlement boundary of the community of Dundalk in the Township of Southgate (hereafter, "the Township"). The subject property is located on the west side of Highway 10 approximately 500 m southeast of its intersection with Highway 9/Main Street East (see **Figure 1**). The property is legally described as Part of Lot 233 and 234, Concession 1 Southwest of Toronto and Sydenham Road.

Much of the subject property is currently designated "Rural" on Schedule A of the Township's Official Plan (OP), and zoned "Restricted Agricultural" (R2) on Schedule 17 of the Township's Zoning By-law. The James Foley Municipal Drain which flows in a southerly direction through the subject property is designated "Hazard Lands" on Schedule A of the Township's OP and is zoned Environmental Protection (EP) on Schedule 17 of the Township's Zoning By-law. Grey County's (hereafter, "the County") OP designates the subject property as a "Primary Settlement Area".

It is our understanding that this EIS is required to provide the Township and Grand River Conservation Authority (GRCA) with the information necessary to assess the eligibility of a subdivision application and Zoning By-law Amendment on the lands considered herein. The proposed plan of subdivision is shown in **Appendix 1**. This EIS has been prepared in accordance with the Terms of Reference provided to GRCA on March 17, 2015, by Skelton Brumwell and Associates (hereafter, "Skelton Brumwell"), and as commented on and approved by GRCA on April 8, 2015. The Terms of Reference are provided in **Appendix 2**. This study will also satisfy the Township's EIS content requirements as outlined in Section 6.5.8 ("Terms of Reference - Environmental Impact Study") of the OP.

RiverStone was first retained in March 2015 to complete the fish and aquatic habitat assessment portions of this EIS with the terrestrial and wetland components being undertaken by Skelton Brumwell on the subject property. In September 2015, a change in project team required that RiverStone complete the analysis and written elements of the EIS report, utilizing the terrestrial and wetland information collected by Skelton Brumwell (e.g., field sheets, preliminary mapping). Where necessary, RiverStone has clarified Skelton Brumwell's data through email and telephone correspondence.

2 APPROACH AND METHODS

The approach and methods used to carry out this EIS are detailed in this section. In general, this includes:

1. Gathering background biophysical information for the subject property and adjacent lands (i.e., 120 m from subject property boundaries) to become familiar with existing records of features and species of conservation interest prior to the site investigations.

2. Conducting a site investigation to field-verify the presence or absence of features and species of conservation interest identified during background information gathering, and to identify any additional significant features (wherever present).

3. Determining the potential for negative impacts associated with the proposed development and ways that these negative impacts can be mitigated via avoidance, minimization, and/or compensation measures.

4. Providing an overall assessment of conformance of the proposed development with all applicable municipal, provincial, and federal environmental policies.

2.1 Information Sources Used to Assess Site Conditions

Background biophysical information pertaining to the subject property and adjacent lands was collected from a variety of sources. This includes:

- **Township of Southgate Official Plan** (February 2009) for natural feature and natural hazard mapping, including:
    - Schedule A – Land Use
    - Map 1 to Schedule A – Dundalk
    - Schedule C – Environmental Constraints
    - Schedule D – Urban Community of Dundalk Servicing
- **Township of Southgate Zoning By-law No. 19-2002** (February 2009, as amended) for natural feature mapping, including:
    - Schedule 17
- **County of Grey Official Plan** (Office Consolidation June 20, 2013) for natural feature mapping, including:
    - Appendix A – Constraint Mapping (Map 2)
    - Appendix B – Constraint Mapping (Map 2)
    - Schedule A – Land Use Designations (Map 2)
    - Secondary Schedule – Land Use Designations (Map 2q, Dundalk)
- **MNRF Natural Areas Mapping and Natural Heritage Information Centre (NHIC) database** regarding information on occurrences of species at risk (SAR) and provincially tracked species (squares: 17NJ4891, 17NJ4991, 17NJ5091, 17NJ4890, 174990, 175090, 17NJ4889, 174989, 175089; accessed September 10, 2015, at: http://www.giscoeapp.lrc.gov.on.ca/web/MNR/NHLUPS/NaturalHeritage/Viewer/Viewer.htm
- **Ministry of Natural Resources and Forestry (MNRF) Midhurst District Information Request** for fisheries and aquatic information within and adjacent to the subject property (received from Graham Findlay, Management Biologist, on August 31, 2015).
- **Ministry of Natural Resources and Forestry (MNRF) Midhurst District (Owen Sound Area) Information Request** for occurrences of species at risk and natural heritage features within and adjacent to the subject property (received from Kathy Dodge, Management Biologist, on November 4, 2015).
- **Species at Risk Range Maps** (accessed October 28, 2015, at: http://www.mnr.gov.on.ca/en/Business/Species/2ColumnSubPage/246809.html).
- **Grand River Conservation Authority (GRCA) Information Request** for fisheries and aquatic information within and adjacent to the subject property (received from Andrew Herreman, Resource Planner, on July 30, 2015).

- **GRCA Interactive Mapping** to identify potential features of conservation interest on the subject property and determine whether GRCA's regulated area extends onto the subject property (accessed October 8, 2015, at http://grims.grandriver.ca/imf/imf.jsp?site=grca_viewer&session=10077791&qlyr=sde_grca.GR.MUNICIPAL_BNDRY&qry=sde_grca.GR.MUNICIPAL_BNDRY.MU_LTIER%3d%27TOWNSHIP%20OF%20SOUTHGATE%27&qzoom=true&ddsid=23058a).
- **Ontario Breeding Bird Atlas (OBBA) database and the Atlas of the Breeding Birds of Ontario, 2001–2005** (Cadman et al. 2007) regarding birds that were documented to be breeding in the vicinity of the subject property during the 2001–2005 period (square: 17NJ49; accessed at: http://www.birdsontario.org/atlas/squareinfo.jsp).
- **Ontario Reptile and Amphibian Atlas** database regarding records of reptiles and amphibians that have been observed within the vicinity of the subject property (squares: 17NJ49, 17NJ59, 17NJ48, 17NJ58; accessed August 26, 2015, at: http://www.ontarioinsects.org/herpatlas/herp_online.html).
- **Distribution of Fish Species at Risk** mapping (for GRCA's jurisdiction) generated by Fisheries and Oceans Canada in 2015 (accessed October 29, 2015, from http://www.conservation-ontario.on.ca/what-we-do/watershed-stewardship/aquatic-species-at-risk).
- **Atlas of the Mammals of Ontario** (Dobbyn 1994) regarding records of mammals in the vicinity of the subject property.
- **Great Lakes Conservation Blueprint for Terrestrial Biodiversity, Volume 2** (Henson and Brodribb (2005) regarding terrestrial biodiversity within Ecodistrict 6E-5 (Mount Forest).
- **Great Lakes Conservation Blueprint for Aquatic Biodiversity, Volume 2** (Phair et al. (2005) regarding aquatic biodiversity within tertiary watershed 2GA (Upper Grand River).
- **Physiography of Southern Ontario** (Chapman and Putnam 2007) for information pertaining to the physiography and soils of the subject property and adjacent lands.
- **Quaternary Geology of the Dundalk Area, Southern Ontario** (Gwyn 1975) for information pertaining to the bedrock and surficial geology of the subject property and adjacent lands.
- **Environmental Impact Assessment** completed in 2006 by Azimuth Environmental Consulting Inc. for a parcel immediately to the west of the subject property, including all related Addendums and Letters (e.g., Dec. 2006, Mar. 2008, Jul. 2008, and May 2009).
- **Environmental Impact Assessment (Addendum)** completed in 2015 by RiverStone Environmental Solutions Inc. for a parcel immediately to the west of the subject property.
- **Recent and Historical Colour Aerial Photography** of the subject property.

In addition to the above information sources, we have also reviewed the following studies that form part of this development submission package and incorporated their results into this EIS (where applicable):

- **Preliminary Geotechnical Investigation** by Soil Engineers Ltd. (dated February 9, 2015).

2.2 Site Investigation

The background biophysical information gathered as outlined in **Section 2.1** helped direct data collection activities associated with multiple site investigations. As described in **Section 1**, RiverStone was responsible for collecting fish and aquatic habitat information, while Skelton Brumwell collected the majority of the terrestrial and wetland data. **Table 1** indicates the primary tasks that occurred during each site investigation, staff involved, and the hours spent on site. Representative photographs (taken by RiverStone) are provided in **Appendix 3**.

Table 1. Site visits and primary tasks.

Date	Primary Task	Staff (Firm)[1]	Hours spent on site (approx.)
Apr 26, 2015	Anuran Monitoring Survey #1	Kyle Fleming (SKB)	1.25
May 26, 2015	Anuran Monitoring Survey #2	Kyle Fleming (SKB)	1.25
May 28, 2015	Vascular Plant Inventory #1 (Spring)	Kyle Fleming (SKB)	not available
June 3, 2015	Breeding Bird Survey #1	Kyle Fleming (SKB)	2.25
June 15, 2015	Breeding Bird Survey #2	Kyle Fleming (SKB)	2.00
June 30, 2015	Anuran Monitoring Survey #3	Kyle Fleming (SKB)	0.25
July 3, 2015	Breeding Bird Survey #3	Kyle Fleming (SKB)	2.25
July 23, 2015	Vascular Plant Inventory #2 (Summer)	Kyle Fleming (SKB)	not available
July 23, 2015	Fish and Aquatic Habitat Assessment	Bev Wicks and James Eyres (RiverStone)	4.25
September 11, 2015	Vascular Plant Inventory #3 (Fall)	Tristan Knight (RiverStone)	1.75
October 1, 2015	Preliminary Wetland Review	Tristan Knight (RiverStone)	2

[1] SKB – Skelton Brumwell and Associates

2.2.1 Geology, Soils, and Drainage

Geology is a significant factor in the formation of soil, the physical characteristics of a watershed, and ultimately surface water quality. The bedrock and overlying deposits influence surface runoff and infiltration, directly influencing the nutrient balance of receiving water bodies. Knowledge of the existing terrain in a study area is important in understanding how a property and its associated natural environment will respond to development pressures. The geophysical setting of this property was determined using topographic mapping, soils mapping, geological mapping, aerial photography, and the on-site investigation.

2.2.2 Vegetation Communities and Vascular Plant Inventory.

Vegetation communities on the subject property were delineated according to Ecological Land Classification (ELC) community tables (Lee et al., 1998). ELC defines ecological units or communities based on bedrock, climate (temperature, precipitation), physiography (soils, slope, aspect), and corresponding vegetation. Use of the system permits biologists and other land managers to use a common language to describe vegetation communities, which in turn facilitates the identification of communities likely to support features or functions of conservation interest. The ELC system is an organizational framework that can be applied at different scales. The ecological units most useful for site-specific evaluations are ecosites and vegetation types (also known as ecoelements). Vegetation types are the finest level of resolution in the ELC system and are recurring patterns found in the plant species assemblages that are associated with a particular ecosite (Lee et al. 1998).

The three-season vascular plant inventory was conducted using an area-search approach that adequately covered all features (e.g., edges of cropfields, hayfields, forest, wetlands, landscaped areas, etc.) on the subject property. Most time and effort was spent inventorying the identified wetland, forest, and hedgerows as these areas contained the greatest diversity of vascular plants and are most likely to harbour locally, regionally, or provincially rare species.

2.2.3 Breeding Bird Surveys

Three rounds of breeding bird surveys were conducted in accordance with the Ontario Breeding Bird Atlas (OBBA) protocol (Bird Studies Canada et al. 2001). Surveys were conducted within the appropriate season (May 24–July 10), time of day (between dawn and 5 hours after dawn), and weather conditions (no rain, wind speed ≤3 on the Beaufort Wind Scale). A total of seven (7) point count stations were established, with stations situated approximately 250 m apart to reduce the potential for double-counting individuals. Breeding bird monitoring stations are identified on **Figure 2**.

2.2.4 Anuran Calling Surveys

Calling anuran surveys were conducted in accordance with the Marsh Monitoring Program for Surveying Amphibians (Bird Studies Canada 2009). This includes three separate surveys occurring within the proper season and timeframe (30 minutes after sunset until midnight) for the central region (43rd to 47th parallels) and under appropriate weather conditions (no heavy rain, wind speed ≤3 on the Beaufort Wind Scale). Anuran calling stations were placed systematically in an effort to cover all potential anuran breeding habitats within the study area. A total of six (6) anuran calling stations were established, as identified on **Figure 2**. The sixth station was added at the request of the GRCA. Calling stations were eliminated from subsequent surveys by SKB for stations where calls were not heard.

2.2.5 Features of Conservation Interest

Features of conservation interest targeted for assessment within this EIS include all natural heritage features and areas identified in the Township's OP (p. 104). This includes:

- Significant Habitat of Threatened and Endangered Species
- Significant Wetlands
- Fish Habitat
- Significant Woodlands

- Significant Valleylands
- Significant Wildlife Habitat (including Deer Wintering Yards)
- Areas of Natural and Scientific Interest
- Cold Water Streams
- Warm Water Streams

Overall, the level of effort expended on-site was deemed adequate to document features of conservation interest and their respective functions given the location of the proposed development and areal extent of disturbance. These features and their driplines (where present) in the vicinity of the proposed area of disturbance were delineated with a survey-grade GPS receiver capable of 2 m accuracy. Features of interest were photographed and all information collected was catalogued for future reference. Representative site photos taken during the site investigation are assembled in **Appendix 3**.

2.2.6 Species of Conservation Interest

Properly assessing whether an area is likely to contain species of conservation interest for the purposes of determining whether a proposed development is likely to have a negative impact is becoming more difficult as the number of listed species increases. Approaches that depend solely on documenting the presence of individuals of a species in an area can be misleading because of the difficulty of observing species that are usually rare and well camouflaged.

Given these difficulties, and the importance of protecting habitats of SAR, fish, and other species of conservation interest, RiverStone's primary approach to site assessment is habitat-based. This means that our field investigations focus on evaluating the potential for features within an area of interest to function as habitat for species considered potentially present, rather than searching for live specimens. An area is considered potential habitat if it satisfies a number of criteria, usually specific to a species, but occasionally characteristic of a broader group (e.g., several turtles of conservation interest use sandy shorelines for nesting, numerous fish species use areas of aquatic vegetation for nursery habitat). Physical attributes of a site that can be used as indicators of its potential to function as habitat for a species include structural characteristics (e.g., physical dimensions of rock fragments or trees, water depth), ecological community (e.g., meadow marsh, rock barren, coldwater stream), and structural connectivity to other habitat features required by the species. Species-specific habitat preferences and/or affinities are determined from status reports produced by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC), Cadman et al. (2007), published and unpublished documents, and direct experience. The results of these habitat-based assessments as well as descriptions of the methodology and rationale employed are provided in **Appendix 8**.

As per the approved EIS Terms of Reference (**Appendix 2**), species-specific surveys focused on vascular plants, breeding birds, and calling anurans (i.e., frogs and toads). Although observations of fauna were recorded, they are not reported herein unless this was important for the identification of a feature of conservation interest or another policy-related feature.

2.3 Impact Assessment and Mitigation Measures

In order to carry out a rigorous and defensible ecological assessment of potential impacts associated with the proposed development, RiverStone employs the following approach:

1. *Predict* impacts to existing features and species of conservation interest on site based on the proposed development plan (from construction to post-completion), including both direct (e.g., vegetation clearance, etc.) and indirect (e.g., light pollution, encroachment post-development, impacts.
2. *Evaluate the significance* of predicted impacts to existing biophysical features and functions based on their spatial extent, magnitude, timing, frequency (how often), and duration (how long).
3. *Assess the probability* or likelihood that the predicted impacts will occur at the level of significance expected (e.g., high, medium, low probability).

In instances where the potential for negative impacts exist, ecologically meaningful mitigation measures are offered to avoid, minimize, and/or compensate for such impacts. RiverStone's impact assessment and recommended mitigation measures are provided in **Section 4**.

2.4 Assessment of Conformance with Applicable Environmental Policies

There are a number of relevant federal, provincial, and municipal environmental policies that apply to the subject property and proposed development, which are listed below. An assessment of the proposed development's conformity with these policies is offered in **Section 4.2.6**.

- Township of Southgate Official Plan (February 2009).
- Township of Southgate Zoning By-law No. 19-2002 (February 2009, as amended).
- County of Grey Official Plan (Office Consolidation June 20, 2013).
- Provincial Policy Statement, 2014, pursuant to the *Planning Act*, R.S.O. 1990, c. P.13, including:
    - Natural Heritage Reference Manual for Natural Heritage Policies of the Provincial Policy Statement, 2005 (OMNR 2010a).
    - Significant Wildlife Habitat Technical Guide (OMNR 2000a).
    - Significant Wildlife Habitat Criteria Schedules for Ecoregion 6 (OMNRF 2015).
    - Significant Wildlife Habitat Mitigation Support Tool (OMNRF 2014).
- Provincial *Conservation Authorities Act*, R.S.O. 1990, c. C.27, including:
    - O. Reg. 150/06 – Grand River Conservation Authority: Regulation of Development, Interference with Wetlands and Alterations to Shorelines and Watercourses
    - GRCA Policies for the Administration of the Development, Interference with Wetlands and Alterations to Shorelines and Watercourses Regulation (Resolution No. 05-13)
    - GRCA Environmental Impact Study Guidelines and Submission Standards for Wetlands (Approved August 26, 2005)
- Provincial *Endangered Species Act*, S.O. 2007, c. 6, including:
    - O. Reg. 230/08 – Species at Risk in Ontario List.
    - O. Reg. 242/08 – General (i.e. "Exemption Regulation").
- Federal *Fisheries Act*, R.S.C. 1985, c. F-14, including:

  - Applications for Authorization under Paragraph 35(2)(b) of the Fisheries Act Regulations, S.O.R/2013-191.
  - Fisheries Protection Policy Statement (Fisheries and Oceans Canada 2013).
- Federal *Migratory Birds Convention Act*, S.C. 1994, c. 22.
  - Migratory Birds Regulations, C.R.C., c. 1035.

3 BIOPHYSICAL FEATURES AND FUNCTIONS

3.1 General Site Conditions and Land-use

The subject property is 40.22 ha in size. At the time of the 2015 site investigations, the subject property consisted primarily of agricultural land-uses. This includes cropped soybean fields, wet fallow fields, and hayfields. Treed hedgerows delineate the boundaries of some of the agricultural fields. Natural areas consist of an identified wetland and Significant Woodland (see **Section 3.6**). Four derelict buildings (one residence, one barn, and two "sheds") were present along Highway 10 at the eastern edge of the subject property during the site investigations, but the barn has since been removed (after it was determined that no Barn Swallows were present, see **Section 3.6.1)**.

Immediately to the north of the subject property is cropped agricultural land which directly abuts a subdivision in the community of Dundalk. To the west, an approved draft plan of subdivision exists, which will contain a road network that ties into the plan of subdivision application considered herein. To the south are natural features, including deciduous, mixed, and coniferous forests and various wetland units associated with the Provincially Significant Melancthon Wetland Complex #1. Agricultural lands comprise much of the adjacent lands east of Highway 10. The subject property and adjacent lands are indicated on **Figure 1**.

3.2 Physiographic Setting

3.2.1 Bedrock Geology

Bedrock underlying the subject property and adjacent lands consists of Middle Silurian aged dolostones of the Guelph Formation (Armstrong and Dodge 2007). This brown to tan dolostone is fine to medium crystalline grained, fossiliferous, and locally biohermal (i.e., has a mound-like form imparted by ancient coral reefs).The Guelph Formation stretches across southern Ontario from the Niagara River to the tip of the Bruce Peninsula but is largely found deep below surficial deposits. Thickness of the overburden above the bedrock is approximately 50-75 m in the study area (Gwyn 1975).

3.2.2 Surficial Geology and Soils

The subject property and adjacent lands are situated within Ecodistrict 6E-5, which is part of the Dundalk Till Plain physiographic region (Chapman and Putnam 2007). At 425 m to 535 m above sea level the Dundalk Till Plain extends higher in elevation than any other area in Ecoregions 6 and 7. The result is a cooler, moister climate with greater intermingling of boreal [e.g., White Spruce (*Picea glauca*), Tamarack (*Larix laricina*)] and eastern deciduous [e.g., Sugar Maple (*Acer saccharum*)] forest species than occurs in other parts of southern Ontario. The Dundalk Till Plain has a fluted surface, consisting of shallow troughs and ridges that orient southeast consistent with the direction of glacial movement in this area.

According to the Grey County soil survey (Gillespie and Richards 1954), the subject property consists mainly of Listowel series silt loam derived from medium-textured dolomitic limestone till. Drainage of this series is imperfect (i.e., the soils are moist or saturated for a significant portion of the year). The remainder of the subject property within and adjacent to the James Foley Municipal Drain consists of Parkhill series loam, which is also derived from dolomitic limestone till. Drainage is poor and the Parkhill series is described as gleisolic (i.e., has developed from prolonged soil saturation).

On-site soil investigations were conducted via eight boreholes advanced to depths of 5.8 to 6.6 m during completion of the *Preliminary Geotechnical Investigation* by Soil Engineers Ltd. At all boreholes, topsoil was observed to depths of 20-30 cm below the surface. Beneath the topsoil is a sandy silt till (intermixed with silty sand till at some boreholes), which is a heterogeneous mixture of clay to gravel particles dominated (in this case) by silt or sand and deposited beneath the glacier. Standard Penetration Tests of the till indicated that it is mostly dense (although is looser near the surface due to weathering). A layer of silt was recorded above the till at three borehole locations. Resistance to augering encountered in a few locations indicates the presence of large boulders.

3.2.3 Topography, Drainage, and Watercourses

The subject property is relatively uniform in topography and slopes gradually (mostly 1-5%) but consistently in a southern direction. The northeastern portion of the property is at the highest elevation (~517 masl), while southwestern portion of the property is at the lowest elevation (~512 masl), indicating a total gradient of roughly 5 m. The subject property is drained by two watercourses, referred to herein as the "James Foley Municipal Drain" (hereafter, "James Foley Drain") and the "drainage feature". These watercourses are described in further detail in **Section 3.6.3**.

3.3 Vegetation Communities and Vascular Plant Inventory

Although primarily under agricultural production, the subject property is composed of a number of natural vegetation communities. A detailed description of these communities follows, with ELC mapping provided in **Figure 3**. Vegetation communities on adjacent lands have been mapped based on air-photo interpretation and observations made from inside subject property boundaries. The results of the three-season vascular plant inventory are provided in **Appendix 4**.

3.3.1 Fresh-Moist Sugar Maple – Hardwood Deciduous Forest (FOD6-5)

Extending into the southern portion of the subject property from adjacent lands is a hardwood forest dominated by Sugar Maple (*Acer saccharum*). Ironwood (*Ostrya virginiana*), American Beech (*Fagus grandifolia*), Black Cherry (*Prunus serotina*), and Eastern White Cedar (*Thuja occidentalis*) are secondary constituents of the canopy. Black Ash (*Fraxinus nigra*) and Green Ash (*Fraxinus pennsylvanica*) are found in moister sections of the forest closer to the drainage feature. The shrub layer consists of Alternate-leaved Dogwood (*Cornus alternifolia*), Chokecherry (*Prunus virginiana*), Beaked Hazel (*Corylus cornuta*), European Guelder Rose (*Viburnum opulus*), and (in moister areas) Nannyberry (*Viburnum lentago*). The ground flora is consistent with moist deciduous forests, and includes Calico Aster (*Symphyotrichum lateriflorum*), Yellow Avens (*Geum aleppicum*), Herb Robert (*Geranium robertianum*), and Northern Cluster Sedge (*Carex arctata*). The portion of this forest that extends onto the subject property is 0.45 ha in size. This forest (and its extension onto adjacent lands to the south and east) is mapped as a Significant Woodland on Appendix B (Map 2) Grey County's OP (see **Section 3.6.4**).

3.3.2 Willow Mineral Thicket Swamp (SWT2-2)

In the extreme southwestern portion of the subject property exists a 1.42 ha thicket swamp dominated by a wide array of willows, including Slender-leaved Willow (*Salix petiolaris*), Shining Willow (*Salix lucida*), Wooly-headed Willow (*Salix eriocephala*), Bebb's Willow (*Salix bebbiana*), and Pussy Willow (*Salix discolor*). A variety of other wetland obligate species were also observed, including Narrow-leaved Meadowsweet (*Spiraea alba*), Spotted Joe-pye Weed (*Eupatorium maculatum*), Softstem Bulrush (*Schoenoplectus tabernaemontanii*), Fox Sedge (*Carex vulpinoidea*), Bebb's Sedge (*Carex bebbii*), and Narrow-leaved Willow-herb (*Epilobium ciliatum*). Adjacent to the Willow Mineral Thicket Swamp (on the west) is a Cultural Meadow containing pasture grasses and meadow forbs

3.3.3 Scotch (Scots) Pine Cultural Plantation (CUP3-3)

A young to mid-aged stand of Scots Pine (*Pinus sylvestris*) is present near the eastern boundary of the subject property at Highway 10.

3.3.4 Cultivated Areas

At the time of the site visits much of the subject property (approximately 37 ha, or 92%) is under soybean cultivation, was actively hayed, or is fallow. Hedgerows delimit the cultivated fields, and typically consist of Manitoba Maple (*Acer negundo*), Green Ash, and American Elm (*Ulmus americana*).

3.3.5 Adjacent Lands

Vegetation community mapping on adjacent lands was based on current aerial photography and observations made from within the Flato East subject property boundaries. Vegetation community classification has therefore been undertaken to community series or ecosite only. Adjacent lands consist of the following vegetation communities:

- CUP3 – Coniferous Plantation (dominated by White Spruce [*Picea glauca*] and Eastern White Pine [*Pinus strobus*])
- MAM – Meadow Marsh
- SWT – Thicket Swamp
- SWD – Deciduous Swamp
- CUT1 – Cultural Thicket

3.4 Breeding Bird Surveys

A total of thirty-one (31) bird species were recorded during breeding bird surveys on the subject property. A list of all bird species recorded is provided in **Appendix 5**.

3.5 Anuran Calling Surveys

A total of five (5) anuran species were recorded during anuran calling surveys, however all calls from every species were heard greater than 100 m from the centre of the monitoring station and occurred

outside the limits of the subject property. Spring Peeper (*Pseudacris crucifer*) was the most abundant anuran species recorded (from a total of 4 stations). Survey results are summarized in **Table 2**.

Table 2. Results of Calling Anuran Surveys on the Subject Property according to Marsh Monitoring Program Protocols.

Station ID	Survey #1 – Species Recorded (Call Code)	Survey #2 – Species Recorded (Call Code)	Survey #3 – Species Recorded (Call Code)	Comments
A	Spring Peeper (3)	-	-	Calls > 100 m away from station.
B	Spring Peeper (3)	-	-	Calls > 100 m away from station.
C	Wood Frog (2) Spring Peeper (3)	-	Grey Treefrog (2) American Toad (2) Spring Peeper (2) Northern Leopard Frog (3)	Calls > 100 m away from station.
D	Spring Peeper (3)	-	-	Calls > 100 m away from station.
E	-	-	-	No calling anurans heard.
F	-	-	-	No calling anurans heard.

3.6 Features of Conservation Interest

Based on the background information collected (**Section 2.1**) and site investigation (**Section 2.2**), we have provided a determination of whether or not features of conservation interest protected through policies outlined in the Township's OP and the PPS are present on the subject property. **Table 3** below and the sections that follow outline our rationale. All features of conservation interest present on the subject property and adjacent lands are mapped on **Figure 4**, which also indicates our recommended buffer distances for protecting these features.

Table 3. Summary of the Assessment of Features of Conservation Interest (according to the Township's OP) on the Subject Property.

Features of Conservation Interest[1]	**Presence or Absence of Feature of Conservation Interest on the Subject Property.**	**Presence or Absence of Feature of Conservation Interest on Adjacent Lands (i.e., within 120 m of Subject Property).**
Significant Habitat of Threatened and Endangered Species	*Present*. See **Section 3.6.1.**	*Present*. See **Section 3.6.1.**
Significant Wetlands	*Absent*. See **Section 3.6.2.**	*Present*. See **Section 3.6.2.**
Fish Habitat	*Present*. See **Section 3.6.3.**	*Present*. See **Section 3.6.3.**
Significant Woodlands	*Present*. See **Section 3.6.4.**	*Present*. See **Section 3.6.4.**
Significant Valleylands	*Absent*. See **Section 3.6.5.**	*Absent*. See **Section 3.6.5.**
Significant Wildlife Habitat	*Potentially Present*. See **Section 3.6.6.**	*Potentially Present*. See **Section 3.6.6.**
Life Science Areas of Natural and Scientific Interest	*Absent*. See **Section 3.6.7.**	*Absent*. See **Section 3.6.7.**
Coldwater Streams	*Absent.* See **Section 3.6.8.**	*Absent.* See **Section 3.6.8.**
Warmwater Streams	*Present*. See **Section 3.6.8.**	*Present*. See **Section 3.6.8.**

[1] - Shaded rows denote features of conservation interest for which negative impacts on the subject property or adjacent lands have been deemed possible.

3.6.1 Significant Habitat of Threatened and Endangered Species

The Township's OP does not expressly define "significant habitat" in the context of endangered and threatened species. The protection of "significant habitat" of endangered and threatened species was language employed by 2005 PPS (which explains its use in the Township's OP), but the term "significant" has been removed in 2014 PPS. The most appropriate approach to identifying endangered and threatened species habitat is to use the definition in the provincial *Endangered Species Act*, 2007 (s. 2), which is also employed by the 2014 PPS:

> **Habitat of Endangered and Threatened Species:** *a) with respect to a species listed on the Species at Risk in Ontario List as an endangered or threatened species for which a regulation made under clause 55(1)(a) of the Endangered Species Act, 2007 is in force, the area prescribed by that regulation as the habitat of the species; or*
>
> *b) with respect to any other species listed on the Species at Risk in Ontario List as an endangered or threatened species, an area on which the species depends, directly or indirectly, to carry on its life processes, including life processes such as reproduction, rearing, hibernation, migration or feeding, as approved by the Ontario Ministry of Natural Resources; and*
>
> *places in the areas described in clause (a) or (b), whichever is applicable, that are used by members of the species as dens, nests, hibernacula or other residences.*

RiverStone submitted an information request to MNRF (Midhurst District, Owen Sound Area) for occurrences of species at risk on the subject property and adjacent lands; the results of MNRF's screening are provided in **Appendix 6**. See **Appendix 8** for a detailed technical description of RiverStone's assessment of habitat for species of conservation interest on the subject property. Previous field surveys completed by Skelton Brumwell identified two threatened species – Bobolink (*Dolichonyx oryzivorus*) and Eastern Meadowlark (*Sturnella magna*) –on the subject property. As previously stated, RiverStone's involvement in the project began in September 2015; this is beyond the breeding bird season and as such, RiverStone was unable to determine if these species were breeding on site, the number of breeding pairs, etc. In the fall of 2015, RiverStone was advised by the client that all of the agricultural fields (i.e., cropland, hayfield, fallow field) on the subject property had been plowed by the farmer that leases the property in preparation for planting in the spring of 2016 (see Photo 7 in **Appendix 3**).

3.6.2 Significant Wetlands

A specific definition of "wetlands" or "significant" (in the context of wetlands) is not provided within the Township's OP. For the purposes of defining wetlands on the subject property and adjacent lands, we have applied the relevant definition from the 2014 PPS from section. 6.0:

> **Wetlands:** means *lands that are seasonally or permanently covered by shallow water, as well as lands where the water table is close to or at the surface. In either case the presence of abundant water has caused the formation of hydric soils and has favoured the dominance of either hydrophytic plants or water tolerant plants. The four major types of wetlands are swamps, marshes, bogs and fens.*

> **Significant:** means *an area identified as provincially significant by the Ontario Ministry of Natural Resources using evaluation procedures established by the Province, as amended from time to time*

Although the Township's OP does not contain provisions for the protection of identified wetlands, identified wetlands are protected under GRCA's regulation (see **Section 5.4**); therefore, it is appropriate to classify identified wetlands as a feature of conservation interest in this assessment.

As noted in **Section 3.3** and shown in **Figure 3**, one (1) identified wetland community (willow thicket swamp) is present on the subject property. Additional identified wetlands and the Provincially Significant Melancthon Wetland Complex #1 are found on adjacent lands. Potential impacts to wetlands on the subject property and adjacent lands are described in **Section 4.2.2**.

3.6.3 Fish Habitat

A specific definition of "fish habitat" is not provided within the Township's OP. For the purposes of defining fish habitat on the subject property and adjacent lands, we have applied the relevant definition from the 2014 PPS from section. 6.0:

> **Fish habitat:** *as defined in the Fisheries Act, c. F-14, as amended, means spawning grounds and any other areas, including nursery, rearing, food supply, and migration areas on which fish depend directly or indirectly in order to carry out their life processes.*

Two watercourses on the subject property provide habitat for fish that meets the above definition. A summary of the fish and aquatic habitat characteristics of these watercourses is provided below.

3.6.3.1 General Conditions

The subject property is situated near the northern terminus of the Grand River watershed where it meets the headwaters of the Saugeen River. Two (2) tributaries enter the subject property from the north, referred to herein as the James Foley Drain and drainage feature. These watercourses converge approximately 210 m south-southeast of the southern property boundary.

The drainage feature has not been mapped on the Township's OP (Schedule D), GRCA's interactive mapping database, or MNRF's Natural Areas Mapping database. The Ontario Ministry of Agriculture, Food, and Rural Affairs' (OMAFRA's) Agricultural Information Atlas indicates that the James Foley Drain is a Class E Agricultural Drain; Class E drains are considered to contain permanent, warmwater conditions with top predators. The status of the James Foley Drain as a classified municipal drain was confirmed by Drainage Superintendent Gerd Uderstadt (see **Appendix 7**).

The characteristics of the James Foley Drain and drainage feature are provided below and summarized in **Table 4**. Locations where detailed aquatic habitat assessments were conducted are indicated on **Figure 2**.

3.6.3.2 James Foley Drain

Based on existing aerial photographs and mapping, the James Foley Drain is initiated in a wetland that straddles the Saugeen River/Grand River watershed boundary between 2nd Line NE and Highway 2. East of Highway 10, the drain is referred to as the Fraser-Lee Drainage Works, a Class C Agricultural

Drain containing permanent, warmwater conditions with baitfish. The Fraser-Lee Drain is conveyed through natural features and agricultural lands, crossing Highway 10 just north of the subject property.

Channel morphology, aquatic habitat, and water quantity/quality characteristics for three (3) assessment stations (approximately 15 m length reaches) are detailed in **Table 4.** Moving in a downstream direction (i.e., from Station 1 to Station 3), a general increase in channel characteristics (e.g., bankfull width, wetted width, and discharge) was observed. Watercress (*Nasturtium officinale*) was noted at each station, suggestive of groundwater contributions to the watercourse. Riparian vegetation consisted principally of meadow marsh species such as Spotted Joe-pye Weed (*Eutrochium maculatum*), Reed-canary Grass (*Phalaris arundinacea*), and Red-osier Dogwood (*Cornus sericea*). A farm crossing between Station 1 and Station 2 has resulted in degradation of the channel. The Drain is also deeply incised (~ 2 m) throughout the subject property, suggesting that floodwaters are cutoff from the riparian zone except under extreme and infrequent flows.

Baitfish were observed at Station 2, confirming this watercourse as direct fish habitat. MNRF provided fisheries data for the James Foley Drain collected upstream of the subject property in 2005 (specific location unknown). Collected species include Central Mudminnow, Creek Chub (*Semotilus atromaculatus*), Northern Redbelly Dace (*Chrosomus eos*), and Brook Stickleback. Based on the data collected and conditions observed, the James Foley Drain is considered a warmwater to coolwater system.

3.6.3.3 Drainage feature

Upstream of the subject property, the drainage feature is conveyed through the Dundalk settlement area via a straightened swale channel. After exiting a 2 m wide concrete box culvert on the south side of Victoria Street North, the drainage feature flows through a straightened open channel through cropland for approximately 200 m before reaching the northern subject property boundary. Brook Stickleback (*Culaea inconstans*) were observed at the culvert mouth in pools along with large beds of Watercress.

Detailed aquatic information for the drainage feature was collected at Station 4; conditions at Station 4 were representative of the entire 420 m length of watercourse conveyed through the subject property. The bed of this watercourse was observed to be fully vegetated with no flowing water whatsoever on the date of assessment. The density of vegetation would create a barrier to fish passage between downstream sections of the drainage feature and the areas around the Victoria Street North culvert where fish were observed. Like the James Foley Drain, the drainage feature is also deeply incised and contains copious Watercress. Based on the conditions observed, the drainage feature is considered to a warm to coolwater intermittent system that may only contain flowing water following the spring freshet. Pockets of refugia habitat for fish remain during the summer months as a result of groundwater contributions.

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Table 4. Channel Morphological and Aquatic Characteristics of the James Foley Drain and Drainage Feature. See **Figure 2** for a Location of these Stations on the Subject Property.

Watercourse	Station No. (~ 15 m Reach Length Assessed)	Channel Morphology and Aquatic Habitat Characteristics	Water Quantity and Quality Characteristics
James Foley Drain	1	**Bankfull Width**: 2.5 m **Wetted Width**: 1.1 m **Water Depth at Thalweg:** 10 cm **Bed Feature:** 100% Run **Substrates:** Sand, Gravel, Small Cobble; layer of silt and algae partially covering substrate. **Incision:** ~2 m to top of bank **Adjacent Slopes:** Flat **Observed Aquatic Species**: Crayfish **Aquatic Vegetation:** Watercress (*Nasturtium officinale*) **Riparian Vegetation**: Joe-Pye weed (*Eutrochium maculatum*), Goldenrod (*Solidago altissima*), Red-osier Dogwood (*Cornus sericea*), Reed-canary Grass (*Phalaris arundinacea*).	**Discharge (m^3/s)**: 0.0045 **Discharge (l/s)**: 4.5 **Water Temperature ^oC (Air Temperature ^oC):** 15.1 (20.5) **Dissolved Oxygen (% Saturation):** 50.4 **Dissolved Oxygen (mg/L):** 5.4 **Specific Conductivity (ug/L):** 691 **pH:** 7.27
James Foley Drain	2	**Bankfull Width**: 5 m **Wetted Width**: 1 m **Water Depth at Thalweg:** 15 cm **Bed Feature:** 45% Pool, 40% Run, 15% Riffle **Substrates:** 25% Sand, 25% Gravel, 40% Large Cobble, 10% Boulder **Incision:** ~3 m to top of bank **Adjacent Slopes:** Flat **Observed Aquatic Species**: Crayfish, baitfish **Aquatic Vegetation:** Watercress (*Nasturtium officinale*) **Riparian Vegetation**: Narrow-leaved Meadowsweet (*Spiraea alba*), Tall Goldenrod (*Solidago altissima*), Joe-Pye weed (*Eutrochium maculatum*), Red-osier Dogwood (*Cornus sericea*), Reed-canary Grass (*Phalaris arundinacea*).\	**Discharge (m^3/s)**: 0.0104 **Discharge (l/s)**: 10.4 **Water Temperature ^oC (Air Temperature ^oC):** 15.6 (22) **Dissolved Oxygen (% Saturation):** 61.9 **Specific Conductivity (ug/L):** 716.4 **pH:** 7.63

Watercourse	Station No. (~ 15 m Reach Length Assessed)	Channel Morphology and Aquatic Habitat Characteristics	Water Quantity and Quality Characteristics
James Foley Drain	3	**Bankfull Width**: 5 m **Wetted Width**: 1.25 m **Water Depth at Thalweg:** 26 cm **Bed Feature:** 90% Run, 10% Pool **Substrates:** 40% Sand, 25% Gravel, 25% Cobble, 10% Boulder **Incision:** ~2 m to top of bank **Adjacent Slopes:** Flat **Observed Aquatic Species**: None **Aquatic Vegetation:** Watercress (*Nasturtium officinale*) **Riparian Vegetation**: Joe-Pye weed (*Eutrochium macultaum*), Goldenrod (*Solidago altissima*), Canada Thistle (*Cirsium arvense*), Fox Sedge (*Carex vulpinoidea*), Bebb's Sedge (*Carex bebbii*),	**Discharge (m^3/s)**: 0.009 **Discharge (l/s)**: 9 **Water Temperature ^oC (Air Temperature ^oC):** 17.1 (25) **Dissolved Oxygen (mg/L):** 7.8 **Specific Conductivity (ug/L):** 716.5 **pH:** 7.93
Drainage feature	4	**Substrates:** 90% Sand/Silt, 10% Cobble **Incision:** ~2.5 m to top of bank **Adjacent Slopes:** Gradual **Observed Aquatic Species**: None **Aquatic Vegetation:** Watercress (*Nasturtium officinale*) **Riparian Vegetation**: Narrow-leaved Meadowsweet (*Spiraea alba*), Forget-me-not (*Myosotis scorpioides*), Reed-canary Grass (*Phalaris arundinacea*).	n/a (no flowing water)

3.6.4 Significant Woodlands

A specific definition of "woodlands" or "significant" (in the context of woodlands) is not provided within the Township's OP. For the purposes of identifying significant woodlands on the subject property and adjacent lands, we have applied the relevant definition from the 2014 PPS (s. 6.0):

> **Woodland:** means *treed areas that provide environmental and economic benefits to both the private landowner and the general public, such as erosion prevention, hydrological and nutrient cycling, provision of clean air and the long-term storage of carbon, provision of wildlife habitat, outdoor recreational opportunities, and the sustainable harvest of a wide range of woodland products. Woodlands include treed areas, woodlots or forested areas and vary in their level of significance at the local, regional and provincial levels. Woodlands may be delineated according to the Forestry Act definition or the Province's Ecological Land Classification system definition for "forest."*
>
> **Significant:** means *an area which is ecologically important in terms of features such as species composition, age of trees and stand history; functionally important due to its contribution to the broader landscape because of its location, size or due to the amount of forest cover in the planning area; or economically important due to site quality, species composition, or past management history. These are to be identified using criteria established by the Ontario Ministry of Natural Resources*

As noted in **Section 3.3.1**, the Sugar Maple – Hardwood Deciduous Forest that extends into the southern portion of the subject property is mapped as a Significant Woodland on Appendix B (Map 2) of the County's OP. Because this woodland (and its extension onto adjacent lands) is already recognized as Significant, there is no need to formally assess the feature based on criteria as provided in the Natural Heritage Reference Manual (OMNR 2010b).

3.6.5 Significant Valleylands

A specific definition of "valleylands" or "significant" (in the context of valleylands) is not provided within the Township's OP. For the purposes of identifying Significant Valleylands on the subject property, we have applied the 2014 PPS definition from section. 6.0:

> **Valleyland**: *a natural area that occurs in a valley or other landform depression that has water flowing through or standing for some period of the year"*.
>
> **Significant**: *means d) in regard to other features and areas in policy 2.1, ecologically important in terms of features, functions, representation, or amount, and contributing to the quality and diversity of an identifiable geographic area or natural heritage system.*

Based on the conditions observed during the site investigations, neither the James Foley Drain nor the drainage feature are associated with valleylands. A review of topographic mapping (1 m contours) indicates that valleylands are also absent from adjacent lands.

3.6.6 Significant Wildlife Habitat

A specific definition of "wildlife habitat" or "significant" (in the context of wildlife habitat) is not provided within the Township's OP. For the purposes of identifying significant wildlife habitat on the subject property, we have applied the 2014 PPS definition from section. 6.0:

> **Wildlife habitat:** *means areas where plants, animals and other organisms live, and find adequate amounts of food, water, shelter and space needed to sustain their populations. Specific wildlife habitats of concern may include areas where species concentrate at a vulnerable point in their annual or life cycle; and areas which are important to migratory or non-migratory species.*
>
> **Significant:** *means d) in regard to other features and areas in policy 2.1, ecologically important in terms of features, functions, representation, or amount, and contributing to the quality and diversity of an identifiable geographic area or natural heritage system.*

Guidance on identifying Significant Wildlife Habitat is provided by the Natural Heritage Reference Manual (OMNR 2010b), Significant Wildlife Habitat Technical Guide (OMNR 2000b), and Significant Wildlife Habitat Ecoregion Criterion Schedule for Ecoregion 6E (OMNRF 2015). The assessment that follows is carried out in accordance with these documents.

According to the SWH Technical Guide (OMNR 2000), use of a landscape approach that considers natural heritage features across a variety of scales results in a more comprehensive assessment of significance. The process for identifying SWH is outlined in s. 9.2.3 of the Natural Heritage Reference Manual (OMNR 2010b). Step 1 considers the nature of the development application proposed and involves the assembly of background ecological information for the subject property and adjacent lands. This information is compiled through a review of the data available from the Natural Heritage Information Centre (NHIC), information requests from MNRF, and local planning documents (e.g., Official Plan Schedules, etc.). If an application triggers a need to protect SWH (e.g., change in land-use that requires approval under the *Planning Act*, etc.), a more thorough investigation of potential SWH features on the subject property or adjacent lands must occur. Any confirmed SWH for the subject property and adjacent lands as identified in relevant planning documents or by the MNRF should be noted at this stage.

Where a need to protect SWH is triggered, step 2 involves undertaking a more thorough analysis of features, functions, and habitats on the subject property via Ecological Land Classification. The list of ELC Ecosite codes generated for the subject property is compared to those codes considered candidate SWH in the relevant Ecoregion Criterion Schedule (i.e., 5E, 6E, or 7E) in step 3. Where a positive match between an ELC Ecosite and candidate SWH exists, the area is considered candidate SWH. In step 4 two options are available for candidate SWH: a) the area may be protected without further study, or b) the area may be evaluated to ascertain whether confirmed SWH is present. Evaluation may involve reviewing available information pertaining to features within a landscape context (e.g., aerial photography), generating more detailed maps of vegetation cover, or conducting surveys of the wildlife population within the candidate SWH including reproductive, feeding, and movement patterns. If the area is confirmed SWH, the final step (5) in the process is the completion of an impact assessment to demonstrate that no negative impacts to the confirmed SWH or its function will occur. The impact assessment process is assisted by the SWH Mitigation Support Tool (OMNRF 2014b).

Our assessment of the potential for features on the subject property and adjacent lands to act as significant wildlife habitat is provided in **Appendix 9**.

3.6.7 Areas of Natural and Scientific Interest

A specific definition of "Areas of Natural and Scientific Interest" (ANSI) or "significant" (in the context of ANSI's) is not provided within the Township's OP. For the purposes of identifying ANSI's on the subject property and adjacent lands, we have applied the 2014 PPS definition from section. 6.0:

> **Areas of Natural And Scientific Interest:** means areas of land and water containing natural landscapes or features that have been identified as having life science or earth science values related to protection, scientific study or education.
>
> **Significant:** *means an area identified as provincially significant by the Ontario Ministry of Natural Resources using evaluation procedures established by the Province, as amended from time to time*

A review of NHIC's Natural Areas Mapping database and the County's OP (Appendix B, Map 2) revealed that no ANSI's are present on the subject property or adjacent lands.

3.6.8 Coldwater and Warmwater Streams

No coldwater streams are present on the subject property or adjacent lands. The two (2) warmwater (i.e., warm to coolwater) streams on the subject property were characterized in **Section 3.6.3** and include a Municipal Drain and drainage feature.

4 IMPACT ASSESSMENT AND RECOMMENDATIONS

4.1 Proposed Development Plan

Development features and areas of disturbance that form part of this draft plan of subdivision application include the following (as outlined in the bottom left corner of **Appendix 1**):

- 496 single family residential and townhouse lots/units (18.2 ha);
- 2 stormwater management blocks (4.23 ha);
- 9 new roads (Street "A" through Street "I") (7.1 ha);
- 7 park blocks (2.16 ha); and
- 6 open space blocks (8.43 ha).

The open space blocks are associated with the floodplain and watercourse setbacks, the Significant Woodland, and an area in the southwestern corner of the subject property to be restored with wetland (see **Section 4.2.2**).

4.2 Impact Assessment

As summarized in **Table 3**, a number of features and species of conservation interest were determined to be present on the subject property and adjacent lands. Based on the results of background information gathering and the site investigation, in concert with a review of the development plan proposed to date (i.e., proposed draft plan), the following sections outline the potential negative impacts to features and species of conservation interest on the subject property and adjacent lands.

4.2.1 Significant Habitat of Threatened and Endangered Species

See **Appendix 8** for a detailed technical description of the potential impacts to habitat of threatened and endangered species, and RiverStone's recommended mitigation measures for protecting these species and/or ensuring conformance of the development application with the *Endangered Species Act, 2007*. Based on communication with the client all cultivated areas (including the fallow fields) were ploughed on the subject property in the fall of 2015, as part of preparing these areas for the 2016 planting season. If the fields have been prepared for planting, as indicated by the client, it is RiverStone's opinion that the subject property is unlikely to contain features with the potential to function as habitat for Bobolink or Eastern Meadowlark. No other features on the subject property had the potential to function as habitat for Endangered or Threatened species. If it were determined that fields continue to contain habitat of either of these two species an approval under s. 23.6 of O. Reg. 242/08 must be secured prior to the commencement of any development or site alteration activities that damage or destroy habitat.

4.2.2 Significant and other Identified Wetlands

In general, negative impacts to wetlands that may be associated with implementation of the development plan as described in **Section 4.1** may result via the following processes:

- Direct loss of wetland area in locations that conflict with the development envelopes.
- Alterations of surface water and/or groundwater contributions to the wetland that may result during construction (e.g., dewatering, etc.), from increased coverage of impervious surfaces (e.g., roads, roofs, etc.), and/or modifications to existing topography or drainage.
- Increased sediment and nutrient loadings that reach the wetland via runoff from the development area from construction to post-completion. This may adversely affect wetland water quality via increased turbidity, nutrient enrichment, contamination by toxic substances, and changes in pH, etc.
- Noise and light pollution that may affect the ability of wetland wildlife to successfully carry out their life processes (e.g., breeding, feeding, etc.).
- Increased human activity/encroachment within the wetland, which may result in soil compaction, dumping, vandalism, or other disturbances.

4.2.2.1 Direct Loss and Alteration of Wetland Area

The draft plan of subdivision considered here has been designed to avoid the majority of the natural features identified; however, to address planning related matters it was necessary to provide continuity with the proposed road network on adjacent lands to the west, which are already subject to an approved draft plan of subdivision. The location of the identified wetland (willow thicket swamp) directly conflicts with the road network that will connect to the approved draft plan to the west. This will result in a loss of 1.42 ha of wetland area on the subject property, which is equivalent to the size of the identified wetland.

To rectify impacts associated with the direct loss of wetland, RiverStone recommends the following:

- **Wetland restoration of an area of the same size or greater should occur in the area identified on Figure 5. A detailed planting plan for this wetland should be implemented once its location and size is agreed to (in principle) by GRCA. This wetland should be graded to the elevations**

that would permit the establishment of a thicket swamp community to ensure that wetland habitat restored is similar in form and function to the identified wetland removed.

An identified wetland is indicated on GRCA's regulatory mapping along Highway 10 within adjacent lands to the southeast of the subject property. The exact areal extent of this wetland is unknown; however, based on existing conditions observed on-site the wetland does not extend onto subject property. No calling anurans were recorded in this wetland ("Station F") or adjacent areas during monitoring. Based on existing aerial photography, it appears that this identified wetland is approximately 30 m from the limit of the subject property.

4.2.2.2 Alterations to Wetland Hydroperiod and Impacts to Water Quality

The potential for alterations to the wetland hydroperiod (i.e., seasonal fluctuation of the groundwater table) and/or duration and frequency of maximum groundwater elevations cannot be assessed until completion of the *Hydrogeological Report.* Groundwater levels were recorded in boreholes advanced during the *Preliminary Geotechnical Investigation* in January 2015, revealing groundwater elevations ranging from ± 0.6 m to ±3.0 m from the ground surface. These results suggest that groundwater levels are elevated and may be at the surface during the spring freshet.

To protect wetlands on adjacent lands (most importantly the Provincially Significant Melancthon Wetland Complex #1) from construction to post-completion of the development plan, RiverStone recommends the following:

- **The *Hydrogeological Study and Groundwater Monitoring* study currently underway assess the seasonal height of the groundwater table, groundwater flow directions, and the relative contribution of surface and groundwater contributions to wetlands on adjacent lands (to the extent possible). The study should also provide recommendations pertaining to how the on-site water balance will be maintained post project completion.**
- **The proposed stormwater management ponds must be designed in a way that protects the adjacent Provincially Significant Melancthon Wetland Complex #1 from negative impacts associated with potential alterations to water quantity and quality following implementation of the development plan.**

The potential for wetland water quality impacts related to inputs of sediment, nutrients, and toxic substances during construction can be greatly minimized via a comprehensive system of erosion and sediment control (ESC) measures. The most effective ESC system incorporates a multi-barrier approach, is adaptive and thereby responds to shifting site conditions, and involves regular inspection and monitoring. To protect wetlands on adjacent lands from water quality impacts during construction, RiverStone recommends the following:

- **All sediment and erosion control measures should conform to the Erosion and Sediment Control guidelines for Urban Construction (December 2006).**
- **When native soil is exposed sediment and erosion control works, in the form of heavy-duty sediment fencing, be positioned along the edge of the areas to be developed, graded, and otherwise disturbed.**
- **Sediment fencing must be constructed of heavy material and solid posts, and be properly installed (trenched in) to maintain its integrity during inclement weather events.**

- **Additional sediment fencing and appropriate control measures must be available on site so that any breach can be immediately repaired.**
- **Regular inspection and monitoring will be necessary to ensure that the structural integrity and continued functioning of the sediment control measures is maintained (i.e., proper installation is not the only action necessary to satisfy the mitigation requirements).**
- **An onsite supervisor should be responsible for daily inspections of the sediment and erosion control measures and record the time and date of inspections, the status of the mitigation measures, and any repairs undertaken.**
- **Best Management practices should be utilized with all machinery and fill being imported to the subject property to ensure that material and tracks are free from invasive species (*Phragmites australis*, etc.).**
- **Machinery should arrive on site in clean condition and is to be checked and maintained free of fluid leaks.**
- **Machinery must be refueled, washed and serviced a minimum of 30 m from wetlands that occur near the subject property boundary on adjacent lands.**
- **Locate all fuel and other potentially deleterious substances a minimum of 30 m from wetlands and watercourses that occur near the subject property boundary on adjacent lands. Minimize fuels and chemicals stored onsite and ensure a spills management plan and the associated spill response equipment is available on-site at all times for implementation in the event of a spill of deleterious material.**
- **Temporary storage locations of aggregate/fill material should be located no less than 30 m from wetlands and watercourses that occur near the subject property boundary on adjacent lands. This material is to be contained by heavy-duty sediment fencing.**
- **Offloading of construction and aggregate/fill materials should be completed during fair weather conditions.**
- **All stockpiled topsoil/overburden should be piled in low piles and stabilized as quickly as possible (e.g., erosion-prone areas covered with textile) to minimize the potential for runoff and wind erosion.**
- **Removal of non-biodegradable erosion and sediment control materials once construction is complete and the site is stabilized.**

4.2.2.3 Impacts from Noise and Lighting

Additional noise and lighting generated from construction to post completion of the development plan is not expected to measurably impact wildlife inhabiting wetlands on adjacent lands. Wetlands on adjacent lands are > 100 m from the nearest lot line (and further from the nearest road), which is a buffer distance sufficient to reduce the risk of noise and lighting impacts to an acceptable level. Nonetheless, to further minimize the potential effects of lighting on wetland wildlife RiverStone recommends the following:

- **Streetlights within the subdivision should be directed towards the ground and away from the surrounding landscape.**

- **The streetlight network should be designed in a way to produce as minimal light as possible (such as by maximizing spacing and using low wattage bulbs), while ensuring that all mandatory lighting requirements are adhered to.**

4.2.2.4 Impacts from Human Encroachment

Human activity/encroachment within the area to be restored as wetland may occur with the creation of 496 lots/units within the subdivision. To minimize impacts from human activity/encroachment on the restored wetland, RiverStone recommends the following:

- **Landscaping plans for the SWM facility should contain only native species that are suitable to site conditions (i.e., moisture regimes, light, etc.).**

4.2.3 Fish Habitat

In general, negative impacts to fish habitat that may be associated with implementation of the development plan as described in **Section 4.1** can result via the following processes:

- Land-based activities such as excavation, grading, use of industrial equipment, dewatering, and vegetation clearing. These activities may result in inputs of soil/sediment, nutrients, and toxic substances to the watercourses during construction, which may adversely affect water quality and fish habitat via increased turbidity, nutrient enrichment, contamination by toxic substances, changes in pH, etc.

- In-water activities that may be required during culvert installations for the crossing of the James Foley Drain by "Street F", and crossings of the western tributary by "Street A" and "Street C".

- Fish passage issues if culverts are undersized and create barriers to fish movement.

- Increased human activity/encroachment within the watercourses, which may result in channel bank degradation, dumping and material or other disturbances.

The potential for water quality impacts within either the James Foley Drain or drainage feature related to inputs of sediment, nutrients, and toxic substances during construction can be greatly minimized via a comprehensive system of erosion and sediment control (ESC) measures. The most effective ESC system incorporates a multi-barrier approach, is adaptive and thereby responds to shifting site conditions, and involves regular inspection and monitoring. To protect both the James Foley Drain and western drainage feature from water quality impacts, RiverStone recommends the following measures additional to those recommended for the protection of wetland features:

- **Machinery must be refueled, washed and serviced a minimum of 30 m from any watercourse or wetland feature.**

- **Qualified personnel should monitor all near-water construction activities.**

To maintain fish passage in the James Foley Drain and the baseflow contributions from the drainage feature during and following culvert installation, RiverStone recommends the following:

- **Installed culverts should be open-bottom and span the bankfull width of the James Foley Drain and drainage feature to allow fish at all life stages to pass up and downstream under all flow conditions. Culverts should not generate backwater effects or increase stream velocity. Culverts must be embedded into the substrate.**

- **Culvert installation must respect the warm-water timing window (beginning July 1 and ending March 31)**

- **Any work associated with the James Foley Drain should be reviewed and approved by the Drainage Superintendent.**

Current use of the subject property as agricultural land has resulted in degradation of the channel banks of both the James Foley Drain and drainage feature in areas where farm vehicles cross the channel; this activity will cease with implementation of the development plan. Nevertheless, increased human activity/encroachment within both the James Foley Drain and drainage feature may occur with the creation of 496 lots/units within the subdivision. To minimize impacts from human activity/encroachment on both watercourses, RiverStone recommends the following:

- **Fencing should be erected along the rear lot line of lots that back onto the floodplains/buffer zones of the James Foley Drain and drainage feature.**

4.2.4 Significant Woodlands

As indicated on the proposed draft plan of subdivision (**Appendix 1**), all lots and roads are set back at least 30 m from the dripline (as delineated by RiverStone with a SX Blue-II GPS unit capable of 2 m accuracy) of the Significant Woodland. The two stormwater management blocks are not subject to the 30 m setback given that they will remain as open space. In order to further protect the Significant Woodland from the potential for negative impacts, RiverStone recommends:

- **A 30 m setback from the dripline of the Significant Woodland be established from all residential lots and roads as indicated on the proposed draft plan of subdivision (see Appendix 1).**

- **The dripline of the Significant Woodland should be staked and surveyed prior to the commencement of any development or site alteration activities.**

- **Sediment fencing should be erected along the dripline of the Significant Woodland to ensure that no vehicle movement or placement of fill/aggregate stockpiles occurs within the primary rooting zone of trees along the edge of the Significant Woodland.**

- **No grading should occur within the 30 m buffer from the dripline of the Significant Woodland with the exception of the stormwater blocks (Block 354 and 355), where grading should be restricted from the dripline and minimized within 30 m of the dripline.**

- **Stormwater management facilities (i.e., ponds) within the stormwater blocks (Block 354 and 355) should be situated as far from the edge of the Significant Woodland as possible.**

- **Access roads that will provide entry points to the stormwater management ponds by maintenance vehicles and equipment be aligned on the north side of the ponds (i.e., adjacent to the residential lots rather than the Significant Woodland).**

- **Landscaping plans for the SWM facility should contain only native species that are suitable to site conditions (i.e., moisture regimes, light, etc.). Tree species that are planted adjacent to the Significant Woodland (i.e., south side of the stormwater management blocks) should consist of species present in the adjacent Significant Woodland. Planting material should be sourced from the hardiness zone where the subject property is located (5a).**

4.2.5 Candidate Significant Wildlife Habitat

According to the assessment outlined in **Appendix 9**, ten (10) candidate significant wildlife habitat features may be present on the subject property or adjacent lands. The potential for these features to be negatively impacted by implementation of the proposed development plan is assessed below.

4.2.5.1 Raptor Wintering Areas

Raptor wintering areas consist of a mixture of forest and field vegetation communities that exceed 15-20 ha. Raptor species that utilize such areas include Red-tailed Hawk (*Buteo jamaicensis*), Rough-legged Hawk (*Buteo lagopus*), Northern Harrier (*Circus cyaneus*), American Kestrel (*Falco sparverius*), Snowy Owl (*Bubo scandiacus*), Short-eared Owl (*Asio flammeus*), and Bald Eagle (*Haliaeetus leucocephalus*).

Criteria provided in the Ecoregion 6E Schedule indicate that significant raptor wintering areas tend to be the "least disturbed sites, idle/fallow or lightly grazed field/meadow (>15 ha) with adjacent woodlands". Much of the agricultural land on the subject property is cropped; such areas would not meet the "least disturbed, idle/fallow" test above and are unlikely to provide enough habitat for abundant small mammals that would support high raptor use. The frequently cut hayfields on the subject property also do not meet the criteria above. Based on communication with the client all cultivated areas (including the fallow fields) were ploughed on the subject property in the fall of 2015, as part of preparing these areas for the 2016 planting season. As such, we have determined that the subject property is not likely to support sufficient raptors during winter to be considered significant.

4.2.5.2 Bat Maternity Colonies

Bats tend to avoid large areas of cleared land (e.g., farm fields) as these areas have an increased risk of predation, and windy conditions can impact flight and insect prey availability. Instead, they prefer to forage over still water (e.g., wetlands), lakes, rivers, and in forested areas with openings in the canopy. Bats are found in higher densities in older forests as these contain large diameter trees (i.e., <25 cm DBH) and greater densities of snags and trees in various stages of decay that provide suitable roosting habitat for bat maternity colonies. As discussed in **Appendix 9**, potential bat maternity roosting sites are present in the Significant Woodland. Because tree clearance will be restricted to hedgerows, and a 30 m buffer surrounding the Significant Woodland has been established, no impacts to bat maternity colonies are expected. As such, RiverStone recommends the following:

- **The recommendations offered to protect the Significant Woodland in Section 4.2.4 be implemented in full.**

4.2.5.3 Reptile Hibernaculum

Snakes in Ontario hibernate in areas where they are able to gain access to features located below the frost line or that do not freeze during winter months. The wide array of features that may function as hibernacula – including both natural (e.g., small mammal burrows, crevices in bedrock, etc.) and human-built features (e.g., rock piles, old stone foundations, etc.) – suggests that candidate snake hibernacula are present on many natural or rural properties across southern and central Ontario. Proper techniques for identifying snake hibernacula typically involve spring or fall surveys to identify congregations of snakes near their point of exit or emergence from a hibernaculum; however, such surveys may still produce a false negative (i.e., fail to successfully identify hibernacula) given the camouflaged, cryptic nature of snakes.

As noted in **Appendix 9**, candidate snake hibernacula on the subject property exists within the Significant Woodland (i.e., small mammal burrows, rock piles, etc.) as well as the foundation of the old buildings along Highway 10. Small mammal burrows in the agricultural field are frequently disturbed by ploughing and would not be expected to function as hibernacula. No individuals or congregations of snakes were observed during any site investigation on the subject property carried out in 2015, suggesting there is a low likelihood that any active hibernacula currently exist. To provide an added degree of protection to candidate snake hibernacula on the subject property, RiverStone recommends the following:

- **The recommendations provided to protect the Significant Woodland in Section 4.2.4 be implemented in full.**

- **Should any congregation (i.e., 2 or more) of snakes be observed on the subject property during construction activities within the same general location during spring (April-early May) or fall (October), suggesting that an active hibernaculum may be present nearby, MNRF should be contacted for further advice.**

4.2.5.4 Old-growth Forest

The Significant Woodland on the subject property and adjacent lands exhibits indicators of old-growth characteristics (e.g., large diameter trees of late-successional species). The Significant Woodland on the subject property will be protected by a 30 m buffer from the dripline. To ensure that old-growth forest is protected on the subject property, RiverStone recommends the following:

- **The recommendations provided to protect the Significant Woodland in Section 4.2.4 be implemented in full.**

4.2.5.5 Seeps and Springs

According to the Ecoregion 6E Criteria Schedules, the protection of seeps and springs is restricted to forested ecosites. Given the abundance of Watercress observed where the drainage feature exits the subject property within/adjacent to the Significant Woodland, it is believed that groundwater contributions to the drainage feature occur. No specific seepage areas or springs were observed adjacent to the drainage feature or within the Significant Woodland; however, detailed groundwater investigations to study the verticality of groundwater movements are not yet complete. To protect potential seeps and springs that may exist within and adjacent to the Significant Woodland, RiverStone recommends the following:

- **The recommendations provided to protect the Significant Woodland in Section 4.2.4 be implemented in full.**

4.2.5.6 Amphibian Breeding Habitat (Woodland)

Skelton Brumwell did not identify calling amphibians on the subject property; however, the Significant Woodland on the subject property could provide suitable habitat for breeding amphibians and will be protected by a 30 m buffer from the dripline. To ensure that woodland amphibian breeding habitat is protected on adjacent lands, RiverStone recommends the following:

- **The recommendations provided to protect the Significant Woodland in Section 4.2.4 be implemented in full.**

4.2.5.7 Amphibian Breeding Habitat (Wetlands)

Skelton Brumwell did not identify any wetland areas on the subject property that contained breeding amphibians; however, amphibian breeding was recorded on adjacent lands. Wetlands on adjacent lands are not expected to be impacted by the development plan provided that RiverStone's recommendations are adhere to. To ensure that amphibian breeding habitat is protected on adjacent lands, RiverStone recommends the following:

- **The recommendations provided to protect wetlands in Section 4.2.2 be implemented in full.**

4.2.5.8 Woodland Area-sensitive Bird Breeding Habitat

No woodland area-sensitive breeding birds were recorded during breeding bird surveys conducted in 2015. Nevertheless, the monitoring stations were located within open habitats and along the forest edge; this would not permit an adequate characterization of the bird assemblage that exists in the Significant Woodland on the subject property and adjacent lands. It is reasonable to assume that woodland area-sensitive birds utilize the Significant Woodland as breeding and feeding habitat. Therefore, to protect candidate woodland area-sensitive bird breeding habitat on the subject property and adjacent lands, RiverStone recommends the following:

- **The recommendations provided to protect the Significant Woodland in Section 4.2.4 be implemented in full.**

4.2.5.9 Special Concern and Rare Wildlife Species

According to the assessment in **Appendix 8**, a total of four (4) special concern species have the potential to be impacted by the development plan: Eastern Ribbonsnake (*Thamnophis sauritus*), Milksnake (*Lampropeltis triangulum*), Common Nighthawk (*Chordeiles minor*), and Monarch (*Danaus plexippus*). A further assessment of these species and their potential habitat on the subject property and surrounding landscape indicates that significant habitat for these species will not be impacted by implementation of the development plan.

4.2.5.10 Amphibian Movement Corridors

Skelton Brumwell did not identify any breeding amphibians on the subject property. The development plan is not expected to bisect any amphibian movement corridors given that natural open space will be maintained within the floodplain and fish habitat setbacks to both the James Foley Drain and drainage feature, permitting movement between the watercourses and Significant Woodland.

4.2.6 Natural Features and Functions

The proposed land use changes will result in the loss of vegetation (hedgerows and cultivated fields) within the proposed development envelope and limits of site alteration. Consequently, the ecological function of these areas will be negatively impacted. The following measures are recommended to reduce adverse effects of development on the property's natural features and functions:

- **Vegetation removal and disturbance outside of the development envelopes should be minimized to the extent possible.**
- **During construction, a defined access route should be used as the primary path for accessing the property and the internal lots to minimize vegetation removal.**
- **Implement a dust prevention strategy to reduce the development and spread of dust from the site. This may include dust suppression measures, such as promptly watering exposed areas when visible dust is observed.**
- **Vegetation removal (e.g., tree/shrub clearing, grading of existing meadows/hayfields, etc.) should be completed outside of the primary breeding bird nesting window (i.e., between April 15 and July 31). If vegetation removal occurs during this period, a nest survey should be conducted by a qualified biologist within 5 days of commencement of construction activities to identify and locate active nests of bird species covered by the federal *Migratory Bird Convention Act, 1994* or provincial *Fish and Wildlife Conservation Act, 1997*. If a nest is located or evidence of breeding noted, a mitigation plan should be developed to avoid any potential impacts on birds or their active nests. Mitigation may require establishing appropriate buffers around active nests or delaying construction activities until the conclusion of the nesting season.**

5 CONFORMANCE WITH APPLICABLE ENVIRONMENTAL POLICIES

The following section summarizes the federal, provincial, and municipal environmental policies that are relevant to this draft plan of subdivision application, and describes how the recommendations provided in this report will ensure compliance of the proposed land-use changes with these policies.

5.1 Township of Southgate Official Plan (February 2009)

The Township's OP prescribes policies related to land-use and future development throughout the municipality. Policy 3.1.2 of the OP provides high-level direction related to the protection of natural heritage features:

> *3.1.2 Objectives*
>
> *1. To protect significant natural heritage features and areas including their associated ecological functions and features.*
>
> *2. To ensure that development and/or site alteration on lands adjacent to significant natural heritage features and areas, does not result in a negative impact on the natural features or their ecological functions.*

The Township's policies for protecting natural heritage features are outlined in section 6.0 under the heading "Natural Environment Area". These are summarized below:

> **Provincially Significant Wetlands:** No development or site alteration permitted in provincially significant wetlands, except where such activity is associated with forestry (excluding logging) and uses connected with the conservation of water, soil, wildlife and other natural resources (s. 6.1.2[a]). No development or site alteration shall be permitted on adjacent lands located within 120 metres of an identified Provincially Significant Wetland (PSW), unless the proposed method of avoiding or mitigating the potential impacts, of such development on the adjacent resource is satisfactory to the Township of Southgate and/or other responsible approval authority (s. 6.1.2[b]).
>
> **Deer Wintering Areas:** Development or site alteration within or adjacent (50 metres) to deer wintering yards may be permitted provided an acceptable Environmental Impact Study is completed which demonstrates that there will be no negative impacts on the natural features or the ecological functions for which the area is identified.
>
> **Areas of Natural and Scientific Interest:** Development and site alteration may be permitted in Areas of Natural and Scientific Interest and in the adjacent lands (50 metres) provided an acceptable Environmental Impact Study is completed which demonstrates that there will be no negative impacts on the natural features or the ecological functions for which the area is identified.
>
> **Threatened and Endangered Species Habitat:** Development and site alteration within the significant habitat of threatened and endangered species will not be permitted. Development and site alteration adjacent to significant habitat of threatened and endangered species may be permitted provided an Environmental Impact Study is completed to the satisfaction of the Township of Southgate and the County of Grey which demonstrates that there will be no negative impacts on the natural features or ecological functions for which the area is identified.
>
> **Significant Wildlife Habitat:** Development and site alteration within or adjacent to significant wildlife habitats will require the completion of an Environmental Impact Study to the satisfaction of the Township of Southgate and the County of Grey which demonstrates that no negative impacts on the natural features or ecological functions of the area will occur.
>
> **Coldwater and Warmwater Streams:** New development or site alteration shall not be permitted within 30 metres of a cold water stream or 15 metres of a warm water stream, except for the restoration or minor expansion of buildings or structures legally existing at the date of adoption of this Plan, or site alteration in association with a legally established use.

Based on our identification of features of conservation interest on the subject property (**Section 3.6**), and our assessment of potential impacts to these features (**Section 4.2**), we have determined that no negative impacts on any features of conservation interest is expected. If required in the future, based on habitat condition, the implementation of RiverStone's recommendations that pertain to the protection of endangered and threatened species habitat (i.e., securement of an approval under s. 23.6 of O. Reg. 242/08) will ensure that the development plan conforms with the Township's OP. As such, the proposed development is deemed to comply with the Natural Environment Area provisions of the Township's OP as outlined in section 6.0.

5.2 County of Grey Official Plan (Office Consolidation June 20, 2013)

The County's OP provides recommendations for promoting a sustainable natural environment across the County. Section 2.8 puts forth policies to identify and protect natural heritage features and hazard lands. Components of the County's natural heritage features and areas and their respective adjacent lands are defined in section 2.8.1:

- **Significant Habitat of Threatened or Endangered Species** – 50 metres
- **Significant Wetlands** – 120 metres
- **Other Identified Wetlands** – 30 metres
- **Fish Habitat** – 50 metres
- **Significant Woodlands** – 50 metres
- **Significant Valleylands** – 50 metres
- **Significant Wildlife Habitat** – 50 metres
- **Area of natural and Scientific Interest** – 50 metres

Policies that pertain to the protection of natural heritage features in the County's OP are consistent with what is provided under the Township's OP with the exception of Significant Woodlands (which are not directly afforded protection under the Township's OP):

> **Significant Woodlands:** No development or site alteration may occur within Significant Woodlands or their adjacent lands unless it has been demonstrated through an Environmental Impact Study, as per section 2.8.7 of this Plan, that there will be no negative impacts on the natural features or their ecological functions.

As stated in **Section 4.2.4**, no negative impacts to the Significant Woodland on the subject property or adjacent lands is expected provided that RiverStone's recommendations are implemented in full. Given this, and the fact that the proposed development has been determined to be in compliance with the natural heritage provisions of the Township's OP, the proposed development is deemed to comply with the natural heritage provisions of Grey County's OP.

5.3 Provincial Policy Statement, pursuant to the Planning Act, R.S.O. 1990, c. P. 13

The Provincial Policy Statement (PPS) provides direction to municipalities on matters of provincial interest related to land-use planning under the *Planning Act, 1990*. Municipal OP's must be consistent with the PPS. The PPS instructs that natural features and areas shall be protected for the long term (s. 2.1.1) and that (s. 2.1.2):

> *The diversity and connectivity of natural features in an area, and the long-term ecological function and biodiversity of natural heritage systems, should be maintained, restored or, where possible, improved, recognizing linkages between and among natural heritage features and areas, surface water features and ground water features.*

The PPS does not permit development and site alteration within the following natural heritage features in Ecoregion 6E (s. 2.1.4):

- Significant Wetlands in Ecoregions 5E, 6E and 7E: and
- Significant Coastal Wetlands

The PPS also does not permit development and site alteration within the following natural heritage features in Ecoregion 6E (s. 2.1.5) unless it has been demonstrated that there will be no negative impacts on the natural features or their ecological functions:

- Significant Woodlands
- Significant Valleylands
- Significant Wildlife Habitat
- Significant Areas of Natural and Scientific Interest
- Non-Significant Coastal Wetlands

Additionally, the PPS does not permit development and site alteration in fish habitat and habitat of endangered and threatened species except in accordance with provincial and federal requirements (s. 2.1.6 and s. 2.1.7).

Finally in regard to identified natural heritage features the PPS states in s. 2.1.8:

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

The Township and County OP's afford an equivalent level of protection to the above-noted natural heritage features as is provided by the PPS. Given this, we can conclude that the proposed development is consistent with the natural heritage provisions of the PPS (s. 2.1).

5.4 Grand River Conservation Authority Regulation 150/06, pursuant to the Conservation Authorities Act, R.S.O. 1990, c. C.27

GRCA regulates development and site alteration activities within and adjacent to wetlands, watercourses, shorelines, floodplains, and valleylands. Subsection 2(1) of O. Reg. 150/06 affords GRCA the authority to regulate development within 15 m from the maximum floodplain limit, 120 m from wetlands greater than 2 ha, and 30 m from wetlands less than 2 ha. In addition to acting as an approval authority, GRCA reviews and provides comments to its member municipalities related to the protection of natural heritage features within municipal policy documents and development applications.

Due to the presence of wetlands and watercourses on the subject property, and a Provincially Significant Wetland on adjacent lands, GRCA's regulated area is present on the subject property within areas to be developed. A permit under GRCA's regulation (i.e., O. Reg. 150/06) is required prior to the commencement of construction activities on the subject property.

5.5 Provincial Endangered Species Act, S.O. 2007, c. 6

The *Endangered Species Act, 2007* (ESA) protects designated endangered and threatened species in Ontario from being killed, harmed, or harassed (s. 9) or having their habitat damaged or destroyed (s. 10). The protection afforded to endangered and threatened species "habitat" is defined as follows (s. 2[1])

(a) with respect to a species of animal, plant or other organism for which a regulation made under clause 55 (1) (a) is in force, the area prescribed by that regulation as the habitat of the species, or

(b) with respect to any other species of animal, plant or other organism, an area on which the species depends, directly or indirectly, to carry on its life processes, including life processes such as reproduction, rearing, hibernation, migration or feeding,

and includes places in the area described in clause (a) or (b), whichever is applicable, that are used by members of the species as dens, nests, hibernacula or other residences; ("habitat").

Appendix 8 lists the species protected under provisions of the ESA that have the potential to occur in the area of interest or on the adjoining lands. As detailed in **Section 3.6.1** and **Appendix 8**, the likelihood of contravening the ESA, should the proposed activities be implemented, can be reduced to an acceptable level by following RiverStone's recommended mitigation measures.

5.6 Federal Fisheries Act, R.S.C. 1985, c. F-14

Recent regulatory changes to the *Fisheries Act, 1985* require under subsection 35(1) that project activities be reviewed to determine if they have the potential to result in serious harm to fish that are part of a commercial, recreational, or Aboriginal fishery, or to fish that support such a fishery. Based on guidance documents provided by DFO, serious harm to fish includes:

- **direct fish mortality**,
- the **permanent alteration of fish habitat** at a spatial scale, duration or intensity that negatively impacts habitat used to carry out one or more of their life processes (i.e., spawning, nursery, or rearing grounds, food supply areas, mitigation corridors, etc.), and
- **destruction of fish habitat** at a spatial scale, duration or intensity such that fish can no longer utilize habitats necessary to carry out one or more of their life processes (i.e., spawning, nursery, or rearing grounds, food supply areas, mitigation corridors, etc.).

In addition to the fish habitat protection provisions of subsection 35(1), sections 20 and 21 mandate the provision of sufficient water and unimpeded passage for fish.

The installation of new culverts is considered an activity for which DFO review is likely required as indicated on DFO's online *Self-assessment* guidance. Once culvert designs have been finalized, a formal DFO *Request for Review* is therefore advised given the potential impacts culvert installation and design may have on fish habitat and fish passage. However, assuming that RiverStone's recommendations for protecting fish habitat (**Section 4.2.3**) are implemented in full, the implementation of the proposed development plan is unlikely to cause serious harm to fish.

5.7 Federal Migratory Birds Convention Act, S.C. 1994, c. 22

Section 6 of the Migratory Birds Regulations under the *Migratory Birds Convention Act, 1994* (MBCA) prohibits the disturbance or destruction of nests, eggs, or nest shelters of a migratory bird. The provincial *Fish and Wildlife Conservation Act, 1997* extends the protection of bird nests and eggs to species that are not listed under the Migratory Birds Regulations (such as Corvids). Clearing of vegetation should be restricted to times outside of the period May 1 to July 31 (see **Section 4.2.6**). Should this not be feasible, a nest survey and follow-up mitigation prior to any construction activities should be completed to prevent contravention of regulations under this Act. The above recommendations will ensure conformance of the development plan with the MBCA.

6 CONCLUSIONS

Based upon the findings presented in this report and contingent upon the implementation of the recommendations made herein, it is our conclusion that the proposed development plan as outlined in **Section 4.1** will have no negative impacts on the natural features identified on the subject property and on adjacent lands or their respective ecological functions, as defined in the 2014 PPS. We advise that the recommendations in this report be incorporated into any draft plan conditions for the property.

7 REFERENCES

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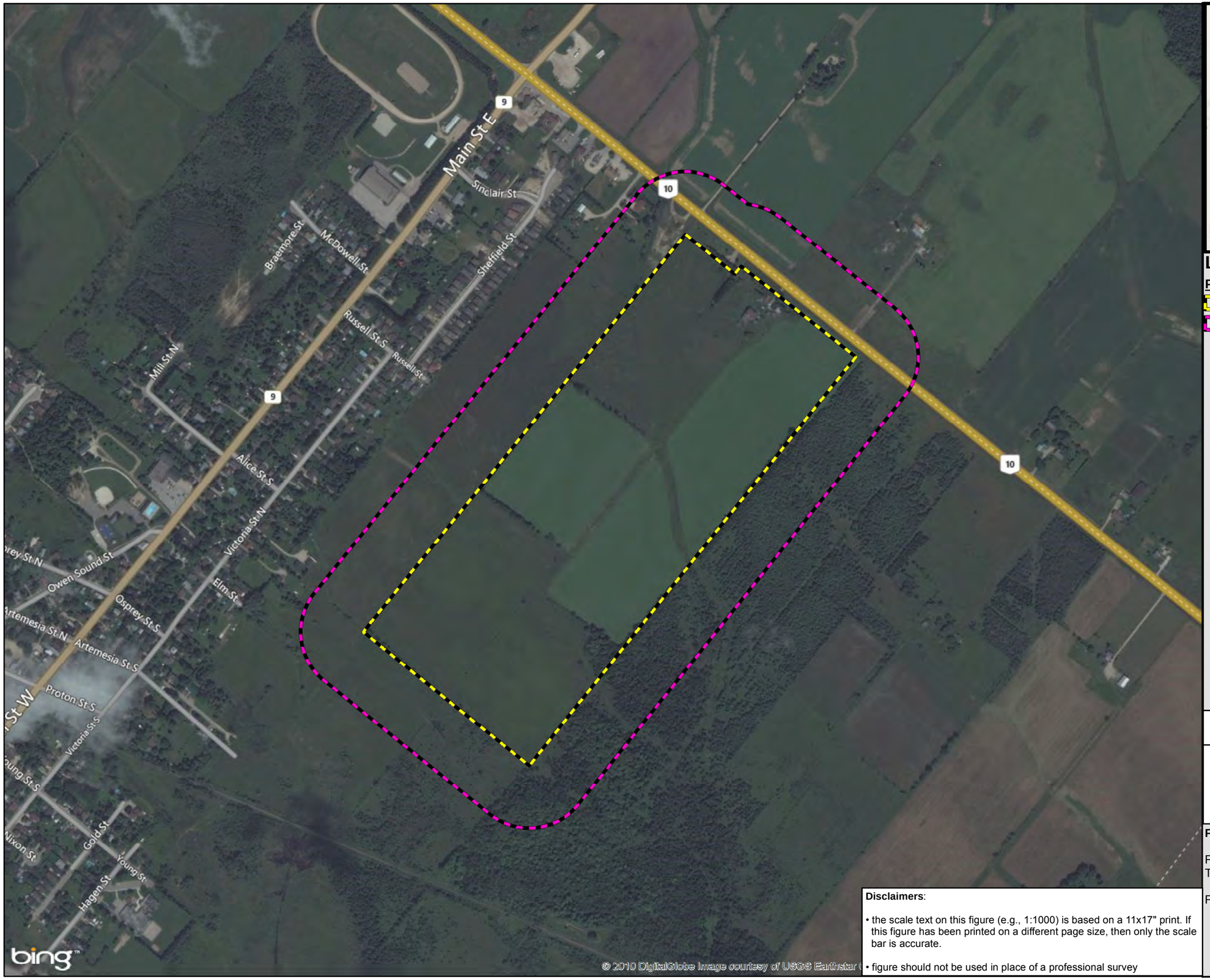
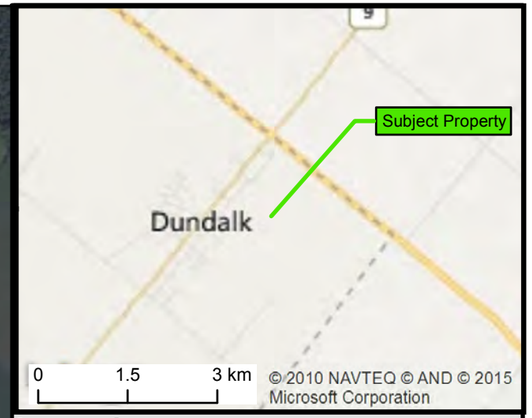




Legend

Planning Boundaries

- Flato East
- Adjacent Lands

N

Orthorectified aerial photo - August 2011

Scale	RS Project No.	Date Last Updated	By
1:7,000	2015-103	Dec 7, 2015	TK
0 100 200 Metres			

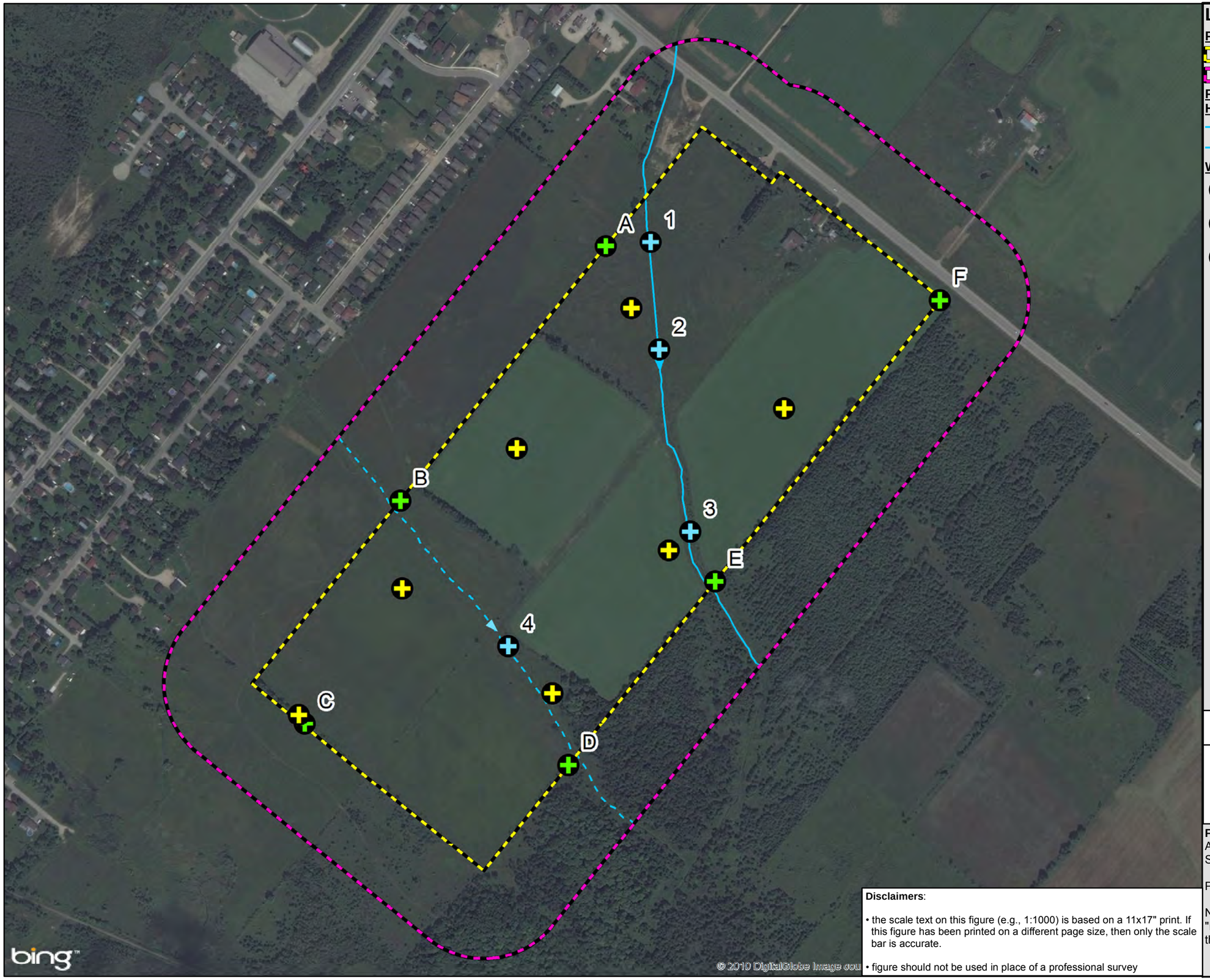
Disclaimers:

- the scale text on this figure (e.g., 1:1000) is based on a 11x17" print. If this figure has been printed on a different page size, then only the scale bar is accurate.
- figure should not be used in place of a professional survey

Figure 1. Location of Subject Property and Adjacent Lands.

Part of Lot 233 and 234, Concession 1 Southwest of Toronto and Sydenham Road.

Prepared for Flato Dundalk Meadows Inc.



Legend

N

Planning Boundaries

- Flato East
- Adjacent Lands

Features with Recognized High Natural Heritage Value - Identified by RiverStone

- James Foley Drain
- Drainage Feature

Wildlife Monitoring Stations

- Breeding Bird Monitoring Stations
- Anuran Monitoring Stations
- Aquatic Habitat Assessment Stations

Orthorectified aerial photo - August 2011

Scale	RS Project No.	Date Last Updated	By
1:5,000	2015-103	Dec 7, 2015	TK

0 75 150 Metres

RiverStone Environmental Solutions Inc

Disclaimers:

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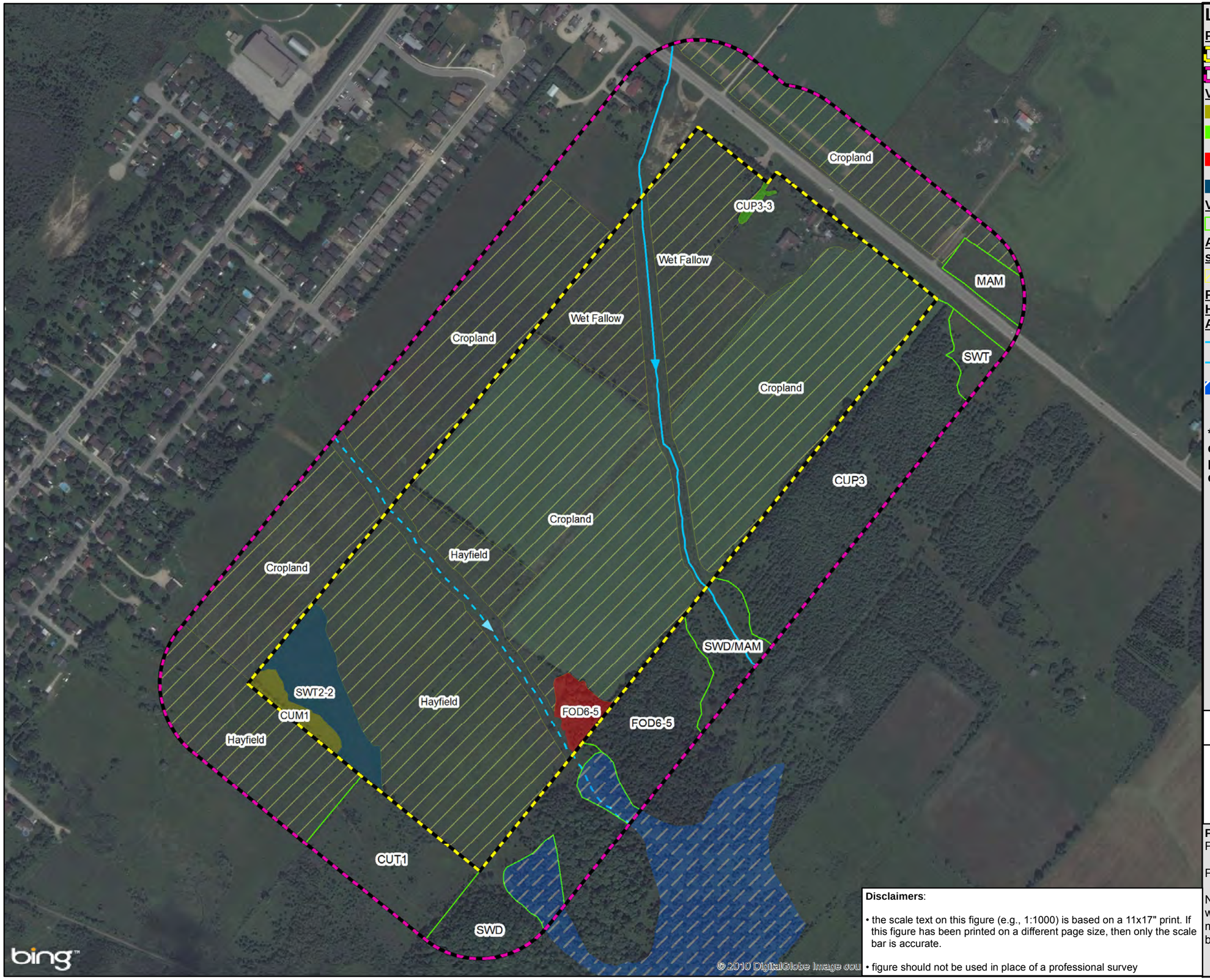
- figure should not be used in place of a professional survey

Figure 2. Locations of Breeding Bird Monitoring Stations, Anuran Calling Stations, and Aquatic Habitat Assessment Stations.

Prepared for Flato Dundalk Meadows Inc.

Note: Anuran Monitoring Stations are labeled "A" through "F". Fish and Aquatic Monitoring Stations are labeled "1" through "4".



Legend

N

Planning Boundaries

- Flato East
- Adjacent Lands

Vegetation Communities - Subject Property

- CUM1: Mineral Cultural Meadow
- CUP3-3: Scots Pine Cultural Plantation
- FOD6-5: Fresh-Moist Sugar Maple–Hardwood Deciduous Forest
- SWT2-2: Willow Mineral Thicket Swamp

Vegetation Communities - Adjacent Lands

- Vegetation Communities - Adjacent Lands

Agricultural Fields (existing at time of survey)

- Agricultural Fields

Features with Recognized High Natural Heritage Value - Identified by Planning Authorities

- James Foley Drain
- Drainage Feature
- Provincially Significant Wetland (Melancthon Wetland Complex #1)

***NOTE: based on correspondence with the client, all agricultural fields on the subject property have been ploughed for the purposes of crop planting next spring.**

Orthorectified aerial photo - August 2011

Scale	RS Project No.	Date Last Updated	By
1:5,000	2015-103	Dec 7, 2015	TK

0 75 150 Metres

RiverStone Environmental Solutions Inc.

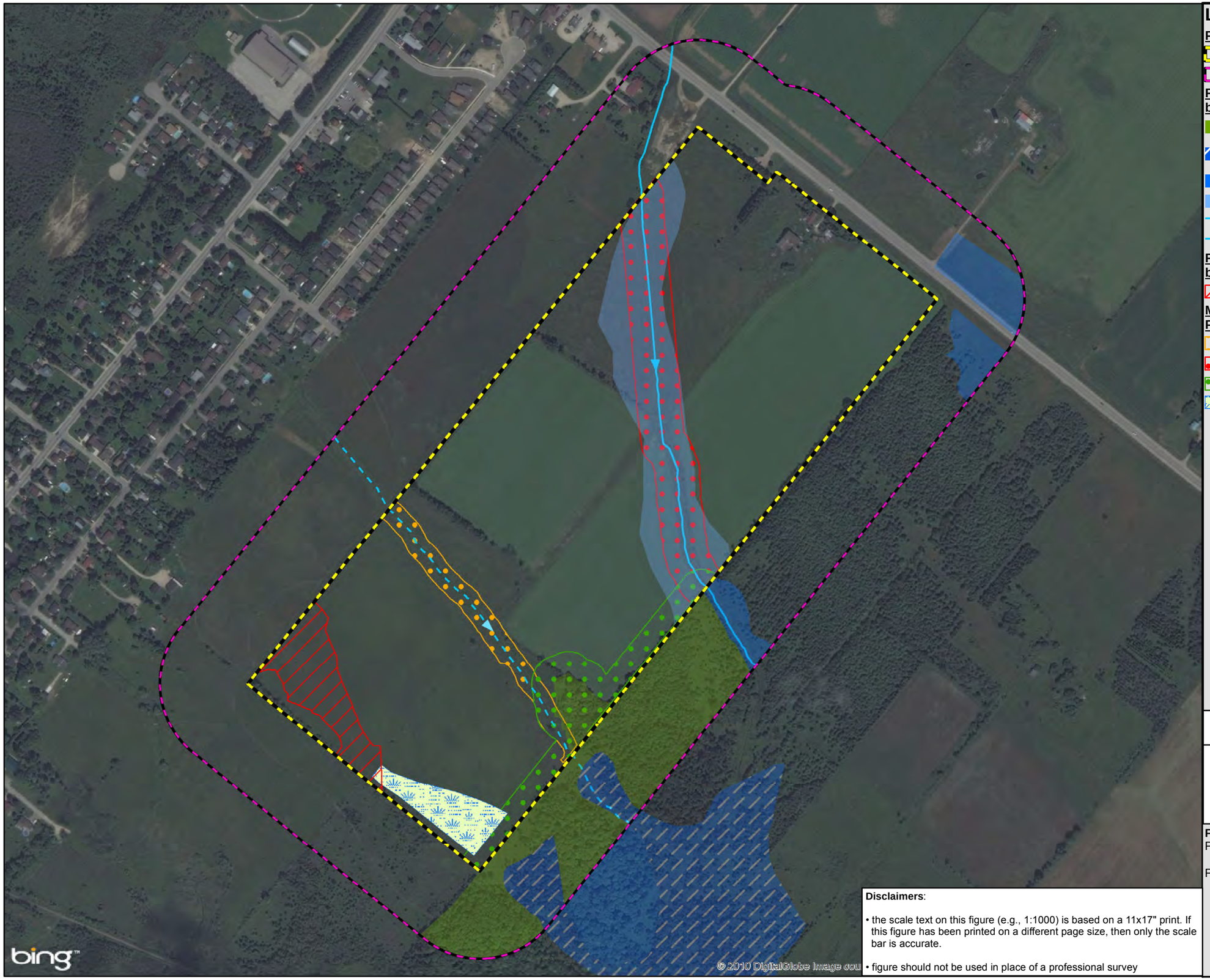
Disclaimers:

- the scale text on this figure (e.g., 1:1000) is based on a 11x17" print. If this figure has been printed on a different page size, then only the scale bar is accurate.
- figure should not be used in place of a professional survey

Figure 3. Existing Vegetation Communities on the Subject Property and Adjacent Lands.

Prepared for Flato Dundalk Meadows Inc.

Note: Vegetation community mapping on adjacent lands was based on current aerial photography and observations made from within the Flato East subject property boundaries.



Legend

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Planning Boundaries

- Flato East
- Adjacent Lands

Features of Conservation Interest - Identified by Planning Authorities

- Significant Woodland
- Provincially Significant Wetland (Melancthon Wetland Complex #1)
- Identified Wetland
- Floodplain (determined by Crozier)
- James Foley Drain
- Drainage Feature

Features of Conservation Interest - Identified by RiverStone

- Identified Wetland (to be removed)

Measures Recommended by RiverStone to Prevent and/or Reduce Impacts

- 15 m Buffer from Drainage Feature
- 30 m Buffer from James Foley Drain
- 30 m Buffer from Significant Woodland
- Wetland Restoration Area

Orthorectified aerial photo - August 2011

Scale	RS Project No.	Date Last Updated	By
1:5,000	2015-103	Dec 8, 2015	TK

0 75 150 Metres

RIVERSTONE ENVIRONMENTAL SOLUTIONS INC

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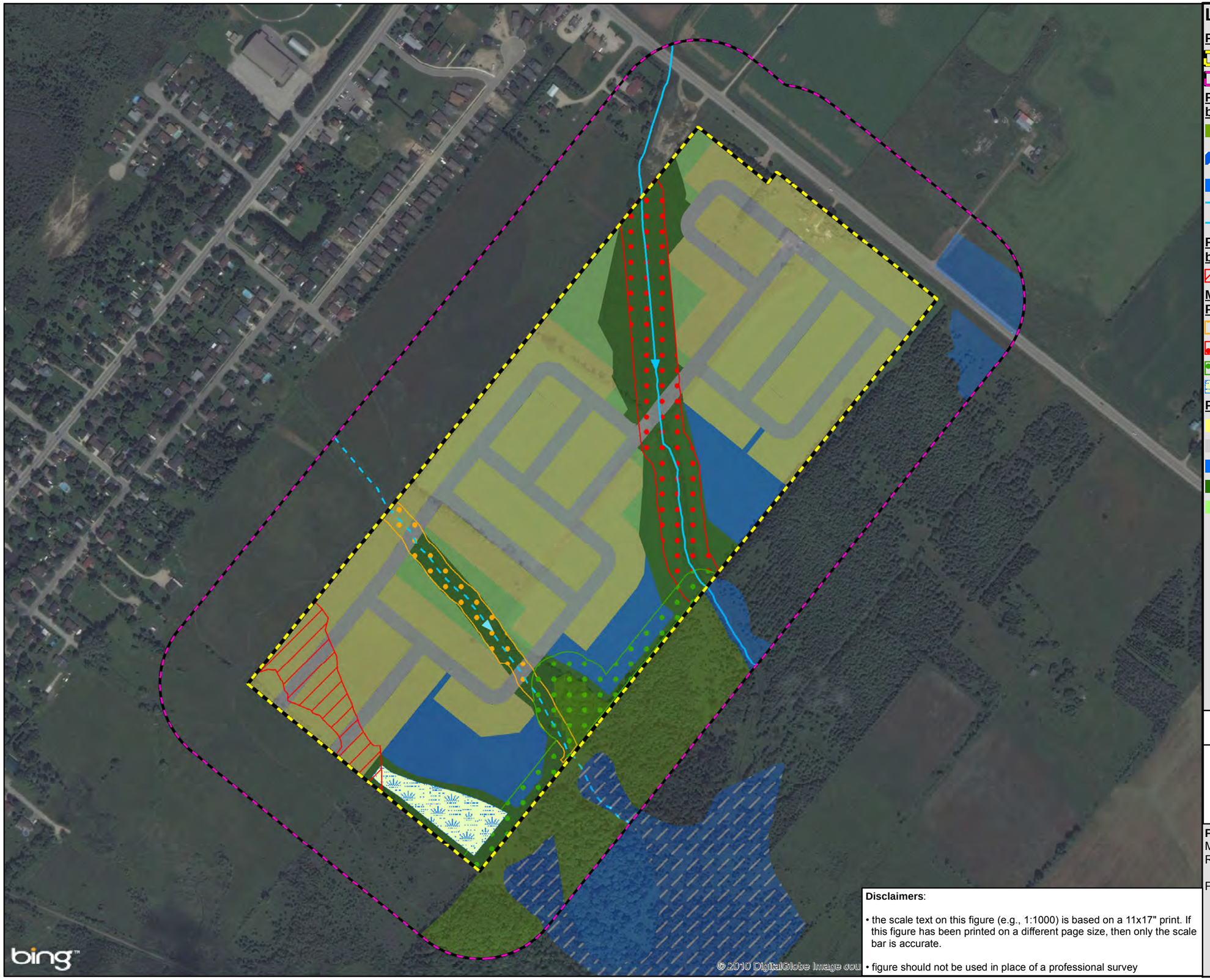
- figure should not be used in place of a professional survey

Figure 4. Features of Conservation Interest on the Subject Property and Adjacent Lands.

Prepared for Flato Dundalk Meadows Inc.



Legend

N

Planning Boundaries

- Flato East
- Adjacent Lands

Features of Conservation Interest - Identified by Planning Authorities

- Significant Woodland
- Provincially Significant Wetland (Melancthon Wetland Complex #1)
- Identified Wetland
- James Foley Drain
- Drainage Feature

Features of Conservation Interest - Identified by RiverStone

- Identified Wetland (to be removed)

Measures Recommended by RiverStone to Prevent and/or Reduce Impacts

- 15 m Buffer from Drainage Feature
- 30 m Buffer from James Foley Drain
- 30 m Buffer from Significant Woodland
- Wetland Restoration Area

Proposed Development and Site Alteration

- Residential Units/Lots
- Roads
- Stormwater Pond Blocks
- Open Space Blocks
- Park Blocks

Orthorectified aerial photo - August 2011

Scale	RS Project No.	Date Last Updated	By
1:5,000	2015-103	Dec 8, 2015	TK

0 75 150 Metres

RIVERSTONE ENVIRONMENTAL SOLUTIONS INC

Disclaimers:

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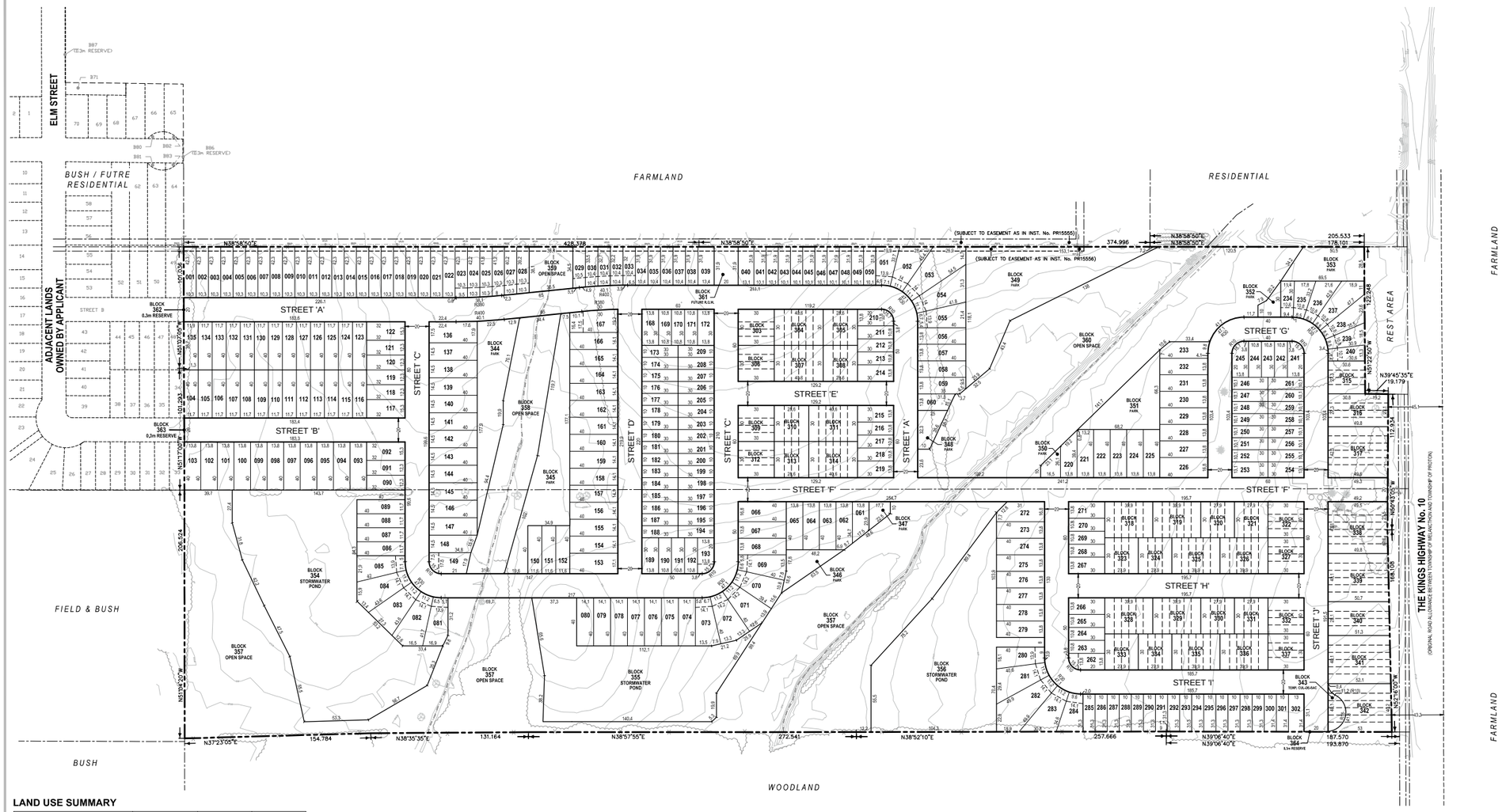
- figure should not be used in place of a professional survey

Figure 5. Proposed Draft Plan of Subdivision with Measures Recommended by RiverStone to Prevent and/or Reduce Impacts.

Prepared for Flato Dundalk Meadows Inc.

Appendix 1. Proposed Draft Plan of Subdivision.



LAND USE SUMMARY

LAND USE	LOTS / BLOCKS	UNITS	AREA
SINGLE DETACHED - 10.0m LOTS	001-050, 168-219, 234-271, 285-302	158	5.57 ha
SINGLE DETACHED - 11.6m LOTS	086-092, 104-135, 150-152	42	1.92 ha
SINGLE DETACHED - 13.7m LOTS	051-085, 093-103, 136-149, 153-167, 220-233, 272-284	102	6.16 ha
TOWNHOUSE - 4 UNITS	303, 305, 306, 308-310, 312, 313, 315, 316, 320-324, 327, 330-334, 337, 340	92	2.10 ha
TOWNHOUSE - 6 UNITS	304, 307, 311, 314, 317-319, 325, 326, 328, 329, 335, 336, 338, 339, 341	96	2.28 ha
FUTURE TOWNHOUSE - 6 UNIT	342	6	0.17 ha
TEMPORARY CUL-DE-SAC / FUTURE TOWNHOUSE	343		0.04 ha
PARK	344-353		2.16ha
STORMWATER POND	354-356		4.23ha
OPEN SPACE	357-360		8.43ha
FUTURE RIGHT OF WAY	361		0.06ha
0.3m RESERVE	362-364		<0.01ha
STREETS			7.1ha
TOTALS		496	40.22ha

LEGAL DESCRIPTION

PART OF LOTS 233 AND 234
CONCESSION 1, SOUTHWEST OF THE TORONTO AND SYDENHAM ROAD
GEOGRAPHIC TOWNSHIP OF PROTON
TOWNSHIP OF SOUTHGATE
COUNTY OF GREY

OWNER'S CERTIFICATE

I HEREBY AUTHORIZE MACNAUGHTON HERMSEN BRITTON CLARKSON PLANNING LIMITED TO SUBMIT THIS PLAN FOR APPROVAL.

DATE: _____

_____
SHAKIR REHMATULLAH - PRESIDENT
FLATO DUNDALK MEADOWS INC.

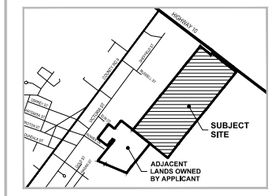
SURVEYOR'S CERTIFICATE

I HEREBY CERTIFY THAT THE BOUNDARIES OF THE LAND TO BE SUBDIVIDED ON THIS PLAN AND THEIR RELATIONSHIP TO THE ADJACENT LANDS ARE ACCURATELY AND CORRECTLY SHOWN.

DATE: _____

_____
DAN DZALDOV, O.L.S., O.L.I.P.
SCHAEFFER DZALDOV BENNETT LTD.
416-987-0101

KEY PLAN



LEGEND

- BOUNDARY LINE
- RIGHT OF WAY LINE
- BLOCK LINE
- LOT LINE
- UNIT LINE
- LEGAL FABRIC
- OVERHEAD HYDRO
- FENCE
- WATERCOURSE
- WOODED AREA
- TREES

REVISION No.	DATE	ISSUED / REVISION	BY

ADDTIO INFORMATION REQUIRED UNDER SECTION 51(17) OF THE PLANNING ACT R.S.O. 1990 C.P.13 AS AMENDED

A. AS SHOWN
B. AS SHOWN
C. AS SHOWN
D. RESIDENTIAL
E. AS SHOWN
F. AS AHOWN
G. AS SHOWN
H. MUNICIPAL WATER SUPPLY
I. SILT LOAM
J. AS SHOWN
K. MUNICIPAL WATER AND SANITARY SERVICES. ALL MUNICIPAL SERVICES AS REQUIRED.
L. AS SHOWN

113 COLLIER STREET
BARRIE, ON, L4M 1H2
P: 705 728 0045 F: 705 728 2010
WWW.MHBCPLAN.COM
PLANNING
URBAN DESIGN
& LANDSCAPE
ARCHITECTURE
MHBC PLANNING

STAMP

DATE	DEC. 4, 2015
FILE No.	15184B
SCALE	1:1,800 (ARCH D)
DRAWN BY	M.M.
CHECKED BY	K.M.
OTHER	

PROJECT

FLATO EAST
FLATO GROUP INC.
3621 HIGHWAY 7 EAST, SUITE 503
MARKHAM, ON L3R 0G6
P:(905) 479-9292 F:(905) 429-9165
WWW.FLATOGROUP.COM

NORTH

FILE NAME

DRAFT PLAN OF SUBDIVISION

DWG No. 1 of 1

SCALE BAR

0 10 20 30 40 50 75 100 150 200m

MEASUREMENTS ON SHOWN ON THES PLAN ARE IN METRES AND CAN BE CONVERTED TO FEET BY DIVIDING BY 0.3048

N: \Southgate\Flato Dundalk – New Residential Development – Dundalk – 15184B\Drawings\Draft Plan\CAD\15184B_DraftPlan_2015-12-04.dwg

Appendix 2. Terms of Reference.

Tristan Knight

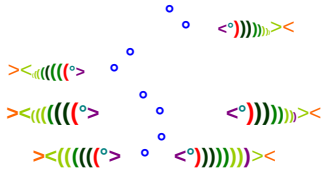
From: Bev Wicks
Sent: Friday, October 2, 2015 11:40 AM
To: Tristan Knight
Subject: FW: Flato Development- Dundalk- EIS Terms of Reference

Categories: 2015-103 Dundalk Flato Developments 2

From: Bev Wicks
Sent: 2015-03-18 Wed 7:47 PM
To: Tristan Knight <tristan@rsenviro.ca>
Cc: Sandy Watson <sandy@rsenviro.ca>
Subject: FW: Flato Development- Dundalk- EIS Terms of Reference

FYI and file please

Bev Wicks Ph.D.
Senior Aquatic Ecologist / Principal
RiverStone Environmental Solutions Inc.
1-310 Taylor Road, Bracebridge Ontario, P1L 1K1
Office 705.645.9887 | Cell 705.641.1037 | Fax 888.857.4979
www.rsenviro.ca



From: Kyle Fleming [mailto:kfleming@skeltonbrumwell.ca]
Sent: 2015-03-17 Tue 12:32 PM
To: aherreman@grandriver.ca
Cc: Kim Horrigan
Subject: Flato Development- Dundalk- EIS Terms of Reference

Hello Andrew,

Further to your meeting with Flato Development Inc. and staff from our office (Kim Horrigan and Bryan Bolivar) on March 12th, we are proposing the following Terms of Reference for the Environmental Impact Study (EIS) in support of applications for the Flato Dundalk property:

1) Desktop review for any known natural heritage features on or adjacent (120 metres).
2) Consultation with GRCA and MNRF for any known information on the property or adjacent lands, including Species at Risk.
3) Field Investigations:

a. Amphibian Surveys- 3 surveys in early April, May and June 2015. If no wetland habitat suitable for supporting amphibian breeding is found, the surveys will be cancelled.
b. Breeding Bird Surveys – 3 surveys in June/early July 2015. These surveys are to include the Bobolink, Eastern Meadowlark and Barn Swallow based on existing site conditions. 3 surveys are required for the Bobolink and Eastern Meadowlark per MNRF protocol. The barn will be inspected for active barn swallow nests where possible due to safety concerns with the condition of the barn.
c. Vascular Plant Surveys- 3 seasons in May, July/August, and Mid-September 2015.
d. Ecological Land Classification- during the July/August site visit.
e. Wetland Delineation- as required if wetland communities are identified during site visits for other purposes listed above.

4) If wetlands are found on site, further discussions will occur with the GRCA and MNRF regarding treatment of those wetlands.
5) Fisheries Assessment- to be completed by sub-consultant. They will contact the GRCA to scope the requirements of the Assessment.
6) Recommendations for mitigation measures as required to ensure no negative impacts to any natural heritage features and ecological functions on or adjacent to the site.

Would we appreciate your comments or acceptance on these Terms of Reference at your earliest convenience.

If you have any questions, please contact me.

Kyle

Kyle Fleming, B.Sc.(Wildlife) | Ecologist
Skelton, Brumwell & Associates Inc.
Engineering Planning Environmental Consultants
93 Bell Farm Rd, Suite 107, Barrie, ON L4M 5G1
Tel: 705-726-1141 ext 125 | Toll Free: 877-726-1141
kfleming@skeltonbrumwell.ca | www.skeltonbrumwell.ca

"Adding Value to Your Enterprise"

400 Clyde Road, P.O. Box 729 Cambridge, ON N1R 5W6

Phone: 519.621.2761 **Toll free:** 866.900.4722 **Fax:** 519.621.4844 **Online:** www.grandriver.ca

April 8, 2015

Kyle Fleming
Skelton, Brumwell & Associates Inc.
93 Bell Farm Road, Suite 107
Barrie, ON L4M 5G1

Dear Mr. Fleming,

Re: Terms of Reference for an Environmental Impact Study
Flato Developments
772146 Highway 10, Dundalk, Township of Southgate

We have now had the opportunity to review the Terms of Reference (TOR) for an Environmental Impact Study (EIS) on the subject property. We have the following comments.

1. The EIS should be prepared in accordance with the Grand River Conservation Authority (GRCA) EIS Guidelines available on the GRCA website at www.grandriver.ca .

2. Although the TOR does not indicate that a Hydrogeological Assessment will be completed to inform the EIS, it was indicated at the pre-consultation meeting on March 12, 2015 that a Hydrogeological Assessment should be submitted as part of a complete application.

3. The study area should include the subject property and 120 metres surrounding the subject property.

4. For Sections 3 (a) and (b), please include a map in the EIS illustrating the monitoring locations for the amphibian and breeding bird surveys.

5. When the wetlands in the vicinity of the subject property have been delineated, please contact GRCA staff to verify the wetland boundaries.

6. Section 5 indicates that a Fisheries Assessment will be conducted by a sub-consultant. Channel characterizations should be included in the assessment of the watercourses. Potential impacts and mitigation measures should also be included in the assessment. Please submit the scope of work for this assessment to the GRCA when it is available and we can provide further comments.

7. In addition to the mitigation measures identified in Section 6, potential direct and indirect impacts should be clearly identified and addressed in the EIS.

Advisory Comment

8. If significant wildlife habitat is identified the during field investigations, the Ministry of Natural Resources and Forestry (MNRF) should be contacted.

Should you have any further questions, please contact Andrew Herreman, Resource Planner at 519-621-2763 ext. 2236.

Yours truly,

Fred Natolochny, MCIP, RPP
Supervisor of Resource Planning
Grand River Conservation Authority
FN/ah

c.c. Shakir Rehmatullah, Flato Developments Inc. (email)
Kim Horrigan, Skelton Brumwell & Associates Inc. (email)
Scott Taylor, Grey County (email)
Clinton Stredwick, Township of Southgate (email)

RIVERSTONE
ENVIRONMENTAL SOLUTIONS INC.

April 14, 2015
RS# 2014-105

Kyle Fleming
Skelton, Brumwell & Associates Inc.
Via Email: kfleming@skeltonbrumwell.ca

***SUBJECT*: Scope of Work—Fish Habitat Assessment, Flato Developments Inc.**

Dear Mr. Fleming:

To address the study requirements for the preparation of a development opportunities and constraints map, and a Fish Habitat Assessment (FHA), RiverStone recommends the following tasks be completed:

1. RiverStone ecologists will obtain and review all relevant fisheries and aquatic data including Species at Risk (SAR) data from, Fisheries and Oceans (DFO), the Ministry of Natural Resources and Forestry (MNRF), and the Grand River Conservation Authority (GRCA).
2. Qualified fisheries ecologists will use the agency data as a baseline for the completion of a fisheries assessment on the subject property, filling in information gas as needed. During the site visit sufficient data will be collected to satisfy the agency requirements for the EIS being completed by Skelton Brumwell. Specifically data collected on the subject property will likely include: physical locations of watercourses using GPS technology, channel morphology and substrates, thermal regimes, critical fish habitat elements. Ecologists will also review opportunities for improvements to the aquatic features, assess buffer requirements, and evaluate the potential for relocation of water features. Field assessment will be undertaken by a qualified fisheries ecologist and can be timed to facilitate onsite discussion with the project team if required. Results of this assessment will be provided in a memo and associated mapping.
3. Using the background data, agency requirements, and identified features RiverStone will provide the fisheries constraints mapping. This mapping can be used to assist in refining the development plan if necessary. Once the RiverStone receives a final development plan we will prepare the FHA for inclusion in the overall EIS. The FHA will identify potential impacts to fish and fish habitat and provide mitigation measures when required.

EXPERIENCE

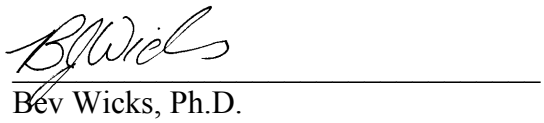
The staff members of RiverStone Environmental Solutions Inc. have completed many Fish Habitat Assessments as part of planning applications in Central Ontario and Southern Ontario. We have worked on numerous projects involving stream relocations and are well experienced in the design and the permitting process. As a company we take pride in having a clear understanding of today's environmental policies and work hard to find the balance that allows development to move forward while respecting the natural environment and the policies/legislation that govern its protection.

Should we be retained to complete the assessment, I would manage the project and complete the onsite fieldwork. I am a senior aquatic ecologist with expertise in environmental policy, fisheries and aquatic assessments, aquatic toxicology, and provincial/federal permitting. I have been working as an aquatic ecologist in the private, public, and academic sectors for the past 18 years.

We appreciate the opportunity to submit this proposal and look forward to working with you. If the proposal is acceptable, please sign the last page of this document, and return a copy to our office. Should you have any questions, please contact me at 705.645.9887 (office) or 705.641.1037 (cell).

RiverStone Environmental Solutions Inc.

Per:



Bev Wicks, Ph.D.
Senior Aquatic Ecologist/Principal

Tristan Knight

From: Bev Wicks
Sent: Friday, October 2, 2015 11:35 AM
To: Tristan Knight
Subject: FW: Flato Group Pre-Submission Consultation letter April 15 2015
Attachments: HydroAssessmentGuidelines-20130610-FINAL2.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

Categories: 2015-103 Dundalk Flato Developments 2

From: Kyle Fleming [mailto:kfleming@skeltonbrumwell.ca]
Sent: 2015-04-23 Thu 3:54 PM
To: Bev Wicks <bev@rsenviro.ca>
Subject: FW: Flato Group Pre-Submission Consultation letter April 15 2015

FYI.

Kyle

From: Andrew Herreman [mailto:aherreman@grandriver.ca]
Sent: April-23-15 3:40 PM
To: Kim Horrigan; Taylor,Scott (Scott.Taylor@grey.ca); Planning, Southgate
Cc: Nazy Majidi
Subject: RE: Flato Group Pre-Submission Consultation letter April 15 2015

Good afternoon Kim, please see below for responses to your recent inquiries.

Scope of Work for the Fish Habitat and Watercourse Assessment

The proposed scope of work provided by Riverstone Environmental Solutions Inc. dated April 14, 2015 is acceptable to the Grand River Conservation Authority (GRCA).

Hydrogeological Assessment

We are requesting the Hydrogeological Assessment in support of the EIS and water balance. I have attached a guidance document for the preparation of the Hydrogeological Assessment. In addition to these guidelines, see below for a few points that the study should include:

- Seasonal high groundwater elevations
- Groundwater flow direction
- How the surrounding wetlands function (fed by surface water or groundwater)
- Assessment of how the water balance will be maintained post development (water quality & quantity, location, & hydroperiod)
- Assessment of SWM infiltration feasibility

Township of Southgate Official Plan Amendment

It is our understanding that you and your client intend to submit an official plan amendment to change the subject lands from Rural to Neighbourhood Area and bring the property into the Dundalk settlement area to be in conformance with the Grey County Official Plan. A watercourse that is visible on aerial photos crosses the property and this watercourse is not reflected in the current Official Plan Schedule. Similar to the other watercourse on-site and the watercourses in Dundalk, this watercourse and 15 metres on either side of the watercourse should be designated Hazard Lands in the proposed Official Plan Amendment.

As previously mentioned, the above-noted watercourse and 15 metres on either side of the watercourse are regulated by the GRCA.

The applicable GRCA plan review fee for the review of this application will be the 'Minor Official Plan Amendment' of $380. When the subdivision and zoning applications are submitted, the subdivision review fee will be required.

I trust this information is of assistance. Please contact me if you have any further questions about this information.

Sincerely,

Andrew Herreman
Resource Planner
Grand River Conservation Authority
400 Clyde Road
PO Box 729
Cambridge ON N1R 5W6
(519) 621-2763 x 2236

Appendix 3. Representative Site Photographs.

Photo 1. (Jul 23, 2015). Watercress observed at Station 2 in the James Foley Drain.

Photo 2. (Jul 23, 2015). Farm crossing of the James Foley Drain, which has degraded the channel banks.

Photo 3. (Sep 11, 2015). Willow thicket swamp to be removed and restored.

Photo 4. (Sep 11, 2015). Hayfield on the subject property.

Photo 5. (Sep 11, 2015). Looking north towards the Sugar Maple – Hardwood Deciduous Forest (Significant Woodland).

Photo 6. (Sep 11, 2015). Looking east along the drainage feature. Significant Woodland on adjacent lands is visible in the distance.

Photo 7. (Dec 08, 2015). Looking north towards Scots Pine plantation near Highway 10.

Appendix 4. Vascular Plant Species Recorded during Three-season Inventory.

Appendix 4, Table 1. Vascular Plant Species Recorded during Three-season Inventories conducted on the Subject Property in 2015.

Scientific Name	Common Name	CC	CW	Introduced?	S-Rank	SKB[1]	Rstone[2]
Abies balsamea	Balsam Fir	5	-3		S5	*	
Acer negundo	Manitoba Maple	0	-2		S5	*	*
Acer saccharinum	Silver Maple	5	-3		S5	*	
Agrimonia gryposepala	Tall Agrimonia	2	2		S5		*
Agrostis gigantea	Redtop Grass	0	0	y	SE5	*	*
Amaranthus retroflexus	Redroot Pigweed	0	2	y	SE5		*
Amelanchier laevis	Smooth Serviceberry	5	5		S5		*
Anemone canadensis	Canada Anemone	3	-3		S5		*
Anemone sp.	Anemone species	n/a	n/a		n/a	*	
Asclepias syriaca	Common Milkweed	0	5		S5		*
Athyrium filix-femina	Northern Lady Fern	4	0		S5		*
Betula papyrifera	White Birch	2	2		S5	*	
Bromus inermis	Smooth Brome	0	5	y	SE5		*
Calamagrostis canadensis	Canada Blue-joint	4	-5		S5	*	
Carex arctata	Drooping Wood Sedge	5	5		S5		*
Carex aurea	Golden-fruited Sedge	4	-4		S5	*	
Carex bebbii	Bebb's Sedge	3	-5		S5	*	*
Carex flava	Yellow Sedge	5	-5		S5		*
Carex vulpinoidea	Fox Sedge	3	-5		S5	*	*
Chenopodium album	Lamb's Quarters	0	1	y	SE5		*
Chrysanthemum leucanthemum	Ox-eye Daisy	0	5	y	SE5	*	
Cichorium intybus	Chicory	0	5	y	SE5	*	
Cirsium arvense	Canada Thistle	0	3	y	SE5		*
Cirsium vulgare	Bull Thistle	0	4	y	SE5		*
Clematis virginiana	Virgin's Bower	3	0		S5	*	
Clinopodium vulgare	Wild Basil	4	5		S5		*
Cornus alternifolia	Alternate-leaved Dogwood	6	5		S5		*
Cornus sericea	Red-Osier Dogwood	2	-3		S5		*
Corylus cornuta	Beaked Hazelnut	5	5		S5		*
Dactylis glomerata	Orchard Grass	0	3	y	SE5		*
Daucus carota	Wild Carrot	0	5	y	SE5		*
Elymus repens	Quack Grass	0	3	y	SE5		*
Epilobium ciliatum	Northern Willow-herb	3	3		S5		*

SKB[1] - Observed by Skelton Brumwell and Associates Inc.

RStone[2] - Observed by Riverstone Environmental Solutions Inc.

Appendix 4, Table 1. Vascular Plant Species Recorded during Three-season Inventories conducted on the Subject Property in 2015.

Scientific Name	Common Name	CC	CW	Introduced?	S-Rank	SKB[1]	Rstone[2]
Epilobium hirsutum	Hairy Willow-herb	0	-4	y	SE5		*
Equisetum arvense	Field Horsetail	0	0		S5	*	*
Erigeron annuus	Daisy Fleabane	0	1		S5		*
Erigeron philadelphicus	Philadelphia Fleabane	1	-3		S5		*
Eupatorium maculatum	Spotted Joe-pye Weed	3	-5		S5		*
Euthamia graminifolia	Grass-leaved Goldenrod	2	-2		S5		*
Fagus grandifolia	American Beech	6	3		S5		*
Fragaria virginiana	Field Strawberry	2	1		S5	*	
Fraxinus americana	White Ash	4	3		S5	*	
Fraxinus nigra	Black Ash	7	-4		S5		*
Fraxinus pennsylvanica	Red Ash	3	-3		S5	*	*
Geranium robertianum	Herb Robert	0	5	y	SE5		*
Geum aleppicum	Yellow Avens	2	-1		S5		*
Heracleum maximum	Cow-parsnip	3	-3		S5		*
Ilex verticillia	Winterberry	5	-4		S5	*	
Impatiens capensis	Spotted Touch-me-not	4	-3		S5	*	
Juncus dudleyi	Dudley's Rush	1	0		S5		*
Juncus effusus	Soft rush	4	-5		S5		*
Lonicera tatarica	Tartarian Honeysuckle	0	3	y	SE5		*
Lotus corniculatus	Bird's-foot Trefoil	0	0	y	SE5		*
Malus pumila	Common Apple	0	5	y	SE5	*	
Melilotus albus	White Sweet-clover	0	3	y	SE5		*
Myosotis scorpioides	Forget-me-not	0	-5	y	SE5	*	*
Nasturtium officinale	Watercress	0	-5	y	SE5		*
Ostrya virginiana	Hop Hornbeam	4	4		S5	*	*
Panicum capillare	Witches Grass	6	5		S4		*
Parthenocissus inserta	Thicket Creeper	3	3		S5		*
Phalaris arundincea	Reed-canary Grass	0	4		S5	*	*
Phleum pratense	Timothy	0	3	y	SE5		*
Phragmites australis	Common Reed	0	-4	y	S5	*	
Picea abies	Norway Spruce	0	5	y	SE3		*
Picea glauca	White Spruce	6	3		S5	*	
Pinus sylvestris	Scots Pine	0	5	y	SE5	*	

SKB[1] - Observed by Skelton Brumwell and Associates Inc.

RStone[2] - Observed by Riverstone Environmental Solutions Inc.

Appendix 4, Table 1. Vascular Plant Species Recorded during Three-season Inventories conducted on the Subject Property in 2015.

Scientific Name	Common Name	CC	CW	Introduced?	S-Rank	SKB[1]	Rstone[2]
Plantago lanceolata	Ribgrass	0	0	y	SE5		*
Plantago sp.	Plantain species	n/a	n/a			*	
Poa pratensis	Kentucky Bluegrass	0	1		S5		*
Populus balsamifera	Balsam Poplar	4	-3		S5		*
Potentilla anserina	SilverWeed	5	-4		S5	*	
Potentilla fruticosa ssp. Floribunda	Shrubby Cinquefoil	9	-3		S5	*	
Potentilla recta	Rough-fruited Cinquefoil	0	5	y	SE5		*
Prunella vulgaris	Heal-All	5	5		S5	*	
Prunus pensylvanica	Pin Cherry	3	4		S5	*	
Prunus serotina	Black Cherry	3	3		S5	*	*
Prunus virginiana	Chokecherry	2	1		S5	*	*
Ranunculus acris	Tall Buttercup	0	-2	y	SE5		*
Ranunculus repens	Creeping Buttercup	0	-1	y	SE5		*
Ranunculus sp.	Buttercup species	n/a	n/a	n/a	n/a	*	
Rhamnus frangula	Glossy Buchthorn	0	-1	y	SE5	*	
Rubus idaeus	Wild Red Rasberry	0	-2		S5		*
Salix amygdaloides	Peach-leaved Willow	6	-3		S5		*
Salix bebbiana	Bebb's Willow	4	-4		S5	*	*
Salix discolor	Pussy Willow	3	-3		S5		*
Salix eriocephala	Heart-leaved Willow	4	-3		S5		*
Salix lucida	Shinning Willow	5	-4		S5		*
Salix nigra	Black Willow	6	-5		S4?	*	
Salix petiolaris	Slender Willow	3	-4		S5		*
Salix sp.	Willow species	n/a	n/a		n/a		
Sambucus canadensis	Common Elderberry	5	-2		S5	*	
Scirpus atrovirens	Black Bulrush	3	-5		S5		*
Scirpus cyperinus	Wool Grass	4	-5		S5	*	*
Schoenoplectus tabernaemontanii	Softstem Bulrush	5	-5		S5		*
Sisyrinchium montanum	Common Blue-eyed Grass	4	-1		S5	*	
Solanum dulcamara	Bittersweet Nightshade	0	0	y	SE5		*
Solidago altissima	Tall Goldenrod	1	3		S5		*
Solidago rugosum	Rough Goldenrod	4	-1		S5		*
Sonchus arvensis	Perennial Sow Thistle	0	1	y	SE5		*

SKB[1] - Observed by Skelton Brumwell and Associates Inc.

RStone[2] - Observed by Riverstone Environmental Solutions Inc.

Appendix 4, Table 1. Vascular Plant Species Recorded during Three-season Inventories conducted on the Subject Property in 2015.

Scientific Name	Common Name	CC	CW	Introduced?	S-Rank	SKB[1]	Rstone[2]
Spiraea alba	Meadowsweet	3	-4		S5		*
Symphyotrichum firmum	Smooth Swamp Aster	6	-5		SU		*
Symphyotrichum lanceolatus	Panicled Aster	3	-3		S5		
Symphyotrichum lateriflorum	Calico Aster	3	-2		S5		*
Symphyotrichum novae-angliae	New England Aster	2	-3		S5		*
Taraxacum officinale	Common Dandelion	0	3	y	SE5	*	*
Thlaspi arvense	Field Penny-cress	0	5	y	SE5		*
Thuja occidentalis	Eastern White Cedar	4	-3		S5	*	*
Trifolium hybridum	Alsike Colver	0	1	y	SE5		*
Trifolium pratense	Red Clover	0	2	y	SE5	*	*
Tussilago farfara	Coltsfoot	0	3	y	SE5		*
Typha latifolia	Broad-leaved Cattail	3	-5		S5	*	*
Ulmer americana	White Elm	3	-2		S5	*	*
Verbascum thaspsus	Common Mullein	0	5	y	SE5	*	*
Veronica anagallis-aquatica	Water Speedwell	0	-5		SE5		*
Veronica sp.	Speedwell species	n/a	n/a		n/a	*	
Viburnum lentago	Nannyberry	4	1		S5		*
Viburnum opulus	European Guelder-rose	0	0	y	SE4		*
Vicia cracca	Cow Vetch	0	5	y	SE5	*	*
Viola pubescens	Yellow Violet	5	4		S5	*	
Viola sp.	Violet species	n/a	n/a		n/a		*

SKB[1] - Observed by Skelton Brumwell and Associates Inc.

RStone[2] - Observed by Riverstone Environmental Solutions Inc.

Appendix 5. Bird Species Recorded during Breeding Bird Surveys.

Appendix 5, Table 1. Bird Species Recorded during Breeding Bird Surveys conducted on the Subject Property in 2015.

Common Name	Scientific Name	Recognized Status in Ontario
Alder Flycatcher	*Empidonax alnorum*	
American Bittern	*Botaurus lentiginosus*	Indicator of Marsh Bird Breeding Habitat
American Goldfinch	*Carduelis tristis*	
American Robin	*Turdus migratorius*	
American Woodcock	*Scolopax minor*	
Black-capped Chickadee	*Poecile atricapillus*	
Blue Jay	*Cyanocitta cristata*	
Bobolink	*Dolichonyx oryzivorus*	Threatened Species
Chipping Sparrow	*Spizella passerina*	
Common Crow	*Corvus brachyrhynchos*	
Common Grackle	*Quiscalus quiscula*	
Common Nighthawk	*Chordeiles minor*	Special Concern Species
Common Snipe	*Gallinago gallinago*	
Common Yellowthroat	*Geothlypis trichas*	
Eastern Kingbird	*Tyrannus tyrannus*	
Eastern Meadowlark	*Sturnella magna*	Threatened Species
European Starling	*Sturnus vulgaris*	
Field Sparrow	*Spizella pusilla*	Indicator of Open Country Bird Breeding Habitat
Grasshopper Sparrow	*Ammodramus savannarum*	Special Concern Species; Indicator of Open Country Bird Breeding Habitat
Mallard	*Anas platyrhynchos*	
Mourning Dove	*Zenaida macroura*	
Northern Flicker	*Colaptes auratus*	
Red-eyed Vireo	*Vireo olivaceus*	
Red-winged Blackbird	*Agelaius phoeniceus*	
Ring-billed Gull	*Larus delawarensis*	
Rough-winged Swallow	*Stelgidopteryx serripennis*	
Savannah Sparrow	*Passerculus sandwichensis*	Indicator of Open Country Bird Breeding Habitat
Song Sparrow	*Melospiza melodia*	
Tree Swallow	*Spizella arborea*	
Vesper Sparrow	*Pooecetes gramineus*	Indicator of Open Country Bird Breeding Habitat
Yellow Warbler	*Setophaga petechia*	

Appendix 6. MNRF Information Requests.

Tristan Knight

From: Dodge, Kathy (MNRF) <kathy.dodge@ontario.ca>
Sent: Wednesday, November 4, 2015 9:19 AM
To: Tristan Knight
Cc: Scheifley, Jody (MNRF); Bev Wicks
Subject: RE: Information Request

Categories: 2015-103 Dundalk Flato Developments 2

Hi Tristan-

I have checked our records and we do not have any additional SAR information specific to that site.

As you have indicated, Bobolink and Eastern Meadowlark are potential species to be present on site. Also consider,

Henslow Sparrow
Monarch Butterfly
Milksnake

If you have any questions, please feel free to give me a call.
Kathy

Kathy Dodge
Management Biologist
Ministry of Natural Resources and Forestry
Owen Sound Field Office
519-371-8422

From: Tristan Knight [mailto:tristan@rsenviro.ca]
Sent: Monday, November 02, 2015 10:46 AM
To: Dodge, Kathy (MNRF)
Cc: Scheifley, Jody (MNRF); Bev Wicks
Subject: FW: Information Request

Hi Kathy,

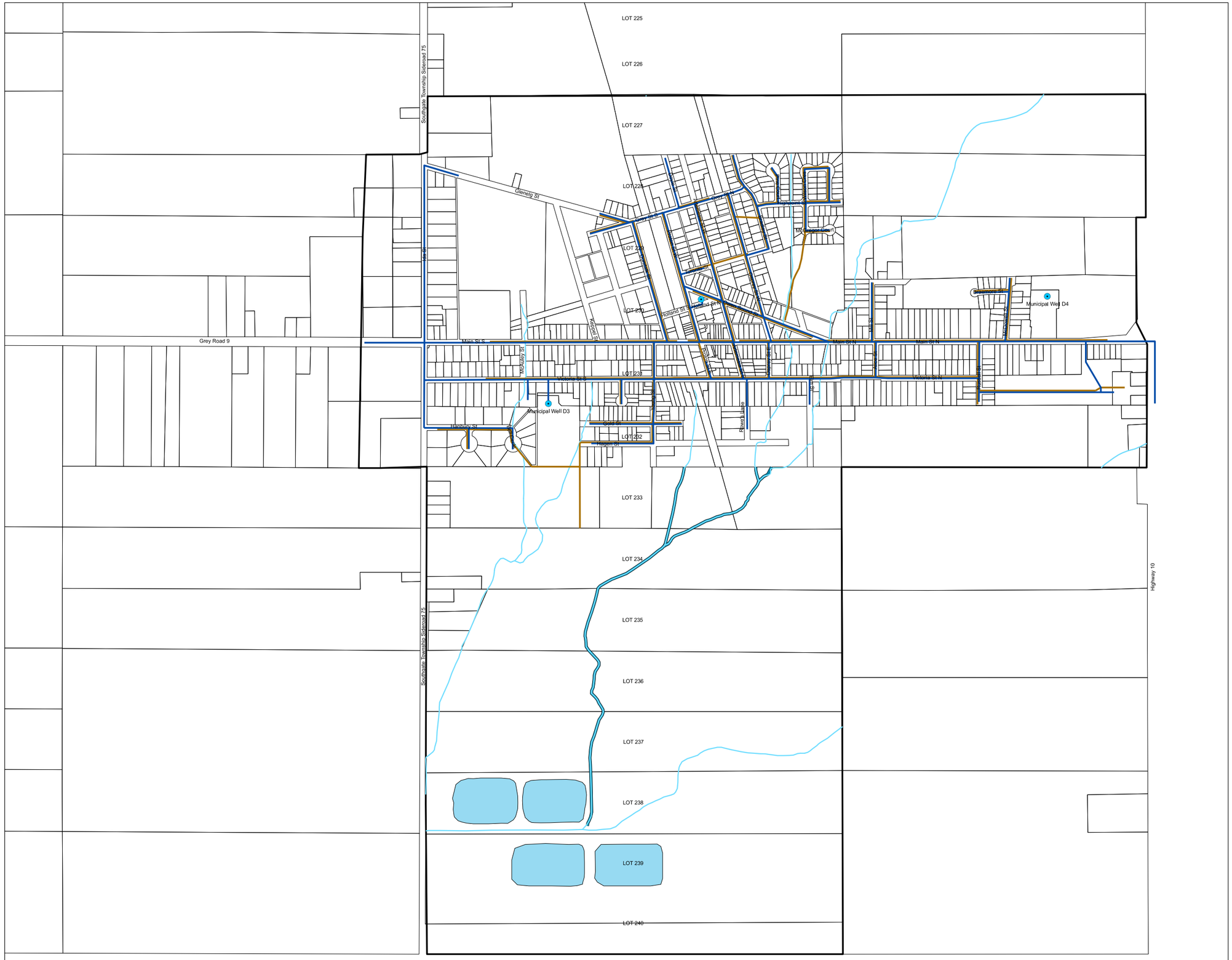
Thanks for responding to my call this morning. See the information request for SAR records at the Dundalk study site below; a study area map is also attached.

Cheers,
T.

Tristan Knight M.Sc.
Ecologist | Botanist
RiverStone Environmental Solutions Inc.

Appendix 7. Correspondence and Mapping of the James Foley Municipal Drain.

RIVERSTONE
ENVIRONMENTAL SOLUTIONS INC.



BASE MAPPING PROVIDED BY THE COUNTY OF GREY, MINISTRY OF NATURAL RESOURCES

250 125 0 250 500 750 1,000
Meters

TOWNSHIP OF SOUTHGATE
OFFICIAL PLAN

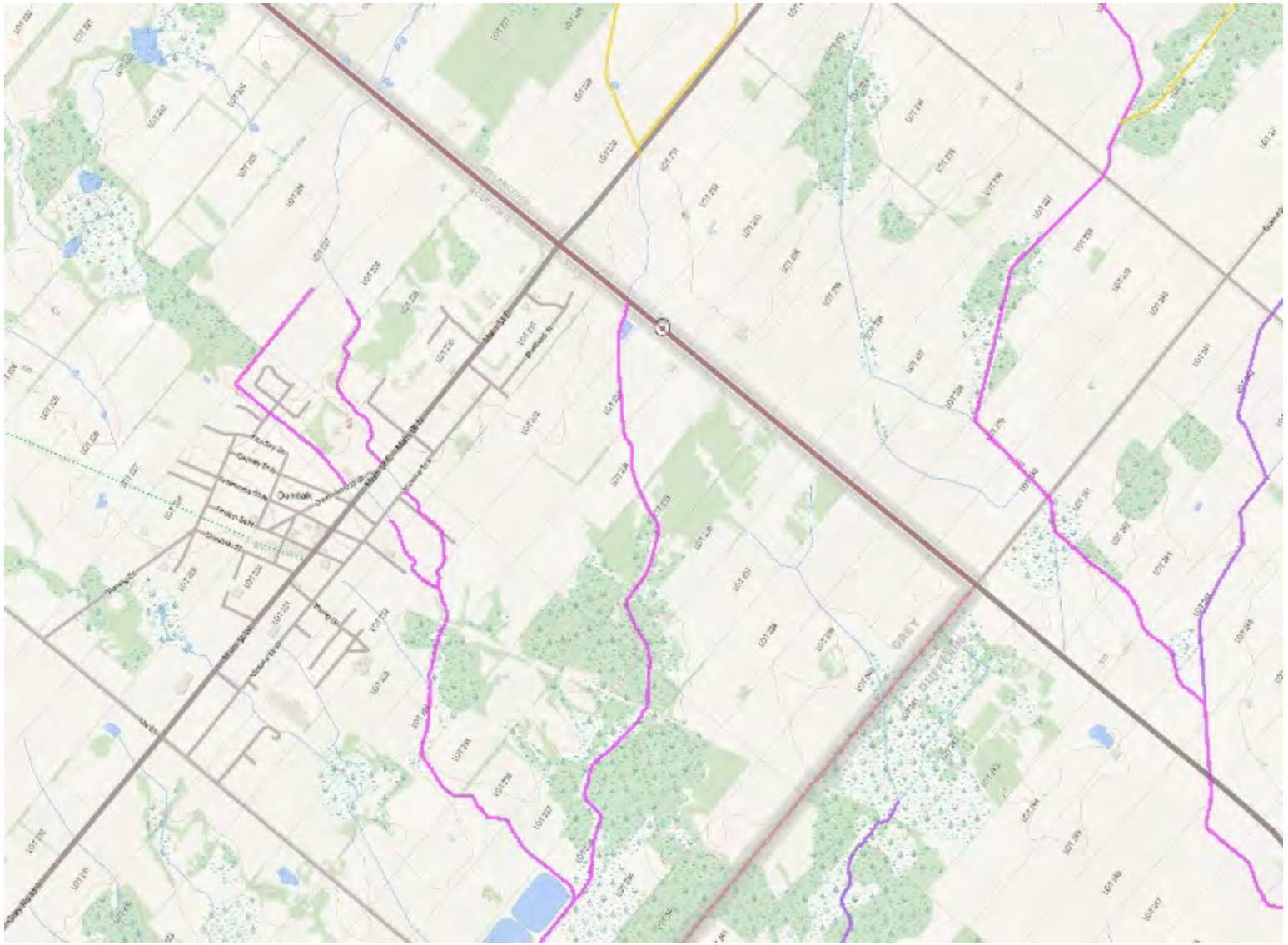
SCHEDULE 'D'
URBAN COMMUNITY OF DUNDALK
SERVICING

- Municipal Wells
- Municipal Water
- Municipal Wastewater
- Foley Drain
- Lagoons

CONSOLIDATED
JANUARY 2009

DCS D.C. Slade Consultants INC.
Planning & Development
243 HURONTARIO STREET, COLLINGWOOD, ON
705.444.1830

DFO Drain Map



Legend

Parcels
- Assessment Parcel
- Farm Tax Rated Parcels - Current Year
- Farm Tax Rated Parcels - Previous Year

Live Data

Administrative
- Conservation Authority
- Geographic Township
- Lots
- Ontario Public Sector Region

Municipality
- Lower or Single Tier Municipality
- Upper Tier or District Municipality

Environment/Base
- Drain Connection
- Power Lines
- ANSI
- NTS 50K Grid
- Quaternary Watersheds
- Tertiary Watersheds
- Secondary Watersheds
- Soils - Outline

Agricultural Tile Drainage - System Type
- Random
- Systematic

Borehole Use
- Dewatering
- Geotechnical or Geological
- Groundwater Recharge
- Observation or Monitoring
- Unknown or Of No Use
- Water Supply

Constructed Drain Type
- Closed/Tiled
- Open or Unknown

Controlled Drainage Class
- Fair
- Good
- Poor

Drain Classification - DFO Class Authorization Type
- A
- B
- C
- D
- E
- F

Soils - CLI
- Class 1
- Class 2
- Class 3
- Class 4
- Class 5
- Class 6
- Class 7
- Organic Soil
- Unclassified
- Water

Soils - Drainage
- Not Applicable
- Imperfectly Drained
- Moderately Well Drained
- Poorly Drained
- Rapidly Drained
- Variable
- Very Poorly Drained
- Very Rapidly Drained
- Well Drained
- Water

Soils - Hydrologic Soil Group
- A
- B
- C
- D

N

1.2 0 1.2 Kilometers

Scale: 1: 24081

Ontario

Map Created: October 13, 2015

Map Center: 44.171165 N, -80.376805 W

Tristan Knight

From: Bev Wicks
Sent: Tuesday, November 24, 2015 12:26 PM
To: Tristan Knight
Subject: FW: James Foley Drain
Attachments: 20150820115518656.pdf

Categories: 2015-103 Dundalk Flato Developments 2

From: Gerd Uderstadt [mailto:gerd.uderstadt@rjburnside.com]
Sent: 2015-08-20 Thu 12:21 PM
To: Bev Wicks <bev@rsenviro.ca>
Subject: Re: James Foley Drain

Hello Bev,

Sorry I was out yesterday but have now reviewed the material you sent. From your aerial photo, the James Foley Drain is the easterly drain. It is shown on your plan as crossing Highway No. 10 at Lot 232. (Partial Township map is enclosed.) The westerly branches, coming through Dundalk, have no status under the Drainage Act and would be classed as natural watercourses.

Your second paragraph would work for our company if it became necessary. Also for installation of crossings on a municipal drain, we recommend you design the structure and obtain Council's approval as well as the necessary permits. Council will request our assistance in reviewing the proposed structure prior to its approval. Hope that answers your questions.....Gerd

BURNSIDE

Gerd Uderstadt, C.S.T.
Drainage Superintendent

R.J. Burnside & Associates Limited
15 Townline
Orangeville, Ontario L9W 3R4
gerd.uderstadt@rjburnside.com
Office: 519-941-5331
Direct Line: 519-938-3024
www.rjburnside.com


TOWNSHIP OF ARTEMESIA
TOWNSHIP OF ARTEMESIA
TOWNSHIP OF MELANCTHON
TOWNSHIP OF MELANCTHON
CON. 1 SWT. & SR.
CON. 2 SWT. & SR.
CON. 3 SWT. & SR.
CON. 3
CON. 4
PROTON STATION
HIGHWAY Nº 10
CANADIAN PACIFIC RAILWAY
DUNDALK
CON. 4 SWT. & SR.
BIRDELL
HOPEVILLE
COUNTY ROAD Nº 9
VENTRY
DRAINAGE WORKS
FRASER DRGE. WKS. 1970
CLARKE DRAINAGE WORKS
PRICEVILLE
KIELAU DRAINAGE WORKS
GILDALE
KINGSCOTE
ELLIS DRAIN 1983
Nº 10 DRAINAGE WORKS
HOOKER DRGE. WKS. 1969
DRAIN Nº 24 1905
LOUGHEED DRGE.
SIGNET
KELDON
EGERTON
GRAND RIVER
Highway Nº 89
CON. 1
CON. 2
CON. 3
CON. 4
CON. 5
CON. 6
CON. 7
CON. 8
CON. 9
CON. 10
11 12 13 14 15 16 17 18 19 20 21 22 23 24 25
191 195 200 205 210 215 220 225 230 235 240
14 16 18 20 22 24 26 28 30 32 34 36 38 40 42

Tristan Knight

From: Bev Wicks
Sent: Wednesday, August 19, 2015 10:22 AM
To: Gerd.Uderstadt@rjburnside.com; jellis@southgate.ca
Cc: Glenn Cunnington; Al Shaw; Kyle Fleming
Subject: James Foley Drain
Attachments: Flato east and west.pdf

Categories: 2015-103 Dundalk Flato Developments 2

Hi Gerd,

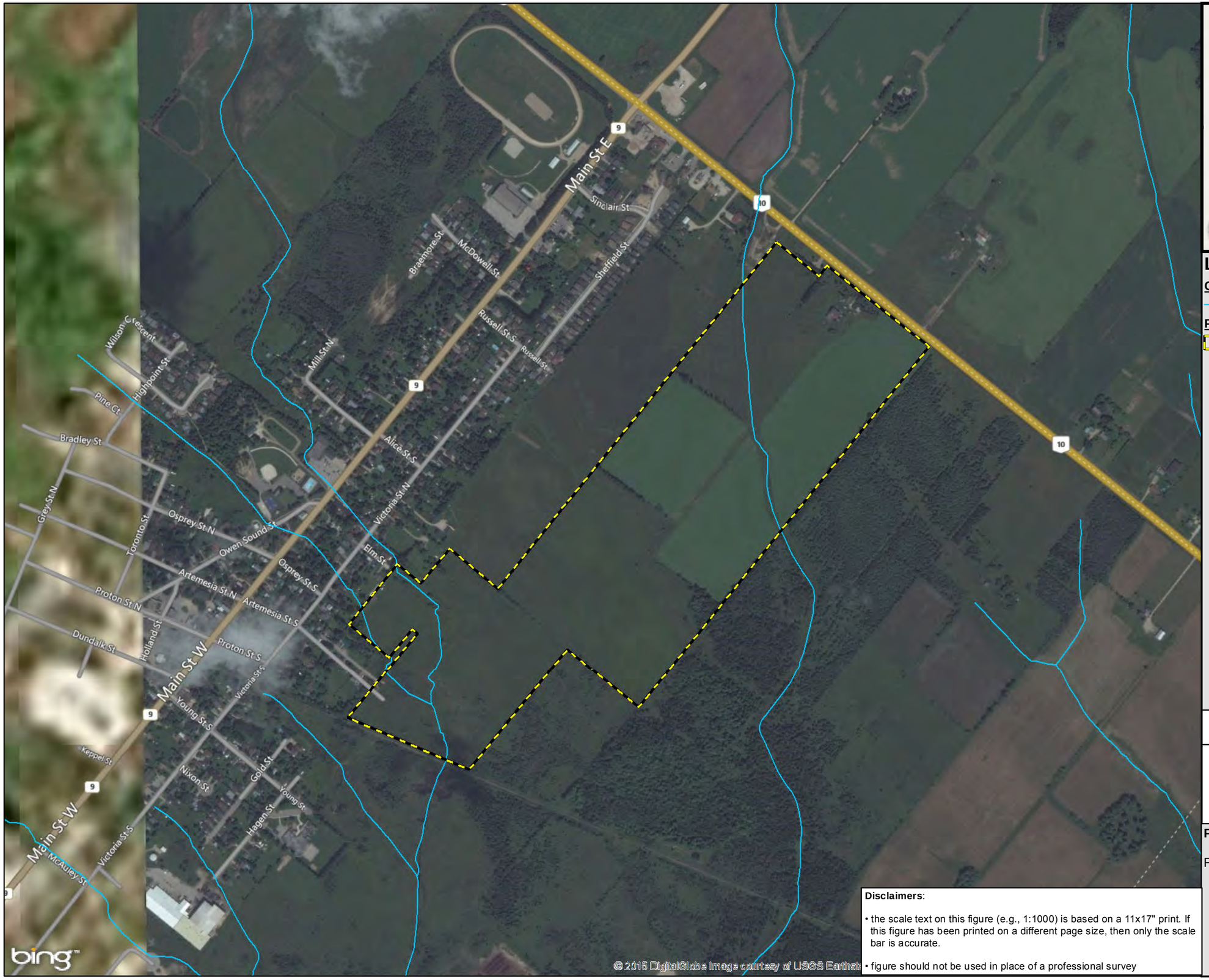
Thank-you for speaking with me yesterday. Attached is a map depicting the two parcels that we are working on as well as the location of the three water features. As discussed the features to the west are proposed for relocation. The one farthest to the east may require crossing structures. If you could confirm which of these three features are classified as Municipal Drains and also confirm the classification that would be greatly appreciated.

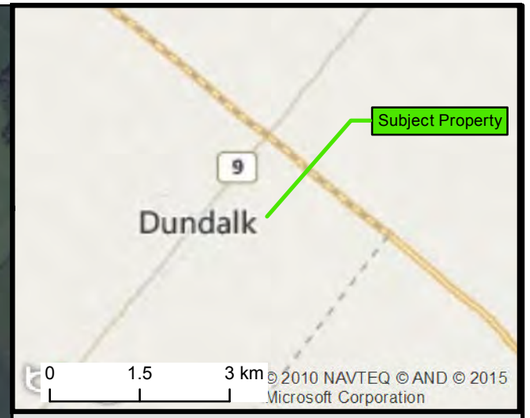
I also understand based on discussions with you yesterday that provided the municipality approves the drain relocation, that it is property designed, that all necessary permits are obtained (MNRF, DFO, and CA), and that appropriate construction monitoring and installation monitoring is conducted, the legal requirements can be met by completing the Section 78 amendment after the project is complete. The amendment/report will need to be completed/approved by the drainage engineer.

If you could please confirm the status of features and that the above process is acceptable it will help us to assist the client with this process. Please note that we are working with Skelton Brumwell on this project and they have been copied on this correspondence as well.

Take care,

Bev Wicks Ph.D.
Senior Aquatic Ecologist / Principal
RiverStone Environmental Solutions Inc.
1-310 Taylor Road, Bracebridge Ontario, P1L 1K1
Head Office 705.645.9887 | Cell 705.641.1037 | Fax 888.857.4979
Southern Ontario Office 1-866-776-7160
www.rsenviro.ca





Legend

Ontario Base Mapping (OBM)

Watercourse

Planning Boundaries

Subject Property

N

Orthorectified aerial photo - spring 2008

Scale	RS Project No.	Date Last Updated	By
1:8,000	2015-103	Jul 30, 2015	GC

0 120 240 Metres

RIVERSTONE

Figure X.

Prepared for Discussion Purposes Only

Disclaimers:

- the scale text on this figure (e.g., 1:1000) is based on a 11x17" print. If this figure has been printed on a different page size, then only the scale bar is accurate.
- figure should not be used in place of a professional survey

Appendix 8. Assessment of Habitat and Impacts to Species of Conservation Interest.

Habitat-based Approach

Properly assessing whether an area is likely to contain species of conservation interest for the purposes of determining whether a proposed development is likely to have a negative impact is becoming more difficult as the number of listed species increases. Approaches that depend solely on documenting the presence of individuals of a species in an area almost always underrepresent the biodiversity actually present because of the difficulty of observing species that are usually rare and well camouflaged. Given these difficulties, and the importance of protecting habitats of SAR, fish, and other species of conservation interest, RiverStone's primary approach to site assessment is habitat-based. This means that our field investigations focus on *evaluating the potential for features within an area of interest to function as habitat for species considered potentially present*, *rather than searching for live specimens*. An area is considered potential habitat if it satisfies a number of criteria, usually specific to a species, but occasionally characteristic of a broader group (e.g., several turtles of conservation interest use sandy shorelines for nesting, numerous fish species use areas of aquatic vegetation for nursery habitat). Physical attributes of a site that can be used as indicators of its potential to function as habitat for a species include structural characteristics (e.g., physical dimensions of rock fragments or trees, water depth), ecological community (e.g., meadow marsh, rock barren, coldwater stream), and structural connectivity to other habitat features required by the species. Species-specific habitat preferences and/or affinities are determined from status reports produced by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC), Cadman et al. (2007), published and unpublished documents, and direct experience.

Table 1 provides RiverStone's desktop screening and on-site assessment for species- and ecological communities of conservation interest. RiverStone measures species- and feature-specific distances from the boundaries of proposed lots or development area(s)—rather than from the boundary of the significant natural heritage feature—and refers to this area as *adjoining lands* (AL). Evaluating the likelihood of species' presence and the potential for negative impacts using this approach ensures that the Adjacent Lands test of the PPS will be met.

For the purposes of RiverStone's assessment, the *subject property* as shown in **Figure 1** is referred to as the Area of Interest (AOI) and the adjoining lands (AL) extents were measured from the boundaries of the AOI.

Table 2 provides RiverStone's recommended mitigation measures, and a determination of whether the likelihood or risk of negative impacts is acceptable after considering all relevant factors (e.g., conservation status of species or habitat, sensitivity to disturbance).

Common Name[1]	Scientific Name	Step 1 (Desktop): Rationale for considering	Step 2 (Desktop): Do site-specific attributes (e.g., ecological system and landscape configuration) assessed from aerial photography and other information sources indicate that potential habitat or communities might be present? Area of Interest (AOI)	Step 2 (Desktop): Adjoining Lands (AL)	Step 3 (On Site): Potential and/or confirmed habitat documented during on-site assessment Area of Interest (AOI)	Step 3 (On Site): Adjoining Lands (AL)	Step 4: Is there potential for the species, its habitat, or ecological community to be negatively impacted by the activities that would be permissible within the AOI?
Endangered & Threatened (Provincially): status from Species at Risk in Ontario List (O Reg 230/08); updated October 2015							
Spotted Turtle	*Clemmys guttata*	Range Map	YES, suitable wetland communities may be present.	YES, suitable wetland communities may be present.	NO, open water wetland communities that would provide suitable feeding and basking habitat are absent.	NO, open water wetland communities that would provide suitable feeding and basking habitat are absent.	NO, see step 3.
Blanding's Turtle	*Emydoidea blandingii*	Range Map	YES, suitable wetland communities may be present.	YES, suitable wetland communities may be present.	NO, open water wetland communities that would provide suitable feeding and basking habitat are absent.	NO, open water wetland communities that would provide suitable feeding and basking habitat are absent.	NO, see step 3.
Whip-poor-will	*Caprimulgus vociferus*	Range Map	YES, both natural and anthropogenic openings in the forest canopy and adjacent open meadows could provide suitable breeding and foraging habitat.	YES, both natural and anthropogenic openings in the forest canopy and adjacent open meadows could provide suitable breeding and foraging habitat.	YES, both natural and anthropogenic openings in the forest canopy and adjacent open meadows could provide suitable breeding and foraging habitat.	YES, both natural and anthropogenic openings in the forest canopy and adjacent open meadows could provide suitable breeding and foraging habitat.	YES, development or site alteration in or adjacent to open areas on the subject property (e.g., meadows adjacent to forest) may have negative impacts on breeding and foraging habitat.
Bobolink	*Dolichonyx oryzivorus*	NHIC Database, OBBA	YES, suitable grassland or agricultural communities may be present.	YES, suitable grassland or agricultural communities may be present.	NO, see **Section 4.2.1** of the EIS report.	YES, suitable grassland or agricultural communities are present.	NO, see step 3.
Least Bittern	*Ixobrychus exilis*	Range Map	YES, suitable wetland communities may be present.	YES, suitable wetland communities may be present.	NO, foraging and breeding habitat (i.e., cattail and other robust emergent shallow marshes) are absent.	NO, foraging and breeding habitat (i.e., cattail and other robust emergent shallow marshes) are absent.	NO, see step 3.
Chimney Swift	*Chaetura pelagica*	Range Map	YES, dark sheltered hollow vertical structures (large trees with cavities and rock crevices) suitable for nesting or roosting may be present.	YES, dark sheltered hollow vertical structures (large trees with cavities and rock crevices) suitable for nesting or roosting may be present.	YES, dark sheltered hollow vertical structures (large trees with cavities) suitable for nesting or roosting are present.	YES, dark sheltered hollow vertical structures (chimneys, smoke stacks, silos, large trees with cavities and rock crevices) suitable for nesting or roosting are present.	NO, dark sheleted hollow vertical structures (e.g., snags and cavity trees) that could act as suitable nesting or roosting habitat are restricted to the Significant Woodland. A thirty (30) m buffer established to protect the Significant Woodland will protect potential chimney swift nesting and roosting habitat.
Barn Swallow	*Hirundo rustica*	OBBA	YES, man-made or natural structures suitable for nesting may be present.	YES, man-made or natural structures suitable for nesting may be present.	NO, Barn Swallow was not observed on the subject property during breeding bird surveys. The barn at the eastern extent of the subject property on Highway 10 was searched for evidence of nests or nesting; no nests or nesting activity was observed.	NO, man-made or natural structures suitable for nesting are absent.	NO, see step 3.
Eastern Meadowlark	*Sturnella magna*	OBBA	YES, suitable grassland or agricultural communities may be present.	YES, suitable grassland or agricultural communities may be present.	NO, see **Section 4.2.1** of the EIS report.	YES, suitable grassland or agricultural communities are present.	NO, see step 3.
Henslow's Sparrow	*Ammodramus henslowii*	Range Map, MNRF Information Request	YES, suitable grassland or agricultural communities may be present.	YES, suitable grassland or agricultural communities may be present.	NO, although grassland communities are present on the subject property, this species was not observed during breeding bird surveys in 2015.	NO, although suitable grassland communities are present on adjacent lands, they are not of sufficient size to support this species.	NO, see step 3.
Bank Swallow	*Riparia riparia*	OBBA	YES, man-made or natural structures suitable for nesting may be present.	YES, man-made or natural structures suitable for nesting may be present.	NO, man-made or natural structures suitable for nesting are absent.	NO, man-made or natural structures suitable for nesting are absent.	NO, see step 3.

[1]Shaded rows denote species or communities for which negative impacts have been deemed possible.

Common Name[1]	Scientific Name	Step 1 (Desktop): Rationale for considering	Step 2 (Desktop): Do site-specific attributes (e.g., ecological system and landscape configuration) assessed from aerial photography and other information sources indicate that potential habitat or communities might be present? Area of Interest (AOI)	Step 2 (Desktop): Adjoining Lands (AL)	Step 3 (On Site): Potential and/or confirmed habitat documented during on-site assessment Area of Interest (AOI)	Step 3 (On Site): Adjoining Lands (AL)	Step 4: Is there potential for the species, its habitat, or ecological community to be negatively impacted by the activities that would be permissible within the AOI?
Little Brown Bat	*Myotis lucifugus*	Range Map	YES, dark sheltered hollow vertical structures (e.g., large trees with cavities or rock crevices) suitable for gestating or roosting may be present.	YES, dark sheltered hollow vertical structures (e.g., large trees with cavities or rock crevices) suitable for gestating or roosting may be present.	YES, dark sheltered hollow vertical structures (large trees with cavities) suitable for nesting or roosting are present.	YES, dark sheltered hollow vertical structures (e.g., large trees with cavities or rock crevices) suitable for gestating or roosting may be present.	NO, dark sheleted hollow vertical structures (e.g., snags and cavity trees) that could act as suitable nesting or roosting habitat are restricted to the Significant Woodland. A thirty (30) m buffer established to protect the Significant Woodland will protect potential maternal roosting habitat.
Eastern Small-footed Myotis	*Myotis leibii*	Range Map	YES, dark sheltered hollow vertical structures (e.g., large trees with cavities or rock crevices) suitable for gestating or roosting may be present.	YES, dark sheltered hollow vertical structures (e.g., large trees with cavities or rock crevices) suitable for gestating or roosting may be present.	YES, dark sheltered hollow vertical structures (large trees with cavities) suitable for nesting or roosting are present.	YES, dark sheltered hollow vertical structures (e.g., large trees with cavities or rock crevices) suitable for gestating or roosting may be present.	NO, dark sheleted hollow vertical structures (e.g., snags and cavity trees) that could act as suitable nesting or roosting habitat are restricted to the Significant Woodland. A thirty (30) m buffer established to protect the Significant Woodland will protect potential maternal roosting habitat.
Northern Long-eared Bat	*Myotis septentrionalis*	Range Map	YES, dark sheltered hollow vertical structures (e.g., large trees with cavities or rock crevices) suitable for gestating or roosting may be present.	YES, dark sheltered hollow vertical structures (e.g., large trees with cavities or rock crevices) suitable for gestating or roosting may be present.	YES, dark sheltered hollow vertical structures (large trees with cavities) suitable for nesting or roosting are present.	YES, dark sheltered hollow vertical structures (e.g., large trees with cavities or rock crevices) suitable for gestating or roosting may be present.	NO, dark sheleted hollow vertical structures (e.g., snags and cavity trees) that could act as suitable nesting or roosting habitat are restricted to the Significant Woodland. A thirty (30) m buffer established to protect the Significant Woodland will protect potential maternal roosting habitat.
Butternut	*Juglans cinerea*	Range Map	YES, difficult to rule out without on-site assessment.	YES, difficult to rule out without on-site assessment.	NO, species was not observed during the three-season vascular plant inventory or during any field activities carried out in 2015.	POSSIBLE, difficult to rule out without on-site assessment.	NO, see step 3.
Endangered or Threatened Nationally but either Not at Risk in Ontario or still to be assessed: status from either Schedule 1 of the *Species at Risk Act* or recent assessment by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC)							
Tri-colored Bat	*Perimyotis subflavus*	Range Map	YES, dark sheltered hollow vertical structures (e.g., large trees with cavities or rock crevices) suitable for gestating or roosting may be present.	YES, dark sheltered hollow vertical structures (e.g., large trees with cavities or rock crevices) suitable for gestating or roosting may be present.	YES, dark sheltered hollow vertical structures (large trees with cavities) suitable for nesting or roosting are present.	YES, dark sheltered hollow vertical structures (e.g., large trees with cavities or rock crevices) suitable for gestating or roosting may be present.	NO, dark sheleted hollow vertical structures (e.g., snags and cavity trees) that could act as suitable nesting or roosting habitat are restricted to the Significant Woodland. A thirty (30) m buffer established to protect the Significant Woodland will protect potential maternal roosting habitat.
Special Concern (Provincially): status from Species at Risk in Ontario List (O Reg 230/08); updated October 2015							
Eastern Musk Turtle	*Sternotherus odoratus*	Range Map	YES, suitable wetland communities may be present.	YES, suitable wetland communities may be present.	NO, open water wetland communities that would provide suitable feeding and basking habitat are absent.	NO, open water wetland communities that would provide suitable feeding and basking habitat are absent.	NO, see step 3.
Snapping Turtle	*Chelydra serpentina*	Ontario Reptile and Amphibian Atlas	YES, suitable wetland communities may be present.	YES, suitable wetland communities may be present.	NO, open water wetland communities that would provide suitable feeding and basking habitat are absent.	NO, open water wetland communities that would provide suitable feeding and basking habitat are absent.	NO, see step 3.

[1]Shaded rows denote species or communities for which negative impacts have been deemed possible.

Common Name[1]	Scientific Name	Step 1 (Desktop): Rationale for considering	Step 2 (Desktop): Do site-specific attributes (e.g., ecological system and landscape configuration) assessed from aerial photography and other information sources indicate that potential habitat or communities might be present? Area of Interest (AOI)	Step 2 (Desktop): Adjoining Lands (AL)	Step 3 (On Site): Potential and/or confirmed habitat documented during on-site assessment Area of Interest (AOI)	Step 3 (On Site): Adjoining Lands (AL)	Step 4: Is there potential for the species, its habitat, or ecological community to be negatively impacted by the activities that would be permissible within the AOI?
Eastern Ribbonsnake	*Thamnophis sauritus*	Ontario Reptile and Amphibian Atlas	YES, open-canopy areas adjacent to wetlands and/or aquatic communities may be present.	YES, open-canopy areas adjacent to wetlands and/or aquatic communities may be present.	YES, open-canopy areas adjacent to wetlands and/or aquatic communities are present.	YES, open-canopy areas adjacent to wetlands and/or aquatic communities are absent.	YES, impacts in the form of habitat loss and road mortality possible.
Milksnake	*Lampropeltis triangulum*	Range Map, MNRF Information Request	YES, open habitats (e.g., forest gaps, open woodlands, meadows, etc.) and forest edges may be present.	YES, open habitats (e.g., forest gaps, open woodlands, meadows, etc.) and forest edges may be present.	YES, open habitats (e.g., forest gaps, open woodlands, meadows, etc.) and forest edges may be present.	YES, open habitats (e.g., forest gaps, open woodlands, meadows, etc.) and forest edges may be present.	YES, impacts in the form of habitat loss and road mortality possible.
Grasshopper Sparrow	*Ammodramus savannarum*	OBBA	YES, suitable grassland or agricultural communities may be present.	YES, suitable grassland or agricultural communities may be present.	YES, this species was recorded as a "probable" breeder during 2015 surveys.	YES, suitable grassland or agricultural communities may be present.	NO, habitat for this species has been ploughed based on direction from the client for the purposes of planting crops next season.
Canada Warbler	*Cardellina canadensis*	OBBA	YES, moist thickets and other shruby habitats adjacent to forests may be present.	YES, moist thickets and other shruby habitats adjacent to forests may be present.	NO, although suitably-sized habitat (e.g., moist thickets.) are present, this species was not observed during breeding bird surveys or any other site investigation in 2015.	YES, moist thickets and other shruby habitats adjacent to forests may be present.	NO, see step 3.
Common Nighthawk	*Chordeiles minor*	Range Map, Habitat Features Present	YES, both natural and anthropogenic openings in canopy and open areas could provide suitable breeding and foraging habitat.	YES, both natural and anthropogenic openings in canopy and open areas could provide suitable breeding and foraging habitat.	YES, this species was recorded flying over the subject property and adjacent lands during site investigations in 2015.	YES, both natural and anthropogenic openings in canopy and open areas could provide suitable breeding and foraging habitat.	YES, development or site alteration in or adjacent to open areas on the subject property (e.g., meadows) may have negative impacts on breeding habitat.
Eastern Wood Pewee	*Contopus virens*	Range Map, Habitat Features Present	YES, suitably sized area of forest is present.	YES, suitably sized area of forest is present.	YES, the Significant Woodland extension into the southern portion of the subject property provides suitable forest habitat for this species.	YES, suitably sized area of forest is present.	NO, forested areas will not be impacted by the development plan.
Wood Thrush	*Hylocichla mustelina*	Range Map, Habitat Features Present	YES, suitably sized area of forest is present.	YES, suitably sized area of forest is present.	YES, the Significant Woodland extension into the southern portion of the subject property provides suitable forest habitat for this species.	YES, suitably sized area of forest is present.	NO, forested areas will not be impacted by the development plan.
Short-eared Owl	*Asio flammeus*	Range Map, Habitat Features Present	YES, suitably sized open areas (e.g., meadow, etc.) may be present.	YES, suitably sized open areas (e.g., meadow, etc.) may be present.	NO, although suitably sized open areas (e.g., meadow, etc.) are present, this species was not observed during breeding bird surveys or any other site investigation in 2015.	YES, suitably sized open areas (e.g., meadow, etc.) may be present.	NO, see step 3.
Monarch	*Danaus plexippus*	Range Map, MNRF Information Request	YES, suitable grassland, mixed meadow, or agricultural communities may be present.	YES, suitable grassland, mixed meadow, or agricultural communities may be present.	YES, Common Milkweed (*Asclepias syriaca*) was observed during the vascular plant inventory.	YES, suitable grassland, mixed meadow, or agricultural communities may be present.	YES, development and site alteration has the potential to damage habitat (e.g., meadows with Milkweed).

[1]Shaded rows denote species or communities for which negative impacts have been deemed possible.

Common Name	Scientific Name	Step 5: Recommended Mitigation Measures	Step 6: Is the likelihood of adverse effects (negative impacts) acceptable when all the relevant factors are considered?
Endangered & Threatened (Provincially): status from Species at Risk in Ontario List (O Reg 230/08); updated October 2015			
Eastern Whip-poor-will	*Caprimulgus vociferus*	• None (see Step 6).	YES, although the presence of this species on the subject property cannot be definitively ruled out, open areas (i.e., cultivated fields) are frequently ploughed and therefore not likely to be utilized for breeding by this species.
Special Concern (Provincially): status from Species at Risk in Ontario List (O Reg 230/08); updated October 2015			
Eastern Ribbonsnake	*Thamnophis sauritus*	• None (see Step 6).	YES, although potential feeding areas for this species (e.g., thicket swamp) are located within the development envelope, the amount of habitat loss is minimal and not expected to compromise the ability of the subject property and adjacent lands to function as potential habitat for this species. Habitat for this species is not limited in the surrounding landscape.
Milksnake	*Lampropeltis triangulum*	• None (see Step 6).	YES, although potential feeding areas for this species (e.g., agricultural fields) are located within the development envelope, the amount of habitat loss is minimal and not expected to compromise the ability of the subject property and adjacent lands to act as potential habitat for this species. Habitat for this species is not limited in the surrounding landscape (i.e., within 2 km).
Common Nighthawk	*Chordeiles minor*	• None (see Step 6).	YES, although the subject property may function as feeding habitat for this species, open areas (e.g., meadows) are frequently mowed and therefore not likely to be utilized for breeding. Suitable feeding habitat on adjacent lands will not be negatively affected by implementation of the development plan.
Monarch	*Danaus plexippus*	• None (see Step 6).	YES, although the breeding habitat (i.e., Common Milkweed) is present on the subject property, habitat for this species is not particularly high quality as it contains mostly cultivated and hayed agricultural fields. Habitat for this species is not limited in the surrounding landscape.

Appendix 9. Assessment of Significant Wildlife Habitat.

Ecoregion 6E	Candidate Significant Wildlife Habitat*	ELC Ecosites	Do site-specific attributes assessed from available information sources and the site investigations indicate that candidate SWH may be present on the subject property or adjacent lands?
Seasonal Concentration Areas of Animals			
Waterfowl Stopover and Staging Areas (Terrestrial)	Fields with sheet water during Spring (mid March to May) Fields flooding during spring melt and run-off provide important invertebrate foraging habitat for migrating waterfowl. Agricultural fields with waste grains are commonly used by waterflow, these are not considered SWH unless they have spring sheet water available.	CUM1 , CUT1 Plus evidence of annual spring flooding from melt water or run-off within these Ecosites.	NO. Although agricultural fields (e.g., cropland and hayfields) are present, no evidence of sheet water was observed in these areas during spring site investigations.
Waterfowl Stopover and Staging Areas (Aquatic)	Ponds, marshes, lakes, bays, coastal inlest, and watercourses used during migration. Sewage treatment Ponds and storm water Ponds do not qualify as a SWH, however a reservoir managed as a large wetland or pond/lake does qualify. These habitats have an abundance food supply (mostly aquatic invertebrates and vegetation in shallow water)	MAS1 , MAS2, MAS3, SAS1, SAM1, SAF1 , SWD1 , SWD2, SWD3, SWD4, SWD5, SWD6, SWD7	NO. Migrating waterfowl utilize open-water wetlands adjacent to large bodies of water to rest and feed. The willow thicket swamp would not contain open water pockets of sufficient size to function as a waterfowl stopover or staging area. No open water features are present on the subject property.
Shorebird Migratory Stopover Areas	Shorelines of lakes, rivers and wetlands, including beach areas, bars and seasonally flooded, muddy and un-vegetated shoreline habitats. Great Lakes coastal shorelines, including groynes and other forms of armour rock lakeshores, are extremely important for migratory shorebirds in May to mid-June and early July to October. Sewage treatment ponds and storm water ponds do not qualify as a SWH.	BBO1, BBO2, BBS1, BBS2, BBT1, BBT2, SDO1, SDS2, SDT1, MAM1 , MAM2, MAM3, MAM4, MAM5	NO. Shorebird migratory stopover areas tend to be restricted to large mudflats along large bodies of water such as the Great Lakes. No such areas occur on the subject property.
Raptor Wintering Areas	The habitat provides a combination of fields and woodlands that provide roosting, foraging and resting habitats for wintering raptors. Raptor wintering sites (hawk/owl) need to be >20 ha with a combination of forest and upland. Least disturbed sites, idle/fallow or lightly grazed field/meadow (>15ha) with adjacent woodlands Field area of the habitat is to be wind swept with limited snow depth or accumulation. Eagle sites have open water, large trees and snags available for roosting.	Hawks/Owls: Combination of ELC Community Series; need to have present one Community Series from each land class; Forest: FOD, FOM, FOC. Upland: CUM; CUT; CUS; CUW. Bald Eagle: Forest community Series: FOD, FOM, FOC, SWD, SWM or SWC on shoreline areas adjacent to large rivers or adjacent to lakes with open water (hunting area).	**YES.** Large open fields support populations of small mammals that are relied upon by raptors during winter. The subject property contains large, contiguous agricultural fields (> 35 ha) that may be used by feeding raptors during winter.
Bat Hibernacula	Hibernacula may be found in caves, mine shafts, underground foundations and Karsts. Active mine sites are not SWH. The locations of bat hibernacula are relatively poorly known.	Bat Hibernacula may be found in these ecosites: CCR1, CCR2, CCA1, CCA2. (Note: buildings are not considered to be SWH).	NO. Caves, abandoned mines, and/or steep talus slopes are absent from the subject property.

*as per Significant Wildlife Habitat Criteria Schedules for Ecoregion 6E (January 2015)

Ecoregion 6E	Candidate Significant Wildlife Habitat*	ELC Ecosites	Do site-specific attributes assessed from available information sources and the site investigations indicate that candidate SWH may be present on the subject property or adjacent lands?
Bat Maternity Colonies	Maternity colonies can be found in tree cavities, vegetation and often in buildlings (buildings are not considered to be SWH). Maternity roosts are not found in caves and mines in Ontario Maternity colonies located in Mature (dominant trees > 80yrs old) deciduous or mixed forest stands with >10/ha large diameter (>25cm dbh) wildlife trees Female Bats prefer wildlife trees (snags) in early stages of decay, class 1-3 . Silver-haired Bats prefer older mixed or deciduous forest and form maternity colonies in tree cavities and small hollows. Older forest areas with at least 21 snags/ha are preferred.	Maternity colonies considered SWH are found in forested Ecosites. All ELC Ecosites in ELC Community Series: FOD, FOM, SWD, SWM.	**YES.** The small extension of the Significant Woodland (and its larger area on adjacent lands) consists of relatively large diameter trees (i.e., > 25 cm DBH) with cavities and crevices that may support bat maternity colonies.
Turtle Wintering Areas	For most turtles, wintering areas are in the same general area as their core habitat. Water has to be deep enough not to freeze and have soft mud substrates. Over-wintering sites are permanent water bodies, large wetlands, and bogs or fens with adequate Dissolved Oxygen Man-made ponds such as sewage lagoons or storm water ponds should not be considered SWH.	Snapping and Midland Painted Turtles; ELC Community Classes; SW, MA, OA and SA, ELC Community Series; FEO and BOO. Northern Map Turtle; Open Water areas such as deeper rivers or streams and lakes with current can also be used as overwintering habitat.	NO. Features that would support overwintering turtles (open water wetlands, water features with soft mud substrates that do not freeze to the bottom) are absent from the subject property.
Reptile Hibernaculum	For snakes, hibernation takes place in sites located below frost lines in burrows, rock crevices and other natural or naturalized locations. The existence of features that go below frost line; such as rock piles or slopes, old stone fences, and abandoned crumbling foundations assist in identifying candidate SWH. Areas of broken and fissured rock are particularly valuable since they provide access to subterranean sites below the frost line Wetlands can also be important over-wintering habitat in conifer or shrub swamps and swales, poor fens, or depressions in bedrock terrain with sparse trees or shrubs with sphagnum moss or sedge hummock ground cover. Five-lined skink prefer mixed forests with rock outcrop openings providing cover rock overlaying granite bedrock with fissures	For all snakes, habitat may be found in any ecosite other than very wet ones. Talus, Rock Barren, Crevice and Cave, and Alvar sites may be directly related to these habitats. Observations or congregations of snakes on sunny warm days in the spring or fall is a good indicator. For Five-lined Skink, ELC Community Series of FOD and FOM and Ecosites: FOC1, FOC3.	**YES.** The subject property contains feeding areas for snakes (i.e., open/meadow habitats with abundant small mammals), although cultivation activities restrict use by snakes. Small mammal burrows and other features within the Significant Woodland and the foundations of buildings on the eastern portion of the subject property may provide suitable hibernacula for snakes where they extend below the frost line.
Colonially - Nesting Bird Breeding Habitat (Bank and Cliff)	Any site or areas with exposed soil banks, sandy hills, borrow pits, steep slopes, and sand piles that are undisturbed or naturally eroding that is not a licensed/permitted aggregate area. Does not include man-made structures (bridges or buildings) or recently (2 years) disturbed soil areas, such as berms, embankments, soil or aggregate stockpiles. Does not include a licensed/permitted Mineral Aggregate Operation.	Eroding banks, sandy hills, borrow pits, steep slopes, and sand piles. Cliff faces, bridge abutments, silos, barns. Habitat found in the following ecosites: CUM1, CUT1, CUS1, BLO1, BLS1, BLT1, CLO1, CLS1, CLT1.	NO. Features that would support colonially-nesting bank and cliff species (e.g., exposed, eroding soil banks, cliff faces, etc.) are absent.
Colonially - Nesting Bird Breeding Habitat Breeding Habitat (Tree/Shrubs)	Nests in live or dead standing trees in wetlands, lakes, islands, and peninsulas. Shrubs and occasionally emergent vegetation may also be used. Most nests in trees are 11 to 15 m from ground, near the top of the tree.	SWM2, SWM3, SWM5, SWM6, SWD1, SWD2, SWD3, SWD4, SWD5, SWD6, SWD7, FET1.	NO. Open bodies of water are absent from the subject property, and no stick nests were identified during on site investigations.

*as per Significant Wildlife Habitat Criteria Schedules for Ecoregion 6E (January 2015)

Ecoregion 6E	Candidate Significant Wildlife Habitat*	ELC Ecosites	Do site-specific attributes assessed from available information sources and the site investigations indicate that candidate SWH may be present on the subject property or adjacent lands?
Colonially - Nesting Bird Breeding Habitat (Ground)	Nesting colonies of gulls and terns are on islands or peninsulas (natural or artificial) associated with open water, marshy areas, lake or large river (two-lined on a 1;50,000 NTS map). Brewers Blackbird colonies are found loosely on the ground in or in low bushes in close proximity to streams and irrigation ditches within farmlands.	Any rocky island or peninsula (natural or artificial) within a lake or large river (two-lined on a 1;50,000 NTS map). Close proximity to watercourses in open fields or pastures with scattered trees or shrubs (Brewer's Blackbird) MAM1 – 6, MAS1 – 3, CUM, CUT, CUS	NO. Features that would support ground-nesting colonial birds (e.g., open water areas with islands and peninsulas) are absent.
Migratory Butterfly Stopover Areas	A butterfly stopover area will be a minimum of 10 ha in size with a combination of field and forest habitat present, and will be located within 5 km of Lake Ontario. The habitat is typically a combination of field and forest, and provides the butterflies with a location to rest prior to their long migration south. The habitat should not be disturbed, fields/meadows with an abundance of preferred nectar plants and woodland edge providing shelter are requirements for this habitat. Staging areas usually provide protection from the elements and are often spits of land or areas with the shortest distance to cross the Great Lakes.	Combination of ELC Community Series; need to have present one Community Series from each landclass: <u>Field:</u> CUM, CUT, CUS <u>Forest:</u> FOC, FOD, FOM, CUP Anecdotally, a candidate site for butterfly stopover will have a history of butterflies being observed.	NO. The subject property is > 5 km from Lake Ontario and generally lacks abundant nectaring plants. Large congregations of migratory butterflies are unlikely to utilize the subject property during migration.
Landbird Migratory Stopover Areas	Woodlots need to be > 10 ha in size and within 5 km of Lake Ontario. If multiple woodlands are located along the shoreline of those woodlands <2 km from Lake Ontario are more significant. Sites have a variety of habitats; forest, grassland and wetland complexes. The largest sites are more significant. Woodlots and forest fragments are important habitats to migrating birds, these features location along the shore and located within 5 km of Lake Ontario are Candidate SWH.	All Ecosites associated with these ELC Community Series; FOC, FOM, FOD, SWC, SWM, SWD.	NO. The subject property is > 5 km from Lake Ontario and would not support large congregations of migratory landbirds.
Deer Yarding Areas	Deer wintering areas or winter concentration areas (yards) are areas deer move to in response to the onset of winter snow and cold. This is a behavioural response and deer will establish traditional use areas. The yard is composed of two areas referred to as Stratum I and Stratum II. Stratum II covers the entire winter yard area and is usually a mixed or deciduous forest with plenty of browse available for food. Agricultural lands can also be included in this area. Deer move to these areas in early winter and generally, when snow depths reach 20 cm, most of the deer will have moved here. If the snow is light and fluffy, deer may continue to use this area until 30 cm snow depth. In mild winters, deer may remain in the Stratum II area the entire winter. The Core of a deer yard (Stratum I) is located within Stratum II and is critical for deer survival in areas where winters become severe. It is primarily composed of coniferous trees (pine, hemlock, cedar, spruce) with a canopy cover of more than 60%. OMNRF determines deer yards following methods outlined in "Selected Wildlife and Habitat Features: Inventory Manual". -Woodlots with high densities of deer due to artificial feeding are not significant.	Note: OMNRF to determine this habitat. ELC Community Series providing a thermal cover component for a deer yard would include; FOM, FOC, SWM and SWC. Or these ELC Ecosites; CUP2, CUP3, FOD3, CUT	NO. Deer yards have not been previously identified on the subject property. Coniferous plantation (White Spruce [*Picea glauca*]and Eastern White Pine [*Pinus strobus*]) is present on adjacent lands to the south of the subject property but is too dense (i.e., has never been thinned) to support wintering deer.

*as per Significant Wildlife Habitat Criteria Schedules for Ecoregion 6E (January 2015)

Ecoregion 6E	Candidate Significant Wildlife Habitat*	ELC Ecosites	Do site-specific attributes assessed from available information sources and the site investigations indicate that candidate SWH may be present on the subject property or adjacent lands?
Deer Winter Congregation Areas	Woodlots will typically be >100 ha in size. Woodlots <100 ha may be considered as significant based on MNRF studies or assessment. Deer movement during winter in the southern areas of Ecoregion 6E are not constrained by snow depth, however deer will annually congregate in large numbers in suitable woodlands. If dder are constrained by snow depth refer to the Deer Yarding Area habitat within Table 1.1 of this Schedule. Large woodlots > 100 ha and up to 1500 ha are known to be used annually by densities of deer that range from 0.1-1.5 deer/ha. Woodlots with high densities of deer due to artificial feeding are not significant.	All Forested Ecosites with these ELC Community Series; FOC , FOM, FOD, SWC, SWM, SWD . Conifer plantations much smaller than 50 ha may also be used.	NO. Deer yards have not been previously identified on the subject property. Coniferous plantation (White Spruce [*Picea glauca*]and Eastern White Pine [*Pinus strobus*]) is present on adjacent lands to the south of the subject property but is too dense (i.e., has never been thinned) to support wintering deer.
Rare Vegetation Communities			
Cliffs and Talus Slopes	A Cliff is vertical to near vertical bedrock >3m in height. A Talus Slope is rock rubble at the base of a cliff made up of coarse rocky debris	Any ELC Ecosite within Community Series: TAO, TAS, TAT, CLO, CLS, CLT	NO. Cliffs and talus slopes are absent from the subject property based on the site investigation.
Sand Barren	Sand Barrens typically are exposed sand, generally sparsely vegetated and caused by lack of moisture, periodic fires and erosion. They have little or no soil and the underlying rock protrudes through the surface. Usually located within other types of natural habitat such as forest or savannah. Vegetation can vary from patchy and barren to tree covered but less than 60%.	ELC Ecosites: SBO1, SBS1, SBT1 Vegetation cover varies from patchy and barren to continuous meadow (SBO1), thicket-like (SBS1), or more closed and treed (SBT1). Tree cover always < 60%.	NO. Flora characteristic of sand barrens are absent based on the three-season vascular plant inventory.
Alvar	An alvar is typically a level, mostly unfractured calcareous bedrock feature with a mosaic of rock pavements and bedrock overlain by a thin veneer of soil. The hydrology of alvars may be complex, with alternating periods of inundation and drought. Vegetation cover varies from sparse lichen-moss associations to grasslands and shrublands and comprising a number of characteristic or indicator plant. Undisturbed alvars can be phyto- and zoogeographically diverse, supporting many uncommon or are relict plant and animals species. Vegetation cover varies from patchy to barren with a less than 60% tree cover.	ALO1, ALS1, ALT1, FOC1, FOC2, CUM2, CUS2, CUT2-1, CUW2 Five Alvar Indicator Species: 1) Carex crawei, 2) Panicum philadelphicum, 3) Eleocharis compressa, 4) Scutellaria parvula, 5) Trichostema brachiatum These indicator species are very specific to Alvars within Ecoregion 6E	NO. Flora characteristic of alvars are absent based on the three-season vascular plant inventory.
Old Growth Forest	Old Growth forests are characterized by exhibiting the greatest number of old-growth characteristics, such as mature forest with large trees that has been undisturbed. Heavy mortality or turnover of overstorey trees resulting in a mosaic of gaps that encourage development of a multi-layered canopy and an abundance of snags and downed woody debris.	Forest Community Series: FOD, FOC, FOM, SWD, SWC, SWM	YES. Given the presence of large diameter trees of late-successional species (e.g., Sugar Maple, Ironwood, American Beech), the extension of the Significant Woodland onto the subject property (and the remainder of this feature on adjacent lands) may be considered an old-growth forest.
Savannah	A Savannah is a tallgrass prairie habitat that has tree cover between 25–60%.	TPS1, TPS2, TPW1, TPW2, CUS2	NO. Flora characteristic of savannahs are absent based on the three-season vascular plant inventory.
Tallgrass Prairie	Tallgrass Prairie is an open vegetation with less than < 25% tree cover, and dominated by prairie species, including grasses.	TPO1, TPO2	NO. Flora characteristic of tallgrass prairies are absent based on the three-season vascular plant inventory.
Other Rare Vegetation Community	ELC Ecosite codes that have the potential to be a rare ELC Vegetation Type as outlined in Appendix M. The OMNRF/NHIC will have up to date listing for rare vegetation communities.	Provincially Rare S1, S2 and S3 vegetation communities are listed in Appendix M of the SWHTG. Any ELC Ecosite Code that has a possible ELC Vegetation Type that is Provincially Rare is Candidate SWH.	NO. Rare vegetation communities were not documented during the site investigation.

*as per Significant Wildlife Habitat Criteria Schedules for Ecoregion 6E (January 2015)

Ecoregion 6E	Candidate Significant Wildlife Habitat*	ELC Ecosites	Do site-specific attributes assessed from available information sources and the site investigations indicate that candidate SWH may be present on the subject property or adjacent lands?
Specialized Habitats for Wildlife			
Waterfowl Nesting Area	A waterfowl nesting area extends 120 m from a wetland (> 0.5 ha) or a cluster of 3 or more small (<0.5 ha) wetlands within 120 m of each individual wetland where waterfowl nesting is known to occur. Upland areas should be at least 120 m wide so that predators such as racoons, skunks, and foxes have difficulty finding nests. Wood Ducks, Bufflehead, Common Goldeneye and Hooded Mergansers utilize large diameter trees (>40cm dbh) in woodlands for cavity nest sites.	All upland habitats located adjacent to these wetland ELC Ecosites are Candidate SWH: MAS1, MAS2, MAS3, SAS1, SAM1, SAF1, MAM1, MAM2, MAM3, MAM4, MAM5, MAM6, SWT1, SWT2, SWD1, SWD2, SWD3, SWD4 Note: includes adjacency to provincially Significant Wetlands	NO. Open water wetlands that could provide nesting habitat for waterfowl are absent from the subject property and adjacent lands.
Bald Eagle and Osprey Nesting, Foraging and Perching Habitat	Nests are associated with lakes, ponds, rivers or wetlands along forested shorelines, islands, or on structures over water. Osprey nests are usually at the top a tree whereas Bald Eagle nests are typically in super canopy trees in a notch within the tree's canopy. Nests located on man-made objects are not to be included as SWH (e.g. telephone poles and constructed nesting platforms)	ELC Forest Community Series: FOD, FOM, FOC, SWD, SWM and SWC directly adjacent to riparian areas – rivers, lakes, ponds and wetlands.	NO. Stick nests were not documented on the subject property during the site investigation. Hydrologic features with abundant open water (e.g., lakes, ponds, large rivers, etc.) are absent from the subject property and adjacent lands.
Woodland Raptor Nesting Habitat	All natural or conifer plantation woodland/forest stands >30ha with >10ha of interior habitat. Interior habitat determined with a 200m buffer. In disturbed sites, nests may be used again, or a new nest will be in close proximity to old nest.	May be found in all forested ELC Ecosites. May also be found in SWC, SWM, SWD and CUP3.	NO. Although potential woodland raptor nesting habitat is present in the Significant Woodland, no stick nests were documented during site investigations. Trees with cavities suitable to function as nesting habitat for owls were also documented in the Significant Woodland.
Turtle Nesting Areas	Best nesting habitat for turtles are close to water and away from roads and sites less prone to loss of eggs by predation from skunks, raccoons or other animals. For an area to function as a turtle nesting area, it must provide sand and gravel that turtles are able to dig in and are located in open, sunny areas. Nesting areas on the sides of municipal or provincial road embankments and shoulders are not SWH. Sand and gravel beaches adjacent to undisturbed shallow weedy areas of marshes, lakes, and rivers are most frequently used.	Exposed mineral soil (sand or gravel) areas adjacent (<100m) or within the following ELC Ecosites: MAS1, MAS2, MAS3, SAS1, SAM1, SAF1, BOO1	NO. The subject property does not contain features that are suitable to function as nesting habitat for turtles (e.g., exposed coarse mineral soil or gravel).
Seeps and Springs	Any forested area (with <25% meadow/field/pasture) within the headwaters of a stream or river system. Seeps and springs are important feeding and drinking areas especially in the winter will typically support a variety of plant and animal species.	Seeps/Springs are areas where groundwater comes to the surface. Often they are found within headwater areas within forested habitats. Any forested Ecosite within the headwater areas of a stream could have seeps/springs.	**YES.** Although groundwater studies that assess the verticality of groundwater gradients have not yet been conducted, groundwater contributions to both the James Foley Drain and western watercourse are inferred by abundant Watercress observed during site investigations. Forested sections of both watercourses just south of the subject property are likely to contain seeps or springs.
Amphibian Breeding Habitat (Woodland)	Presence of a wetland or pond >500 m^2 (about 25 m diameter) within or adjacent (within 120m) to a woodland (no minimum size). The wetland, lake or pond and surrounding forest, would be the Candidate SWH. Some small wetlands may not be mapped and may be important breeding pools for amphibians. Woodlands with permanent ponds or those containing water in most years until mid-July are more likely to be used as breeding habitat.	All Ecosites associated with these ELC Community Series; FOC, FOM, FOD, SWC, SWM, SWD Breeding pools within the woodland or the shortest distance from forest habitat are more significant because they are more likely to be used due to reduced risk to migrating amphibians.	**YES.** Although anuran calling surveys confirmed that no amphibian breeding is occurring in woodlands on the subject property, calling was heard on adjacent lands.

*as per Significant Wildlife Habitat Criteria Schedules for Ecoregion 6E (January 2015)

Ecoregion 6E	Candidate Significant Wildlife Habitat*	ELC Ecosites	Do site-specific attributes assessed from available information sources and the site investigations indicate that candidate SWH may be present on the subject property or adjacent lands?
Amphibian Breeding Habitat (Wetlands)	Wetlands and pools (including vernal pools) >500 m^2 (about 25 m diameter), supporting high species diversity are significant; some small or ephemeral habitats may not be identified on MNRF mapping and could be important amphibian breeding habitats. Presence of shrubs and logs increase significance of pond for some amphibian species because of available structure for calling, foraging, escape and concealment from predators. Bullfrogs require permanent water bodies with abundant emergent vegetation.	ELC Community Classes SW, MA, FE, BO, OA and SA. Typically these wetland ecosites will be isolated (>120m) from woodland ecosites, however larger wetlands containing predominantly aquatic species (e.g. Bull Frog) may be adjacent to woodlands.	**YES.** Although anuran calling surveys confirmed that no amphibian breeding is occurring in wetlands on the subject property, calling was heard on adjacent lands.
Woodland Area-Sensitive Bird Breeding Habitat	Habitats where interior forest breeding birds are breeding, typically large mature (>60 yrs old) forest stands or woodlots >30 ha. Interior forest habitat is at least 200 m from forest edge habitat.	All Ecosites associated with these ELC Community Series; FOC, FOM, FOD, SWC, SWM, SWD.	**YES.** Although breeding bird surveys did not indicate the presence of area sensitive interior forest birds, it is likely that such species are present in the Significant Woodland on adjacent lands.

*as per Significant Wildlife Habitat Criteria Schedules for Ecoregion 6E (January 2015)

Ecoregion 6E	Candidate Significant Wildlife Habitat*	ELC Ecosites	Do site-specific attributes assessed from available information sources and the site investigations indicate that candidate SWH may be present on the subject property or adjacent lands?
Habitat for Species of Conservation Concern (not including Endangered or Threatened Species)			
Marsh Bird Breeding Habitat	Nesting occurs in wetlands. All wetland habitat is to be considered as long as there is shallow water with emergent aquatic vegetation present. For Green Heron, habitat is at the edge of water such as sluggish streams, ponds and marshes sheltered by shrubs and trees. Less frequently, it may be found in upland shrubs or forest a considerable distance from water.	MAM1, MAM2, MAM3, MAM4, MAM5, MAM6, SAS1, SAM1, SAF1, FEO1, BOO1. For Green Heron: All SW, MA and CUM1 sites.	NO. Although American Bittern *(Botaurus lentiginosus*) was observed on the subject property during breeding bird surveys, suitable habitat for marsh breeding birds is absent from the subject property. Adjacent lands may contain suitable areas.
Open Country Bird Breeding Habitat	Large grassland areas (includes natural and cultural fields and meadows) >30 ha Grasslands not Class 1 or 2 agricultural lands, and not being actively used for farming (i.e., no row cropping or intensive hay or livestock pasturing in the last 5 years). Grassland sites considered significant should have a history of longevity, either abandoned fields, mature hayfields and pasturelands that are at least 5 years or older. The Indicator bird species are area sensitive requiring larger grassland areas than the common grassland species.	CUM1, CUM2	NO. Although indicators of open country breeding bird habitat were observed as "probable" breeders on the subject property - including Savannah Sparrow and Grasshopper Sparrow - such habitats are under cultivation and are thus exempted from designation as candidate significant wildlife habitat.
Shrub/Early Successional Bird Breeding Habitat	Large field areas succeeding to shrub and thicket habitats >30 ha in size. Shrub land or early successional fields, not class 1 or 2 agricultural lands, not being actively used for farming (i.e., no row-cropping, haying or livestock pasturing in the last 5 years). Shrub thicket habitats (>10 ha) are most likely to support and sustain a diversity of these species. Shrub and thicket habitat sites considered significant should have a history of longevity, either abandoned fields or lightly grazed pasturelands.	CUT1, CUT2, CUS1, CUS2, CUW1, CUW2. Patches of shrub ecosites can be complexed into a larger habitat for some bird species.	NO. Indicators of Shrub/early successional bird breeding habitat were not observed on the subject property during breeding bird surveys.
Terrestrial Crayfish	Wet meadow and edges of shallow marshes (no minimum size) should be surveyed for terrestrial crayfish. Constructs burrows in marshes, mudflats, meadows, the ground can't be too moist. Can often be found far from water. Both species are a semi-terrestrial burrower which spends most of its life within burrows consisting of a network of tunnels. Usually the soil is not too moist so that the tunnel is well formed.	MAM1, MAM2, MAM3, MAM4, MAM5, MAM6, MAS1, MAS2, MAS3, SWD, SWT, SWM, CUM1 with inclusions of above meadow marsh or swamp ecosites can be used by terrestrial crayfish.	NO. "Chimneys" associated with terrestrial crayfish were not observed during site investigations.
Special Concern and Rare Wildlife Species	When an element occurrence is identified within a 1 or 10 km grid for a Special Concern or Provincially Rare species; linking candidate habitat on the site needs to be completed to ELC Ecosites	All Special Concern and Provincially Rare (S1-S3, SH) plant and animal species. All plant and animal element occurrences (EO) within a 1 or 10 km grid. Older element occurrences were recorded prior to GPS being available, therefore location information may lack accuracy.	**YES.** See **Appendix 8**.
Animal Movement Corridors			

*as per Significant Wildlife Habitat Criteria Schedules for Ecoregion 6E (January 2015)

Ecoregion 6E	Candidate Significant Wildlife Habitat*	ELC Ecosites	Do site-specific attributes assessed from available information sources and the site investigations indicate that candidate SWH may be present on the subject property or adjacent lands?
Amphibian Movement Corridors	Movement corridors between breeding habitat and summer habitat. Movement corridors must be determined when Amphibian breeding habitat is confirmed as SWH from Table 1.2.2 (Amphibian Breeding Habitat –Wetland) of this Schedule.	Corridors may be found in all ecosites associated with water. Corridors will be determined based on identifying the significant breeding habitat for these species (see above).	**YES**. Amphibian movement corridors are assumed to exist between the western watercourse and extension of the Significant Woodland on the subject property.
Deer Movement Corridors	Corridors may be found in all forested ecosites. A Project Proposal in Stratum II Deer Wintering Area has potential to contain corridors.	Movement corridor must be determined when Deer Wintering Habitat is confirmed as SWH (see above). A deer wintering habitat identified by the OMNRF as SWH will have corridors that the deer use during fall migration and spring dispersion. Corridors typically follow riparian areas, woodlots, areas of physical geography (ravines, or ridges).	NO. The subject property is not located between any identified or potential deer yarding areas or winter deer concentration areas. Given this, deer movement corridors are absent from the subject property.

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