



**Environmental Impact Study
125 Arthur Street West
Town of Thornbury**

Prepared for:
C.F. Crozier & Associates Consulting Engineers
&



Prepared by:
Azimuth Environmental
Consulting, Inc.

March 2022

AEC 19-376



Environmental Assessments & Approvals

March 8, 2022

AEC 19-376

C.F. Crozier & Associates Consulting Engineers
40 Huron Street, Suite 300
Collingwood, Ontario
L9Y 4R3

Attention: Shelley Hensel, Special Projects Administrator

Re: **Environmental Impact Study for 125 Arthur Street West,
Town of Thornbury, Town of The Blue Mountains, Grey County.**

Dear Ms. Hensel:

Azimuth Environmental Consulting, Inc. was retained to provide a Scoped Environmental Impact Study for a development ("Blue Meadows") proposed for the above noted lands. The purpose of this report is to provide the Grey Sauble Conservation Authority with an understanding of natural environmental conditions and potential for impacts related to the proposed re-development on significant natural heritage features and functions of the property and adjacent lands. This report also documents the natural environmental features present within the property and adjacent lands with regard to Species at Risk and their habitats.

If you have questions or require additional information please do not hesitate to contact the undersigned.

Yours truly,
AZIMUTH ENVIRONMENTAL CONSULTING, INC.

David d'Entremont, H. B.Sc.
Terrestrial Ecologist



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1.0 INTRODUCTION

Azimuth Environmental Consulting, Inc. (Azimuth) was retained by C.F. Crozier & Associates (Crozier; Collingwood) on behalf of Blue Meadows Inc. to complete an Environmental Impact Study (EIS) pertaining to the proposed development of lands at 125 Arthur Street West in the Town of Thornbury, Township of The Blue Mountains (Township), County of Grey (County; Figure 1).

It is our understanding that an EIS is required due to the presence of natural heritage features on adjacent lands and as a portion of the subject lands are mapped as “regulated” by the Grey Sauble Conservation Authority (GSCA) under Ontario Regulation (O. Reg.) 151/06.

The purpose of this EIS is to identify Key Natural Heritage Features (KNHFs) associated with the subject and adjacent lands, and to assess the impact of the proposed development on the identified KNHFs. Further, this EIS addresses potential habitat of species listed under Ontario’s *Endangered Species Act*, 2007 (ESA).

2.0 PLANNING CONTEXT

2.1 Provincial Policy Statement

The Provincial Policy Statement (PPS 2020) outlines policies related to natural heritage features (Section 2.1). Ontario's *Planning Act*, 1990 requires that planning decisions shall be consistent with the PPS. According to the PPS, development and site alteration shall not be permitted in:

- *Significant wetlands* in Ecoregions 5E, 6E and 7E; and
- *Significant coastal wetlands*.

Similarly, Section 2.1.5 of the PPS states that, unless it has been demonstrated that there will be no negative impacts on the natural features or their ecological functions, development and site alteration shall not be permitted within:

- a) *significant wetlands* in the Canadian Shield north of Ecoregions 5E, 6E; and 7E;
- b) *significant woodlands* in Ecoregions 6E; and 7E;
- c) *significant valleylands* in Ecoregions 6E; and 7E;
- d) *significant wildlife habitat*;
- e) *significant areas of natural and scientific interest*; and
- f) *coastal wetlands* in Ecoregions 5E, 6E; and 7E that are not subject to policy 2.1.4(b)



It is ultimately the responsibility of the Province and/or the Municipality to designate areas identified within Section 2.1.4 and 2.1.5 of the PPS as ‘significant’. The Natural Heritage Reference Manual (MNR, 2010) and Significant Wildlife Habitat (SWH) assessment guidelines for Ecoregion 6E (MNRF, 2015) were used to identify SWH functions attributable to the subject and adjacent lands.

Section 2.1.6 of the PPS states that development and site alteration is not permitted in fish habitat except in accordance with federal and provincial requirements.

Section 2.1.7 of the PPS states that development and site alteration shall not be permitted in habitat of Threatened and Endangered species, except in accordance with provincial and federal requirements.

As per Section 2.1.8 of the PPS, no development and site alteration will be permitted on lands adjacent to 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 there will be no negative impacts on the natural features and ecological functions.

2.2 Endangered Species Act

Ontario’s *Endangered Species Act*, 2007 (ESA) provides regulatory protection to Extirpated, Endangered and Threatened species prohibiting harassment, harm and/or killing of individuals and destruction of their habitats. Habitat is broadly characterized within the ESA as the area prescribed by a regulation as the habitat of the species or an area on which the species depends, directly or indirectly, to carry on its life processes including reproduction, rearing of young, hibernation, migration or feeding.

The various schedules of the ESA included under O. Reg. 230/08 identify Species at Risk (SAR) in Ontario. These include species listed as Extirpated, Endangered, Threatened and Special Concern. As noted above, only species listed as Extirpated, Endangered and Threatened receive protection from harm and destruction to habitat on which they depend. Species designated as Special Concern may receive protection under the SWH provisions of the PPS.

2.3 Federal Fisheries Act

On August 28, 2019, provisions of the *Fisheries Act* came into force that included new protections for fish and fish habitat in the form of standards, codes of practice, and guidelines for projects near water. The *Act* provides protection against the ‘death of fish,



other than by fishing’, (Section 34.4(1)) and the ‘harmful alteration, disruption or destruction of fish habitat’, (Section 35(1)), otherwise known as HADD.

If the death of fish, and/or HADD is likely to result from a project, the project requires an authorization from Fisheries and Oceans Canada (DFO) as per Paragraph 34.4(2)(b) or 35(2)(b) of the *Fisheries Act* Regulations. The fish and fish habitat protection provisions of the *Fisheries Act* are documented in the Fish and Fish Habitat Protection Policy Statement, which outlines how DFO will implement these provisions. The process of fisheries review is currently being revised as DFO unveils codes of practice. In the meantime, projects are being reviewed to determine potential impacts to fish and fish habitat, mitigative strategies to eliminate impacts, and determine approval requirements. Projects that take place near or in water that have the potential to impact fish and fish habitat, after taking measures to avoid and mitigate impacts, may require a permit from DFO.

2.4 The County of Grey Official Plan

Within the County of Grey Official Plan (2019), the property is within a “Primary Settlement Area” and adjacent lands to the west are identified as “Hazard Lands” [Secondary Schedules: Land Use Types (Map 2a); Appendix A]. According to Section 3.5.2, “Land use policies and development standards in areas designated Primary Settlement Areas will be in accordance with local official plans and/or secondary plans.” As per Section 7.2, “New development shall generally be directed away from Hazard lands.”

Woodland occurs along the western property boundary and as such, the following policy is relevant:

Section 7.4, In order to be considered significant, a woodland shall be either greater than or equal to forty (40) hectares in size outside of settlement areas, or greater than or equal to four (4) hectares in size within settlement area boundaries. If a woodland fails to meet the size criteria outside a settlement area, a woodland can also be significant if it meets any two of the following three criteria:

- *Proximity to other woodlands i.e. if a woodland was within 30 metres of another significant woodland, or*
- *Overlap with the boundaries of a Provincially Significant Wetland and Significant Coastal Wetlands, Core Area, Significant Valleylands, or a Significant Areas of Natural and Scientific Interest, or*
- *Interior habitat of greater than or equal to eight (8) hectares, with a 100 metre interior buffer on all sides.*



2.5 The Town of The Blue Mountains Official Plan

Within the Town of The Blue Mountains Official Plan ([OP]Town Official Plan; 2016) the property is designated as “Downtown Area” and “Community Living Area” and lands located adjacent to the western property boundary are identified as “Hazard” lands (Schedule A-2: Thornbury and Clarksburg; Appendix A). Constraint Mapping – OP Appendix 1 identifies Deer Wintering Areas associated with valleylands adjacent to the subject lands (Appendix A). As such, the following policies are relevant.

As per Section B3.1.3, permitted uses on lands designated Community Living Area include single detached dwellings, semi-detached dwellings, duplex dwellings, townhouses and apartment dwellings (and a number of other uses).

Section B3.3.3 outlines permitted uses on lands designated Downtown Area which include but are not limited to retail uses, service uses, business offices, recreational facilities, *etc.*

As per Section B5.2.1 of the Town Official Plan:

- a) “Development and site alteration shall not be permitted in habitat of endangered species and threatened species, significant wetlands and significant coastal wetlands.
- b) Development and site alteration shall not be permitted in:
 - i) significant woodlands;
 - ii) significant valleylands;
 - iii) significant wildlife habitat; and,
 - iv) significant areas of natural and scientific interest unless it has been demonstrated that there will be no negative impacts on the natural features or their ecological functions.
- c) Development and site alteration shall not be permitted in fish habitat except in accordance with Provincial and Federal requirements.

No development or site alteration shall be permitted on adjacent lands unless the ecological function of the adjacent lands has been evaluated and it has been demonstrated, through an Environmental Impact Study (EIS), that there will be no negative impact on the natural features or their ecological functions.”

Section B.5.4.2 f) states that “development will be setback from the top of bank of all slopes and ravines having a slope of 3:1 or greater, in accordance with the requirements of the appropriate Conservation Authority.”



2.6 Grey Sauble Conservation Authority

Portions of the property are within lands regulated by the GSCA due to the presence of a watercourse and unevaluated wetland on adjacent lands (Appendix A). As such, portions of the property are subject to O. Reg. 151/06 and hence approvals are required from the GSCA prior to site grading or development within the regulation limit.

3.0 STUDY APPROACH

The subject lands are located in Ecoregion 6E between Arthur Street West (Highway 26) and Alice Street West (Figure 2). The lands cover approximately 5.6ha.

Consultation with the GSCA occurred to confirm the Terms of Reference for the EIS (Appendix B).

3.1 Background Data

A review of background documents provided information on site characteristics, habitat, wildlife, rare species and communities, and general cultural/historic aspects of the property and adjacent lands. This background data review included:

- Aerial images (Google, County of Simcoe, VuMap);
- The Ministry of Northern Development, Mines, Natural Resources and Forestry (NDMNRF) Natural Heritage Information Center (NHIC):
 - Get Natural Heritage Information page (NDMNRF, 2022a);
 - Make-A-Map: Natural Heritage Areas application (NDMNRF, 2022b);
- iNaturalist data [website];
- Atlas of the Breeding Birds of Ontario (OBBA; Cadman et al., 2007);
- eBird data [website];
- Ontario Butterfly Atlas [website];
- Ontario Reptile and Amphibian Atlas [website];
- Atlas of the Mammals of Ontario (Dobbyn, J. 1994);
- Toporama Interactive Mapping [website];
- Land Information Ontario Mapping [website];
- Fisheries and Oceans Canada (DFO) SAR Interactive Mapping [website];
- NDMNRF Fish ON-Line Interactive Mapping [website]; and
- Ministry of the Environment, Conservation and Parks (MECP) Species at Risk Ontario list [website].



3.2 Vegetation Community Mapping

Vegetation community types were classified using Ecological Land Classification (ELC) methods (Lee 2008, Lee *et al.* 1998) based on a field survey completed on June 30, 2020 (Scott Martin).

A summer plant survey was conducted as a roving search to compile a list of species by ELC community. Special attention was given to SAR plants that could potentially be on the property, such as Butternut (Endangered) which is protected under the ESA.

3.3 Fisheries Assessment

Fish habitat characteristics of Little Beaver Creek and drainage features on the subject lands were evaluated during an early spring site visit on March 27, 2020 (Mike Gillespie).

A fish information request was submitted to the NDMNRF (Midhurst District) on December 18, 2020, with a response received on December 21, 2020 (Appendix C).

3.4 Wildlife Surveys

3.4.1 Deer Wintering Habitat

As the Town of The Blue Mountains OP identifies Deer Wintering Areas associated with valleylands adjacent to the subject lands a deer winter habitat survey was completed during late winter when sign of winter deer use would be most apparent (March 11, 2020, temperature -1°C; Beaufort Wind Scale: 0; precipitation: none; cloud cover: 100%; surveyors: Jim Broadfoot and Alexa Pompilio). The survey included assessment of evidence of winter deer use of the subject and adjacent lands by deer - tracks, trails, pellet group accumulations, browsing of shrubs/trees, etc.

3.4.2 Birds

Three dawn breeding bird surveys were conducted at two point count stations on June 5, June 17 and June 30, 2020 (Figure 2). Point counts were five minutes in duration and were based on the protocol of the Ontario Breeding Bird Atlas Guide for Participants (OBBA, 2001), and adapted from the Bobolink Survey Methodology (MNR, Aurora District 2013). Survey stations were established to provide full coverage of the property and adjacent lands, with emphasis on meadow habitat. Breeding evidence was assessed using OBBA criteria. All birds seen or heard were identified to species and counted.

3.4.3 Bats

A bat exit survey was conducted on July 23, 2020 (duration: 8:26 – 9:26pm; temperature 21°C; Beaufort Wind Scale: 1; precipitation: none; cloud cover: 10%; sunset: 8:56pm;



surveyors: A. Pompilio, Scott Tarof, S. Martin and David d'Entremont). Two ecologists surveyed the house and garage accessed off Arthur Street West (survey station 'A'), and two other ecologists surveyed a second house and garage accessed off Lansdowne Street South (survey station 'B', Figure 2). The four structures on the property were inspected in advance of the survey (same evening) to determine potential bat access points for careful scrutiny during exit surveys. Exit surveys were completed between 30 minutes before sunset until 30 minutes after sunset consistent with standard methods.

Access points identified during the preliminary inspection were monitored using Wildlife Acoustics Echometer Touch 2 Pro Ultrasonic Smartphone Modules (one unit at survey station 'A'; two units at survey station 'B') to allow recording of bat calls. Additionally, passive acoustic monitors (SM3 Wildlife Acoustics with external ultrasonic microphones) were used to record bat activity (one unit at survey station A and two units at survey station B, Figure 2).

3.5 Species at Risk Assessment

A habitat based assessment of SAR having potential to occur locally based on background data sources and information provided by the MECP to an information request submitted March 23, 2020 (response received October 14, 2020) (Appendix C).

4.0 EXISTING CONDITIONS

4.1 Land Use

4.1.1 On-site Land Use

The subject lands contain two single-detached dwellings and associated garages. The dwelling in the central section of the property is vacant. Portions of the property are regularly mowed as shown on Figure 2.

4.1.2 Adjacent Land Use

Adjacent land uses include residential, recreational and commercial to the north, east and south. Lands to the west are primarily agricultural. Georgian Bay is approximately 475m to the northeast.

4.2 General Topography

The tableland portion of the subject lands is generally flat with an elevation of approximately 195 metres above sea level (masl). The northern portion of the subject lands and adjacent lands to the north contain a valley feature associated with Little Beaver Creek. As shown on Figure 2, a top of stable slope has been defined for the valley along the northern limit of the property. The valley slope presents an elevation



change of approximately 6m between tablelands of the subject lands and bottomlands of adjacent lands.

4.3 Vegetation Community Mapping

Figure 2 identifies vegetation communities identified on/adjacent to the subject lands as described in Table 1.

Table 2 provides a list of vascular plants by vegetation community. No Butternut (Endangered) or Black Ash (Endangered) trees were observed on or adjacent to the subject lands. None of the plant species are designated as SAR or considered provincially rare (*i.e.*, not S rank 1, 2, 3 or H). A high proportion of the plant species (45%) are non-native.

4.4 Wetlands

An unevaluated wetland associated with Little Beaver Creek is identified in background mapping on adjacent lands to the north within the valley bottomlands associated with Little Beaver Creek as shown on Figure 2.

4.5 Watercourse Assessment

The subject lands are located within the Little Beaver Creek Watershed (GSCA, 2018). As per Figure 2, the majority of the property is comprised of tablelands adjacent to valleylands containing Little Beaver Creek (Figure 2).

4.5.1 Little Beaver Creek

Little Beaver Creek flows in a general southwest to northeast direction, extending onto/abutting the property in two locations (Figure 2). The creek flows into Georgian Bay approximately 475m downstream of Arthur Street West.

The creek displays a meandering profile with riffle/pool/run morphology. Large woody debris is abundant within the channel, and riffles are composed of small to large cobble with coarse gravel. Shading of the channel from surrounding overstory trees is relatively high, particularly along the outer bends of pool features where evidence of erosion was observed. No in-stream vegetation, including watercress, was noted during field evaluation.

Field measurements on March 27, 2020 determined the channel has an average bankfull width of 6.1m and average bankfull depth of 0.63m. Riffles were, on average, 3.2m wide and 0.13m deep, while pools possessed water depths of 0.5-1.0m. Average water velocities and temperatures of 0.76m/s and 3.4°C (air temperature = 0°C) were recorded.



The creek flows within a well-defined corridor with a distinct floodplain and transition to tableland. The floodplain displayed evidence of recent silt/sand deposition during site evaluation, indicating periodic high flows resulting from snowmelt.

No fish were seen during the site visit, partly owing to turbid conditions preventing observation in pools. According to the NDMNRF, recent Little Beaver Creek in close proximity to the subject lands identified a community of spring spawning fish species including Creek Chub, Brook Stickleback, White Sucker, Rainbow Trout, Blacknose Dace, Common Shiner and Fathead Minnow (Appendix C). The MNRF assesses the thermal regime as “cool water” (Appendix C). None of these species is a SAR or considered provincially rare. There are no records of aquatic SAR for Little Beaver Creek (DFO, 2021).

4.5.2 Manmade Drainage Features

Tableland drainage from the subject lands to the Little Beaver Creek valleylands was noted by Azimuth on March 27, 2020. This drainage was conveyed by manmade ditches as shown in Figure 2. These features contained abundant dead herbaceous vegetation and lacked coarse substrate. They had average wetted measurements of 0.75m (width) and 0.05m (depth). Trickle flow was noted within them. To the west, no drainage pathway was observed within the valleylands, although trickle flow was observed in the vicinity of Little Beaver Creek at the location indicated on Figure 2 (orange line in valleylands). This flow may have originated on the tablelands.

Based on minimal early spring flows, ditches on the property are considered seasonal features that only convey water after snowmelt/heavy rain events.

4.6 Wildlife Surveys

4.6.1 Deer Wintering Habitat

The results of the late winter survey revealed no signs of winter deer use of the subject or adjacent valleylands.

4.6.2 Birds

A total of 28 bird species were detected on/adjacent to the subject lands, with findings and survey conditions reported in Table 3. None of the bird species are designated as SAR or considered provincially rare.



4.6.3 Bats

Three (3) bat passes were recorded incidentally on the acoustic monitors during exit surveys between all survey stations. Calls were relatively weak and poorly rendered (likely due to distance of bat(s) from monitors), however the acoustic profile strongly suggested either Hoary Bat, Big Brown Bat and/or Silver-haired Bat, with Big Brown Bat being most likely due to habitat/context. These bats may have been foraging over the subject lands or adjacent lands. No SAR bats were detected.

4.7 Species at Risk Assessment

4.7.1 Endangered & Threatened

Table 4a provides an assessment of Endangered and Threatened species identified locally in background data. No Endangered or Threatened species were observed on/adjacent to the subject lands and none of the Endangered/Threatened species identified locally have potential to occur on the property based on habitat.

4.7.2 Special Concern

Table 4b provides an assessment of Special Concern species identified locally in background data. No Special Concern species were observed on/adjacent to the subject lands.

5.0 NATURAL HERITAGE FEATURES AND FUNCTIONS

5.1 Wetlands

The results of field studies revealed no wetlands on the tableland portion of the subject lands. Adjacent valleylands contain unevaluated wetlands as mapped by the province. These wetlands are not evaluated as provincially significant.

Wetlands – adjacent lands, unevaluated.

5.2 Woodlands

Woodlands occur within the valleylands and extend upslope and onto the property as shown on Figure 2. The continuous area of woodland associated with the subject and adjacent lands covers approximately 1.8ha (Appendix A).

This area of woodland is not mapped as Significant Woodland within the County Official Plan mapping (Appendix A) and does not meet the size criteria to be considered significant for woodlands in settlement areas (*i.e.*, the feature is smaller than 4ha). Further, the woodland is not within 30m of another significant woodland, does not overlap boundaries with another significant feature (*i.e.*, PSW, Significant Valleyland,



ANSI), and does not consist of interior habitat (County Official Plan Section 7.4). The subject and adjacent lands do not contain Significant Woodlands.

5.3 Valleyland

Valleylands of the subject and adjacent lands are not mapped as Significant Valleyland within the County Official Plan (Appendix A). However, as the feature is prominent/associated with a watercourse and has a defined top of stable slope, it is considered a sensitive natural heritage feature for the purposes of impact assessment.

Valleylands – adjacent lands.

5.4 Watercourse

Little Beaver Creek provides direct coolwater fish habitat protected under federal *Fisheries Act*.

Ditches on the property were created historically to facilitate site drainage and provide no channel connection to Little Beaver Creek. They are ephemeral features not considered to function as fish habitat.

5.5 Significant Wildlife Habitat

The SWH criteria schedule for Ecoregion 6E (MNRF 2015) identifies 38 SWH functions for consideration in this area of the province. The results of wildlife surveys completed and assessment of habitats present on and adjacent to the subject lands revealed no SWH functions attributable to the subject or adjacent lands.

6.0 PROPOSED DEVELOPMENT

As per Appendix D, development is proposed for the tableland portion of the subject lands, with the limit of the proposed lot fabric occurring outside of the 15m setback from the top of stable slope. Development includes a mix of residential and commercial land uses. The residential component will consist of 98 residential row houses, 18 commercial/residential townhouses, two commercial/residential buildings each with 2 floors of residential units above the commercial ground floor, as well as associated aboveground and underground parking (Appendix D). The mixed commercial/residential land use will be located in the northern third of the property, between Louisa Street West and Arthur Street/Hwy 26 (Appendix D).

An approach to functional servicing/Stormwater Management (FSSMR) has been prepared by Crozier (2022). Part of this plan involves the creation of three Stormwater



Management facilities (SWM; *i.e.* ponding areas), including one pond along the northwest edge of the limit of development (SWM #3) which would outlet into the valley towards Little Beaver Creek via a proposed storm sewer and outlet (Outlet #1) (Appendix D; Crozier, 2022). The outlet would consist of a headwall and riprap area within the meander belt of Little Beaver Creek. Detailed design of the storm sewer and outlet are not available at this time, however it is anticipated that the construction of these features will involve temporary vegetation clearing along the path of the storm sewer to accommodate excavation and construction, as well as clearing and installation of a permanent surface feature at the outlet location.

7.0 IMPACT ASSESSMENT

7.1 Wetlands

Unevaluated wetlands are confined to valleylands associated with Little Beaver Creek on adjacent lands. Therefore, the proposed development results in no direct impact to wetlands.

As the unevaluated wetlands are situated in the bottomlands of the valley, the hydrology of the wetlands is assumed to be governed primarily by surface water inputs conveyance within Little Beaver Creek and potentially ground water inputs derived from infiltration from the subject and adjacent lands. The proposed development results in no alterations to Little Beaver Creek and introduces limited amounts of impervious surfaces to the overall potential infiltration area associated with the watercourse/wetland, much of which is associated with farmland to the west of the settlement area. Therefore, the proposed development has limited to no capacity to impact the hydrology of adjacent wetlands and hence there will be no indirect impacts to wetland composition, structure or functions.

Due to the requirement to control surface water on the site in a post-development scenario, a storm sewer and outlet are proposed at the northeast end of the valley. The point of discharge is proposed within the meander belt of Little Beaver Creek, with Little Beaver Creek as the ultimate receiver (Appendix D). This feature will require construction and installation of features which likely occur within 30m of the unevaluated wetland, and therefore mitigation recommendations are proposed in Section 8.0. Provided that the recommendations in Section 8.0 are adhered to, no indirect impacts to unevaluated wetland are expected to occur as a result of the proposed development and SWM plan.



7.2 Valleyland

The lot fabric of the proposed development will occur outside of the top of stable slope and the associated 15m buffer as illustrated in Appendix D. As long as development (including both lot fabric and grading plans) remains outside of this 15m buffer zone, there is no expectation of direct impacts to valleylands as the result of the proposed residential/commercial development component of the plan.

Due to the requirement to control surface water on the site in a post-development scenario, a storm sewer and outlet are proposed at the northeast end of the valley. The point of discharge is proposed within the meander belt of Little Beaver Creek, with Little Beaver Creek as the ultimate receiver (Appendix D). This feature will require temporary vegetation clearing in Valleylands to accommodate excavation and construction equipment along the linear path of the proposed storm sewer and outlet through the THDM2-40, FODM4-11 and FOMM4-3 vegetation communities, as well as the permanent installation of surface features related to the outlet, including a headwall and rip-rap area. The path of the storm sewer is direct and crosses through the Valleyland features in a manner that requires minimal disturbance and minimal tree removal, and the majority of land clearance for excavation/construction is expected to be able to be re-vegetated following completion of site works (except for the necessary permanent outlet area).

Given that the proposed disturbance footprint of the storm sewer and outlet would occur within Valleylands as well as the 15m setback from the top of stable slope, mitigation recommendations are proposed in Section 8.0 to address potential negative indirect impacts resulting from development. Provided that the recommendations in Section 8.0 are adhered to, impacts to Valleylands resulting from the proposed development and SWM plan are expected to be minimal and mitigable.

7.3 Watercourse

Residential and commercial development proposed on tablelands on the property, including grading and lot lines, will occur over 30m from Little Beaver Creek. As per Section 7.2, a 15m setback from the stable top of slope of valleylands has been applied to lots on the northwest side of the property.

As per the Functional Servicing and Stormwater Management Report (Crozier, 2022), stormwater quantity and quality controls will be implemented on the property in accordance with Town, GSCA and MECP standards. The proposed site layout will result in approximately 1.84 hectares of land draining into Little Beaver Creek versus 1.68ha under pre-development conditions. Runoff from Street B, comprising approximately 0.83ha of the 1.84ha total area draining into the creek corridor post-development, will be



subject to water quality and quantity controls in the form of a dry pond (SWM Facility #3) (Appendix D; Crozier, 2022) and Jellyfish Filter (or equivalent) unit. At least 80% total suspended solids removal is anticipated to be achieved through these stormwater controls. Uncontrolled runoff from roofs and backyards in a 1.01ha area at the west side of the property will enter the Little Beaver Creek corridor via sheet flow post-development (Crozier, 2022). As this runoff does not originate on or traverse new paved surfaces, it is expected to be clean (Crozier, 2022). The post-development runoff rate from all areas (controlled and uncontrolled) draining to the creek will at least match the pre-development runoff rate on the property (Crozier, 2022).

Thermal mitigation measures are not outlined in the FSSMR (Crozier, 2022); however, impacts to the coolwater fish community in Little Beaver Creek are unlikely given that SWM Facility #3 will employ a ‘dry’ pond design without a permanent pool.

It is recommended that in future design stages, additional measures are considered on the west side of the property in order to further improve the quality of overland runoff entering the creek corridor. As outlined in Section 8.0, it is recommended that a landscape plan be implemented to restore the 15m setback to stable top of bank as a naturally vegetated buffer to the valleylands.

Provided the above recommendations are implemented, the proposed development setbacks and stormwater controls on the property are considered sufficient for the protection of Little Beaver Creek, and aquatic biota within it.

As per the FSSMR (Crozier, 2022), SWM Facility #3 is to outlet at a headwall proposed in the Little Beaver Creek floodplain by the northwest corner of the property (Appendix D). A rip rap swale extending from the headwall to the creek is also proposed. It is anticipated that this will result in temporary and permanent vegetation impacts in the Little Beaver Creek corridor. Works are also expected to occur near, and possibly within, regulated fish habitat as defined by the high-water elevation of the creek (approximated by the two-year flood elevation).

Site works on tablelands have the potential to impact fish and fish habitat in Little Beaver Creek through sediment impacts locally and downstream. If unmitigated, such impacts have the potential to result in the death of fish, and the “harmful alteration, disruption or destruction” of fish habitat, which are prohibited under Section 34.4(1) and Section 35(1) of the *Fisheries Act*. Provided standard Best Management Practices (BMPs) for land alteration and construction are implemented, temporary impacts to aquatic biota and habitat are mitigable. Recommended BMP’s include the preparation of an Erosion and Sediment Control (ESC) Plan prior to construction that outlines requirements for ESC



implementation and monitoring (particularly following rain events) throughout the life of the project.

Review of detailed designs of the proposed stormwater outlet in the creek floodplain is required to confirm areas of temporary and permanent vegetation clearing, requirements for in-water work and potential impacts to fish and fish habitat. Works near/in water should also be screened in accordance with DFO's 'Projects Near Water' review process to determine if submission to DFO for a *Fisheries Act* permit is required. Any in-water work required for the stormwater outlet is to adhere to fisheries timing restrictions for a coolwater fish community, which prohibit in-water work from occurring between March 15 and July 15 (DFO, 2013). All work in the floodplain/creek is to be suitably isolated, and completed 'in the dry'. Additional mitigation recommendations are provided in Section 8.0.

8.0 RECOMMENDATIONS

- Clear vegetation outside of the bird nesting and SAR bat season (generally defined as the time between April 1 and September 30 – *i.e.*, clear trees between October 1 and March 31);
- As part of the engineering design, prepare an ESC Plan to the satisfaction of the GSCA and Town of The Blue Mountains. As part of this plan, the following conditions should be included:
 - ESCs should be placed at the limit of the work area to prevent sediment-laden runoff or the accidental intrusion of machinery into adjacent natural areas;
 - All construction-related activities and grading should occur within the limit of the work area and should not extend beyond perimeter silt controls, which should be spacious enough to accommodate them;
 - Routine inspection of all ESCs should occur throughout construction, and any deficiencies identified should be corrected immediately;
 - Inspection and maintenance of ESCs should continue until soils are stabilized and development is complete;
 - Bare areas are to be stabilized with topsoil and seed or sod as soon as possible following construction;
 - Perimeter silt controls should also be installed around materials storage (e.g. soil stockpiles) on the property. Soil stockpiles should be sited away from the 15m setback from the top of bank;
 - Timing of construction should coincide with dryer periods to minimize the potential for transport of sediment and other deleterious substances that may result in negative impacts to natural heritage features/fish habitat;



- Any maintenance of machinery required during construction (including refuelling) should be completed over 30m from natural heritage features, and away from the 15m setback from the top of bank to prevent accidental spillage of deleterious substances; and,
 - The contractor is required to have a Spill Response Plan in place before the start of construction, and have a spill kit on site at all times in case of accidental spillage of deleterious substances. The contractor is required to report any spills to the Ontario Action Centre at 1-800-268-6060;
- Regarding the work area of the storm sewer and outlet that drain northwest from SWM Facility #3:
 - Work area should be minimized as much as possible to avoid unnecessary vegetation removal in Valleylands and lands adjacent to unevaluated wetlands, while still accommodating the space required for all equipment and personnel to operate;
 - When excavating the storm sewer trench, excavated topsoil in the top 0.5m should be set aside and stockpiled. When the storm sewer is being buried again, this topsoil should be put back to form the top ~0.5m of soil over top of the buried installed storm sewer; and,
 - An appropriate native seed mix should be seeded over top of exposed soils to stabilize/control erosion and support re-vegetation of the work zone following the completion of construction;
- Given that much of the 15m setback to stable top of slope is open land, prepare a landscape plan to restore the 15m setback area as a naturally vegetated buffer to the valleylands:
 - The plan should utilize native species of trees and shrubs, which should be allowed to grow into a natural, self-sustaining vegetation zone; and,
 - The plan should include tree and shrub plantings for the re-vegetated storm sewer work area northwest of SWM Facility #3, except in circumstances where woody plantings would interfere with engineered features;
- If in- or near-water work is required for the following is recommended for in- or near-water work if required for the proposed SWM Facility #3 outlet:
 - Work is to be completed outside of March 15 to July 15 in accordance with coolwater fisheries timing restrictions;
 - All work is to occur 'in the dry' and in isolation of flow;
 - Any dewatering required within an isolated work area is to discharge water to a filter bag (*i.e.*, envirobag or equivalent). Filter bags should be placed on flat, stable, vegetated ground, and, if possible, over 30m from Little Beaver Creek;
 - Outlet designs should include provisions for preventing erosion/scour in the creek floodplain, and creek bed/banks. Any requirement for stone



placement in fish habitat should use pre-washed rounded riverstone that is free of fine sediment;

- Under no circumstances is machinery permitted to enter fish habitat. Machinery usage should be minimized in the Little Beaver Creek floodplain for outlet channel construction to the extent possible;
- All disturbed areas in- or near- water are to be fully stabilized/restored post-construction; and,
- Detailed designs of all in- or near-water works should be reviewed by a qualified Fisheries Ecologist to fully assess potential impacts to fish/fish habitat, and determine potential permitting requirements under the *Fisheries Act*.

9.0 CONCLUSIONS

The residential/commercial component of the proposed development can be achieved with no direct impacts to significant/sensitive natural heritage features or functions of the subject and adjacent lands. However, this component of development has potential to indirectly impact valleylands, wetland and watercourse/fish habitat due to the requirement of a storm sewer and outlet by the functional servicing and SWM plan. The proposed natural heritage setback is considered sufficiently large to protect valleylands, and natural heritage features including fish habitat. Provided that the recommendations of Section 8.0 are adhered to, negative indirect impacts of the proposed development on wetlands and valleylands are expected to be minimal and mitigable. The proposed stormwater outlet in the Little Beaver Creek floodplain requires further fisheries screening at a detailed design stage to fully assess potential impacts to fish/fish habitat, and confirm potential *Fisheries Act* permitting requirements.



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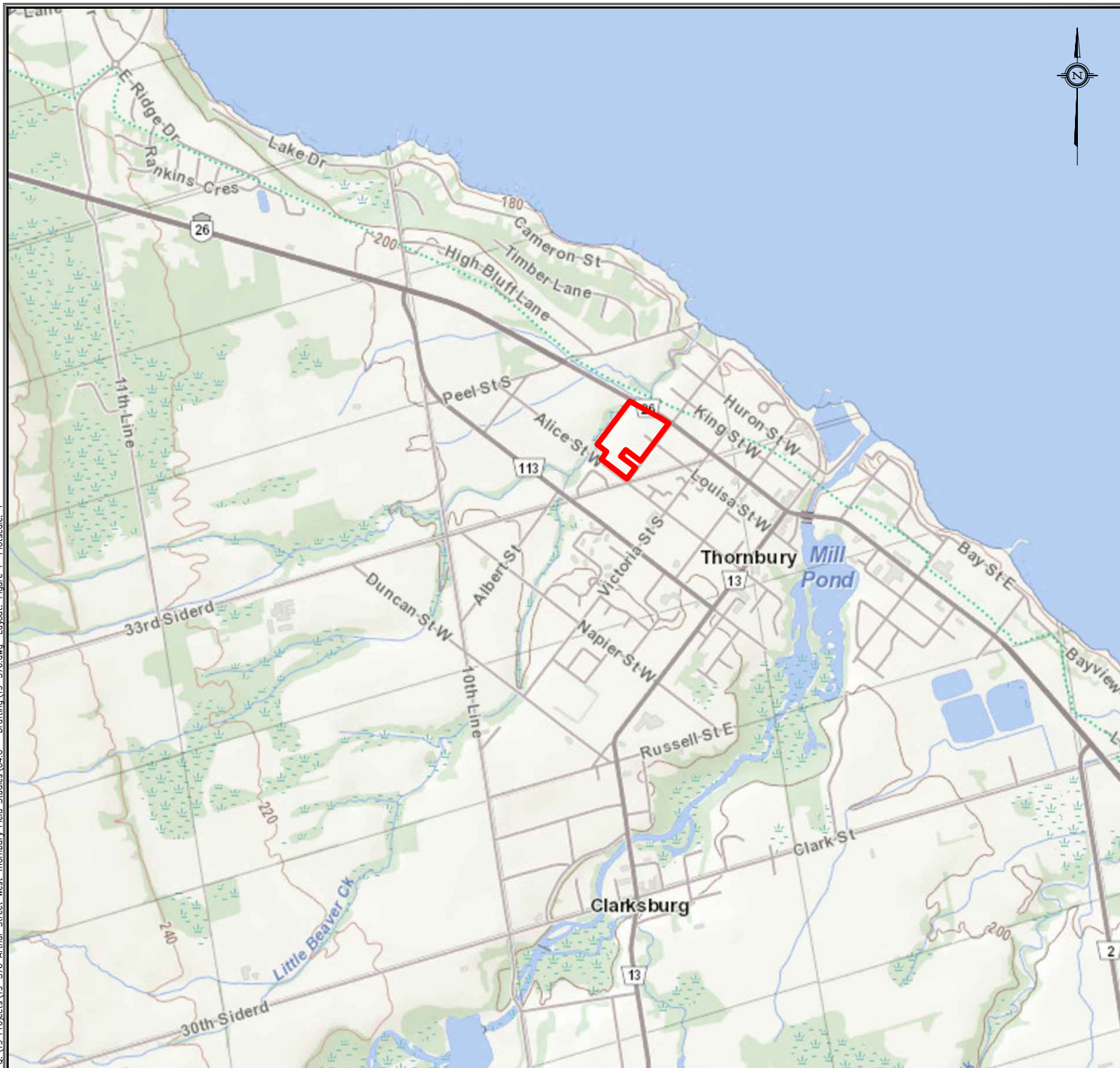
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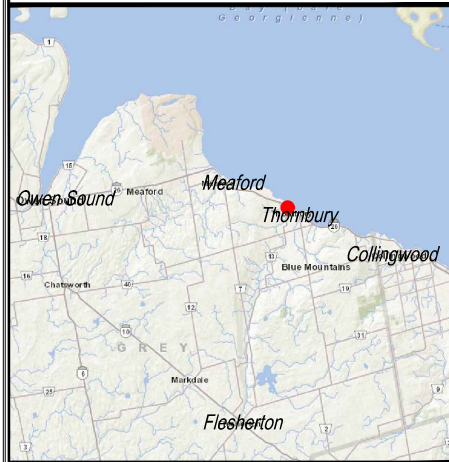
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LEGEND:

— Approx. Property Boundary



Regional Map

250m 0 750m
 HORIZONTAL SCALE 1: 25,000

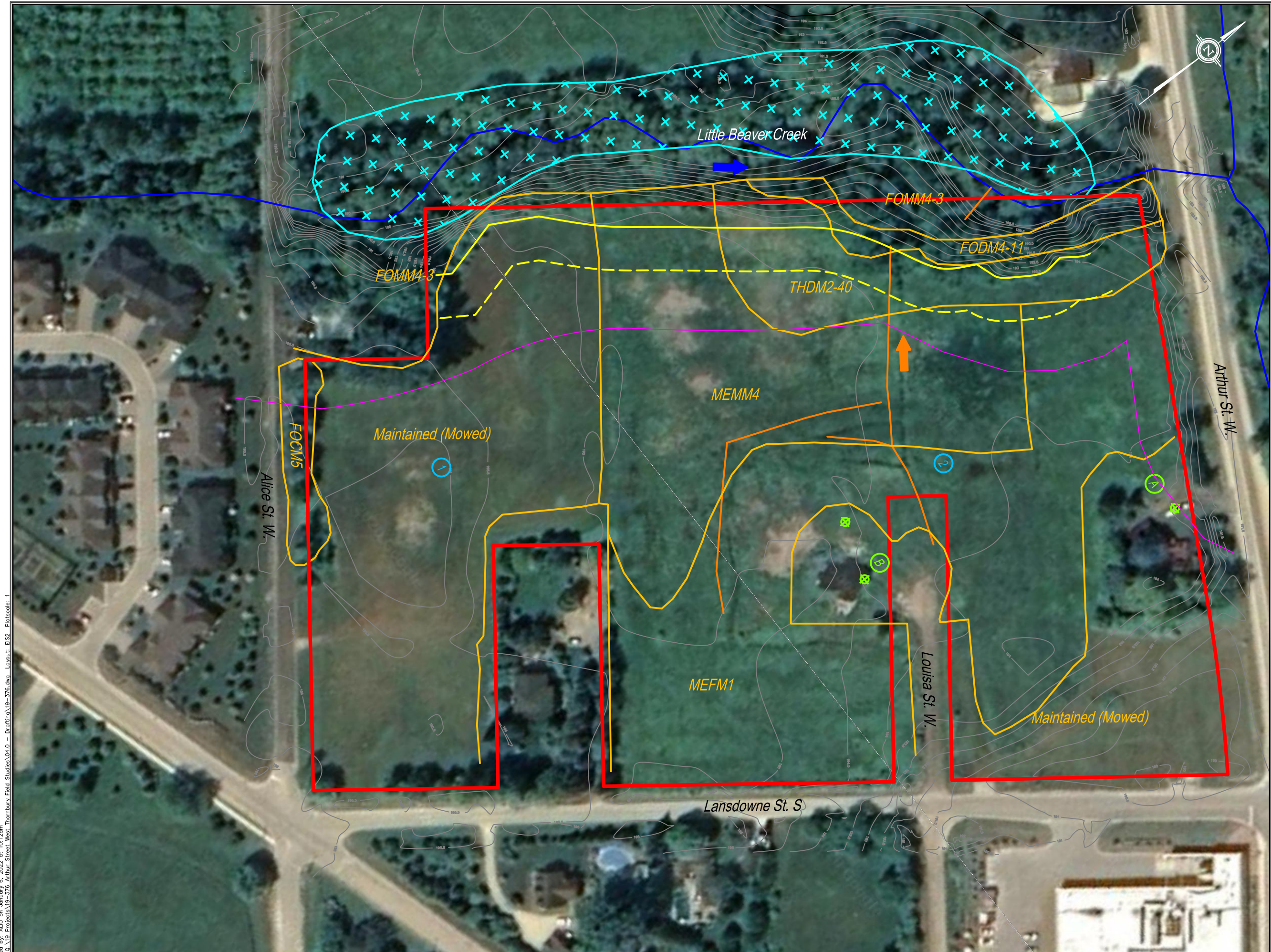


Property Location

Arthur Street West,
 Thornbury, ON

DATE ISSUED: September 2020	Figure No.
CREATED BY: JLM	
PROJECT NO.: 19-376	
REFERENCE: MNR	1

Plotted by: ALU on January 6, 2022 at 10:12am
File: Q:\19 Projects\19-376 Arthur Street West Thornbury Field Studies\04.0 - Drafting\19-376.dwg Layout: EIS2 Plotscale: 1



LEGEND:

- Approx. Property Boundary
- Watercourse
- Drainage Feature
- Flow Direction
- Unevaluated Wetland
- Breeding Bird Point Count Station
- Bat Exit Survey Stations
- Bat Acoustic Monitors
- Top of Stable Slope
- 15m Setback from Top of Stable Slope
- GRCA Regulated Limits
- Vegetation Communities

FOCM5 Naturalized Coniferous Hedgerow Ecosite
FODM4-11 Dry-Fresh Black Locust Deciduous Forest Type
FOMM4-3 Dry-Fresh White Cedar-Hardwood Mixed Forest Type
MEFM1 Dry-Fresh Forb Meadow Ecosite
MEMM4 Fresh-Moist Mixed Meadow Ecosite
THDM2-40 Dry-Fresh Black Locust Deciduous Shrub Thicket Type

15m 0 30m
HORIZONTAL SCALE 1:1,250

 **ENVIRONMENTAL CONSULTING, INC.**

Environmental Features

**Arthur Street West,
Thornbury, ON**

DATE ISSUED:	January 2022	Figure No.
CREATED BY:	JLM	2
PROJECT NO.:	19-376	
REFERENCE:	MNRF	

Ecological Land Classification				Canopy/Shrub Layer	Ground Cover
System	Community Class	Community Series	Ecosite		
Terrestrial	ME, Meadow	MEF, Forb Meadow	MEFM1, Dry - Fresh Forb Meadow Ecosite	The ground on this property generally slopes gently from Landsdowne Street towards the north-west and eventually to the Little Beaver Creek in the valley beyond the subject property's north-west border. This meadow polygon occupies the most elevated portion of the property - from Landsdowne Street to the abandoned house on Louisa Street, then towards the north-east to Highway 26. The upland meadow vegetation is generally between approximately 0.5-1.3 metres (m) tall, with a very sparse "canopy" composed of many widely scattered young Black Walnut, Manitoba Maple, Black Locust, Common Buckthorn and White Ash (1.5 - 3 m tall).	The ground cover here is comprised mainly of a variety of tall, "weedy" upland forbs, with some grasses. Dominant species include White Sweet Clover, Great Burdock, Wild Carrot, Orchard Grass and Annual Fleabane over low-growing species such as Red Clover, Field Horsetail, Tufted Vetch and Redtop.
Terrestrial	ME, Meadow	MEM, Mixed Meadow	MEMM4, Fresh - Moist Mixed Meadow Ecosite	This polygon is the result of considerable cultural impact. Much of the ground - particularly in the south-west portion of the polygon - is currently blanketed in a bed of large wood chips, approximately 10-20 cm deep. There are many pits and mounds within this wood-chipped area, with the mounds housing species more typical of upland meadows and the many small depressions being occupied by clusters of sedges, rushes and forbs typical of moist soils. There are some sections of narrow, shallow linear, constructed drainage features that generally run from south-west to north-east to the larger central feature that runs towards the north-west. These also contain some moister-soil species.	Ground layer flora is dominated by typical pioneer "weedy" grasses and forbs. By far the most dominant plant species here is Field Horsetail, which covers most of the ground layer along with Red Clover, Redtop and Colt's-foot. Species typical of moister soils, such as Fox Sedge and Narrow-panicled Rush, are commonly found in the small moist depressions and lining the bases of the narrow, shallow drainage features. Dominant taller species include White Sweet Clover, Panicked Aster, Black Raspberry, Canada Thistle and Orchard Grass.
Terrestrial	TH, Thicket	THD, Deciduous Thicket	THDM2, Dry - Fresh Deciduous Shrub Thicket Ecosite	This thicket polygon is a result of seed dispersal from the mature Black Locust cultural forest (FODM4-11) adjacent to the north-west. It is dominated by Black Locust saplings and seedlings, which appear to be progressively younger further away from FODM4-11. This polygon is dominated by mixed meadow grasses and forbs that have been slowly invaded by the Black Locust, along with young trees and shrubs, such as Black Walnut, Trembling Aspen, Staghorn Sumac, Black Raspberry and Multiflora Rose.	Ground flora is typical of a Fresh Meadow, with species such as Field Horsetail, Oxeye Daisy, Tall Buttercup, White Sweet Clover, Redtop, and Canada Goldenrod Dominating, along with Orchard Grass, Black Medic, Wild Grape and Spreading Dogbane.
Terrestrial	FO, Forest	FOC, Coniferous Forest	FOCM5, Naturalized Coniferous Hedge-row Ecosite	This small polygon is centred around a row of seven mature Scotch Pine trees (approximately 10-15 m tall) between Alice Street to the south-west and the mowed field adjacent to the north-east. These trees are heavily draped in Wild (Riverbank) Grape vines, almost to the upper branches. Many young trees (White Ash, Trembling Aspen, Sugar Maple) and shrubs (Choke Cherry, Common Buckthorn, Red-osier Dogwood) are growing at the base of the Scotch Pine trees, surrounded by a small dense "meadow" of fresh/moist soil forbs and grasses.	The vegetation is thick in this open community, with vines such as Wild Grape and Hedge False Bindweed draped over much of the lower shrubs and other vegetation. Ground flora is dominated by Field Horsetail, Panicked Aster and Canada Bluegrass, with Poison Ivy, Tall Buttercup, Marsh Bedstraw, Late Goldenrod, Tufted Vetch and Spiked Sedge also common.
Terrestrial	FO, Forest	FOM, Mixed Forest	FOMM4, Dry - Fresh White Cedar Mixed Forest Ecosite	This polygon forms the woodland of the upper bank of the Little Beaver Creek valley. Generally only the woodland edge encroaches onto the subject property. The portion of this woodland that borders the adjacent property in the north-east corner of the property has been altered through human development and garden plantings. In this small area, several mature Eastern Cottonwood and Black Walnut form the canopy, along with White Ash in the understory and Staghorn Sumac and large Multiflora Rose bushes at the sunlit edges. Across the majority of the polygon, White Ash is the dominant species in the canopy, with Eastern White Cedar and White Ash dominating the understory, along with occasional Basswood.	Ground flora is often sparse, particularly under the White Cedars. Enchanter's Nightshade dominates the ground flora throughout this polygon, along with Yellow Avens and Poison Ivy. In the north-west corner, under the Walnut and Cottonwood, Goutweed is quite common, having spread from adjacent gardens.
Terrestrial	FO, Forest	FOD, Deciduous Forest	FODM4, Dry - Fresh Upland Deciduous Forest Ecosite	This narrow band of tall, mature Black Locust trees is cultural in origin. Below the Black Locust canopy, there is very little sub-canopy (some White Ash and Trembling Aspen), with a large gap in vegetation until the shrub layer, which consists mainly of Black Locust, Wild Grape, Staghorn Sumac, Multiflora Rose and Black Raspberry.	Ground flora here is dominated by Garlic Mustard and Field Horsetail, with Black Locust seedlings, Enchanter's Nightshade, Poison Ivy and Canada Bluegrass.

Table 2. Vascular Plant List, 125 Arthur Street West, Thornbury

FAMILY ¹	SCIENTIFIC NAME ¹	COMMON NAME ¹	Vegetation Communities ²						Conservation Rankings ¹		
			MEFMI	MEMM4	THDM2-40	FOCM5-3	FOMM4-3	FODM4-11	GRANK	SRANK	TRACK
Aceraceae	<i>Acer negundo</i>	Manitoba Maple	X						G5	S5	N
Anacardiaceae	<i>Rhus typhina</i>	Staghorn Sumac			X		X	X	G5	S5	N
Anacardiaceae	<i>Toxicodendron radicans</i> var. <i>rydbergii</i>	Western Poison Ivy	X	X		X	X	X	G5	S5	N
Apiaceae	<i>Aegopodium podagraria</i>	Goutweed		X		X			GNR	SE5	N
Apiaceae	<i>Anthriscus sylvestris</i>	Wild Chervil	X						GNR	SE4?	N
Apiaceae	<i>Daucus carota</i>	Wild Carrot	X	X	X				GNR	SE5	N
Apocynaceae	<i>Apocynum androsaemifolium</i>	Spreading Dogbane					X		G5	S5	N
Apocynaceae	<i>Apocynum cannabinum</i>	Hemp Dogbane			X				GNR	S5	N
Apocynaceae	<i>Asclepias syriaca</i>	Common Milkweed	X	X			X		G5	S5	N
Asteraceae	<i>Arctium minus</i>	Common Burdock	X				X		GNR	SE5	N
Asteraceae	<i>Cirsium arvense</i>	Canada Thistle	X	X	X				G5	SE5	N
Asteraceae	<i>Cirsium vulgare</i>	Bull Thistle	X		X				GNR	SE5	N
Asteraceae	<i>Erigeron annuus</i>	Annual Fleabane	X	X					G5	S5	N
Asteraceae	<i>Euthamia graminifolia</i>	Grass-leaved Goldenrod		X					G5	S5	N
Asteraceae	<i>Eutrochium maculatum</i> var. <i>maculatum</i>	Spotted Joe Pye Weed		X					G5T5	S5	N
Asteraceae	<i>Lactuca serriola</i>	Prickly Lettuce	X		X				GNR	SE5	N
Asteraceae	<i>Leucanthemum vulgare</i>	Oxeye Daisy	X	X	X				GNR	SE5	N
Asteraceae	<i>Solidago altissima</i> var. <i>altissima</i>	Eastern Tall Goldenrod				X	X		G5	S5	N
Asteraceae	<i>Solidago canadensis</i> var. <i>canadensis</i>	Canada Goldenrod		X	X				G5T5	S5	N
Asteraceae	<i>Solidago gigantea</i> var. <i>gigantea</i>	Giant Goldenrod	X	X					G5T5	S5	N
Asteraceae	<i>Sonchus arvensis</i> ssp. <i>arvensis</i>	Glandular Sow-thistle	X	X					GNRTNR	SE5	N
Asteraceae	<i>Sonchus oleraceus</i>	Common Sow-thistle		X					GNR	SE5	N
Asteraceae	<i>Symphyotrichum lanceolatum</i> ssp. <i>lanceolatum</i>	Eastern Panicked Aster	X	X	X	X			G5T5	S5	P
Asteraceae	<i>Symphyotrichum lateriflorum</i>	Calico Aster				X			G5	S5	P
Asteraceae	<i>Symphyotrichum novae-angliae</i>	New England Aster		X		X			G5	S5	N
Asteraceae	<i>Taraxacum officinale</i>	Common Dandelion		X					G5	SE5	N
Asteraceae	<i>Tussilago farfara</i>	Coltsfoot		X	X				GNR	SE5	N
Brassicaceae	<i>Alliaria petiolata</i>	Garlic Mustard	X					X	GNR	SE5	N
Brassicaceae	<i>Hesperis matronalis</i>	Dame's Rocket					X		G4G5	SE5	N
Convolvulaceae	<i>Calystegia sepium</i>	Hedge False Bindweed				X			G5	S5	N
Convolvulaceae	<i>Convolvulus arvensis</i>	Field Bindweed	X					X	GNR	SE5	N
Cornaceae	<i>Cornus sericea</i>	Red-osier Dogwood	X	X		X			G5	S5	N
Cucurbitaceae	<i>Echinocystis lobata</i>	Wild Cucumber				X			G5	S5	N
Cupressaceae	<i>Thuja occidentalis</i>	Eastern White Cedar					X		G5	S5	N
Cyperaceae	<i>Carex aurea</i>	Golden Sedge	X		X				G5	S5	N
Cyperaceae	<i>Carex cristatella</i>	Crested Sedge		X					G5	S5	N
Cyperaceae	<i>Carex retrorsa</i>	Retrorsed Sedge		X					G5	S5	N
Cyperaceae	<i>Carex spicata</i>	Spiked Sedge		X		X			GNR	SE5	N
Cyperaceae	<i>Carex stipata</i>	Awl-fruited Sedge		X					G5	S5	N
Cyperaceae	<i>Carex vulpinoidea</i>	Fox Sedge		X		X			G5	S5	N

Table 2. Vascular Plant List, 125 Arthur Street West, Thornbury

FAMILY ¹	SCIENTIFIC NAME ¹	COMMON NAME ¹	Vegetation Communities ²						Conservation Rankings ¹		
			MEFMI	MEMM4	THDM2-40	FOCM5-3	FOMM4-3	FODM4-11	GRANK	SRANK	TRACK
Cyperaceae	<i>Scirpus atrovirens</i>	Dark-green Bulrush		X					G5	S5	N
Dipsacaceae	<i>Dipsacus fullonum</i>	Common Teasel	X						GNR	SE5	N
Equisetaceae	<i>Equisetum arvense</i>	Field Horsetail	X	X	X	X		X	G5	S5	N
Fabaceae	<i>Lotus corniculatus</i>	Garden Bird's-foot Trefoil				X			GNR	SE5	N
Fabaceae	<i>Medicago lupulina</i>	Black Medick	X		X				GNR	SE5	N
Fabaceae	<i>Melilotus albus</i>	White Sweet-clover	X	X	X	X			G5	SE5	N
Fabaceae	<i>Robinia pseudoacacia</i>	Black Locust	X	X	X		X	X	G5	SE5	N
Fabaceae	<i>Trifolium pratense</i>	Red Clover	X	X					GNR	SE5	N
Fabaceae	<i>Vicia cracca</i>	Tufted Vetch	X	X	X	X			GNR	SE5	N
Iridaceae	<i>Sisyrinchium montanum</i> var. <i>montanum</i>	Strict Blue-eyed-grass			X				G5T5	S5	N
Juglandaceae	<i>Juglans nigra</i>	Black Walnut	X	X		X	X	X	G5	S4?	N
Juncaceae	<i>Juncus brevicaudatus</i>	Short-tailed Rush		X					G5	S5	N
Juncaceae	<i>Juncus compressus</i>	Compressed Rush		X					G5	SE5	N
Juncaceae	<i>Juncus dudleyi</i>	Dudley's Rush		X					G5	S5	N
Juncaceae	<i>Juncus effusus</i>	Soft Rush		X					G5	S5	N
Juncaceae	<i>Juncus nodosus</i>	Knotted Rush		X					G5	S5	N
Lamiaceae	<i>Glechoma hederacea</i>	Ground-ivy	X						GNR	SE5	N
Lamiaceae	<i>Lycopus americanus</i>	American Water-horehound		X					G5	S5	N
Liliaceae	<i>Heemerocallis fulva</i>	Orange Daylily			X				GNA	SE5	N
Lythraceae	<i>Lythrum salicaria</i>	Purple Loosestrife		X					G5	SE5	N
Oleaceae	<i>Fraxinus americana</i>	White Ash	X	X	X	X	X	X	G5	S4	N
Onagraceae	<i>Circaea canadensis</i>	Broad-leaved Enchanter's Nightshade			X		X	X	G5	S5	N
Onagraceae	<i>Epilobium parviflorum</i>	Small-flowered Hairy Willowherb		X					GNR	SE4	N
Onagraceae	<i>Epilobium strictum</i>	Downy Willowherb		X					G5	S4	N
Onagraceae	<i>Oenothera biennis</i>	Common Evening-primrose	X	X	X				G5	S5	N
Papaveraceae	<i>Papaver orientale</i>	Oriental Poppy	X						GNR	SE1	N
Pinaceae	<i>Pinus sylvestris</i> var. <i>sylvestris</i>	Scots Pine				X			GNRTNR	SE5	N
Plantaginaceae	<i>Plantago lanceolata</i>	English Plantain	X	X					G5	SE5	N
Poaceae	<i>Agrostis gigantea</i>	Redtop	X	X	X				G4G5	SE5	N
Poaceae	<i>Bromus inermis</i>	Smooth Brome	X	X		X	X	X	G5T5	SE5	N
Poaceae	<i>Dactylis glomerata</i>	Orchard Grass	X	X	X	X	X		GNR	SE5	N
Poaceae	<i>Elymus repens</i>	Quackgrass	X	X					GNR	SE5	N
Poaceae	<i>Phalaris arundinacea</i>	Reed Canarygrass		X		X			G5	S5	N
Poaceae	<i>Phleum pratense</i>	Common Timothy	X	X		X			GNR	SE5	N
Poaceae	<i>Poa annua</i>	Annual Bluegrass			X				GNR	SE5	N
Poaceae	<i>Poa compressa</i>	Canada Bluegrass				X		X	GNR	SE5	N
Poaceae	<i>Poa palustris</i>	Fowl Bluegrass		X		X			G5	S5	N
Polygonaceae	<i>Rumex crispus</i>	Curled Dock		X	X	X			GNR	SE5	N
Primulaceae	<i>Lysimachia nummularia</i>	Creeping Yellow Loosestrife	X						GNR	SE5	N
Ranunculaceae	<i>Ranunculus acris</i>	Common Buttercup	X	X	X	X			G5	SE5	N

Table 2. Vascular Plant List, 125 Arthur Street West, Thornbury

FAMILY ¹	SCIENTIFIC NAME ¹	COMMON NAME ¹	Vegetation Communities ²						Conservation Rankings ¹		
			MEFMI	MEMM4	THDM2-40	FOCM5-3	FOMM4-3	FODM4-11	GRANK	SRANK	TRACK
Rhamnaceae	<i>Rhamnus cathartica</i>	European Buckthorn	X	X		X		X	GNR	SE5	N
Rosaceae	<i>Fragaria virginiana</i>	Wild Strawberry			X				G5	S5	N
Rosaceae	<i>Geum aleppicum</i>	Yellow Avens	X	X	X		X	X	G5	S5	N
Rosaceae	<i>Geum canadense</i>	Canada Avens					X		G5	S5	N
Rosaceae	<i>Potentilla norvegica</i>	Rough Cinquefoil	X						G5	S5	N
Rosaceae	<i>Prunus virginiana</i>	Chokecherry	X	X		X			G5	S5	N
Rosaceae	<i>Rosa multiflora</i>	Multiflora Rose	X	X	X	X	X	X	GNR	SE5	N
Rosaceae	<i>Rubus occidentalis</i>	Black Raspberry	X	X	X		X	X	G5	S5	N
Rubiaceae	<i>Galium aparine</i>	Common Bedstraw					X		G5	S5	N
Rubiaceae	<i>Galium palustre</i>	Common Marsh Bedstraw		X		X			G5	S5	N
Salicaceae	<i>Populus balsamifera</i>	Balsam Poplar			X		X		G5	S5	N
Salicaceae	<i>Populus deltoides ssp. deltoides</i>	Eastern Cottonwood		X	X		X	X	G5T5	S5	N
Salicaceae	<i>Populus tremuloides</i>	Trembling Aspen	X		X			X	G5	S5	N
Salicaceae	<i>Salix eriocephala</i>	Cottony Willow		X					G5	S5	N
Salicaceae	<i>Salix petiolaris</i>	Meadow Willow		X					G5	S5	N
Scrophulariaceae	<i>Verbascum thapsus</i>	Common Mullein	X						GNR	SE5	N
Scrophulariaceae	<i>Veronica americana</i>	American Speedwell			X				G5	S5	N
Solanaceae	<i>Solanum dulcamara</i>	Bittersweet Nightshade			X				GNR	SE5	N
Tiliaceae	<i>Tilia americana</i>	Basswood					X		G5	S5	N
Typhaceae	<i>Typha angustifolia</i>	Narrow-leaved Cattail		X					G5	SE5	N
Violaceae	<i>Viola sp.</i>	Violet species	X					X	-	-	-
Vitaceae	<i>Parthenocissus vitacea</i>	Thicket Creeper	X	X				X	G5	S5	N
Vitaceae	<i>Vitis riparia</i>	Riverbank Grape			X	X	X	X	G5	S5	N
¹ Nomenclature and conservation rankings based on Ministry of Northern Development, Mines, Natural Resources and Forestry (NDMNRF) Natural Heritage Information Centre (NHIC, 2022)											
² ELC Codes based on Ecological Land Classification for Southern Ontario manual (Lee et al., 1998)											

Table 3. Bird List, 125 Arthur Street West, Thornbury

			Breeding Bird Survey Data								Conservation Ranks ^F		
Family	Scientific Name	English Common Name ¹	Point Count Station 1			Point Count Station 2			Incidental ^C	Breeding Evidence ^D	S-Rank	G-Rank	SARO Status
			6/5/2020 ^A	6/17/2020 ^B	6/30/2020 ^C	6/5/2020 ^A	6/17/2020 ^B	6/30/2020 ^C					
Anatidae	<i>Branta canadensis</i>	Canada Goose							X	None	S5	G5	
Bombycillidae	<i>Bombycilla cedrorum</i>	Cedar Waxwing	S(1)	FO(2)	S(3)	S(1)	S(1)	S(1)		Pr	S5	G5	
Cardinalidae	<i>Cardinalis cardinalis</i>	Northern Cardinal		S(2)	S(1)	S,C(3)	S(1)		X	Pr	S5	G5	
Cardinalidae	<i>Passerina cyanea</i>	Indigo Bunting			S(1)					Po	S5B	G5	
Charadriidae	<i>Charadrius vociferus</i>	Killdeer		S(1)						Po	S4B	G5	
Columbidae	<i>Zenaida macroura</i>	Mourning Dove	S(1)		S(1)					Pr	S5	G5	
Corvidae	<i>Corvus brachyrhynchos</i>	American Crow	FO(1)	H(1)					X	Po	S5	G5	
Corvidae	<i>Cyanocitta cristata</i>	Blue Jay		S(1)				S(3)	X	Po	S5	G5	
Fringillidae	<i>Haemorhous mexicanus</i>	House Finch					S(1)			Po	SNA	G5	
Fringillidae	<i>Spinus tristis</i>	American Goldfinch	S,C(5)	S,C(4)	S,C(4)		S,C(5)	S,C(9)	X	Pr	S5	G5	
Icteridae	<i>Agelaius phoeniceus</i>	Red-winged Blackbird	S,C(1)	S,C(1)	S,C(3)	NE(Pair)	S,C(6+Pair)	S,C(1)	X	Co	S5	G5	
Icteridae	<i>Quiscalus quiscula</i>	Common Grackle	H(1)	FO(5)		H(3)		C(2)		Po	S5	G5	
Laridae	<i>Larus delawarensis</i>	Ring-billed Gull							X	None	S5	G5	
Mimidae	<i>Dumetella carolinensis</i>	Gray Catbird					S(1)			Po	S5B, S3N	G5	
Paridae	<i>Poecile atricapillus</i>	Black-capped Chickadee		S,C(1)	S,C(1)					Pr	S5	G5	
Parulidae	<i>Geothlypis trichas</i>	Common Yellowthroat	S(1)	S(2)		S(2)	S,C(2)	S,C(1)		Pr	S5B, S3N	G5	
Parulidae	<i>Setophaga petechia</i>	Yellow Warbler		S(1)			S(2)	S(2)		Pr	S5B	G5	
Parulidae	<i>Setophaga ruticilla</i>	American Redstart	S(1)			S(1)				Po	S5B	G5	
Passerellidae	<i>Melospiza melodia</i>	Song Sparrow	S(3)	S(3)	S(3)	S(1)	S(3)	S(4)	X	Pr	S5	G5	
Passerellidae	<i>Spizella passerina</i>	Chipping Sparrow	S(2)	S(2)	S(1)	S(1)		S(1)		Pr	S5B, S3N	G5	
Passeridae	<i>Passer domesticus</i>	House Sparrow					S(1)	S(5)		Pr	SNA	G5	
Picidae	<i>Colaptes auratus</i>	Northern Flicker			S(1)					Po	S5	G5	
Picidae	<i>Dryobates villosus</i>	Hairy Woodpecker	C(1)							Po	S5	G5	
Sittidae	<i>Sitta carolinensis</i>	White-Breasted Nuthatch	S(1)				S(1)			Po	S5	G5	
Sturnidae	<i>Sturnus vulgaris</i>	European Starling	FO(2)	FO(3)			S,H(1)		X	Po	SNA	G5	
Troglodytidae	<i>Troglodytes aedon</i>	House Wren	S(1)				S(1)			Po	S5B	G5	
Turdidae	<i>Turdus migratorius</i>	American Robin	S,C(2)		S,C(1)	S(1)		S,C(2)		Pr	S5	G5	
Vireonidae	<i>Vireo olivaceus</i>	Red-eyed Vireo		S(1)		S(1)	S(1)			Pr	S5B	G5	

¹Nomenclature based on Ministry of Northern Development, Mines, Natural Resources and Forestry (NDMNRF), Natural Heritage Information Centre (NHIC) database (2022)

Surveys Conditions:

^AJune 5, 2020; Time 7:02-7:07am (Station 1) and 7:16-7:21am (Station 2); Temperature 15°C; Wind B1; Cloud Cover 0%; Precipitation None; Background Noise 2; Observer S. Martin

^BJune 17, 2020; Time 8:11-8:16am (Station 1) and 7:54-7:59am (Station 2); Temperature 18°C; Wind B0; Cloud Cover 0%; Precipitation None; Background Noise 2; Observer S. Martin

^CJune 30, 2020; Time 8:35-8:40am (Station 1) and 8:21-8:26am (Station 2); Temperature 23°C; Wind B0; Cloud Cover 0%; Precipitation None; Background Noise 2; Observer S. Martin

*Species on adjacent lands

^CSpecies detected outside of formal breeding bird surveys; blank cell = not detected.

^DOBBA Breeding Evidence Codes:

The number in brackets represents the largest number of individuals observed during one period at that point location.

F/O - Fly Over

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

POSSIBLE

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

S, C - Singing male present, or breeding calls heard, in suitable nesting habitat in nesting season.

PROBABLE

A - Agitated behaviour or anxiety calls of an adult.

N - Nest building or excavation of nest hole.

P -Pair observed in suitable nesting habitat in nesting season.

T - Permanent territory presumed through registration of territorial behaviour (e.g. song) on at least two days, a week or more apart, at the same place.

CONFIRMED

DD - Distraction display or injury feigning.

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

NE - Nest containing eggs

NU - Used nest or eggshell found (occupied or laid within the period of study)

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

FS - Adult carrying fecal sac

CF - Adult carrying food for young

NY - Nest with young seen or heard

^DBreeding Evidence:

Co - Confirmed breeding on or adjacent to property.

Pr - Probably breeding on or adjacent to property.

Po - Possibly breeding on or adjacent to property.

None - Species observed but no evidence of breeding on or adjacent to property.

^EAccording to Appendix C of the Significant Wildlife Habitat Technical Guide (MNRF 2000).

^FConservation Rankings: Committee on the Status of Endangered Species in Canada (COSEWIC) Wildlife Species at Risk Report (October 2015), Species at Risk Public Registry https://www.registrelep-sararegistry.gc.ca/sar/index/default_e.cfm, Ontario

S-Rank = Sub-national/provincial scale (from 1-5), S1 - Extremely Rare, S2 - Very Rare, S3 - Rare to Uncommon, S4 - Common, S5 - Very Common .
G-Rank = Global scale (from 1 - "Critically Imperiled" to 5 - "Secure" or common), G1 - Critically Imperiled, G2 - Imperiled, G3 - Vulnerable, G4 - Apparently Secure, G5 - Secure .
B = Breeding Populations, N = Non-breeding Populations; SARO: EXT - Extirpated, END - Endangered, THR - Threatened, SC - Special Concern, Blank - Not at Risk in Ontario.

Table 4a. Endangered and Threatened species assessment, 125 Arthur St. W., Thornbury

Taxa	Common Name	ESA Status	Habitat Requirements	Habitat on or Adjacent to Lands?	Observed?	Issue Related to Proposed Development?
Bird	Bank Swallow	THR	Nest in burrows it constructs in sand banks associated with valleylands and in fill piles/gravel pits having near vertical faces.	No	No	No
Bird	Barn Swallow	THR	Build nests in manmade structures like sheds, barns, etc. and under bridges/in culverts, etc.	Yes	No	No
Bird	Bobolink	THR	Large grasslands	No	No	No
Bird	Chimney Swift	THR	Build nests in chimneys and/or on walls of built structures (barns, houses, churches, etc.)	Yes	No	No
Bird	Eastern Meadowlark	THR	Large grasslands	No	No	No
Bird	Eastern Whip-poor-will	THR	Open woodlands, disturbed areas	No	Not detected during evening bat exit surveys on July 23, 2020	No
Bird	Loggerhead Shrike	END	Alvars, pasturelands - Carden Plain	No	No	No
Bird	Red-headed Woodpecker	END	Occurs in open deciduous forests, particularly those dominated by oak and beech, groves of dead trees, floodplain forests, orchards, cemeteries, savannas and savanna-like grasslands. Although the species occupies a range of habitat types, key habitat is characteristically composed of woodlands where tall trees are of large circumference (<i>i.e.</i> mature cover) and are at a low density. A high density of snag trees is also an indicator of key habitat types (COSEWIC, 2007).	Marginal habitat present	No	No

Table 4a. Endangered and Threatened species assessment, 125 Arthur St. W., Thornbury

Taxa	Common Name	ESA Status	Habitat Requirements	Habitat on or Adjacent to Lands?	Observed?	Issue Related to Proposed Development?
Mammal	Eastern Small-footed Bat	END	Cliffs, caves, mines, talus slopes	No	Not detected on subject lands during bat exist surveys	No
Mammal	Little Brown Myotis	END	Mature woodlands (snag/cavity trees) and buildlings (churches, older homes with attics, etc.)	Yes - anthropogenic structures and adjacent woodlands	Not detected on subject lands during bat exist surveys	No
Mammal	Northern Myotis	END	Mature woodlands (snag/cavity trees)	Yes - adjacent woodlands	Not detected on subject lands during bat exist surveys	No
Mammal	Tri-coloured Bat	END	Mature woodlands (snag/cavity trees) and occasionally in barns or other buildlings	Yes - anthropogenic structures and adjacent woodlands	Not detected on subject lands during bat exist surveys	No
Plant	Black Ash	END	Facultative wetland tree species frequently found in floodplain forests, swamps, seepage areas, shoreline margins and fens. Occupied sites are generally seasonally-flooded (COSEWIC, 2018).	Yes - adjacent riparian zone	No	No
Plant	Butternut	END	Forests, woodlands, fencerows, open lands	Yes	No	No

List compiled based on background data sources and information request to the MECP.

Table 4b. Special Concern species assessment, 125 Arthur St. W., Thornbury

Taxa	Common Name	Habitat Requirements	Habitat on or Adjacent to Lands?	Observed?	Issue Related to Proposed Development?
Bird	Canada Warbler	Breeds in a range of deciduous and coniferous, usually wet forest types, all with a well- developed, dense shrub layer - generally associated with the southern shield/boreal shield.	Yes	No	No
Bird	Common Nighthawk	Open woodlands, disturbed areas, rooftops in urban environments	Yes - flat roofs of downtown Thornbury (adjacent lands)	Not detected during evening bat exit surveys on July23, 2020	No
Bird	Eastern Wood-Pewee	Forests	Yes	No	No
Bird	Grasshopper Sparrow	Large grasslands	No	No	No
Bird	Wood Thrush	Mature forests	Yes	No	No
Fish	Silver Lamprey	Clear water so they can find fish hosts, relatively clean stream beds of sand and organic debris for larvae to live in, and unrestricted migration routes for spawning.	Not mapped habitat (DFO, 2019). Not reported in recent fish sampling by the MNRF Midhurst District	No	No
Insect	Monarch	Open lands with abundant milkweed	No	No	No
Reptile	Snapping Turtle	Wetlands with permanent standing water/lakes/slow moving rivers	Yes - adjacent unevaluated wetland	No turtles or signs of turtles (predated nests, etc.) observed	No

List compiled based on background data sources and information request to the MECP.



APPENDICES

Appendix A: Background Mapping

Appendix B: Terms of Reference Confirmation with GSCA

Appendix C: Provincial Information Requests and Responses

Appendix D: Proposed Site Plan and Select Figures from Functional Servicing & Stormwater Management Report



APPENDIX A

Background Mapping



General Location of Subject Lands

GEORGIAN BAY



Simcoe County

Refer to Secondary Plan in the Town of the Blue Mountains Official Plan

Dufferin County

Wellington County



THE COUNTY OF GREY
OFFICIAL PLAN

APPENDIX B
Constraint Mapping

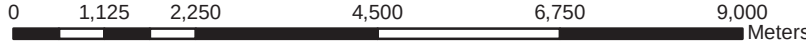
MAP 2

LEGEND

- Provincial Highway
- County Road
- Local Road
- Seasonal Road
- Stream / River
- Lakes
- Other Wetlands

- Significant Earth & Life ANSI
- Significant Earth ANSI
- Significant Life ANSI
- Significant Valleylands
- Significant Woodlands

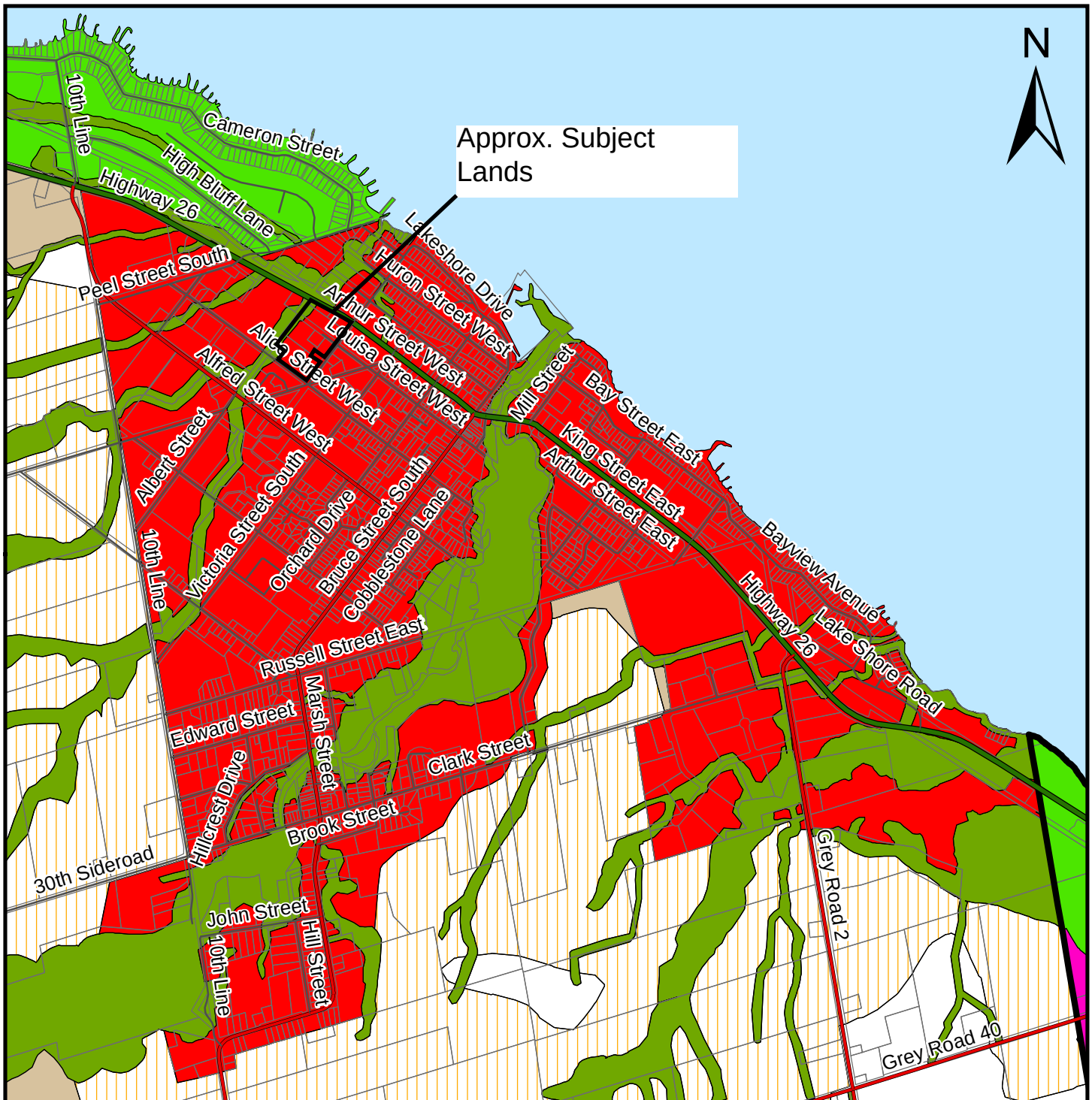
SCALE 1:95,000



AUTHOR: Grey County Planning and Development
FILE NAME: GR_OP_ApdxB_Map2eastX36.mxd
APPLICATION: ArcMap
DATE: June 7, 2019
PROJECTION: UTM zone 17N / NAD83
SOURCE: Teranet, Ministry of Natural Resources and Forestry

INTERACTIVE MAP: geo.grey.ca
DOWNLOAD PDF: grey.ca/planning-development

This map is for illustrative purposes only. Do not rely on this map as being a precise indicator of routes, location of features or surveying purposes. This map may contain cartographical errors or omissions.



LEGEND

- | | |
|---------------------------|---|
| Provincial Highway | Sunset Strip Area |
| County Road | Industrial Business Park |
| Local Road | Space Extensive Industrial and Commercial |
| Seasonal Road | Niagara Escarpment Plan Boundary ** |
| Agricultural | Niagara Escarpment Development Control Area |
| Special Agricultural | Escarpment Natural Area |
| Rural | Escarpment Recreation Area |
| Primary Settlement Area | Hazard Lands |
| Secondary Settlement Area | Provincially Significant Wetlands |
| Inland Lakes & Shoreline | |
| Recreational Resort Area | |
- ** certain settlement areas within the Niagara Escarpment Plan Boundary may be subject to Development Control.

THE COUNTY OF GREY OFFICIAL PLAN

SECONDARY SCHEDULE Land Use Types

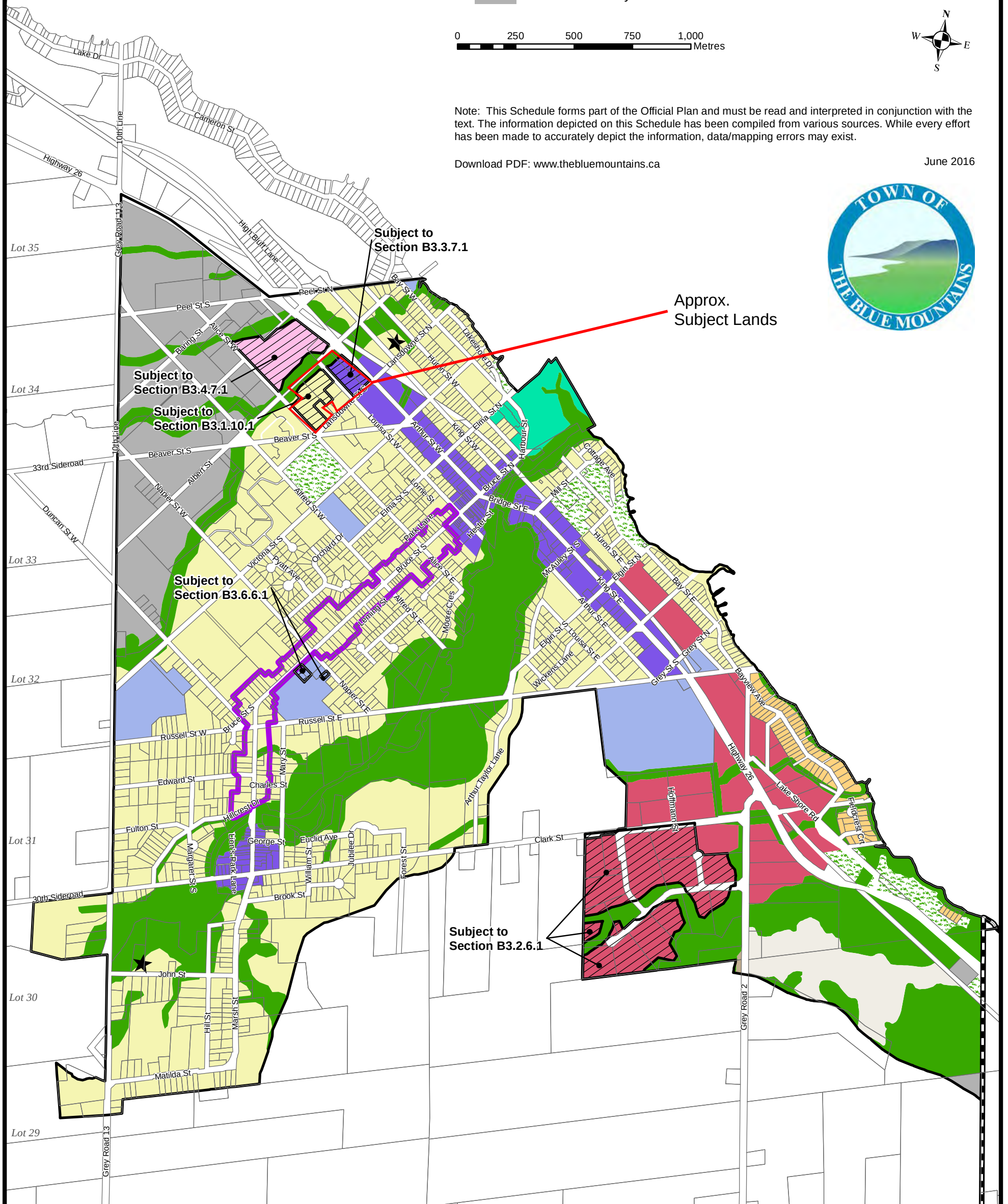
MAP 2a

THORNBURY - CLARKSBURG

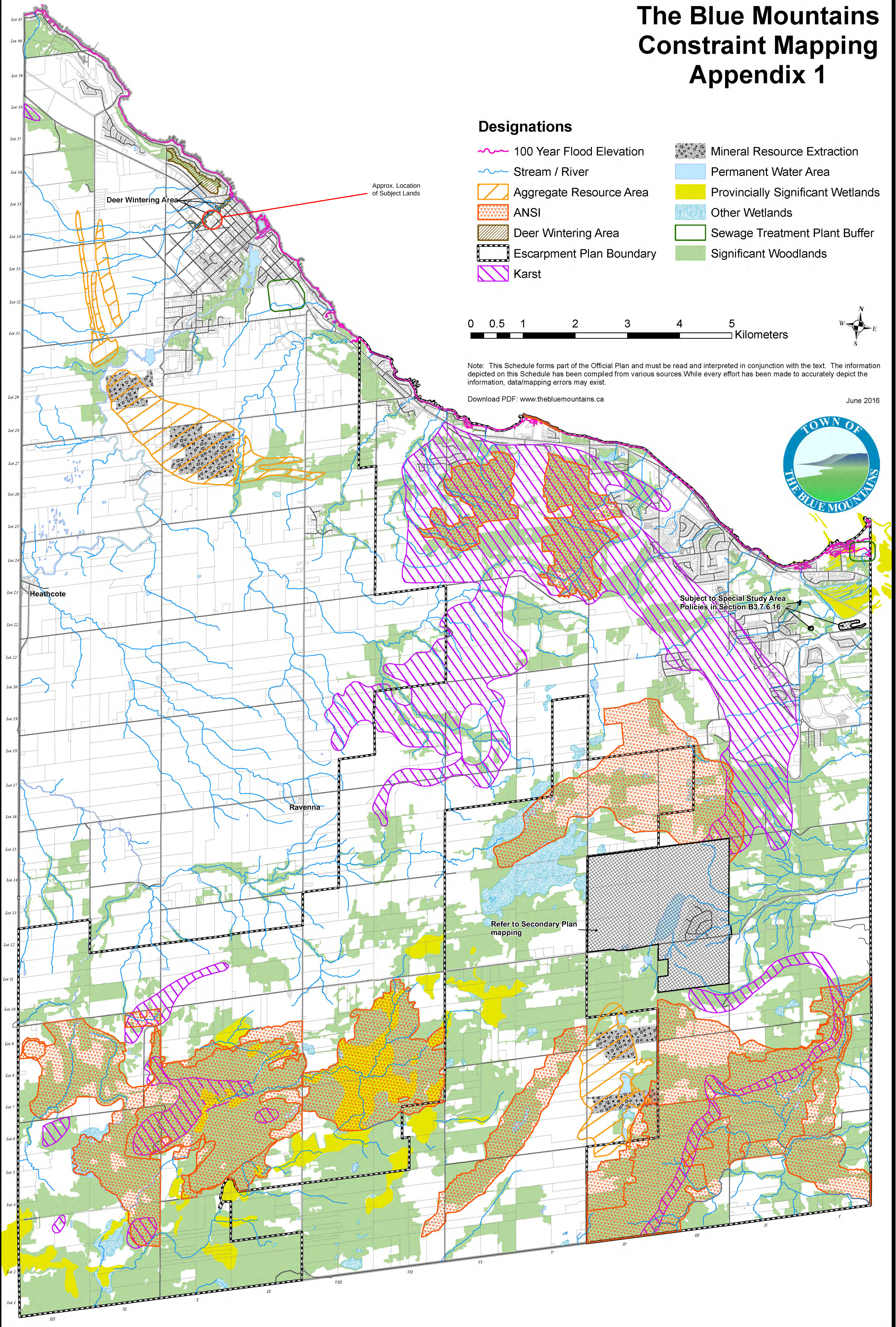
SCALE 1:25 000

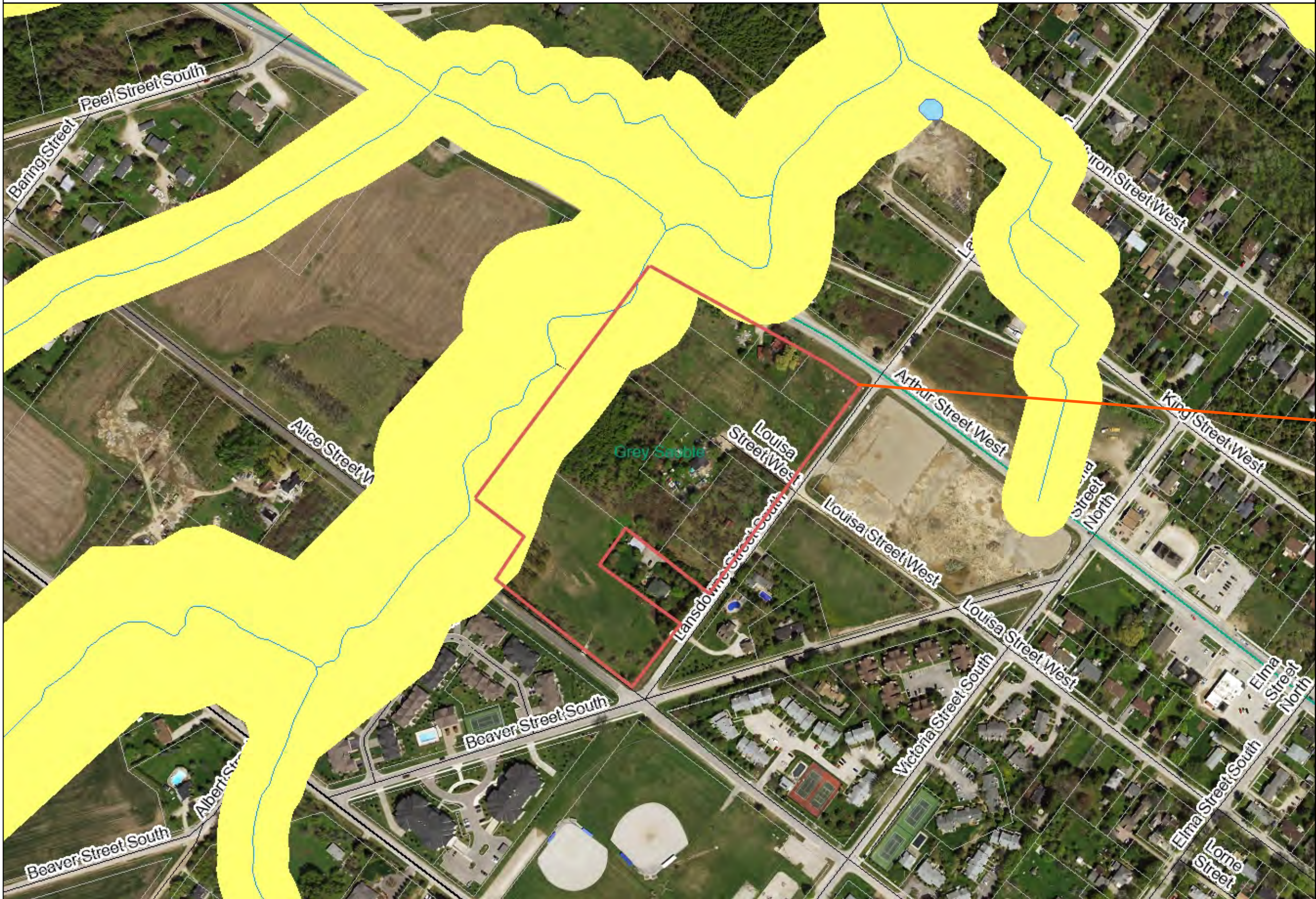
INTERACTIVE MAP: geo.grey.ca
 DOWNLOAD PDF: grey.ca/planning-development

GR_OP_SecSched_Map2aThornbury-ClarksburgX11.mxd



The Blue Mountains Constraint Mapping Appendix 1





Legend

- CA Boundaries
- Wet Areas - GSCA
- Wet Areas - GRCA
- Water Features
- Watercourses
- Floodplains - NVCA
- Floodplains - GRCA
- Approximate Regulated and Screening Areas - SVCA
 - Approximate Regulated Area
 - Approximate Screening Area
- Regulations - GSCA
- Regulations - NVCA
- Parcels - Current
- Large Scale Roads
 - Provincial Highway
 - County Road
 - Township Road
 - Seasonal Road
- Grey County Boundary

Approximate
Boundary of Subject
Lands



Notes

Legend

-  Assessment Parcel
-  Earth Science Provincially Significant/sciences de la terre d'importance provinciale
-  Earth Science Regionally Significant/sciences de la terre d'importance régionale
-  Life Science Provincially Significant/sciences de la vie d'importance provinciale
-  Life Science Regionally Significant/sciences de la vie d'importance régionale
-  Evaluated Wetland
-  Provincially Significant/considérée d'importance provinciale
-  Non-Provincially Significant/non considérée d'importance provinciale
-  Unevaluated Wetland
-  Woodland
-  Conservation Reserve
-  Provincial Park
-  Natural Heritage System

Approx.
Subject Lands



Notes:
Natural Heritage Features

0.2 0 0.08 0.2 Kilometres

Absence of a feature in the map does not mean they do not exist in this area.

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APPENDIX B

Terms of Reference Confirmation with GSCA

Scott Tarof

From: Andrew Sorensen [a.sorensen@greysauble.on.ca]
Sent: Thursday, January 9, 2020 11:27 AM
To: Shelley Hensel
Cc: Jacob Kloeze; George Cooper
Subject: RE: Scoped EIS - Arthur & Louisa Street development, Thornbury

Hi Shelley;

In addition to the below, we recommend the completion of an ELC map, breeding bird inventories in accordance with the Breeding Bird Atlas Protocol (i.e. Minimum of two visits 15 days apart) This will assist in determining presence or absence of species at risk.

Thanks,

Andrew J. Sorensen
Environmental Planning Coordinator
Grey Sauble Conservation Authority
237897 Inglis Falls Road, R.R. #4
Owen Sound, ON
N4K 5N6
519-376-3076 ext. 227
a.sorensen@greysauble.on.ca
www.greysauble.on.ca

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From: Shelley Hensel <shensel@cfcrozier.ca>
Sent: January 3, 2020 4:55 PM
To: Andrew Sorensen <a.sorensen@greysauble.on.ca>
Cc: Jacob Kloeze <j.kloeze@greysauble.on.ca>; George Cooper <gcooper@cfcrozier.ca>
Subject: Scoped EIS - Arthur & Louisa Street development, Thornbury

Hello Andy:

Further to our discussion this morning regarding the proposed development on Arthur Street and Louisa Street in Thornbury, here is our proposed scope of work for the completion of the Scoped EIS.

- Complete a site visit to assess Significant Wildlife Habitat for presence/absence of Deer Wintering Yard as mapped on Appendix 1 of The Blue Mountains Official Plan (February 2020);
- Conduct a fisheries site visit to characterize the aquatic habitat of Little Beaver Creek (spring 2020);
- Complete a site visit to determine the presence/absence of Species At Risk (late spring 2020);
- Prepare a buffer enhancement plan for the top of bank of the Little Beaver Creek corridor.

If you could please review in light of our discussion this morning and let me know of any changes as soon as you can as we are expecting to send the proposal to the client early next week.

Regards,

Shelley

Shelley Hensel | Special Projects Administrator
C.F. Crozier & Associates Consulting Engineers
40 Huron Street, Suite 301 | Collingwood, ON L9Y 4R3
cfcrozier.ca | shensel@cfcrozier.ca
tel: 705.446.3510 ext: 149



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APPENDIX C

Provincial Information Requests and Responses

Midhurst District MNRF
Information Request Form



Name:

Company Name:

Email Address:

Phone Number:

Project Name:

Property Address:

Township/Municipality:

Lot & Concession:

UTM Coordinates:
(NAD83) Easting (X) Northing (Y)

Project Description:

Project Type: ☐ Planning Act ☐ Aggregates Resources Act ☐ Environmental Assessment Act
☐ Other

Have you previously contacted someone at MNRF for information on this site? Yes ☐ No ☐

If yes, when and who?

Prior to requesting information from MNRF, please review available online information and attach a summary of your initial screening. Please include a list of features/ habitats on site and summary of the species at risk that are reasonable to expect could be present based on the available habitats. Available MNRF species at risk, fisheries and natural heritage data can be found at [Make a Natural Heritage Map](#), [Land Information Ontario](#), and [Species at Risk-Ontario](#)

Please indicate in the box below, any additional information required.

Please provide a map of accurate scale to illustrate footprint/study area of the proposed activity in relation to the surrounding landscape (e.g. property boundaries, roads, waterbodies, natural features, towns, and other human landmarks). Use of aerial photography is strongly encouraged. Include scale, north arrow and legend.

Please forward the completed form to: ***MIDHURSTINFO@ontario.ca***

Or send by mail:

*Midhurst District, Ministry of Natural Resources and Forestry
2284 Nursery Road, Midhurst, ON L9X 1N8*



**MECP Information Request Form
Attachment**

Initial Screening- SAR

Date: March 23, 2020

Project Ref: AEC 18-376

Azimuth Contact: Alexa Pompilio, Terrestrial Ecologist
Email apompilio@azimuthenvironmental.com
Phone 705 721-8451 x 225

Attachments: Study Area Location Map

Project Name: Arthur Street West (Thornbury)

Activity Description: Mixed residential and commercial development

Study Area: Property is located south of Arthur Street West and west of Landsdowne Street South in the Community of Thornbury – *see attached Study Area Location Map*

Comprehensive SAR List/Initial Screening Based on On-line and Other Sources¹:

- Mammals: Eastern Small-footed Myotis (END), Little Brown Myotis (END), Northern Long-eared Myotis (END) and Tri-colored Bat (END);
- Reptiles and Amphibians: Snapping Turtle (SC);
- Birds: Bank Swallow (THR), Barn Swallow (THR), Bobolink (THR), Chimney Swift (THR), Common Nighthawk (SC), Eastern Meadowlark (THR), Eastern Whip-poor-will (THR), Eastern Wood-pewee (SC), Grasshopper Sparrow (SC), Loggerhead Shrike (THR), Red-headed Woodpecker (SC) and Wood Thrush (SC);
- Fish/Aquatic Species: Silver Lamprey (SC);
- Plants: Butternut (END); and
- Insects: Monarch Butterfly (SC).

¹*On-line and other sources: Species at Risk Ontario (<https://www.ontario.ca/environment-and-energy/species-risk-ontario-list>); Land Information Ontario (<https://www.ontario.ca/page/land-information-ontario>); Make a Natural Heritage Map - Natural Heritage Information Centre (unable to access website) (http://www.gisapplication.lrc.gov.on.ca/mamnh/Index.html?site=MNR_NHLUPS_NaturalHeritage&view)*



[er=NaturalHeritage&locale=en-US](#)); *Ontario Breeding Bird Atlas (Squares 17NK43)* (<http://www.birdsontario.org/atlas/maps.jsp?lang=en>); *Ontario Reptile and Amphibian Atlas (Squares 17NK43)* (<https://ontarionature.org/programs/citizen-science/reptile-amphibian-atlas/>), *eBird* (<https://ebird.org/explore>); *Fisheries and Oceans Canada* (<http://www.dfo-mpo.gc.ca/species-especies/index-eng.htm>); *Fish Online* (<https://www.gisapplication.lrc.gov.on.ca/FishONLine/Index.html?site=FishONLine&viewer=FishONLine&locale=en-US>); *Ontario Butterfly Atlas* (http://www.ontarioinsects.org/atlas_online.htm); and *Atlas of the Mammals of Ontario* (Dobbyn, J. 1994. Federation of Ontario Naturalists).

List of Features/Habitats on and Adjacent to Proposed Activity:

- Study area is largely disturbed and consists mainly of early successional species (*see attached Study Area Location Map*);
- Anthropogenic structures present on-site;
- Watercourse/fish habitat – Little Beaver Creek (permanent watercourse);
- MNRF Unevaluated Wetland located adjacent to the property – associated with watercourse; and
- Woodland/valleyland located adjacent to the property – associated with watercourse.

Consolidated SAR List Expected in Area Based on Habitat²:

- Mammals: Eastern Small-footed Myotis (END), Little Brown Myotis (END), Northern Long-eared Myotis (END) and Tri-colored Bat (END);
- Birds: Bank Swallow (THR), Barn Swallow (THR), Bobolink (THR), Chimney Swift (THR), Common Nighthawk (SC), Eastern Meadowlark (THR), Eastern Wood-pewee (SC), Grasshopper Sparrow (SC), Red-headed Woodpecker (SC) and Wood Thrush (SC);
- Fish/Aquatic Species: Silver Lamprey (SC);
- Plants: Butternut (END); and
- Insects: Monarch Butterfly (SC).

²List of SAR to be assessed relative to the activity/proposed development.

Information Requested:

- Confirmation that the Consolidated List of SAR expected in the Area Based on Habitat includes all SAR of concern to the MECP with respect to this activity; or
- Provision of additional information related to SAR of concern to the MECP with respect to the activity/proposed development³.

³If SAR of concern are deemed “Restricted”, Azimuth will protect the species identity within reporting that would become part of the public record.



Study Area Location Map (VuMap)

Alexa Pompilio

From: Snell, Shamus (MECP) [Shamus.Snell@ontario.ca]
Sent: October 14, 2020 5:02 PM
To: Alexa Pompilio
Cc: Scott Tarof
Subject: RE: AEC19-376 EIS Arthur St W Thornbury - Information Request
Attachments: 19-376 MECP Species at Risk Information Request_Issued_200323.pdf

Hi Alexa,

The Ministry of the Environment, Conservation and Parks (MECP) Species at Risk Branch (SARB) has conducted review of the property and the areas adjacent to it and can detected the one other Species at Risk (SAR) in addition to confirming those identified in the attached screening:

- Canada Warbler (*Cardellina canadensis*)

While this review represents MECP's best currently available information, it is important to note that a lack of information for a site does not mean that SAR or their habitat are not present. There are many areas where the Government of Ontario does not currently have information, especially in area not previously surveyed. On-site assessments will better verify site conditions, identify and confirm presence of SAR and/or their habitats. It is the responsibility of the proponent to ensure that SAR are not killed, harmed, or harassed, and that their habitat is not damaged or destroyed through the activities carried out on the site.

My apologise that no one has responded to you sooner if you require anything else please let me know.

Regards,

Shamus Snell
A/ Management Biologist
Species at Risk Branch
Ministry of the Environment, Conservation and Parks
Email: shamus.snell@ontario.ca

From: Alexa Pompilio <apompilio@azimuthenvironmental.com>
Sent: September 8, 2020 2:16 PM
To: Species at Risk (MECP) <SAROntario@ontario.ca>
Cc: Scott Tarof <starof@azimuthenvironmental.com>
Subject: FW: AEC19-376 EIS Arthur St W Thornbury - Information Request

CAUTION -- EXTERNAL E-MAIL - Do not click links or open attachments unless you recognize the sender.

Good afternoon,

I wanted to follow up regarding a Species at Risk and Background Information Request that was submitted for a property located in the Community of Thornbury (see attached).

Kind regards,

Alexa Pompilio H.B.Sc.

Terrestrial Ecologist

Due to COVID-19, our staff are working remotely. Overall, projects are proceeding but some schedules are affected. Municipal offices and provincial offices are closed to the public and most are working from home, which may delay the approving process and services we rely upon. Our offices are also closed to the public but I can be reached on my cell or email. I look forward to talking with you.



Azimuth Environmental Consulting, Inc
642 Welham Road
Barrie, Ontario, L4N 9A1

Phone: (705) 721-8451 ext. 225

Cell: (705) 794-2233

apompilio@azimuthenvironmental.com

www.azimuthenvironmental.com

Providing services in hydrogeology, terrestrial and aquatic ecology & environmental engineering

Please consider the environment before printing this correspondence

From: Alexa Pompilio

Sent: March 23, 2020 9:20 AM

To: 'SAROntario@ontario.ca'

Subject: AEC19-376 EIS Arthur St W Thornbury - Information Request

Good morning,

Attached please find our Species at Risk and Background Information Request for an Environmental Impact Study for a proposed residential and commercial development on the property located south of Arthur Street West and west of Landsdowne Street South in the Community of Thornbury (see attached for mapping) . Please let me know if you require any additional information.

We look forward to hearing back from you.

Thanks in advance,

Alexa Pompilio H.B.Sc.

Terrestrial Ecologist



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Please consider the environment before printing this correspondence

Michael Gillespie

From: Shirley, Brent (MNRF) [brent.shirley@ontario.ca]
Sent: Monday, December 21, 2020 3:23 PM
To: Michael Gillespie
Subject: RE: Fisheries Information Request - Arthur Street West Thornbury

Hi Mike,

We've had some very recent sampling done on the Little Beaver River in Thornbury. The fish community in close proximity to the subject property is all spring spawning fish species, a combination of creek chub, brook stickleback, white sucker, rainbow trout, blacknose dace, common shiner and fathead minnow were collected. Based on the fish community and some spot water temperatures taken on the Little Beaver River it appears have a cool water thermal regime.

Hope this information is useful and if you have any questions or concerns please feel free to contact me at any time.

Best Regards,

Brent Shirley

A/Management Biologist
Midhurst District Ministry of Natural Resources and Forestry
Midhurst District Office | 2284 Nursery Rd | Midhurst | ON | L9X 1N8
Cell # - 705-718-3145

From: Michael Gillespie <mgillespie@azimuthenvironmental.com>
Sent: December 18, 2020 4:43 PM
To: MIDHURSTINFO (MNRF) <MIDHURSTINFO@ontario.ca>
Subject: Fisheries Information Request - Arthur Street West Thornbury

CAUTION -- EXTERNAL E-MAIL - Do not click links or open attachments unless you recognize the sender.

Good afternoon,

Azimuth has been retained to complete an EIS for a property at Pt Lot 34, Concession 10 (south of Arthurt Street West/west of Landsdowne Street South) in Thornbury (Town of the Blue Mountains; 17T 542700m E, 4934762m N). A mix of residential and commercial development is proposed on the property.

Little Beaver Creek is located along the west property boundary, and flows from south to north (please see attached figures). The majority of its channel is located on the neighbouring property to the west, with a small section of channel located on subject lands (Figure 2). The creek flows into Georgian Bay approximately 590m downstream of the property.

Azimuth has checked common background information sources, including the Land Information Ontario (LIO) database, Fish ON-Line, DFO aquatic SAR mapping and Grey Sauble Conservation reporting for fisheries information for Little Beaver Creek. Very little information has been found, including no ARA information in the LIO database.

In order to assist in our study, we are kindly requesting that MNRF provide any additional aquatic/fisheries information (including fish community and thermal regime) for this watercourse if available.

Thank you in advance for your time.

Regards,

**Mike Gillespie, B.Sc.Env.,
Fisheries Ecologist**

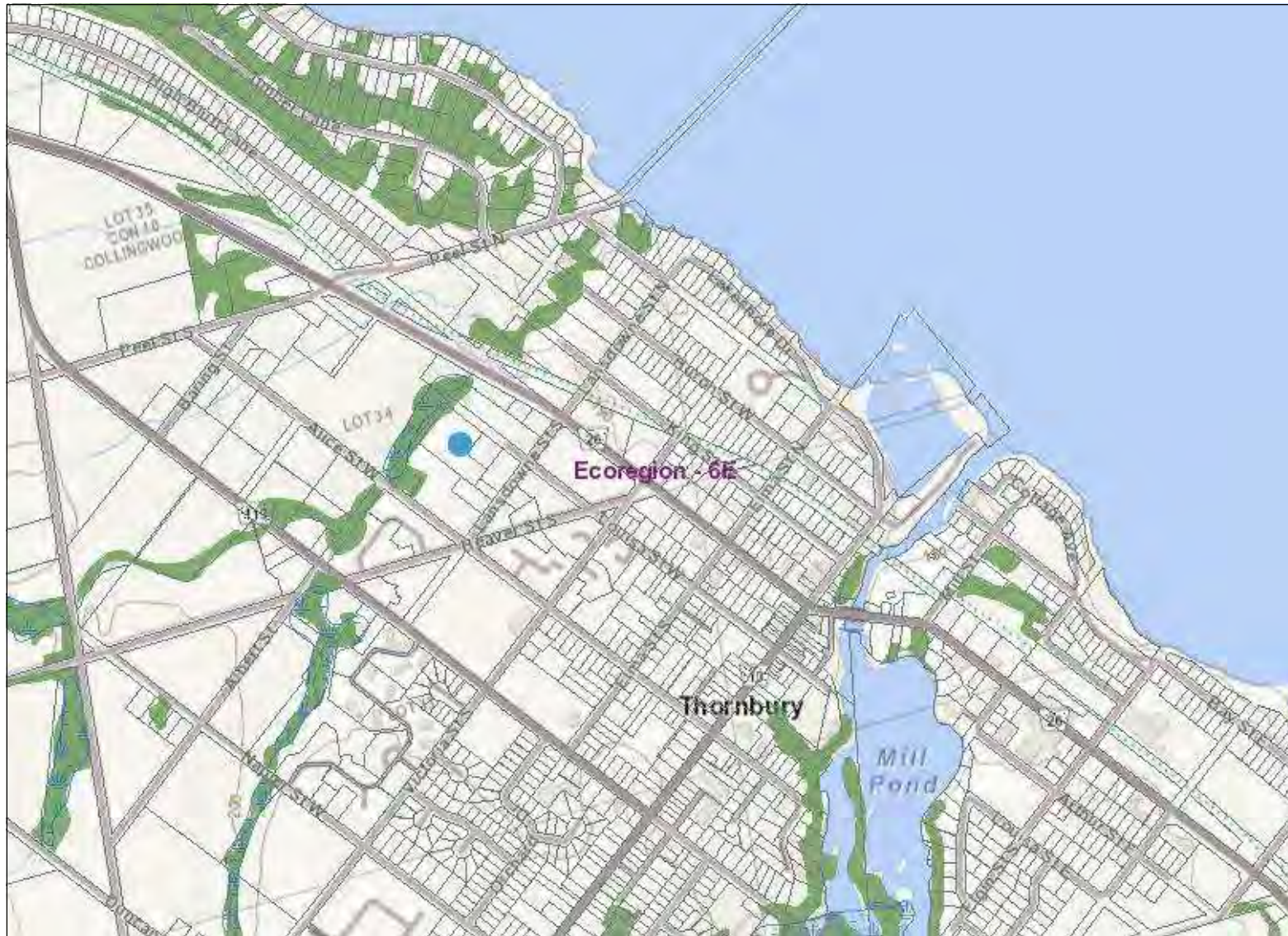
Azimuth Environmental Consulting, Inc
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Phone: (705) 721 - 8451 ext. 203
Fax: (705) 721 - 8926
www.azimuthenvironmental.com

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Study Area Location Map (VuMap)



Legend

- Assessment Parcel
- Woodland
- Conservation Reserve
- Provincial Park
- Natural Heritage System
- Ecoregion
- Wetland**
 - Provincially Significant Wetland Evaluated
 - Non - Provincially Significant Wetland Evaluated
 - Unevaluated Wetland
- Area of Natural Heritage & Scientific Interest (ANSI)**
 - Provincially Significant Life Science ANSI
 - Provincially Significant Earth Science ANSI
- Greenbelt Plan**
 - Boundary
 - Greenbelt External Connections
- Land Use Designations**
 - Protected Countryside
 - Greenbelt Towns and Villages
 - Greenbelt Hamlets
 - Urban River Valley
 - Greenbelt Specialty Crop Area
- Niagara Escarpment Plan (NEP)**
 - Boundary
 - Parks and Open Space System
- Land Use Designations**
 - Escarpment Natural Area
 - Escarpment Protection Area
 - Escarpment Rural Area
 - Mineral Resource Extraction Area
 - Escarpment Recreation Area
 - Urban Area
 - Minor Urban Centre
- Oak Ridges Moraine Conservation Plan (ORM)**
 - Boundary
- Land Use Designations**
 - Natural Core Area
 - Natural Linkage Area
 - Countryside Area
 - Rural Settlement
 - Palgrave Estates Residential Community
 - Settlement Area

0.7 0 0.33 0.7 Kilometers



This map should not be relied on as a precise indicator of routes or locations, nor as a guide to navigation. The Ontario Ministry of Natural Resources and Forestry (OMNRF) shall not be liable in any way for the use of, or reliance upon, this map or any information on this map.

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This map may not display all features listed in the legend because the feature layer was not turned on at the time the map was made; the features do not exist in the geographic range; or features have not been mapped. Absence of a feature in the map does not mean they do not exist in this area.

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GTA 2005 / SWOOP 2006 / Simcoe-Muskoka-Dufferin © FirstBase Solutions, 2005 / 2006 / 2008
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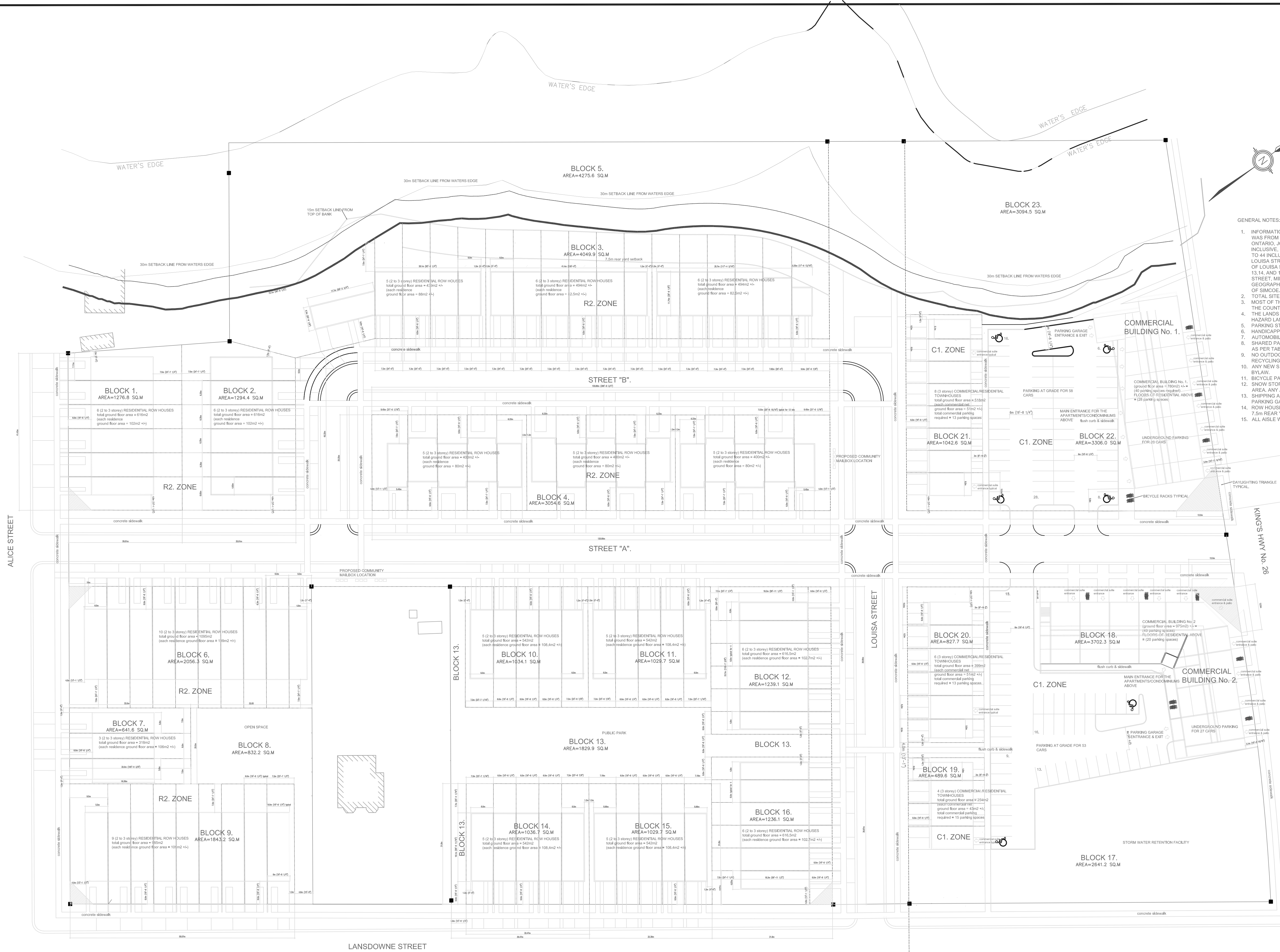
APPENDIX D

Proposed Site Plan and Select Figures from Functional Servicing & Stormwater Management Report



GENERAL NOTES:

1. INFORMATION USED OR ACQUIRED IN THE DEVELOPMENT OF THIS SITE PLAN WAS FROM RUDY MAK SURVEYING LTD. (ONTARIO LAND SURVEYOR) BARRIE ONTARIO, JOB NO. 13384, SHOWING TOPOGRAPHY ON PART OF LOTS 40-44, INCLUSIVE, 46 & 47 SOUTHWEST SIDE OF ARTHUR STREET AND ALL OF LOTS 40 TO 44 INCLUSIVE, PARTS OF LOTS 45 TO 49 INCLUSIVE, NORTHEAST SIDE OF LOUISA STREET AND ALL OF PARK LOTS 11 TO 14 INCLUSIVE, SOUTHWEST SIDE OF LOUISA STREET AND PART OF PARK LOTS 11 AND 12, AND ALL OF PARK LOTS 13, 14, AND 15, NORTHEAST SIDE OF ALICE STREET, TOWN OF THORNHURST, GEORGIC TOWN OF THORNHURST, TOWN OF THE BLUE MOUNTAINS COUNTY OF SIMCOE.
2. TOTAL SITE AREA IS 5.6 HECTARES (13.8 ACRES).
3. MOST OF THE LANDS SHOWN ARE DESIGNATED PRIMARY SETTLEMENT AREA IN THE COUNTY OFFICIAL PLAN, WITH A PORTION DESIGNATED AS HAZARDOUS LAND. THE LANDS ARE DESIGNATED DOWNTOWN AREA, COMMUNITY LIVING AREA AND HAZARDOUS LAND WITHIN THE TOWN OF BLUE MOUNTAINS OFFICIAL PLAN.
4. PARKING STALL SIZES SHOWN ARE 2.75m WIDE X 5.5m LONG.
5. HANDICAPPED PARKING STALL SIZE SHOWN ARE 3.4m WIDE X 5.5m LONG.
6. AUTOMOBILE DRIVE AISLE WIDTH TO BE 6.0m WIDE.
7. SHARED PARKING FOR THE COMMERCIAL BUILDINGS AND APARTMENTS ABOVE AS PER TABLE 6.4 OF THE TOWN OF BLUE MOUNTAINS ZONING BYLAW.
8. NO OUTDOOR GARBAGE OR RECYCLING PROPOSED. ALL GARBAGE AND RECYCLING TO BE WITHIN THE BUILDING.
9. ANY NEW SIGNAGE IS SUBJECT TO THE TOWN OF THE BLUE MOUNTAINS SIGN BYLAW.
10. BICYCLE PARKING IS SHOWN NEAR THE COMMERCIAL BUILDINGS.
11. SNOW STORAGE TO BE STORED ON SITE IN THE DESIGNATED SNOW STORAGE AREA. ANY ADDITIONAL SNOW IS TO BE REMOVED FROM THE SITE.
12. SHIPPING AND RECEIVING FOR THE COMMERCIAL BLOCKS 1 AND 2 TO BE IN THE PARKING GARAGE.
13. ROW HOUSES HAVE A 6.0m WIDE LOT FRONTAGE, 6.0m FRONT YARD SETBACK, 7.5m REAR YARD SETBACK.
14. ALL AISLE WIDTHS WITHIN THE PARKING LOTS ARE 6.0m.



SITE STATISTICS (TOTAL SITE AREA = 5.6 HECTARES)			
LAND USE	NUMBER OF UNITS	GROUND FLOOR AREA	PARKING PROVIDED
RESIDENTIAL TOWNHOUSES & ROWHOUSES	89 UNITS	9659 m ²	7 spaces per unit
COMMERCIAL/RESIDENTIAL TOWNHOUSES	18 UNITS	1171 m ²	2 spaces per unit residential 1 space for 20% of commercial
COMMERCIAL BUILDINGS	2 BUILDINGS CONTAINING A TOTAL OF 17 COMMERCIAL UNITS	1735 m ²	89 parking spaces required
APARTMENT UNITS (ABOVE THE COMMERCIAL BUILDINGS)	2 BUILDINGS CONTAINING A TOTAL OF 75 APARTMENTS	no ground floor area	as per the zoning bylaw

SCHEDULE OF LAND USE			
PROPOSED LAND USE	BLOCKS	YIELD UNITS, BLOCKS	AREA
RESIDENTIAL ROWHOUSES & SEMI-DETACHED DWELLING	1, 2, 3, 4, 6, 7, 9, 10, 11, 12, 14, 15, 16	96 UNITS PER 13 BLOCKS	2,082.2 HECTARES 20,822,200
COMMERCIAL/RESIDENTIAL TOWNHOUSES	18, 20, 21	18 UNITS PER 3 BLOCKS	2,059 HECTARES 20,590
COMMERCIAL BUILDINGS 1 & 2	18, AND 22	17 UNITS PER 2 BLOCKS	7,083 HECTARES 70,830
RESIDENTIAL UNITS (ABOVE THE COMMERCIAL BUILDINGS)	18, AND 22	75 UNITS PER 2 BLOCKS	SHARED SPACE WITH COMMERCIAL BUILDINGS 1 & 2 2,842 HECTARES 28,420
STORM WATER FACILITY	17		1,409 HECTARES 14,090
PUBLIC PARK	13		2,023 HECTARES 20,230
OPEN SPACE	5, 6, AND 23		4,023 HECTARES 40,230
TOTAL			5.6 HECTARES 56,000

DRAWING SCALE
0m 3m 10m

ADDED & REVISED INFORMATION	NO.	DATE	BY
ADDED & REVISED INFORMATION	10	22/02/16	MPK
ADDED DIMENSIONS	9	22/02/04	MPK
ADDED DIMENSIONS	8	22/02/02	MPK
REVISED SITE LINES	7	22/01/26	MPK
REVISED LOT LINES	6	22/01/21	MPK
REVISED DRAWING COMMENTS	5	22/01/07	MPK
REVISED LOT LINES	4	22/01/05	MPK
REVISED CHART	3	21/12/31	MPK
REVISED DRAWING	2	21/12/06	MPK
ISSUED FOR COMMENT	1	21/12/02	MPK
Particulars	No.	Date	By

Revisions to drawing



Project title

BLUE MEADOWS DEVELOPMENT

LANDSDOWNE & ALICE STREET

THORNHURST

TOWN OF THE BLUE MOUNTAINS

ONTARIO

Project number

2021-1000

Date

DEC 2021

Scale

as noted

Sheet title

SITE LAYOUT (NOTES)

Drawn by

MPK

Checked by

MPK

Drawing no.

A1.0

Figure from:
C.F. Crozier & Associates Inc. (Crozier).
February 2022. Functional Servicing &
Stormwater Management Report - 125 Arthur
Street, Town of the Blue Mountains, Grey
County. Prepared for: The Blue Meadows Inc.
CFCA File No. 2142-6059. Received February
24, 2022.

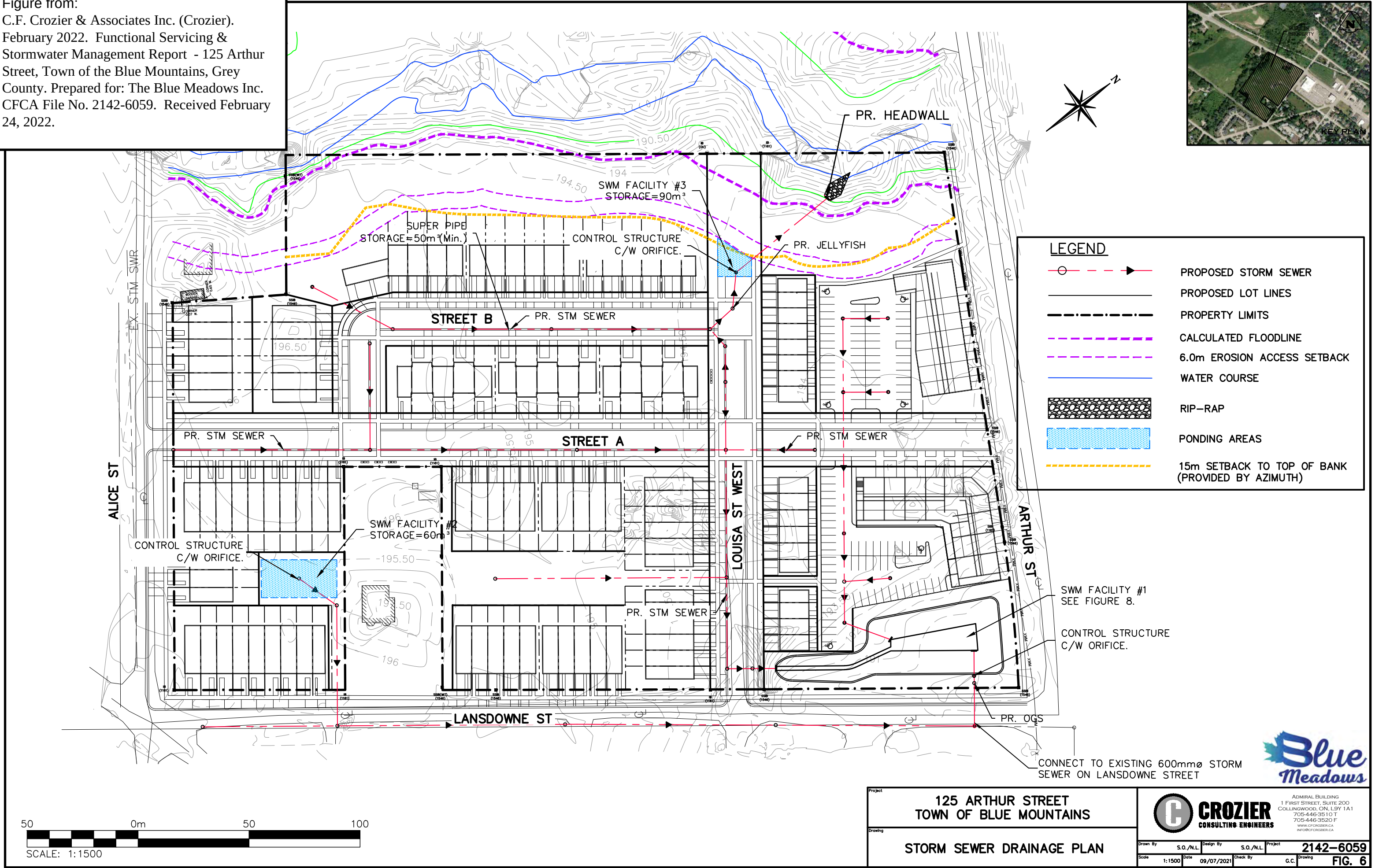
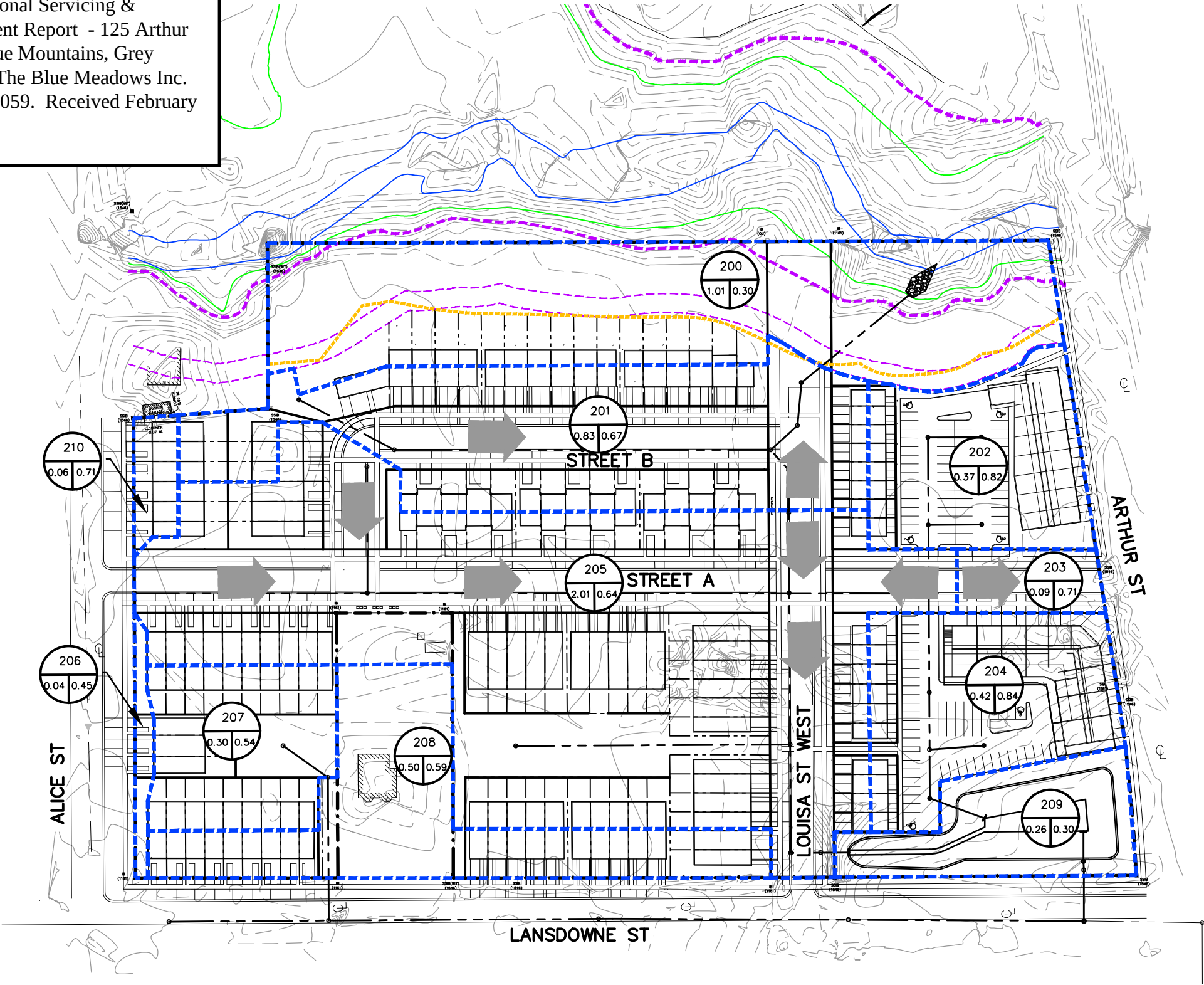


Figure from:
C.F. Crozier & Associates Inc. (Crozier).
February 2022. Functional Servicing &
Stormwater Management Report - 125 Arthur
Street, Town of the Blue Mountains, Grey
County. Prepared for: The Blue Meadows Inc.
CFCA File No. 2142-6059. Received February
24, 2022.



LEGEND

198.00
198.50
x199.11

EXISTING MAJOR CONTOURS
EXISTING MINOR CONTOURS
EXISTING ELEVATION
PROPERTY BOUNDARY

DRAINAGE AREA

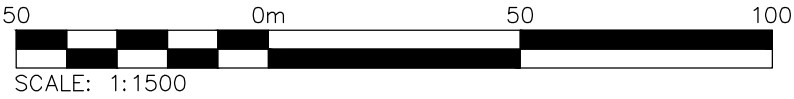
OVERLAND FLOW ARROW

CATCHMENT ID
RUNOFF COEFFICIENT
CATCHMENT AREA (ha)

REGIONAL FLOODLINE
6.0m EROSION ACCESS SETBACK
100 YR FLOODLINE
WATER COURSE

PROPOSED STORM SEWER

15m TOP OF BANK SETBACK (PROVIDED BY AZIMUTH)



Project

125 ARTHUR STREET
TOWN OF BLUE MOUNTAINS

Drawing

POST-DEVELOPMENT DRAINAGE

Blue Meadows

CROZIER
CONSULTING ENGINEERS

Admiral Building
1 First Street, Suite 200
Collingwood, ON, L9Y 1A1
705-446-3510 T
705-446-3520 F
www.cfcrozier.ca
info@cfcrozier.ca

Drawn By	S.O./N.L.	Design By	S.O./N.L.	Project	2142-6059
Scale	1:1500	Date	09/07/2021	Check By	G.C.

FIG. 7