Colucent Environmental

37 Bellevue Terrace
St. Catharines, ON, L2S 1P4 Canada
colucentenvironmental.com

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Bronte Creek Meadows Lands

Alinea Land Corporation

Environmental Impact Assessment (EIA) Report
Phase 1

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EXECUTIVE SUMMARY

This Environmental Impact Assessment Report (EIA) was completed on behalf of Alinea Land Corporation (Alinea). This report provides information regarding:

- Natural areas and functions
- Interactions amongst ground, surface water and ecology
- Proposed development information
- Predicted environmental impacts
- Mitigation, restoration and enhancement

The 123.69 ha Bronte Creek Meadows Alinea land holdings (Subject Lands) are located north of Mainway, west of Burloak Drive, south of Upper Middle Road and east of Sheldon Creek and an existing developed area (**Figure 1,** Appendix 1). The Subject Lands are a mix of active agriculture, woodlands, wetlands and riparian areas, and they occur in an urban settlement area, supported by full municipal services.

Phase 1 of the Subject Lands 1 (49.75 ha) are proposed for a variety of land uses including single family residential, townhouses, potential apartment units in a mixed-use format with retail/commercial uses at grade, institutional and open space. A total of 597 residential units will be established on these lands. The northern portion of Phase 1 are referred to as District 1, Meadows, while the southern portion of the Phase 1 lands is referred to as a District 2, Institutional Area (Employment Block). **Figure 9** (Appendix A) provides the Draft Plan of Proposed Subdivision for the Phase 1 lands.

The Subject Lands have been investigated from a natural heritage perspective, and the landscape, natural features and functions are well understood. The technical information has been gathered, analyzed and integrated into the land use planning work being led by Bousfields Inc. (Bousfields). This EIA is informed by the Existing Conditions Report (Terrastory and Hutchinson (2025a), the SSWS (MTE 2025d) and the Development Limits Report (Colucent 2025).

Most of the proposed development footprint is currently actively farmed land. Natural features occur mostly on the southern half of the Phase 1 lands and include parcels of deciduous woodlands with natural wetlands internal to those forests. The cultivated lands and other disturbed areas, have smaller, less important features some of which include populations of invasive species (e.g., Common Reed). Sheldon Creek West Branch and its mostly forested valley is the more important riparian system, on the Phase 1 lands.

Detailed ecological surveys of the natural heritage have identified some features and areas that meet accepted definitions of Significant Woodlands, Significant Wildlife Habitat, Habitat of

Endangered and Threatened species and Fish Habitat. Significant Wildlife Habitat has been confirmed for Special Concern and Rare Wildlife Species and Significant Wildlife Habitat is probable for Bat Maternity Colonies.

The proposed Phase 1 development will result in an increase in natural vegetation and habitat cover of about 4 ha over the existing conditions. Forest and wetland creation will create a wider, continuous and stable ecological linkage between the Sheldon Creek valley and the nearby Sheldon Creek Woodland. Buffer widths and character have been defined in response to the sensitivity of features and functions. The mitigation and enhancement measures will ensure there will be no negative impacts on natural heritage features and functions, from the development of the Phase 1 lands.

The resulting natural heritage system will include viable and resilient natural features and associated functions. This EIA provides detailed recommended actions to be implemented during pre-construction, construction, and post-construction stages of development.

After the application of an avoidance process, and the implementation of impact minimization and enhancement measures, the proposed development in Phase 1 will result in the following:

- Conservation of 12.16 ha of natural heritage areas
- Conservation of all existing wetlands within woodlands in Phase 1
- Creation of 1.55 ha of two Enhancement Areas to Key Features between Sheldon Creek Valley Woodland and Sheldon Creek Woodland (and internal to Sheldon Creek Woodland)
- Establishment of naturalized buffers between natural features and development
- Removal of a swath of deciduous forest in the Sheldon Creek Valley Woodland to facilitate the required municipal extension of Corporate Drive across the valley
- Net increase in natural vegetation cover on the Subject Lands
- Increased habitat connectivity between the Sheldon Creek valley (Blocks 247, 248) and the Sheldon Creek Woodland (with associated increased movement of species and genetic material)
- Conservation of confirmed existing occurrences and associated habitat for five endangered bat species (habitat likely exists for two additional endangered bat species, not confirmed through acoustic monitoring; enhancement of SAR bat habitat and use with mitigation (artificial roost boxes and natural areas/features in SWM pond areas)
- Removal of farm fields used by some wildlife for foraging (e.g., White-tailed Deer, Canada Goose seasonal use of soybean and corn fields) and by some open land species for breeding and foraging (e.g., Horned Lark, Barn Swallow)

This project will create outcomes, that will enhance the protection and recovery of natural heritage features and functions within the Sheldon Creek watershed. Assuming the conservation, mitigation and enhancement measures outlined in this report, are implemented as identified, the development will have no negative impacts on the natural heritage features and their functions.

This EIA provides recommended actions to be implemented during pre-construction, construction, and post-construction stages of development. An Adaptive Management and Monitoring Plan is recommended for completion to ensure that the implementation and monitoring of the development will proceed in an optimized and sustainable manner.

1.0 SUBJECT LANDS & INTRODUCTION

1.1 Introduction

Colucent Environmental Inc. (Colucent) was retained by Alinea Land Corporation (Alinea) to develop this Environmental Impact Assessment (EIA) report for the Bronte Creek Meadows community development project. The previous EIA, dated June 27, 2025, assessed the entire Bronte Creek Meadow Alinea land holdings. This EIA addresses the Phase 1 lands, which are generally the western half of the Alinea Bronte Creek Meadows holdings.

This EIA follows and was guided by the Existing Conditions Report (ECR) (Terrastory and Hutchinson 2025a) and was created concurrently with the completion of the Scoped Subwatershed Study (SSWS) (MTE 2025d).

This EIA report has relied upon the work and findings of detailed technical, planning and design reports completed by experts in various disciplines (listed in section 1.4). For example, fluvial geomorphology and flood hazard work has been completed by Water's Edge Environmental Solutions Team Ltd. Hydrogeological, geotechnical and hydraulic work has been completed by MTE Consultants Inc (MTE). Ecological work has been completed by Terrastory Environmental Consulting Inc. (Terrastory), and Hutchinson Environmental Services Limited (Hutchinson). Colucent completed ecological work and biophysical integration work on the Subject Lands in 2023, 2024 and 2025. Colucent also crafted a Development Limits Report for these lands. That report has been largely superseded by the SSWS and this EIA.

The ecological work is described in detail in the 2025 Terrastory and Hutchinson Existing Conditions Report (ECR) (2025a).

Through the development of this EIA and the associated SSWS, multiple discussions have been held with representatives of the City of Burlington (the City), Conservation Halton, (CH) and with two First Nations, Mississaugas of the Credit First Nation, and Six Nations of the Grand River Elected Council). Comments received to-date from those governments and agencies have been reviewed and considered in this Phase 1 EIA. Comments are addressed more fully in a consolidated manner in a Comment Response Matrix, developed by Bousfields (2026).

1.2 Subject Lands Location

The 123.69 ha Bronte Creek Meadows property (Subject Lands) is located north of Mainway, west of Burloak Drive, south of Upper Middle Road and east of Sheldon Creek and an existing developed area (**Figure 1**, Appendix 1).

The development is being proposed in a phased manner with the western half of the Subject Lands proceeding first. The Phase 1 development limit and plan are depicted on **Figure 9** (Appendix 1). Phase 1 (49.75 ha), addressed in this report is proposed for a variety of land

uses including 597 units in single family and semi-detached residential, townhouses, an employment block and open space. Phases east of Phase 1 (73.94 ha) will be addressed in subsequent development processes and in separate, subsequent EIA reporting.

The northern portion of Phase 1 are referred to as District 1, Meadows (residential), while the southern portion of the Phase 1 lands is referred to as a District 2, Institutional Area (employment block).

The Subject Lands (Phases 1 and 2) are bounded by existing urban development on three sides. South of Mainway, the adjacent lands are occupied by commercial uses. Lands to the west across Sheldon Creek are residential, as are the lands north of Upper Middle Road. A 20 m wide Hydro One corridor passes adjacent to the Subject Lands along the northwest limits, just south of Upper Middle Road. Within the Subject Lands, adjacent to the hydro corridor is an 18.28 m wide easement, accommodating high pressure underground oil pipelines.

To the east of the Subject Lands (well east of the Phase 1 lands) is the 682 ha Bronte Creek Provincial Park. The western side of the park closest to the Subject Lands, has very active recreational uses and facilities including parking lots, park buildings, leash free dog park, disc golf field, and a model plane airfield. Vegetation in the western portion of the park includes a mix of open meadows, treed areas, and active farmland associated with historical aspects of the park (e.g., Spruce Land farmhouse). The prominent forested valley of Bronte Creek ranges between about 500 m to 1.5 km east of Burloak Drive (**Figure 1**, Appendix 1).

The Subject Lands are about equidistant (about 5 km from the Subject Lands) to the slopes of the Niagara Escarpment (northeast) and Lake Ontario (southeast). The Subject Lands sit about 1 km north of a major transportation corridor, the Queen Elizabeth Way (QEW) and associated Service Roads.The relatively flat Subject Lands are mostly within the Sheldon Creek watershed which has a total drainage area roughly 7.4 km^2. A small area of the Subject Lands abutting Burloak Drive is within the Bronte Creek watershed.

The Phase 1 Subject Lands lie within the sub catchments of the Sheldon Creek West Branch and the Sheldon Creek East Branch. The headwaters of Sheldon Creek occur north and upstream of Highway 407, north of 1 Side Road, on the Trafalgar Moraine. The Phase 2 lands, subject to subsequent EIA reporting, include tributaries of Sheldon Creek and Bronte Creeks (**Figure 3**, Appendix 1).

1.3 EIA Terms of Reference and Guidance

The landowner consulting team developed Terms of Reference for the Master Environmental Servicing Study/ Scoped Subwatershed Study (MESP/SSWS), including specific Terms of Reference for the EIA (Appendix 4, MTE 2025d, developed by Terrastory and Colucent, 2025).

Provincial guidance has been available since the 1990s about how to determine the potential effects of development on the environment through successive versions of the Natural Heritage Reference Manual (e.g., 1999, 2010) (NHRM). The latest version of the NHRM (2010) is relevant to the now historic 2005 Provincial Policy Statement (PPS).

Updates to the NHRM have not been developed in response to new versions of the PPS issued in 2014, 2020, 2024. Accordingly, aspects of the NHRM are now outdated and require revisions and updates. The province has apparently been working on an updated NHRM for many months, but the content and timing of changes are unknown (pers comm). Given the absence of a more current NHRM, recent scientific literature and professional judgement is also relied upon for some more current aspects of impact assessment (e.g., mitigation hierarchy, climate change effects and resiliency, natural heritage feature and function sensitivity, and human use of and interactions with nature).

The federal Impact Assessment (IA) Agency of Canada has just released research results regarding improving IA in Canada (Horvath et al 2026). That research relies heavily upon the voices of skilled practitioners, who are described by the Agency as being "… intimately familiar with the real-world practical challenges that arise in the IA process across Canada and factors that either contribute to, or undermine, its effectiveness, and are well positioned to identify potential areas of improvement and innovation."

Best practices in impact assessment are also available with a few organizations. Most notably, the International Impact Assessment Association (IAIA) (and the provincial chapter OAIA) provide leadership in this profession. The lead author of this EIA has worked closely with IAIA for a few decades and has led impact assessment training sessions for about 1,100 practitioners and government staff in Ontario.

The Region of Halton produced EIA Guidelines (version 1, 2009; version 2, 2020). Ecological Impact Study (EIS) Guidelines were also produced by Conservation Halton (2005). Ecological Study Guidelines were also developed by Conservation Halton (2017). Like the NHRM, there are some challenges introduced relying on what are now considered to be historic documents. This EIA refers to the most current IA references and materials to address the standard mitigation hierarchy applied in IA.

Collectively those serve as useful background documents, providing guidance regarding some local best practices in impact assessment.

This approach specifically addresses the following standard steps:

- Avoidance
- Minimization
- Restoration/enhancement/mitigation

- Offsetting

One of the comments and discussion points related to the IA process is how baseline conditions are defined (i.e., point from which impact predictions are measured). Colucent looks at current conditions on the landscape for the baseline for the assessment of impacts, while making some reference to historic and ongoing impacts.

Six Nations of the Grand River (SNGR) refer to their larger Territory, now being within the most highly urbanized land in Canada. SNGR states that development has occurred on Six Nations' traditional territory without consultation or consent of SNGR. The cumulative effects of this intense development have contributed to what SNGR describes as significant environmental degradation, and, as a result, severe impacts on its ability to exercise Aboriginal and Treaty Rights.

This EIA is intended to comply with provincial and municipal requirements. This EIA is a technical, impact assessment document that assumes the baseline conditions are as is, without detailed reference to historic landscape conditions (which are sometimes less well-documented and less well known). Colucent is not a party to Treaties, nor are we involved in government-to-government discussions about Treaty Rights.

Colucent believes that business has a role in reconciliation (e.g., Action #92, in Calls to Action, Truth and Reconciliation Commission of Canada, 2015). Technical areas of responsibility are referenced in this EIA, including some aspects that have been raised by Mississaugas of the Credit First Nation, and Six Nations of the Grand River (e.g., wetland sensitivity, adequacy of protective buffers, access control to sensitive features, reference to SNGREC's Environmental Levy Policy which requires 41 m wetland buffers).

1.4 Environmental Studies and Technical Integration

The environmental members of the consulting team collaborating on behalf of Alinea in their technical evaluation of the Bronte Creek Meadows lands include:

- Terrastory Environmental Consulting Inc., in association with Hutchinson Environmental Services Limited
- Water's Edge Environmental Solutions Team Ltd.
- MTE Consultants Inc.
- Kuntz Forestry Consultants Inc.
- Colucent Environmental Inc.

The broader consulting team includes civil engineers, land use planners and landscape architects, who have led the development design and the planning approvals processes (i.e.,

MTE Consultants Inc., Paradigm Transportation Solutions Ltd., Bousfields Inc., and NAK Design Strategies).

This report has carefully considered the work and findings of the technical team mentioned above. Areas of technical interaction (e.g., water and ecology) have been fully explored and discussed amongst the technical team to ensure a sound understanding of baseline characteristics and ecological sensitivities to potential impacts. Beyond identifying, listing and mapping natural heritage features, those features and associated functions have also been analyzed in terms of sensitivity to typical and expected development impact activities (e.g., vegetation removal, grading, excavations, altered surface flows).

This Phase 1 EIA addresses direct, indirect, and cumulative natural environmental effects, and the development of related and relevant mitigation measures. These measures will enhance the protection and recovery of natural heritage features and functions within the Phase 1 sub catchments of the Sheldon Creek West Branch and the Sheldon Creek East Branch.

2.0 LANDSCAPE AND WATERSHED CONTEXT

The Subject Lands occur on a physiographic unit formally known as a drumlinized till plain, near the glacial Iroquois Shoreline. The soils on the Subject Lands are dominated by relatively tight and less than perfectly drained clay loam tills (Halton till). Those soils are relatively impermeable, and groundwater is generally disconnected from the surface water system. The wetlands occur as surface water features on the Phase 1 lands, with no important links with ground water.

Soils generally include glacial till deposits, with sand and clay deposits in some areas. Shale bedrock is present at depths varying from 1.1 m to 4.6 m below ground surface (mbgs). The Subject Lands are relatively flat falling gently from elevations ranging of 141.9 m in the northwest to 129.5 m in the southeast.

This relatively flat landscape, the weak connection between ground and surface water systems and the predominant agricultural use, limits the diversity and sensitivity of natural heritage features and functions. After colonization by Europeans, this landscape was intensively managed for agricultural production. Remnant natural features including relict woodland and wetlands were apparent on the landscape at the height of this agricultural period. As agriculture shifted and played a less prominent role on the Subject Lands, some additional vegetation cover established in previously open and farmed areas (e.g., northern portions of Sheldon. Creek valley, and in ephemerally wet areas). Some woodlands and wetlands that served as livestock watering and/or irrigation purposes have naturalized and/or are recovering from historic impacts.

Queenston shale bedrock underlies the Subject Lands at depths of about 1.1 m to 4.6 m below ground surface (mbgs). Groundwater elevations from monitoring wells in bedrock and soils, occur between about 1.25 m and 6.1 m below ground surface (mbgs). The local groundwater flow is interpreted to be southeast towards Lake Ontario, generally following the fall of the land.

The soils on the Subject Lands are predominantly Chinguacousy till, which are derived from locally occurring brown shales, sandstones, and fossiliferous limestone. There is some variation in color and texture in these soil materials. **Photo 15** (Appendix 2) illustrates areas of the Subject Lands where Queenston shale has caused the surface soils to have a more reddish pink hue.

The local microclimate is defined in part by the very southern location of the Subject Lands and the proximity to Lake Ontario. The province delineates this area as the Lake Erie-Lake Ontario Ecoregion. More specifically the Subject Lands occur in the Toronto Ecodistrict 7E-4.

The native woodlands in this Ecodistrict are dominated by Sugar Maple (*Acer saccharum*) and American Beech (*Fagus grandifolia*). Other tree species on drier sites include Northern Red Oak (*Quercus rubra*) and White Oak (*Quercus alba)*. On fresh sites, the woodlands include American basswood, (*Tilia americana*), Red Maple (*Acer rubrum*), Trembling Aspen (*Populus*

tremuloides), with White Ash (*Fraxinus americana*) occurring on fresh sites and on drier sites. **Figures 2** and **3** (Appendix 1) illustrate the Subject Lands in the larger watershed context. Sheldon Creek is the primary river system draining the Subject Lands. The Sheldon Creek West Branch flows north to south along the western side of the Subject Lands (**Photos 1** to **6**, Appendix 2). The headwaters occur north and upstream of Highway 407, north of 1 Side Road. The headwaters (two ephemeral tributaries) originate in actively farmed lands with some local impoundments, and flow south, under Highway 407, via a culvert about 60 m in length.

The Sheldon Creek West Branch shallow ravine provides organic contributions to the downstream watercourse system (e.g., invertebrates and debris). Sheldon Creek West Branch flows south, through developed lands (including piped sections), under the QEW corridor, and flows in an open channel south to Lake Ontario, entering the lake at Sheldon Creek Park, in neighboring Oakville.

Minor flows are conveyed by small tributaries of Sheldon Creek, and a tributary to Bronte Creek drains a catchment area on the eastern portions of the Subject Lands. The tight soils result in flashy surface water runoff, principally through drainage channels affected by historic and ongoing agricultural activities (e.g., ditching along field edges and cultivation in some tributaries when drier weather and soil conditions allow) (e.g., **Photos 23** to **24**, Appendix 2).

Agricultural and municipal activities have altered original flows between Sheldon Creek and Bronte Creek watersheds over time. These tributaries are being analyzed and discussed with Conservation Halton and the City. The existing separation of these tributaries will remain in the post development landscape. These watercourses will be discussed in more detail in subsequent EIA reporting for future development phases.

The largest river system in the local area is Bronte Creek. A minor Bronte Creek Tributary runs northwest to southeast through the eastern portions of the Subject Lands, as a very small channel, that is poorly defined. The contributions from that tributary have been disrupted historically and most Bronte Creek tributary flows have been diverted to Sheldon Creek. This matter has been discussed with the City and was discussed in the field with Conservation Halton on June 25, 2025. Those discussions continue and will inform subsequent EIA reporting for future development phases.

2.1 Natural Heritage

The City of Burlington Official Plan (including as amended by OPA 4) allows that the boundaries of the Region's Natural Heritage System can be refined with deletions and/or boundary adjustments through a sub-watershed study accepted by the Region, an individual Environmental Impact Assessment accepted by the Region, or similar studies based on terms of reference accepted by the Region.

The SSWS (section 2.2.6) provides detailed discussions regarding the NHS policy text and interpretation Key Natural Features, including Enhancements to Key Features, Linkages

(section 5.20.1), and a discussion of buffers appropriate for the scale of the SSWS. Section 5.20 of the SSWS provides detailed information and recommendations related to the NHS limits. A summary of key information in the SSWS is provided in the following as baseline information to inform the impact assessment analyses in this report.

Natural Heritage Features contribute to an understanding and determination of both Natural Heritage and Water Resource Systems. Given the landscape and context of the Subject Lands, the following features and associated functions are determinant of feature/area boundaries. Some overlap occurs between sensitive water features and natural heritage features and functions. The following list synthesizes and simplifies extensive background data reports and consolidates the development limit discussions. PPS Significant Natural Features (Key Features), and related features that are important at the Regional and/or City scale are:

- Significant Woodlands
- Identified Wetlands (non-provincially significant wetlands/non-PSW)
- Candidate and Confirmed Significant Wildlife Habitat
- Endangered (bat species), Threatened Species (Silver Shiner) and other species at risk
- Fish Habitat - Valleylands and Fisheries (confined drainage systems; Sheldon Creek West Branch)
- Fish Habitat - Watercourses and Fisheries (unconfined drainage systems; East Sheldon Creek and Bronte Creek tributaries)

Regional Centers for Biodiversity were not delineated in the original Regional NHS background report and mapping; however, they were suggested to be 200 ha or more in size. There are no Centers for Biodiversity exceeding that recommended size threshold in or adjacent to the Phase 1 lands.

The SSWS identifies enhancements to the Regional and City adopted NHS. The remaining text in this sub-section addresses potential Enhancements to Key Natural Features.

Enhancements are described by the City and Region as ecologically supporting areas adjacent to Key Natural Features, that increase the ecological resilience and function of individual key natural features or groups of key natural features or of the Natural Heritage System.

This EIA identifies and discusses two Enhancements to Key Features that contribute to the NHS by protecting and restoring critical ecological functions such as, ecological connectivity among natural area patches, surface water catchment areas for wetlands, minimum core area thresholds and improved core area shape that reduce edge effect and enlarge interior habitat. OPA 4 (Schedule 5; included in this EIA as **Figure 8**, Appendix 1) identifies conceptual locations of those two potential NHS Enhancement Areas and one NHS linkage.

The Development Limits Report (Colucent Environmental Inc. 2005) looked more closely at some of these concepts (e.g., enhancement areas, linkages), informed by a greater level of understanding of the landscape than is afforded at the regional or city-wide levels). That Development Limits Report is largely superseded by the more recent guidance and recommendations provided by the SSWS and this EIA.

One aspect of natural heritage that has been considered in more detail in this EIA is the relative sensitivity of the existing natural heritage features and functions to development impacts. This supplements the significance assessment and provides more explanation and technical support for the impact assessment, mitigation analyses and net effects. This was a topic of some discussion amongst the city, their peer reviewer (LGL Limited), CH and First Nations. Colucent agreed to provide substantial documentation of this work in this EIA in response to those discussions.

Table 1 provides an overview of the natural heritage feature sensitivity in the Phase One lands and what mitigation measures and methods will be relied upon in impact mitigation and enhancement work. Table 2 provides a more detailed impact assessment which includes more specificity in feature sensitivity to development impacts and mitigation measures.

This EIA also provides an opportunity to carefully consider PPS section 4.1.3, that notes *"Natural heritage systems* shall be identified … recognizing that *natural heritage systems* will vary in size and form in *settlement areas*, *rural areas*, and *prime agricultural areas*." For example, while it is important that natural heritage systems and their features and functions are maintained to the extent achievable in Settlement Areas, given the demands associated with sustainable community design and the increased human activity within the urban/urbanizing NHS, there is a need for some increased flexibility and innovative design.

It is apparent that the ongoing urbanization of the Subject Lands presents different challenges and opportunities for natural heritage conservation, than in in rural and agricultural areas. The use of natural areas for traditional purposes (e.g., hunting, fishing, gathering) is complicated by urban rules regarding some harvests and by a growing awareness of, and interest in more opportunities for community interactions with nature and its benefits. The City could consider and plan for an appropriate level of human use of natural areas within and around the Subject Lands. Collaborative planning with the region and province could be beneficial to ensure natural features are not exposed to undue or unsustainable pressure, and that uses are spread more community-wide (e.g., including Bronte Creek Provincial Park).

2.2 Cultural Heritage

Before the arrival of colonists from Europe these lands and waters were relied upon by Indigenous peoples for thousands of years. More information regarding the Indigenous peoples and colonization are provided in the archaeological reporting developed for the Subject Lands (Archaeological Services Inc., 2024).

A brief outline follows regarding more recent colonization and post colonization context. Comments are included where these cultural heritage activities have affected and/or are related to the natural environment. This summary is prepared by a non-Indigenous author who is trained in western sciences. It is informed by some direct dialogue with First Nations. Technical comments recently received from and discussed with representatives of Mississaugas of the Credit First Nation and Six Nations of the Grand River (Elected Council) have been considered in this EIA.

The Subject Lands are situated within Treaty 13a, which was signed on August 2, 1805, between the Mississaugas and the British Crown. On September 12, 1806, the signing of Treaty 14 confirmed the Head of the Lake Purchase between the Mississaugas of the Credit and the Crown for lands along the north shore of Lake Ontario southwest of the Toronto Purchase to what is now Oakville (Archaeological Services Inc., 2024). Grand River First Nations (GRFN) states that Aboriginal and Treaty Rights are not only set out in the treaties themselves but are also recognized and affirmed in Section 35 of the Constitution Act, 1982. The GRFN website provides a comprehensive listing of treaties and related articles and actions; **https://www.sixnations.ca/LandsResources/1websiteTreatyProclamationPublicNoticesIndex.pdf**

The local landscape, once part of Nelson Township, was subject to the first land survey in 1806. The widespread clearing of the natural forests occurred in the late 1700s and the early 1800s, to enable settlement by United Empire Loyalists and by European colonizers. **Photo 7** (Appendix 2) depicts an artifact of the early forest clearing. Some settlers used white pine stumps with attached surface roots to create livestock fencing for farm fields. Remnants of these artifacts are not frequently encountered in the Greater Toronto Area (GTA).

The Subject Lands occur about 1 km south of an early village in Ontario, Tansley, which was originally known as St. Annes. Tansley was settled in the late 1820s and by the 1870s, the village included a grist mill, sawmill, hotel, post office and school. Rail lines were established in the area in 1854 - 1855 and in 1878.

Large orchards occurred north of the Subject Lands (visible in the historic aerial photos, **Figures 5**, **6**, Appendix 1). Those orchards appear to be the naming origin for both the Orchard Road and the local Orchard community.

Those historic aerial photos also depict an actively farmed landscape with three homes and farms fronting on Upper Middle Road, on the northern margins of the Subject Lands. The Sheldon Creek valley was less forested, especially in the northern half on the Subject Lands. The trees that were present historically, appear to be concentrated on and at the top of the relatively steeper slopes of Sheldon Creek.

Bronte Creek Provincial Park is situated to the east of the Subject Lands, across Burloak Drive. The park areas adjacent to Burloak Drive are less natural and include more active uses including parking lots and park buildings, leash free dog park, disc golf field, a model plane airfield, a mix of open meadows, treed areas, and farmland associated with historical aspects

of the park (e.g., Spruce Land farmhouse). The main, forested valley of Bronte Creek is about 500 m to 1.5 km east of Burloak Drive and the Subject Lands (**Figure 1**, Appendix 1).

The large Bronte Creek valley system anchors the Bronte Creek Provincial Park, a Recreation Class provincial park established in 1972. The Management Plan (MECP, 2002) for that park identifies objectives related to four areas, protection, recreation, heritage appreciation, and tourism. Bronte Creek Provincial Park was established by the Ministry of Natural Resources and Forestry (MNRF; MNR at that time).

3.0 NATURAL HERITAGE FEATURES AND FUNCTIONS

The Existing Conditions Report addresses the character of the Bronte Creek Meadows lands (Terrastory and Hutchinson, 2025a). Technical data have been assembled and reviewed in the context of the current standards for assessing natural heritage (features and functions) in Ontario (2010 NHRM). These materials have also been considered in the context of current technical guidance materials and with the application of the best current science and knowledge related to ecosystem functions, goods and services, and impact assessment best practices.

3.1 Natural Heritage Features and Functions

The SSWS has defined the limits of the Key Features, linkages and the limits of the NHS. At that scale recommended buffer ranges were presented for some features and areas. If/as necessary, further refinements are addressed in this EIA.

It is worth noting that there are some limiting factors negatively affecting the biodiversity and productivity of the Key Features (e.g., limited presence of open water and short duration wetland hydroperiods, extensive European Buckthorn infestations). These factors and enhancements to Key Features are discussed further in this EIA.

Enhancements to Key Natural Features on the Bronte Creek Meadows lands will improve connectivity, increase woodland core size and provide opportunities to create new, more viable wetlands with longer hydroperiods for sustainable amphibian and invertebrate populations (**Figures 10**, **11**, Appendix 1).

In terms of general natural heritage context, over the past 200 years, most of the natural vegetation cover was removed and replaced with more intensive agricultural production and settlements. Natural areas were mostly confined to lands that could not be readily cultivated (e.g., wetlands and areas of seasonally high ground areas, surface water features, and steep slopes). In addition to the presence of natural features, natural functions and processes are also present on the landscape. These have been affected by largescale changes in land use.

The widespread clearing of natural areas and the implementation of active agriculture have reduced landscape opportunities for carbon sequestration. Carbon stocks retained in larger natural areas have persisted, but many smaller and near urban natural areas have seen reduced natural area carbon capture through more intensive farming methods (e.g., merged fields, hedgerow removal, tile drainage of seasonally wet fields). Carbon sequestration opportunities exist in developing areas through the restoration of some features (e.g., naturalized buffers, stormwater management/SWM facilities, and the management of natural areas to maintain and improve forest health and resilience).

Most regulating services are best measured and addressed at a landscape scale versus a local, project by project scale (e.g., local climate and air quality conditions). Having said that, the proposed development offers opportunities to improve some regulatory services (i.e.,

pollination). In their current condition, the cropped and bare soils fields in the Subject Lands present limited pollination activities. Pollination activities were observed periodically on the Subject Lands, associated principally with seasonally wet areas within woodland and open areas. The Phase 1 and 2 lands include some seasonal pollinator habitat that can be replaced and enhanced in the design of buffers, restoration areas and natural channels.

Opportunities to improve natural heritage features, functions and processes are discussed in section 6 of this report. For example, the environmental team are collaborating on created habitat areas in storm water management facilities and buffers to optimize the pollination function.

3.2 Natural Hazards, Natural Heritage Features Assessment

Some overlap occurs between natural hazards and natural heritage features. The following list is intended to synthesize and simplify extensive background data reports referred to in this EIA. This approach promotes an understanding of natural heritage features and functions aligned under the following seven categories. A brief discussion is presented regarding each category.

- Natural Hazards (sensitive surface and ground water features)
- Significant Woodlands
- Identified Wetlands (non PSW, and CH regulated wetlands)
- Candidate and Confirmed Significant Wildlife Habitat
- Endangered (bat species) and Threatened Species (Silver Shiner)
- Fish Habitat - Valleylands and Fisheries (confined drainage systems; Sheldon Creek West Branch)
- Fish Habitat - Watercourses and Fisheries (unconfined drainage systems; East Sheldon Creek and Bronte Creek tributaries)

3.2.1 Natural Hazards

Natural hazards generally consist of lands that could pose a risk to human life and property. These lands consist of flood plains, riverine erosion hazards, unstable slopes, wetlands, and areas of unstable soil. Relevant natural hazards are discussed briefly below and illustrated in **Figure 7** (Appendix 1). CH Regulations are important aspects of hazards that are address in the applicant's consultants' reports

Within the Phase 1 portions of the Subject Lands, floodplains and riverine erosion hazards associated with watercourses were confirmed by Water's Edge Environmental Solutions Team Ltd. The valley erosion hazard/stable top of slope associated with the Sheldon Creek Valley was confirmed by MTE. These aspects are being considered in more detail by Conservation Halton and MTE, with collaborative field surveys of those features completed on June 25, 2025.

Conservation Halton has provided an initial response (September 29, 2025) and some discussions are ongoing.

Multiple, very small, disturbed features with some wetland characteristics are present within the proposed development on the tablelands of the Subject Lands, outside of the woodlands. (see Section 4 for details). Most of those wetlands provide no measurable water detention or water quality enhancement functions. The open area wetlands do not appear to present natural hazard conditions/functions.

3.2.2 Sensitive Surface Water Features

The Subject Lands have limited seasonal wetland features that contribute to the local biodiversity. The hydrology studies have noted the alterations of surface water systems over time, associated with upstream development.

The existing natural systems are relatively stable, although narrow riparian corridors (i.e., Tributary to Sheldon Creek, Tributary to Bronte Creek, in Phase 2) and active agriculture are characterized by more recent disturbances including farm drainage channel creation (e.g., short term periods of intense surface flow movements directed to farm ditches, in response to storms and early spring runoff conditions).

Two relatively more sensitive surface water features are wetland areas SCW-1, SCW-2, both in the Phase 1 lands. The primary source of water to those monitored wetlands is precipitation and surface water runoff, with limited to no groundwater contribution. That surface runoff comes principally from actively farmed fields.

3.2.3 Sensitive Groundwater Features

The connections between ground and surface water are limited by the tight till soils and the surface water systems are largely flashy in nature. The presence of low permeability soils underneath the wetland features may limit the downward percolation of groundwater into the shallow weathered bedrock. No sensitive groundwater features have been identified.

3.2.4 Significant Woodlands

There are three woodland areas on the Subject Lands. Two occur on the Phase 1 lands (i.e., Sheldon Creek Valley Woodland and Sheldon Creek Woodland), and all three meet standard significant woodland criteria.

The Sheldon Creek Valley Woodland is discussed further in the valleyland and fisheries discussion (section 3.2.8, 3.2.9). One tableland woodland, Sheldon Creek Woodland (11.0 ha) is discussed in the following. There are smaller treed areas that do not meet accepted definitions of woodland (e.g., hedgerows, scattered individual trees).

Figures 4 and **5** (Appendix 1) illustrate the limits of the Sheldon Creek Woodland in 1954 and 1960. The historical context helps to understand the longer-term presence of some woodlands versus areas that were previously not forested (e.g., in the general area of wetland SCW-2). The resolution of the aerial photo limits an ability to define the nature of the more historic openings, but that one area on/near SCW-2 is generally coincident with less mature existing woodland and small ditches suggesting that wetland may have some disturbance origins.

The Sheldon Creek Woodland (within a landlocked parcel, and mostly owned by the City of Burlington), consists of more mature deciduous forest types, with some wetland communities (e.g., Oak Mineral Deciduous Swamp). The drier portions of the woodland are comprised of Dry - Fresh Oak - Maple - Hickory Deciduous Forest and - Dry- Fresh Sugar Maple - Oak Deciduous Forest. Extensive European and Common Buckthorn thickets have infested Sheldon Creek Woodland edges and portions of interior forest.

The eastern portion of the Sheldon Creek Woodland has 0.19 ha of interior core habitat area (area sensitive habitat) as measured 100 m from the woodland edge. Using the 200 m threshold distance from edge to interior, Sheldon Creek Woodland has limited opportunity for viable, functional interior habitat for area sensitive species of wildlife. Wetland areas in the Sheldon Creek Woodland are discussed in section 3.2.5.

Given the relatively tight soils and the flashy nature of surface runoff, the Sheldon Creek Woodland provides a limited degree of attenuation of runoff and water quality enhancement. The intermittent surface flows through this woodland contribute to downstream fish habitat. While generally measured on a larger landscape scale, these natural areas also contribute to carbon storage and biodiversity conservation.

3.2.5 Wetlands

Three wetlands occur within the Phase 1 lands, and these occur within the Sheldon Creek Woodland (SCW-1, SCW-2, SCW-3). These wetland features have been investigated and measured in detail by members of the technical consulting team.

The following is a summary of key conclusions about these three Phase 1 wetland features on the Subject Lands, based upon the best, most current field information and scientific references. These occur within the Sheldon Creek Woodland, and two are more sensitive to change (SCW-1, SCW-2).

Wetland SCW-1 has been highlighted for its importance for amphibians (**Photos 28**, **29**, Appendix 2). It holds water for a brief time in the spring and receives periodic storm flows from adjacent lands, that move into SCW-1 through indistinct channels. This feature is sensitive to adjacent land use and drainage changes.

SCW-2 remains inundated through the growing season (**Photo 35**, Appendix 2). This feature is habitat to two provincially rare bryophytes (Floating Crystalwort and Fringed Heartwort) and

is important habitat for amphibians. Bryophytes are non-vascular plants that include mosses, liverworts and hornworts. A large population of Floating Crystalwort was observed. This species is widespread and propagates readily (well-known to and heavily used by the aquarium industry). Fringed Heartwort was not commonly observed on the Subject Lands and may have more specialized habitat requirements.

There is limited seasonal surface water flow into and from SCW-2 (**Photos 34** to **36**, Appendix 2). This wetland appears to perform a level of flow detention and surface water quality enhancement and is an important node of biodiversity. This feature is sensitive to adjacent land use and drainage changes.

There is limited seasonal surface water flow into and from this feature (**Photos 34** to **36**, Appendix 2), although the connecting intermittent link does provide amphibian movement habitat between wetlands SCW-1 and SCW-2). This feature is sensitive to adjacent land use changes. A provincially rare lichen (*Anisomeridium biforme*) was observed on a decaying log in the field edges and meadow near this intermittent link.

SCW-3, the larger wetland unit in the Sheldon Creek Woodland is a very seasonal feature, with open water present for only brief periods after spring melt and after storms (**Photos 31 - 33**, Appendix 2). The limits of this feature are not well defined, and in places blend into adjacent upland areas of forest, through a transition zone. SCW-3 does not have large areas of ground cover plant species that are representative of wetland conditions, perhaps because of periods of significant scouring by surface water runoff flows. Indications of the periodic strong surface flows and resultant debris patterns are illustrated in **Photos 31**, **32** (Appendix 2). No organic soils are evident in SCW-3.

This treed swamp (SCW-3) has been delineated by Terrastory as Oak Mineral Deciduous Swamp, a provincially rare vegetation community. A canopy tree in this wetland feature, Bur Oak is known as the most common oak species in Ontario, and it tolerates harsh soil conditions, including poor, dry soils and wet, poorly drained or inundated soils. Bur Oak distribution is not necessarily defined by soil characteristics.

Although Bur Oak is tolerant of some inundation, such as that which occurs in wetland SCW-3, it does not tolerate prolonged flooding. This feature is not sensitive to adjacent land use changes but will depend upon the maintenance of appropriate surface flows (i.e., design of post development surface water inputs and outputs). This aspect was discussed briefly in the field by representatives of Terrastory, Colucent and Conservation Halton on June 25, 2025.

A provincially rare spider species (Spined Micrathena) has been identified in SCW-3. Through additional surveys by Terrastory, this species has also been identified in the Sheldon Creek and Bronte Creek tributaries, and in the valley of the main Sheldon Creek. This species is more easily detected in deciduous forests that contain oak and hickory trees. A review of observation locations on the Subject Lands, suggests a potential relationship between the Spined Micrathena, surface water flows, and seasonally flooded areas.

3.2.6 Significant Wildlife Habitat

The detailed ecological studies completed during 2022 - 2024 have identified areas of confirmed, probable and possible Significant Wildlife Habitat (SWH). To date, the following characteristics are present on the Subject Lands.

- Bat Maternity Colonies (probable; discussed further in section 3.2.7)
- Special Concern and Rare Wildlife Species (confirmed)

Bat Maternity Colonies

Bat acoustic monitoring data have confirmed the presence of five species of bats (currently listed as endangered) in all three woodlands on the Subject Lands. Based upon habitat conditions, there may be two additional species of SAR bats on the Phase 1 lands. The presence of four potential bat maternity roosts has also been identified. These are defined as potential, given the exact colony tree location is uncertain. The acoustic monitor records a colony within about 30 m of the monitor, and potential roost trees have also been identified in that range. Terrastory and Hutchinson (2025) have identified one potential bat maternity roost on Figure 6, in their ECR. This is in the southwestern portion of the City-owned Sheldon Creek Woodland. Other areas of high bat activity are also indicated on that Figure.

Those potential maternity roosts occur in the Sheldon Creek Valley Woodland and the Sheldon Creek Woodland. More generally, recorded bat activity was highest in the Sheldon Creek Valley Woodland. The conservation of the woodlands will help to protect potential maternity roosts.

Special Concern and Rare Wildlife Species

In addition to the species already discussed above, the following species at risk have been identified on or near the Phase 1 portion of Subject Lands:

- Bristly Buttercup
- Floating Crystalwort
- Fringed Heartwort
- Lichen
- Lichen
- Lichen
- Speckled Blister Lichen
- Monarch
- Unicorn Clubtail

- Barn Swallow
- Eastern Wood-pewee
- Wood Thrush

The features and species discussed above are grouped below by Phase 1 areas on the Subject Lands, for ease of reference. Detailed mapping of occurrences is provided by Terrastory in their Existing Conditions Report (ECR) (Terrastory and Hutchinson, 2025a).

Sheldon Creek Valley

- Bristly Buttercup (*Ranunculus hispidus*)
- Spined Micrathena Spider (*Micrathena gracilis*)
- Bat maternity roost(s)

Sheldon Creek Woodland

- Floating Crystalwort
- Fringed Heartwort
- Spined Micrathena Spider (*Micrathena gracilis*)
- Bat maternity roost(s)

3.2.7 Endangered and Threatened Species

While bat maternity roosts were discussed above and support the Significant Wildlife Habitat delineation of woodlands, any impacts on these endangered species and habitat will need to be addressed through relevant permitting or registration processes under Ontario's amended Endangered Species Act or under the pending new Species Conservation Act.

The Terrastory ECR (section 4.6.1) refers to new bat guidelines prepared for use by MECP in August 2025. Colucent has confirmed that the document that Terrastory refers to is an internal draft, internal working document used by MECP staff as they are considering how best to approach SAR bats under the amended Endangered Species Act and under the pending Species Conservation Act. MECP states that document is not to be used as a current reference or guideline (pers comm).

3.2.8 Valleylands and Fisheries (Confined Drainage Systems)

Significant Valleylands are defined and designated by the planning authority. General guidelines for determining significance of these features are presented in the NHRM (MNR 2010) for Policy 2.1 of the PPS. A review of those criteria confirms that the valley associated

with Sheldon Creek does not meet the accepted thresholds to be deemed significant valleylands.

In terms of fisheries, Sheldon Creek West Branch is mapped as exhibiting a warmwater thermal regime. Fish species in Sheldon Creek included a mix of minnow species, salmonid, suckers and sunfish. Most of those fish were described as coolwater, common in Ontario and are considered relatively tolerant to intermediately tolerant to environmental or anthropogenic stressors. No aquatic species at risk (SAR) are documented in the Sheldon Creek West Branch

The shallow Sheldon Creek ravine provides more organic contributions to the downstream watercourse system (e.g., invertebrates and debris). Forests and wetlands contribute important functions in terms of biogeochemical functions including complex interactions between hydrological processes, mineralogical transformations, bacterial and vegetation communities, and soil stores of carbon and nutrients. These aspects are further considered and addressed in the proposed mitigation and monitoring measures (e.g., increase natural vegetation cover, SWM techniques, Low Impact Development (LID) implementation) (section 6).

3.2.9 Watercourses and Fisheries (Unconfined Drainage Systems)

The tributary reaches within the Subject Lands provide indirect, contributing fish habitat, and offer a supporting function to fish habitat downstream. Water's Edge Environmental Solutions Team Ltd. assessed the characteristics of surface water features, from a fluvial geomorphic perspective.

These features which occur largely within Phase 2 lands, will be explored in more detail in subsequent EIA reporting. Some information is provided here as it relates in part to a SWM facility proposed in the southeastern portion of the Phase 1 lands.

Terrastory assessed many headwater drainage features and tributaries in Phase 1 and in future phases of development lands. Headwater drainage features on the Subject Lands do not provide direct fish habitat given the poorly defined nature of most of the drainage features in the agricultural fields. Ultimately these flow into catchbasins or tributaries with fish barriers. They are largely supplied by overland flow, have tenuous hydrological connectivity and/or contain barriers to upstream movement (i.e., culverts, storm sewer pipes) (e.g., Inlet Catchbasin, which discharges to the Sheldon Creek watershed via storm sewers along Mainway and Heine Court (**Photo 22**, Appendix 2).

3.3 Linkages

From a general perspective, the more prominent and biologically productive linkages occur within watersheds and are closely associated with watercourses, associated valleyland wetlands, and other natural vegetation communities.

The Subject Lands are bordered on the west by Sheldon Creek West Branch, which includes some portions of well-defined, low valley walls, intact deciduous forests and successional vegetation cover.

Sheldon Creek West Branch flows through existing developed areas, both upstream and downstream of the Subject Lands. The creek appears to have been altered in places and the headwaters, north of Highway 407 are in farmed and forested landscape conditions. The riparian corridor along Sheldon Creek West Branch is narrow, compared with the larger Bronte Creek system. While smaller, it serves a local riparian connection throughout its non-piped sections. Sheldon Creek flows into Lake Ontario (through an armour stone channel) at Sheldon Creek Park, about four km south of the Subject Lands.

East of the Subject Lands, the primary terrestrial and aquatic landscape linkages are associated with Bronte Creek. The Bronte Creek valley is well-defined throughout, has steep valley walls and a diversity of vegetation and wildlife. The Bronte Creek watershed comprises 312 km^2 and includes 10 subwatersheds. Bronte Creek flows downstream from the provincial park to Lake Ontario, about three km downstream of the Subject Lands.

The location of the Subject Lands in an urbanized setting, limits the opportunities for the movement of ground-based fauna (and propagules of flora) across subwatershed and watershed areas. Movement and linkage functions overland across watersheds (e.g., from Bronte Creek Provincial Park across the Subject Lands) are limited especially by Burloak Drive and through the active western park areas, where substantial human/pet use occurs,

These linkages are limited by Highway 407. Upstream of the Subject Lands, the headwaters of Sheldon and Bronte Creeks converge on a physiographic feature known as the Trafalgar Moraine. That convergence includes headwater creeks of Sheldon Creek, Bronte Creek (Lower Main Branch Subwatershed) and Bronte Creek (Mount Nemo Creek Subwatershed).

Wildlife observations suggest that the Subject Lands perform a local linkage for some species moving from the Sheldon Creek West Branch system to the Sheldon Creek Woodland. As development progresses, wildlife associated with agricultural fields will be replaced, and common and widespread wildlife associated with developed areas will adapt to and colonize the developed areas. Wildlife movement across the terrain in the post development setting will remain limited, in part associated with the local vehicle traffic volumes.

Some attendees at the Pre-application Community Meeting (October 1, 2025) expressed substantial concerns about existing traffic conditions on Upper Middle Road, Mainway, Burloak Drive and nearby Appleby Line. Traffic volumes and patterns can affect the viability of wildlife behaviors and movement.

Specific reference is made to White-tailed Deer as a culturally significant game animal to First Nations peoples (Six Nations of the Grand River comment). We recognize that cultural importance and are aware of a small number of deer that use the Subject Lands. Deer will be

less often encountered on the Bronte Creek Meadows lands as they urbanize. However, the substantial restoration and enhancement areas will conserve and increase habitat available for some local deer life habitat functions. Larger concentrations and movements of deer will continue unabated in the larger Bronte Creek system and in the rural/agricultural headwater areas across the Trafalgar Moraine.

There is a growing body of science that is continuing to inform the assessment of viable linkages and corridors in urban areas (e.g., Li et al 2021; Zelmer and Goto, 2022; Glista et al 2008; Gelmi-Candusso et al 2025. These have been reviewed and they have informed this EIA.

3.4 Socio-cultural Considerations

The Subject Lands are not accessible to the public as they are privately held and include actively farmed areas. The city-owned Sheldon Creek Woodland is isolated and surrounded by private lands. Some limited use of the Sheldon Creek valley was apparent; however, it seems that extensive treefall associated with the mortality of large ash trees (Emerald Ash Borer) currently limits access to some areas. A narrow footpath was observed along the west Sheldon Creek top of bank.

A group referred to as the Friends of Sheldon Creek Watershed, operates a Facebook page of interest: **https://www.facebook.com/friendsofsheldoncreek** This group of about 1000 followers posts information about ecology generally and provides information and observations specific to this watercourse. Their Facebook page suggests particular attention is paid by that group to observations in a locally accessible park (Sherwood Park), which sits a couple of kms downstream of the Subject Lands.

When used respectfully and sustainably, nature presents opportunities for important social opportunities and benefits. The residents of the proposed new community on the Subject Lands will have an opportunity to engage and interact with nature, given their proximity to important natural areas. It is expected that the nearby Bronte Creek Provincial Park will be the prime natural areas attraction for existing and future residents. New social benefits that may be accrued with the natural areas, including opportunities for:

- Physical wellness through passive recreation
- Emotional wellness associated with human proximity to and connectedness to nature
- Nature observation and appreciation
- Community cohesion and connectedness

4.0 NATURAL HERITAGE SIGNIFICANCE AND SENSITIVITY SUMMARY

This section summarizes natural heritage features significance and associated sensitivity to changes in the landscape (natural and anthropogenic). The detailed ecological baseline information and significance interpretations have principally been drawn from the Existing Conditions Report completed by Terrastory and Hutchinson (2025a).

Terrastory and Hutchinson (2025a) provide comprehensive information, mapping and photographs that explain the features and characteristics in detail. This EIA draws from that extensive information and provides some of the key highlights to inform the impact assessment analyses.

The following confirmed significant natural features occur on the Subject Lands:

- Significant Woodlands
- Identified Wetlands (non PSW)
- Candidate and Confirmed Significant Wildlife Habitat
- Endangered (bat species) and Threatened Species (Silver Shiner)
- Fish Habitat - Valleylands and Fisheries (confined drainage systems; Sheldon Creek West Branch)
- Fish Habitat - Watercourses and Fisheries (unconfined drainage systems; East Sheldon Creek and Bronte Creek tributaries)

Other important natural features and areas occur on adjacent lands (e.g., headwater drainage features, wildlife linkages).

The two woodland areas in Phase 1 meet standard significant woodland criteria. Within those woodlands, there are smaller, specific areas that do not meet accepted definitions of woodland (e.g., hedgerows, scattered clusters of trees that do not meet a minimum width criterion). The significant woodlands exhibit varying age structures and evidence of past disturbances, typical across this transitioning rural, agricultural landscape (e.g., historic logging, livestock grazing).

The woodlands include areas where the canopy is mature, and some pockets that are more mid-successional in nature, given historic openings. Terrastory notes the presence of remnant old growth trees in the southwestern edges of the Sheldon Creek Woodland. Some of the old oak trees may have been retained along field edges as informal property markers. Some edges are characterized by a slow advancement of successional species, and many edges are infested with European Buckthorn.

The more mature woodlands have an increased level of sensitivity to changes on or near the edges (e.g., woodland edge removal, water table and surface drainage changes). These

sensitivities are dampened somewhat, by the relatively tight native soils that limit the spread of tree rooting systems. In these soils, most of the surface feeding roots of trees generally occur within about 1.5 times the width of the dripline. Those sensitivities increase in deciduous swamps (e.g., SCW-1), where rooting systems are expected to be wider spreading and dependent upon the existing, natural hydrologic regime.

Significant Wildlife Habitat has been confirmed for Special Concern and Rare Wildlife Species and Significant Wildlife Habitat is probable for Bat Maternity Colonies. These features when confirmed, can also affect the sensitivity of the woodlands and wetlands within the forest patches.

In terms of bats, five species that are currently listed as endangered in Ontario and are protected under the Endangered Species Act, 2007, occur in the forests on the Subject Lands. Two other species that were not recorded through acoustic monitoring likely also occur. While the primary threats to bat species are white nose syndrome (non-migratory bats), and wind turbines (migratory bats), the sensitivity of all bat species are noted, and these species are addressed in this EIA.

In terms of Special Concern and Rare Wildlife Species, the ECR confirmed the presence of two bird species (Eastern-wood Pewee, Wood Thrush), two bryophyte species (Floating Crystalwort, Fringed Heartwort), one butterfly species (Monarch) and one spider species Spined Micrathena, all considered of conservation concern. These confirmed species on the Phase 1 lands are addressed in this impact assessment text.

One threatened minnow species, Silver Shiner, does not occur on the Phase 1 lands. It occurs downstream and is unlikely to occur in tributaries on the Subject Lands (e.g., given existing fish passage barriers).

That large minnow species is found or potentially found in the main Bronte Creek channel and in two tributaries of downstream reaches of Bronte Creek. Opportunities to manage potential impacts downstream and to consider enhancement measures that might positively impacts that species will be fully addressed in reporting for the subsequent phases of development.

Wildlife was observed to be more diverse within the forested areas (including wetland areas within and immediately adjacent to woodlands). The wetland areas provide support for some amphibian use, however, the limited open water and short hydroperiods of most the wetland features present a limiting factor to productive and viable amphibian habitat.

The open, actively farmed landscape was not observed to have special importance for wildlife, although some hunting/foraging activities were apparent (e.g., Red-tailed Hawk foraging for rodents, Coyotes hunting, White-tailed Deer foraging in harvested fields).

During discussions with the city, questions were raised about the existing wildlife connectivity across the southern portions of the Subject Lands, connecting Sheldon Creek to the west and

Bronte Creek Provincial Park to the east. There was interest in understanding the degree of existing connectivity and how it might be maintained in a post development landscape.

Linkages are described at different scales on the landscape (e.g., in Halton Region they are described as regional or local). The larger regional linkages on the local landscape generally occur outside the Subject Lands (i.e., main valley of Bronte Creek and its connections to the south with Lake Ontario and to the north with natural areas across the Trafalgar Moraine to the Niagara Escarpment).

Local linkages include concentrations of natural areas associated with systems that have been disrupted and fragmented by urbanization (e.g., urban creek systems, as defined by Conservation Halton). Terrastory identifies the Sheldon Creek Woodland Valley as a local linkage, meeting the criteria defined by the Region of Halton. No other linkages are defined that meet established criteria.

Terrastory defined one area as providing local and limited connectivity for amphibian movement occurs between wetlands, SCW-1 and SCW-2. That linkage occurs through a meadow, in an opening that will be conserved and subject to ecological restoration planning. That area was subject to some discussions amongst Terrastory, Colucent and Conservation Halton in the field on June 25, 2025.

There is no evidence of important wildlife linkages or connections between the Phase 1 lands and the lands to the east, including Bronte Creek Provincial Park. Limitations and barriers prevent the establishment of a viable and sustainable wildlife linkage across Burloak Drive.

5.0 PROPOSED DEVELOPMENT

5.1 Development Footprint and Land Uses

Phase 1 (49.75 ha) is proposed for a variety of land uses including 597 units in single family and semi-detached residential, townhouses, an employment block and open space. The intended use of the open spaces includes parks, stormwater management facilities, naturalization areas and existing natural areas. Residential uses total about 25% of the Phase 1 lands, the school block is 6%, employment block is 15% roads occupy 18% and open and natural space, including stormwater management totals about 35%.

The Subject Lands have been investigated from a natural heritage perspective, and the landscape, natural features and functions are well understood. The technical information has been gathered, analyzed and integrated into the land use planning work being led by Bousfields. This section of the Phase 1 EIA is informed by the Existing Conditions report (Terrastory and Hutchinson 2025a), and the Development Limits Report (Colucent 2025).

Existing natural areas in Phase 1 are associated with Sheldon Creek West Branch Valley Woodland and the Sheldon Creek Woodland.

Proposed NHS enhancement areas include the restoration of an existing active farm field between Sheldon Creek and the Sheldon Creek Woodland (Enhancement Area 1) and buffers associated with retained woodlands and Sheldon Creek. The opening along the southern edge of Sheldon Creek Woodland will also be restored (Enhancement Area 2) and will contribute to increased wildlife habitat connectivity (i.e., where a minor linkage for amphibian movement occurs between wetlands SCW-1 and SCW-2).

MTE has identified a series of stages for the development of these lands. Their geotechnical, hydrogeological and stormwater management reports provide details about the installation of this community and its associated servicing. Summary comments are provided in the following sections.

5.2 Description of Construction

MTE notes that prior to any cutting and engineering fill operations, the surficial topsoil must be removed and stockpiled. Further, to minimize the effects of weather and groundwater, fill operations onsite should be carried out in the dry summer months.

The development will be on full municipal services and the invert levels for the watermain, and sewers will be at conventional depths. Geotechnical investigations have demonstrated that the groundwater conditions in the shale bedrock could influence construction (i.e., where excavations will extend in the shale bedrock for servicing and foundation construction).

MTE notes that minor to moderate groundwater seepage is expected as excavations proceed through the shale bedrock. Minor groundwater seepage is also expected where the excavations extend into the saturated seams within the overburden deposits.

This scenario is discussed in the impact assessment discussions (section 6), as there is the potential for excavations to cause localized declines in water table and soil saturation. This scenario requires special attention in relation to adjacent natural heritage features.

5.3 Transportation, Street B Right-of-Way

The Phase 1 municipal road system is depicted on **Figure 9** (Appendix 1). The proposed roads avoid natural heritage features, except for the potential crossing of Sheldon Creek by Street A (Corporate Drive extension). Street B (potential extension of Sutton Drive) abuts the east side of Sheldon Creek Woodland. This is discussed further in the impact assessment section. Paradigm Transportation Solutions Limited (2025) has assessed the potential impacts associated with post development traffic generated from Phase 1 and subsequent phases. **Table 1** (Appendix 3) and the SSWS provide input to the creation of minor-linkages for small ground-based wildlife to safely under proposed Street B.

5.4 Stormwater Management

SWM criteria for the development have been established by MTE to meet three goals: satisfy the general SWM criteria set out by the city, respect existing infrastructure, and support NHS features within the Subject Lands. The city criteria address flood control, erosion control, infiltration, water budgets, and water quality control. Recognizing that the capacity of existing sewers needs to be respected, MTE has set a criterion to control the post-development peak flow rate to the pre-development level at each existing inlet. The stormwater management planning and design is described in section 15.5 of the SSWS (MTE 2025d).

In addition to the general criteria set out by the city, several additional criteria related to NHS features within the Subject Lands have been set. Generally, these include matching pre-development flow contributions to wetlands under post-development conditions. Pre-development peak flow rates were established at each point of interest (POI) defined by MTE using the SWMHYMO hydrologic modeling software for the 25mm Water Quality as well as the 2-, 5-, 10-, 25-, 50- and 100-year design storm events.

To meet the flow targets the SWM control strategy for development of the Phase 1 Subject Lands includes realignment of sub-catchment boundaries and the creation of one wet pond SWM facility. Enhanced (80% Total Suspended Solids removal efficiency) Water Quality treatment is provided at all locations via the proposed wet pond SWM facilities and an oil/grit separator (OGS).

It is important to note that differences exist in the relative ecological conditions and sensitivity of the wetlands in the Subject Lands. Ecological work completed to-date identifies two the wetlands in Sheldon Creek Woodlands (SCW-1, SCW-2) as being more sensitive to hydrological changes. Wetland SCW-3 receives substantial surface flows that have led to the scouring of the ground cover and soils, reducing the ecological importance and sensitivity of that feature.

Site investigations undertaken in SCW-1, SCW-2 and SCW-3 with Conservation Halton (June 25, 2025) afforded some preliminary, collaborative discussions about hydroperiod limits of these features and the potential to supplement localized amphibian and invertebrate functions with deeper created habitat pools in proposed, adjacent Enhancement Areas. Wetland boundaries in proximity to woodland edges were staked and surveyed during the collaborative field investigations.

6.0 IMPACT ASSESSMENT - PROPOSED DEVELOPMENT

6.1 Introduction

The Draft Plan has already been intentionally designed to include a broad band of natural and open areas across the southern portions of the Subject Lands. This band is coincident with the existing east-west concentration of natural features and proposed enhancement areas. This will become more apparent as the Phase 2 Draft Plan is developed.

On the Phase 1 lands, that east-west band of green is comprised of:

- One Stormwater Management Facility (Block 241)
- Sheldon Creek Woodland (not part of existing application; City owned)
- Proposed Naturalization Areas (Blocks 250, 251, 252, 253)
- Sheldon Creek West Branch Woodland Valley (Block 248)

Predicted direct impacts are principally associated with the proposed removal of scattered, individual trees, portions of hedgerows and some cultural vegetation features.

This EIA has considered different types of predicted effects (e.g., direct, indirect) and various mitigation measures that are available and proven to address predicted impacts. The mitigation hierarchy includes the following standard steps:

- Avoidance
- Minimization
- Restoration/enhancement
- Offsetting

Avoidance was the first mitigation measure generally considered. In some cases, avoidance can be achieved through project and design modifications. In this planning process, a desire to incorporate an employment block initially resulted in planning for the removal of some mature woodland and wetland areas long the south side of the Sheldon Creek Woodland. Similarly, the plan initially proposed of the removal of a portion of the Sheldon Creek Woodland (non-City-owned northeast corner). Avoidance discussions resulted in plan adjustments and the conservation of the entire Sheldon Creek Woodland and associated wetlands.

More generally, where features may need to be removed to accommodate development (e.g., extension of Corporate Drive), direct and indirect effects can be minimized through mitigation measures such as tree retention planning, erosion and sediment control, and active construction oversight. Restoration can be used to enhance conditions in retained natural

features (e.g., removal of invasive species such as buckthorn and garlic mustard, native tree species underplanting.

6.2 Summary of Predicted Effects

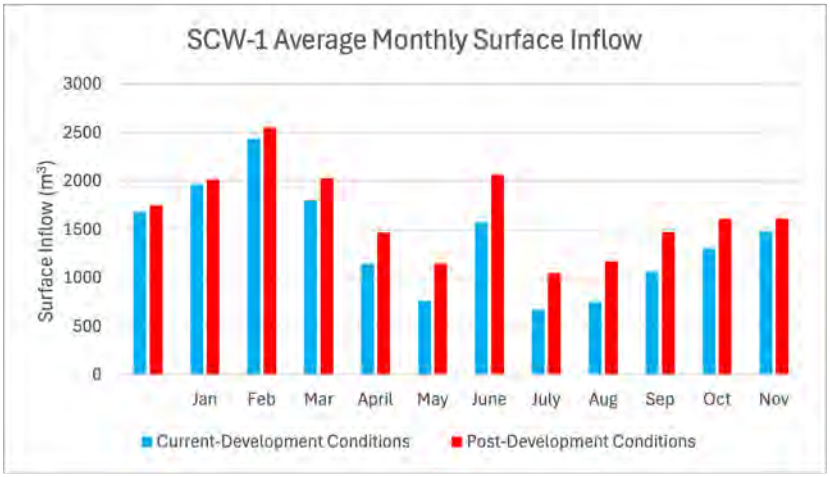
This EIA has been informed by detailed and integrated discussions about the interactions amongst surface water and natural heritage features and conditions in the Phase 1 lands. Some key elements of those discussions related to wetlands, are discussed in the following.

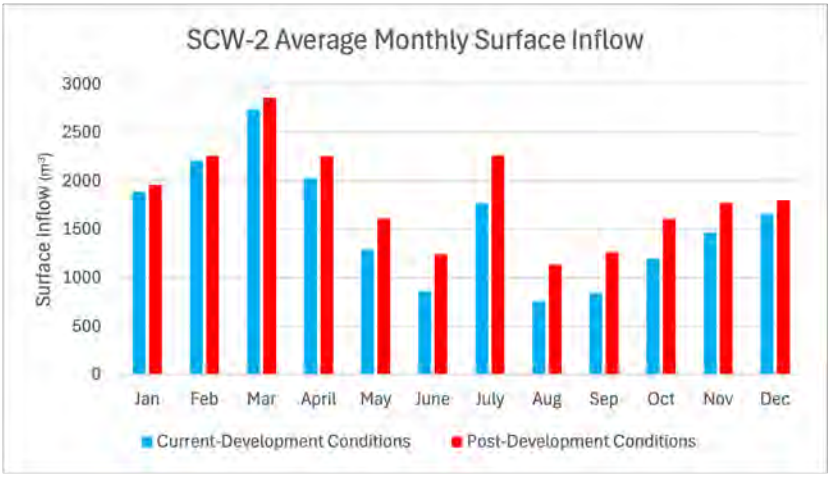
The three wetlands in Phase 1 have different levels of sensitivity to development impacts (Table 1). They are currently affected by surface water flows that originate principally in actively farmed fields. Water quality data gathered by MTE has confirmed that the loads of sediment being conveyed to and through some wetlands are substantial (e.g., SCW-3). Where surface water has time to sit and sediment can settle, sediment deposition is more likely (e.g., SCW-1 and SCW-2). That water quality enhancement function is limited in SCW-3 where conveyance is relatively rapid, limiting slower, quieter water for sediment attenuation. The post development setting will remove the conveyance of excess sediment to these wetlands (e.g., delivery of clean rooftop drainage contributions).

Important hydrologic information is presented in Tables 8.10, 8.11, 15.9 and 15.9 of the SSWS. Series 8 tables represent pre-development contributions to wetlands while the series 15 tables represent post-development contributions to wetlands.

Working closely with MTE, the surface water contributions to wetland features have been modeled to confirm the development can generally match monthly and annual pre- and post-development inflows for the relatively more sensitive wetland features (SCW-1, SCW-2). Special attention was paid to matching flows (monthly and annually) for SCW-2, a feature that has a longer hydroperiod and supports two rare bryophyte species.

Both SCW-1 and SCW-2 are predicted to experience an increase in annual surface water flows (19.9% and 17.7% increases respectively). Those increases are distributed across monthly and seasonal periods. The following monthly flow graphs (from MTE) for SCW-1 and SCW-2 illustrate the increased flows. In both cases, the hydroperiods will be extended in favor of time for amphibians to complete their life cycles. To ensure the ecology oi these features is not disrupted by these flows, wetlands SCW-1, SCW-2 (and SCW-3) will be the focus of detailed adaptation planning and monitoring. The larger buffers and the Enhancement Areas afford space for the creation and use of small natural wetlands to moderate flows if/as necessary.


SCW-1 Average Monthly Surface Inflow
Surface Inflow (m³)
3000
2500
2000
1500
1000
500
0
Jan
Feb
Mar
April
May
June
July
Aug
Sep
Oct
Nov
Current-Development Conditions
Post-Development Conditions


SCW-2 Average Monthly Surface Inflow
Surface Inflow (m³)
3000
2500
2000
1500
1000
500
0
Jan
Feb
Mar
April
May
June
July
Aug
Sep
Oct
Nov
Dec
Current-Development Conditions
Post-Development Conditions

SCW-3 is a wetland feature with a higher degree of existing natural impacts associated with ongoing inflows and outflows of high volumes of surface water and associated scouring of surface soils and limited organic soil accumulation. The annual flows in this wetland will decrease by 8.1% in the post development setting, which will contribute to an opportunity to decrease scouring from existing high volumes of surface water flows.

These impacts will be monitored and further in the proposed Adaptive Management and Monitoring Plan, to be developed in collaboration with the City and Conservation Halton.

Table 2 (Appendix 3) provides a summary of natural features and functions, organized by area in the Draft Plan and subject to an assessment of impacts, mitigation, detailed buffer recommendations and overall effects outcomes.

After the application of an avoidance process, the proposed development (per the Draft Plan) will result in the following direct effects for natural heritage features and functions on the Subject Lands:

- Conservation of 12.16 ha of natural heritage areas
- Conservation of all existing wetlands within woodlands in Phase 1
- Removal of a section of the forest canopy in the Sheldon Creek Valley Woodland to allow for the creation of the City-required extension of Corporate Drive
- Maintenance of intact woodland edges (incorporating woodland management to improve/restore woodland edge conditions)
- Creation of two Enhancements to Key Features comprised of about 1.55 ha of deciduous woodland/wetland/meadow between Sheldon Creek and Sheldon Creek Woodland and internal to the Sheldon Creek Woodland
- Creation of naturalized buffers between natural features and development (see section 6.4 for buffer details)
- Net increase in natural vegetation cover on the Subject Lands
- Predicted increase in native biodiversity (i.e., plants, invertebrates, amphibian species)
- Potential to increase populations of rare species (e.g., Monarch, Unicorn Clubtail)
- Increased habitat connectivity between the Sheldon Creek valley and the Sheldon Creek Woodland, with potential increases in the size of area sensitive bird habitat
- Conservation of existing occurrences and associated habitat for seven endangered bat species (5 species confirmed with acoustic monitoring); enhancement with mitigation (artificial roost boxes and natural areas/features in SWM ponds)

- Removal of farm fields used by some wildlife for foraging (e.g., White-tailed Deer, Canada Goose seasonal use of farmed fields) and by some open land species for breeding and foraging (e.g., Horned Lark, Barn Swallow)

The proposed development will result in the following indirect effects and outcomes for natural heritage features and functions:

- Shift of some wildlife movement that is currently dependent upon existing agricultural lands, into adjacent protected natural areas and more distant agricultural and rural areas
- Potential increased use of existing natural areas by proposed community residents and pets, while also providing better access to an existing landlocked municipal parcel of natural heritage (Sheldon Creek Woodland), where use is currently limited, uncontrolled and unmanaged
- Potential for effects on wildlife given the increased presence of human residents and pets (and general increases in noise, light, and increased traffic in the newly urbanized setting)

Over time, common wildlife associated with developed areas will occupy residential habitat. There will be a shift away from some species dependent upon open edges and meadows (e.g., Indigo Bunting, kildeer, savannah sparrow, song sparrow), with increases in species including Northern Cardinal, Blue Jay, Brown-headed cowbird, and House Sparrow.

6.3 Summary of Mitigation Measures

Table 1 (Appendix 3) provides a summary of natural features and functions, organized by area in the Draft Plan and subject to an assessment of impacts, mitigation, detailed buffer recommendations and overall effects outcomes.

This EIS considers the full range of mitigation measures including:

- Ground water mitigation activities/techniques such as some LIDs (e.g. infiltration trenches strategically placed at wetland inflows)
- Surface water quantity mitigation, based upon existing future catchment area boundaries (e.g., surface run-off detention timing and delivery methods)
- Habitat enhancement to limit direct and indirect effects
- Staging and timing of ecological measures (e.g., recognizing inactive versus active wildlife season activities, progressive and advanced invasive species control)
- Collection and propagation of native plant species at risk
- Installation of artificial habitat structures to increase wildlife at risk species populations

A discussion of mitigation measures follows.

From a hydrological perspective, the SSWS (section 1.6) provides detailed analyses of LID measures that are potentially suitable to the Phase 1 lands. MTE notes that the emerging trend for the implementation of Low Impact Development (LID) is a stormwater management strategy that seeks to mitigate the impacts of increased runoff and stormwater pollution by managing runoff as close to its source as possible. LID comprises a set of site design strategies that minimize runoff and use distributed, small scale structural practices.

LID practices can include:

- Rainwater harvesting
- Bio-retention swales
- Green roofs
- Permeable surfaces
- Clean water collection
- Enhanced vegetation cover
- Volume Runoff storage reduction and evapotranspiration
- Amended topsoil and increased topsoil depth
- Infiltration galleries

MTE has completed a screening of the suitability of these measures in the SSWS (Table 15.18).

From an ecological perspective, in addition, to the Habitat Enhancement Areas (1, 2) discussed briefly in section 6.5 the following mitigation measures are to be implemented to mitigate potential development impacts. The City of Burlington has presented some of their thinking about the use of open space and natural areas in OPA 4 and in Planning for Burlington's Bronte Creek Meadows: Background and Draft Strategies.

Beginning at a higher level, natural heritage areas and systems within and abutting Settlement Areas need to fully consider the context for and policy approaches to reconnect people and communities with nature. The World Health Organization reported in 2008, that there were already more people living in cities than in rural areas. In Halton Region we are presented with an opportunity to fully explore and evolve aspects of the human use of natural areas.

Designing more complete and healthy communities suggests we view opportunities to transition the interaction between people and nature. OPA 4 presents a high-level conceptual trail location. The Alinea design team is continuing to build on that vision by considering the following measures and activities:

- Landscape design including natural and artificial barriers that will slow tick/viral movements, and movements of host animals such as White-tailed Deer
- Design review of stormwater management systems to minimize the opportunities for mosquito development and virus spread and to ensure appropriate larval management
- Active management of invasive plants and the promotion of native species (e.g., including discussions with First Nations to promote the planting and restoration of culturally important plant species)
- Opportunities to bring people on trails towards/to points of interest (e.g., local geology exposed faces, local pioneer relict fence)
- Opportunities for traditional and/or ceremonial uses in natural areas (for discussion with First Nations)
- Areas for mindful engagement with nature
- How best to inform trail users about the sustainable use of natural sources (e.g., limit and control non-Indigenous plant foraging and harvesting; for discussion with First Nations)
- Opportunities to engage the community in local scale horticulture, farming and soils restoration (e.g., perhaps in association with parks, schools, and the ongoing interpretive activities at the Bronte Creek Provincial Park

The following are proposed mitigation measures to address predicted impacts associated with the proposed Phase 1 Draft Plan. These are summarized in **Table 2** (Appendix 3), and they are organized sequentially below, by development stages.

Pre-construction Period:

- Ensure all environmental permits are coordinated and obtained in advance of construction
- Define the approach selected to address endangered bat species (i.e., Bill 5 has amended the Endangered Species Act, and the Species Conservation Act will likely be in place when this project advances (i.e., no permit requirements; these will be replaced with a registration process)
- Develop an Adaptive Management and Monitoring Plan for lands to be conserved, restored, and protected in a post development setting (e.g., including opportunities for native plant propagule harvest and relocation into restoration/enhancement areas)
- Woodland edge pre-stressing planning and implementation (i.e., selective edge thinning, before construction in the Sheldon Creek West Beach crossing and in proposed mature forest removal (i.e., Block 241)
- Pre-development mitigation implementation (e.g., monitoring equipment installation, protective hoarding, sediment, and erosion control)

- Schedule construction activities recognizing limiting biological seasons (e.g., breeding birds, SAR bats and aquatic periods for avoidance)

Construction Period:

- Complete construction during scheduled windows (with environmental oversight if/as determined in the Adaptive Management and Monitoring Plan)
- Design and implement created habitat (e.g., buffers)
- Establish specialized habitat features such as bat roosting boxes, reptile hibernacula, deeper amphibian breeding pools/refugia)
- Restore and enhance disturbed and degraded woodland habitat (e.g., invasives removal with ongoing control)
- Install climate change adaptation measures such as installation of deeper, screened open water amphibian breeding/refuge pools, use of climate change resilient species in buffers and restoration/enhancement plantings, etc.
- Monitor and adjust pre-stressed treed areas if/as necessary
- Install signage and interpretive information if/as determined during ongoing community planning and design

Post Construction Period:

- Install development limit fencing if/as required to help manage the interface between development and nature (subject to City accessibility, trail and interpretation interests and objectives)
- Develop and disseminate nature information that will benefit citizens in the broader local community (e.g., nature guide and signage (including QR codes) for residents to encourage and foster sustainable activities)
- Conduct periodic monitoring to define additional/restorative actions and habitat creation enhancements, defined in the Adaptive Management and Monitoring Plan

6.4 Development Limit and Buffer Discussion

Development limits identified in a separate report (Colucent 2025) have been carried forward in the Draft Plan and in this EIA to conserve the ecological integrity of:

- Significant Woodlands
- Important Wetlands internal to those Significant Woodlands
- Endangered Bat species and associated habitat in those Significant Woodlands

- Fish Habitat
- Species at Risk and Significant Wildlife Habitat (e.g., limited habitat for area sensitive birds)

Limits of woodland and wetlands have been staked and agreed upon by the City and Alinea representatives. To ensure those limits remain intact and that the natural areas remain unaffected by direct and indirect activities, buffers have been identified to add a layer of protection on the external faces of features that will interact with development.

Buffers were analyzed based upon an assessment of the natural heritage features and functions and their relative importance and sensitivity to changes in land use and development activities. Tables 1 and 2 provide an illustration of the steps taken and conclusions reached regarding how best to mitigate impacts associated with the proposed development.

It is apparent on Table 1 that buffers are an important aspect of impact mitigation for several more sensitive characteristics and functions, including:

- Moderation of risks and natural hazards
- Biological diversity
- Vegetation community structure
- Species Richness
- Biological Productivity
- Some wildlife habitat and occurrences
- Source and sustainability of water (most influenced by the SWM strategy)
- Contributions to human access management

When planned, designed and implemented precisely, buffers can contribute to:

- Temperature and quality control for areas receiving overland runoff
- Managing pedestrian access to natural features, while contributing to fostering community stewardship of natural features
- Protecting the integrity of edges of vegetation communities

Buffers are one part of the larger package of mitigation measures which include stormwater management, erosion control and seepage management in construction foundations.

With this context natural feature importance and an understanding of the sensitivity to impacts in association with details of the hydrology and ecology has led to the proposed final buffer

refinements. These final buffers are presented in the sequence used in Table 3 for ease of reference.

As an introduction to Table 3 (below) the following more general discussions about wetlands and woodlands are provided. These draw in part upon comments received from and discussed with the City, LGL (City's peer reviewer), CH, and Mississaugas of the Credit First Nation, and Six Nations of the Grand River Elected Council (SNGREC).

Wetlands:

The Subject lands occur on a relatively flat till plain. Surface water from these lands drains largely across actively farmed fields, often gathered and conveyed in drainage collector ditches along woodland and field edges. Wetlands on this till plan are smaller, fragmented and are largely relicts of a farmed landscape. These are amongst the most common wetland types in Ontario (i. e, treed and thicket swamps, and marshes, not fens or bogs).

Of the three wetland areas defined as important in Phase 1 on the Subject Lands, one may have been associated with livestock watering and/or crop irrigation (SCW-2). Three wetlands with more ecological importance are associated with the City-owned Sheldon Creek Woodland (i.e., SCW-1, SCW-2, SCW-3), One wetland SCW-2 has a more permanent hydroperiod, which provides habitat to significant species (Floating Crystalwort, Fringed Heartwort), and to the presence of a larger population of woodland pool amphibian breeding amphibians.

Both the City and CH consider wetlands (e.g., in terms of Natural Heritage System and hazards respectively). The CA Act, in conjunction with Ontario Regulation 41/24, are the key tools in fulfilling the CH mandate because they prevent or restrict development activity in areas where the control of flooding, erosion, dynamic beaches, unstable soil or bedrock may be affected by development.

Under Ontario Regulation 41/24, CH regulates all watercourses, valleylands, wetlands, Lake Ontario Shoreline, hazardous lands and unstable soil and bedrock, as well as lands adjacent to these features. A permit is required from CH prior to undertaking any development within CH's regulated area. Permit applications are reviewed under Section 2 of CH's Policies and Guidelines for the Administration of Ontario Regulation 41/24. as well as within 30 metres from a wetland, except where:

- allowed under Policies 2.4-2.46 (inclusive), and
- the wetland limit is to be established in the field in conjunction with Conservation Halton staff, staff from the local municipality (if necessary) and the applicant.

CH requires that an area of permanent, self-sustaining vegetation be established within the regulatory allowance and within other areas adjacent to wetlands to mitigate flooding and erosion impacts by stabilizing soils, maintaining hydrologic conditions, and supporting the

hydrologic function of wetlands. Put simply, CH regulated wetlands with a 30 m limit. That 30 m can be reduced to 15m however, upon demonstration of the maintenance of hydrological conditions.

CH no longer participates in land use planning review and has shifted its focus to the administration and impact of its regulations. In summary, CH regulates wetlands with a standard 30-meter limit, which may be reduced to 15 meters, provided a permit application is submitted and it can be demonstrated that there will be no hydrological impact. CH does not refer to these areas as buffers.

The GRSN provided feedback regarding the significance of their ancestral lands and emphasized the value of natural areas. Specifically concerning wetlands, the GRSN expressed strong support for establishing substantial buffers adjacent to wetlands, referencing and articulating a requirement for a 41-meter buffer zone. This figure refers to a SNGREC Environmental Levy Policy. Technical rationale is not provided to support the 41 m buffer width, however, GRSN acknowledged that while they would ideally favor 100 m buffers. Colucent has approached the topic of buffers from a position of understanding that not all natural features including wetlands are the same. Natural feature types and individual features are understood in terms of characteristics and sensitivity to development. Impacts are predicted and addressed based upon these substantial, detailed site-specific analyses.

Woodlands:

Table 3: Summary of Buffer Recommendations

NHS ELEMENT	LOCATION	REFINED SCIENCE BASED BUFFERS
Wetlands	SCW-1, SCW-2	• The sensitivity of two wetlands (SCW-1, SCW-2) was carefully considered and discussed with draft EIA report reviewers. The buffers for these two wetlands have been extended from 15 m to 30 m. • This more precautionary approach recognizes the sensitivity of ensuring the monthly and annual water balances are effective for the conservation and improvement of some features and functions (e.g., increased amphibian viability and productivity, providing a measure of adaptability given a level of scientific uncertainty regarding how some species will respond to development impacts (i.e., Floating Crystalwort, Fringed Heartwort and a lichen species, *Arthonia lapadicola*)

NHS ELEMENT	LOCATION	REFINED SCIENCE BASED BUFFERS
		• Wetland buffers will overlap to some degree with Enhancement Area actions. In that situation, buffers will include some strategic enhancements that are expected to magnify increases in biodiversity (e.g., amphibian populations, increase in buffers and enhancement areas available for temporary surface water storage in times of increased surface flows)
	SCW-3	• 15 m from wetland limit; this wetland has a lower sensitivity to development impacts. It is routinely exposed to severe scouring effects of surface water conveyance. In places the understory includes dense thickets of invasive buckthorn and rapid surface flows have limited the development of an intact floral ground layer. • Staked and agreed upon wetland limits do not extend to the woodland edge in these circumstances. The wetlands are internal to the woodland edge.
Enhancement Area Created Wetlands		• None; there is no scientific support for buffers to protect newly created to created features on actively disturbed, cultivated farmlands; any human activity near created features will need to consider limiting access that could slow the feature creation process (e.g., use of signage, temporary fencing).
Enhancement Watercourse Wetlands		• This relates to activities east of Phase 1 and will be addressed further in subsequent EIAs.
Woodlands	Sheldon Creek Valley Wood-land	• 10 m from the greater of the stable top of bank and the woodland dripline. • This woodland has been developed along the western limits, in existing development. Single family housing has established a development interface (e.g., along Creek Way). Field observations from the valley bottom suggest that the existing development without apparent buffers or access controls have

NHS ELEMENT	LOCATION	REFINED SCIENCE BASED BUFFERS
		created some indirect effects (e.g., disposal of garden debris, uncontrolled access). • The edge of this forest on the east side of this valley is more intermediate aged woodland with scattered canopy openings, given degradation from Emerald Ash Borer (EAB). A 10 m buffer will completely protect dripline rooting systems and will enable adjacent new residents to indirectly interact with nature in their backyards.
	Sheldon Creek Woodlot	• This mostly City-owned woodland is more diverse than the Sheldon Creek Valley Woodland. It has been present on the landscape for a longer period except for some earlier clearing in the vicinity of SCW-2 (perhaps associated with the installation of a farm pond). The following specific buffers reflect the integrity of edge conditions around this feature. • North edge: 10 m from Dripline • Disturbed eastern edge: 7.5 m from Dripline (see Sutton Drive, below) • South edge: 10 m from Dripline • West edge: 15 m from Dripline (enhancement area, no proposed development and therefore buffers are not specifically required. This 15 m buffer concept is identified to ensure large trees with widely spreading rooting systems are not negatively impacted by enhancement measures: (i.e., there are larger, more mature trees along this edge). Enhancement measures may include increased shallow wetland areas which can hold excess surface water if/as needed.
	Mainway Wood-lot	• This relates to activities east of Phase 1 and will be addressed further in subsequent EIAs; for general planning purposes ahead of detailed work, a buffer range between 10 m and 15 m from the agreed upon dripline is the likely outcome (may be affected by

NHS ELEMENT	LOCATION	REFINED SCIENCE BASED BUFFERS
		wetland locations and sensitivity assessments in subsequent reporting).
Sutton Drive		• 7.5 m buffer with an ability for some activities inside the boulevard, based on existing disturbance conditions (e.g., within the first 5.0 m of the 7.5 m buffer). • The eastern edge of Sheldon Creek Woodland is very disturbed, including the deep disruption of soils from former servicing installation. The restoration of these disturbed soil conditions is impractical. The very disturbed woodland edge will benefit from some actions to strengthen woodland edge resilience (e.g., removal of buckthorn and other invasives, promotion of native understory development with selective subcanopy native tree planting).

Buffers are one mitigation measure; information regarding buffers follows, as these became a point of detailed discussion amongst Colucent and reviewers of drafts of this EIA.

Buffers are key in some settings, but buffers to contribute to mitigating noise and light effect are less relevant here, given the form and density of the proposed complete community.

Buffers can be an important part of helping to manage access to natural features. The buffers and their widths are less important than fencing, controlled access points and information sharing about the importance and sensitivity of natural areas. Colucent has studied buffers in relation to adjacent land uses in the GTA over four decades and has found little evidence that wider buffers limit human access. In fact, Colucent has observed that wider buffers can be an attractant for larger networks of random trails (e.g., Oakville, Milton).

This report addresses the Phase 1 lands. Some aspects of planning and design interact/intersect with the Phase 2 lands. The following considerations will be further addressed through ongoing private and public engineering planning and design discussions. Some of these details may affect mitigation measures.

- The Sheldon Creek and Bronte Creek tributaries/channel designs will need to interact with the SWMP block and Mainway Woodland; this may require minor refinements to mitigation measures

- Approaches to manage direct and indirect effects on the conserved NHS, associated with the increased community population and human activities will require additional dialogue with the City
- The design of natural heritage restoration (e.g., habitat enhancement and creation) will benefit from additional dialogue with the City (e.g., canopy cover optimization to contribute to City objectives) and others who have identified interest and capacity in restoration (e.g., SNGR/Kayanese, CH).

6.5 Conceptual Enhancement Area and Linkage Works

The proposed development includes two primary areas where ecological restoration will be planned, designed and implemented.

- Sheldon Creek Valleyland Tableland Linkage Area (Enhancement Area A)
- Sheldon Creek Woodland Opening Restoration Area (Enhancement Area B)

These areas afford an opportunity to achieve several important natural environment and social objectives, including:

- Increased area of viable natural vegetation cover
- Improved biodiversity. and species at risk conservation
- Reconnection of fragmented woodlands that have been divided by agricultural use (improved connectivity for wildlife movement and increased productivity), with conscious attention to addressing ecological limitations such as limited open water, relatively short wetland hydroperiods)
- Enabling informed use and benefits derived from integration nature, sustainable within Healthy, Livable and Safe Communities

More specifically, the restoration of these areas will:

- Allow some space to control/manage surplus post development surface flows if/as necessary (ability to add temporary detention to slow and direct water inflows to wetlands)
- Improve the quality of surface water contributions to the more sensitive wetlands (SCW-1, SCW-2) using third pipes directing clean water to these features
- Increase species biodiversity and improve wildlife movement connectivity between Sheldon Creek and the Sheldon Creek Woodland
- Increase pollination functions (specific plantings and increased shallow wetland breeding and foraging habitat)
- Create additional community opportunities for nature appreciation and wellness

Conceptual restoration plans are provided (**Figures 10**, **11**, Appendix 1) identify areas general and conceptual areas suitable for:

- Forest Habitat Creation
- Creation of Weland Features (Water detention, polishing and resilient amphibian breeding areas, invertebrate breeding and foraging areas)
- Meadow and Thicket Habitat Creation
- Wildlife Habitat Feature Installations (e.g., artificial reptile hibernacula, bat roosting boxes)

These are preliminary and conceptual ideas, and they are being contemplated in the larger Subwatershed context. We expect that the City, Conservation Halton and First Nations will have substantial interest in exploring and refining these conceptual ideas. We also expect that the proportions amongst created habitat types may change.

7.0 CONCLUSIONS

Phase 1 of the Subject Lands is proposed for a variety of land uses including single family residential, townhomes, institutional and open space. A total of 597 units will be established on these lands.

The Subject Lands have been investigated from a natural heritage perspective, and the landscape, natural features and functions are well understood. The technical information has been gathered, analyzed and integrated into the land use planning work being led by Bousfields Inc. This EIA is informed by the Existing Conditions Report (Terrastory and Hutchinson 2025a), the SSWS (MTE 2025d) and the Development Limits Report (Colucent 2025).

Most of the proposed development footprint is currently actively farmed land. Natural features occur mostly on the southern half of the Phase 1 lands and include intact deciduous woodlands and wetlands internal to the forests. The cultivated lands and other disturbed areas, have smaller features some of which include populations of invasive species (e.g., Common Reed). Sheldon Creek and its smaller, mostly forested valley is an important riparian system, on the Phase 1 lands.

Detailed ecological surveys of the natural heritage have identified features and areas that meet accepted definitions of significant woodlands, significant wildlife habitat, habitat of endangered and threatened species and fish habitat. Significant Wildlife Habitat has been confirmed for Special Concern and Rare Wildlife Species and Significant Wildlife Habitat is probable for Bat Maternity Colonies.

The proposed development will result in an increase in natural vegetation and habitat cover of about 4 ha over the existing conditions. Forest and wetland creation will create a continuous and stable linkage between the Sheldon Creek valley and the nearby Sheldon Creek Woodland. There will be minor removals of significant woodlands and significant wildlife habitat, most notably for the proposed crossing of Sheldon Creek by the municipally required extension of Corporate Drive. The resulting, broadened natural heritage system will include viable and resilient natural features and associated functions. The development of Phase 1 will not result in negative effects on natural heritage features or functions.

This EIA has defined impacts, mitigation and habitat creation and enhancement measures. Discussions amongst MTE, Terrastory and Colucent have informed feature-based water balance approaches (monthly and annually) that will conserve and improve wetland functions and special features). Some of these approaches will require discussions with the City, Conservation Halton and First Nations to optimize outcomes that comply with regulatory requirements (e.g., conservation authority permits) and to respect and contribute to meaningful reconciliation, for example, through collaborative restoration.

Final mitigation measures to conserve important and sensitive ecological features and functions in some have relied on detailed hydrological modeling. This EIA provides detailed

recommended actions to be implemented during pre-construction, construction, and post-construction stages of development. An Adaptive Management and Monitoring Plan is recommended for completion to ensure that the implementation and monitoring of the development will proceed in an advanced, sustainable manner.

Phase 1 EIA Report Prepared by:

COLUCENT ENVIRONMENTAL INC.



Tom Hilditch
President

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APPENDICES

APPENDIX 1 – FIGURES

Figure 1 Location of Subject Lands
Figure 2 Physiography and Watersheds
Figure 3 Watercourses
Figure 4 Subject Lands Historic Context (1954)
Figure 5 Subject Lands Historic Context (1960)
Figure 6 Figure 6 from Terrastory 2025a, Vegetation Communities
Figure 7 Figure 7 from Terrastory 2025a, Natural Hazards
Figure 8 Official Plan Amendment 4, Schedule S
Figure 9 Draft Plan of Proposed Subdivision (Development Limits)
Figure 10 Enhancements to Key Features, Area 1
Figure 11 Enhancements to Key Features, Area 2

APPENDIX 2 – PHOTOLOG

Bronte Creek Meadows and Opportunity Areas: Representative Photographs

APPENDIX 3 – TABLES

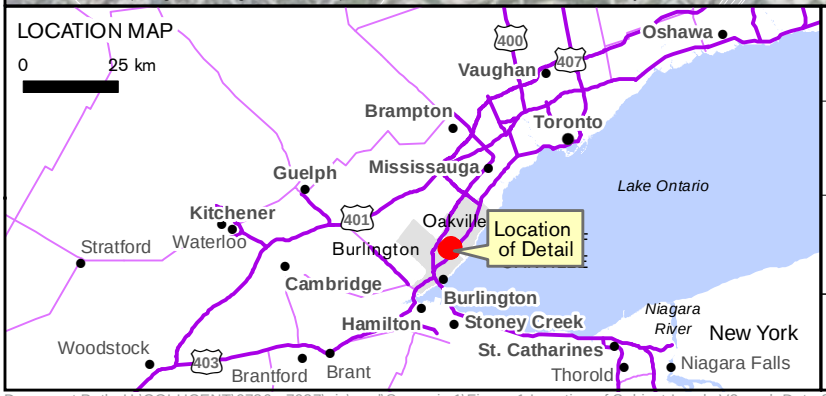
Table 1 Functional Assessment and Sensitivity Summary
Table 2 Impact, Mitigation and Net Effects Summary
Table 3 Summary of Buffer Recommendations (in report text)

ATTACHMENT 1:

Figures



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Bronte Creek Meadows Environmental Impact Assessment

Location of Subject Lands

Prepared by: Colucent Environmental

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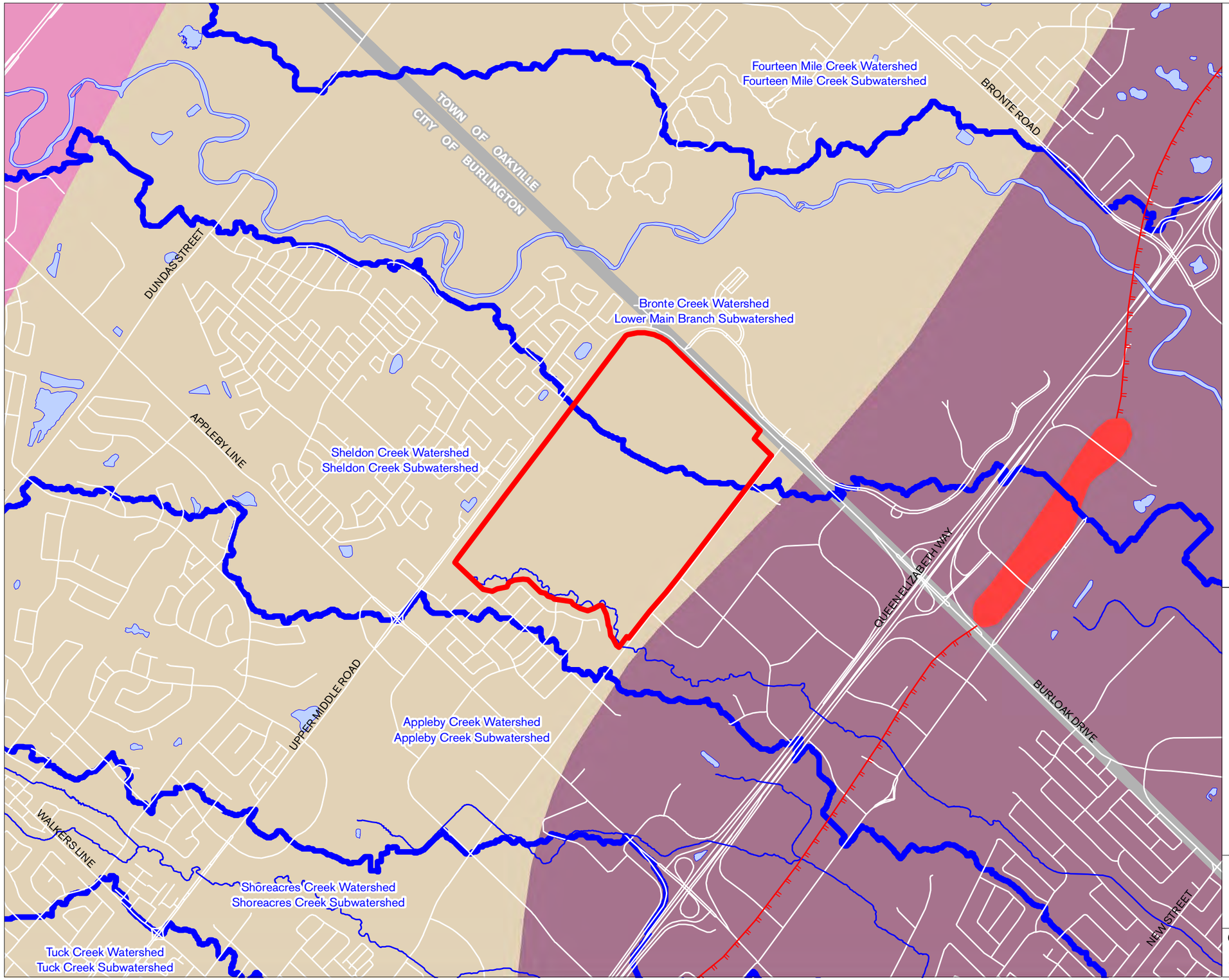
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Figure 1

Document Path: H:\COLUCENT\9736 - 7027\gis\mxd\Scenario 1\Figure 1 Location of Subject Lands V2.mxd Date Saved: August 22, 2024



Subject Lands
Waterbody (MNRF)
Watercourse (MNRF)
Subwatershed

Physiography
2: Till Moraines
6: Till Plains (Drumlinized)
10: Shale Plains
14: Beaches
Shorecliff

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Bronte Creek Meadows
Environmental Impact Assessment

LANDSCAPE AND WATERSHED CONTEXT

Physiography and Watersheds

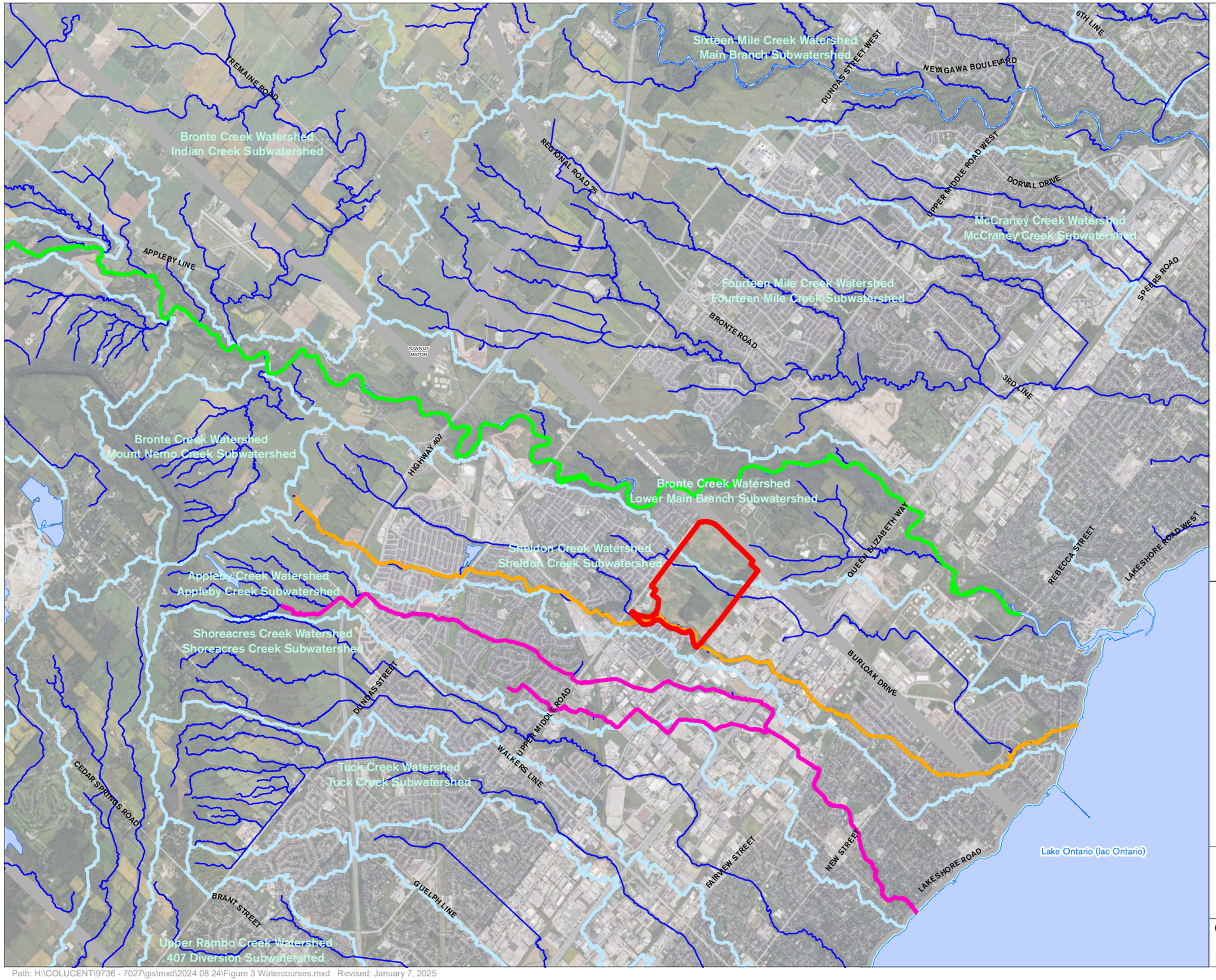
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Figure 2

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Subject Lands
Waterbody
Watercourse
Subwatershed
Appleby Creek
Bronte Creek
Sheldon Creek

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Bronte Creek Meadows
Environmental Impact Assessment

LANDSCAPE AND WATERSHED CONTEXT

Watercourses

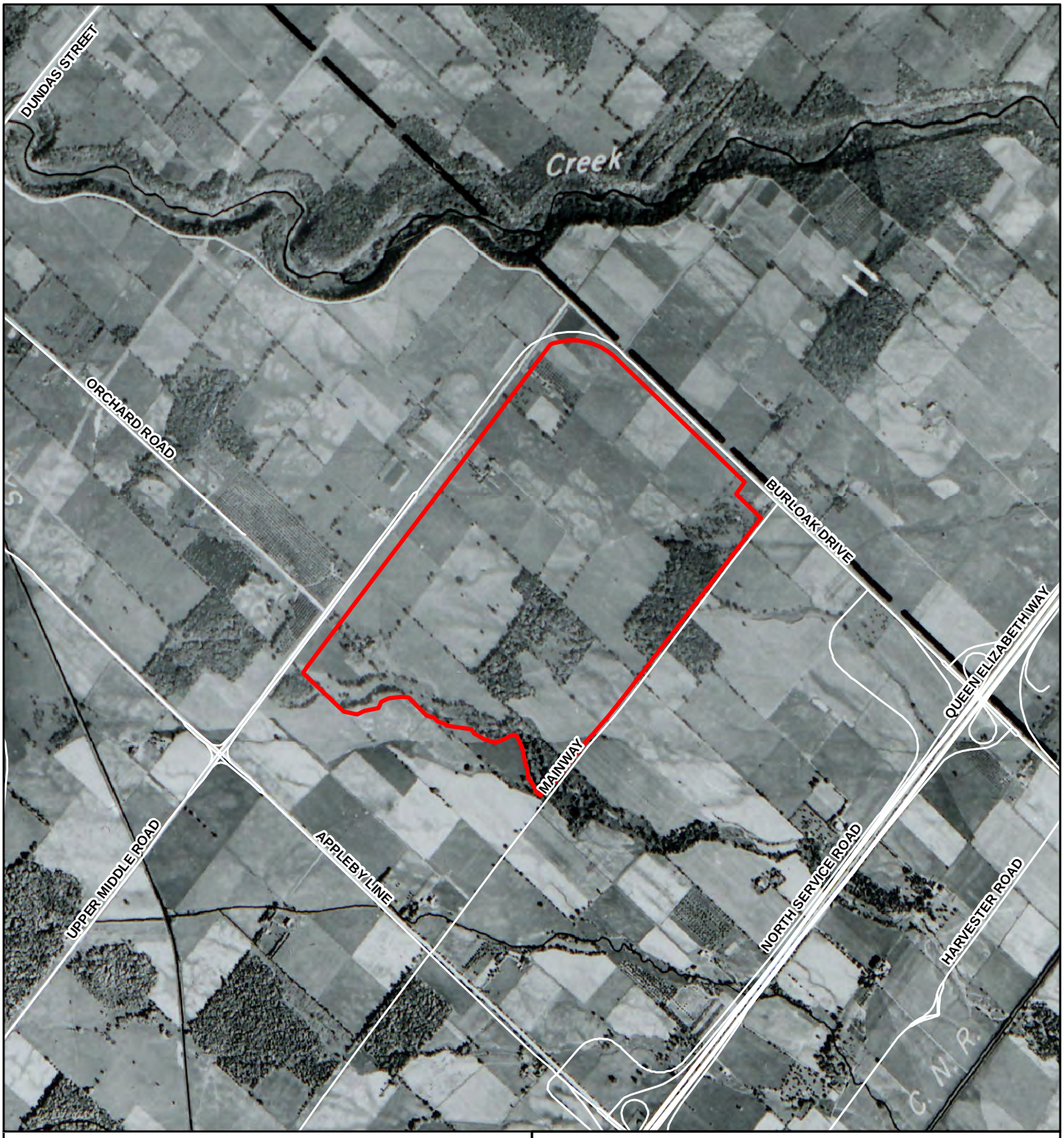
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Figure 3

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Legend

Subject Lands

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Bronte Creek Meadows Environmental Impact Assessment

Subject Lands Historic Context 1954

Prepared by: Colucent Environmental

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Figure 4



Legend

Subject Lands

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Bronte Creek Meadows Environmental Impact Assessment

Subject Lands Historic Context 1960

Prepared by: Colucent Environmental

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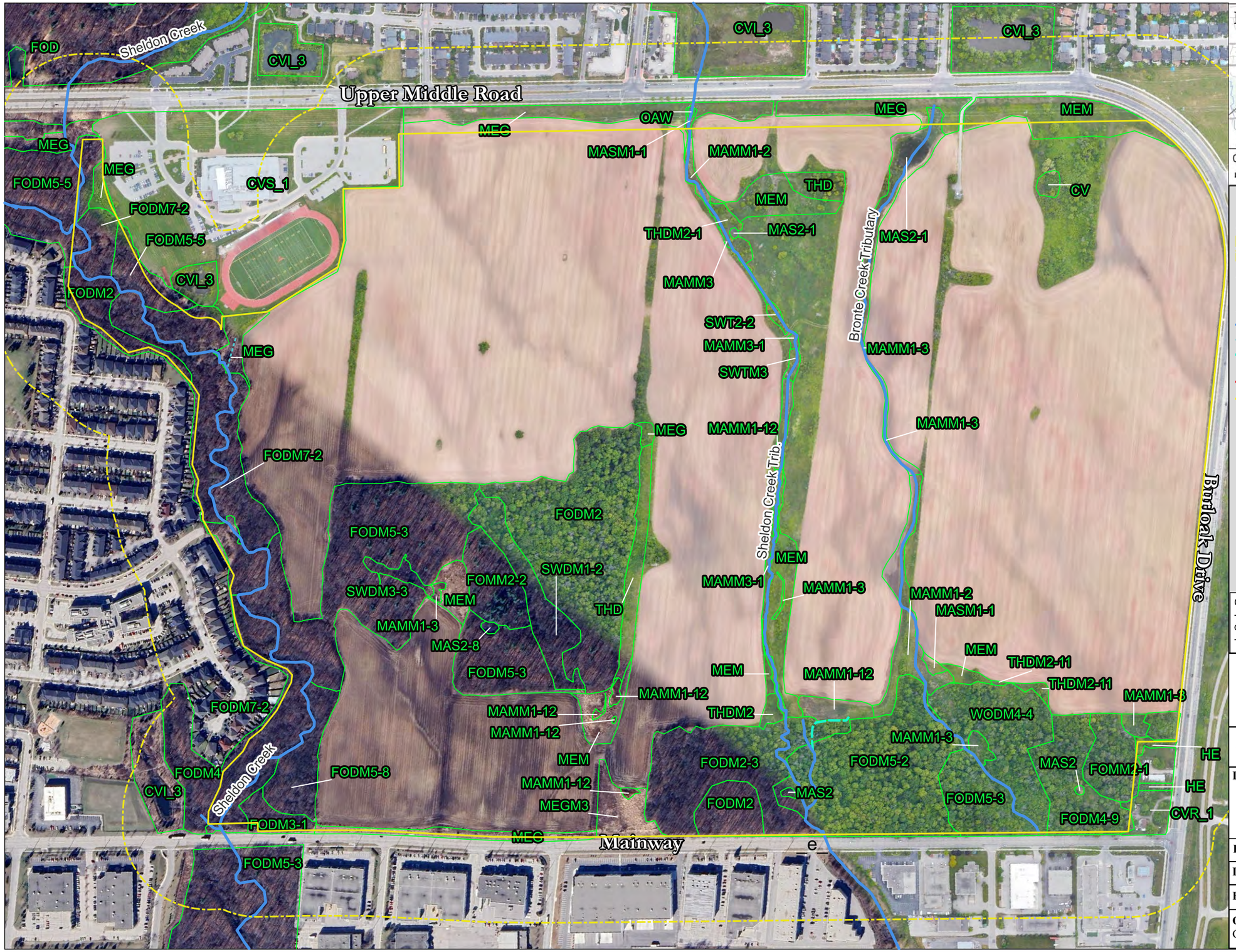
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Figure 5



Legend

Area of Assessment
- Subject Property
- Adjacent Lands (120 m)

Biophysical Features and Conditions
- Vegetation Communities

Significant Natural Features - Terrastory & HESL
- Watercourse
- SWM Outlet
- Bronte Creek Trib Side Channel
- Outer Limit of Woodland Features
- Wetland Areas Within Woodlands

GENERAL NOTES:
-Features depicted herein should not be used in place of a professional survey.
-Numeric scale is for a 11x17 inch print.

Colucent Environmental

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Location:
Bronte Meadows,
City of Burlington

Project No.:

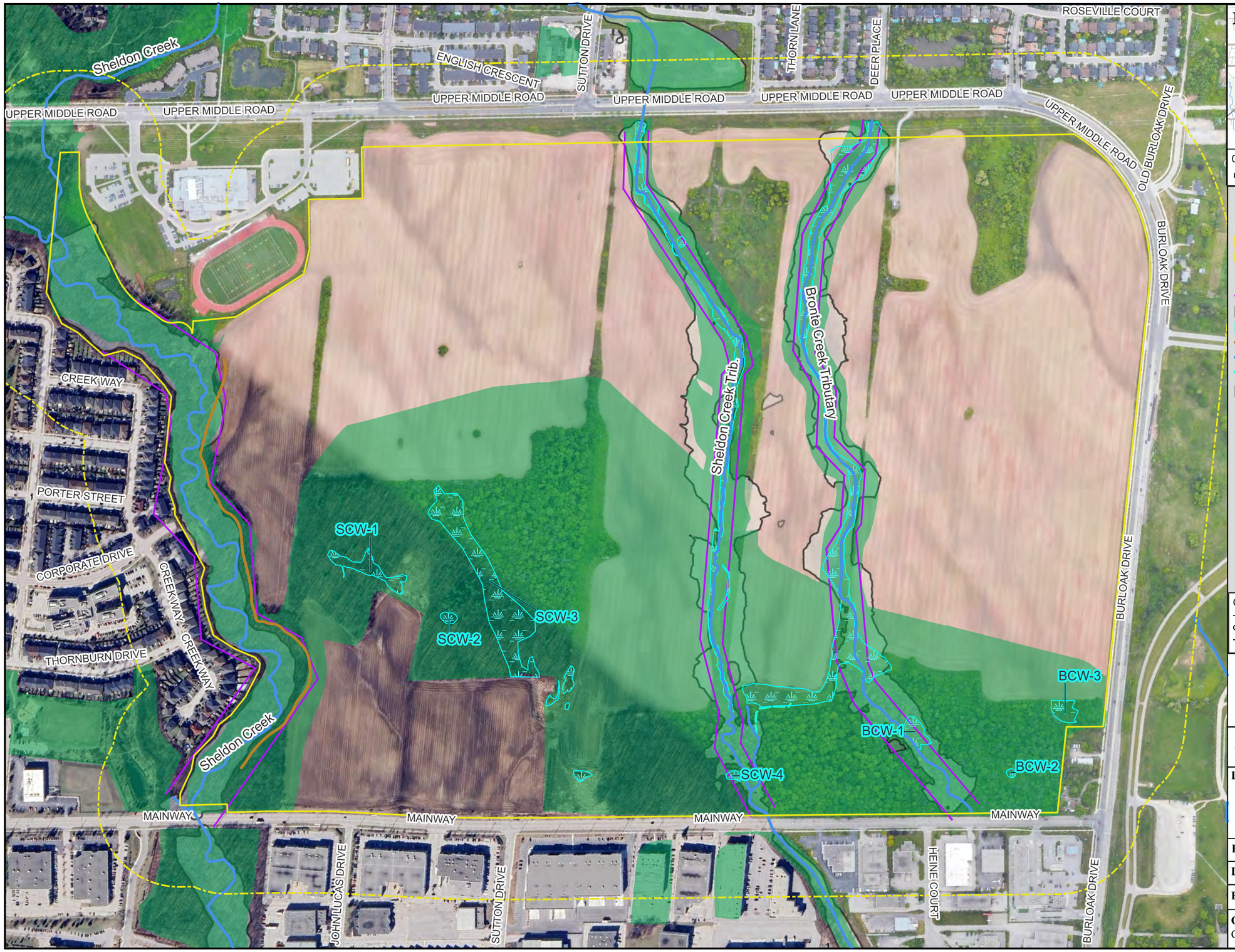
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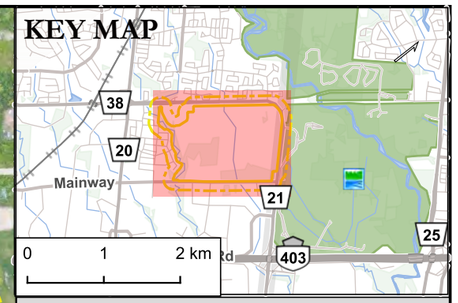
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Orthophotograph Date: Google, 2018.

Figure 6 Vegetation Communities

Figure modified from Terrastory Environmental (2025).





Legend

Area of Assessment
- Subject Property
- Adjacent Lands (120 m)

Natural Hazards
- Meander Belt (Water's Edge, Dec. 2023)
- Floodplain (Water's Edge, 2023)
- Unevaluated / Other Wetland
- Stable Top of Slope (STOS) (MTE, Feb. 2024)
- Watercourse
- Bronte Creek Trib Side Channel
- Natural Heritage System

GENERAL NOTES:
-Features depicted herein should not be used in place of a professional survey.
-Numeric scale is for a 11x17 inch print.

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Location:
Bronte Meadows,
City of Burlington

Project No.:

Date: 2024-06-13

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Orthophotograph Date:
Google, 2018.

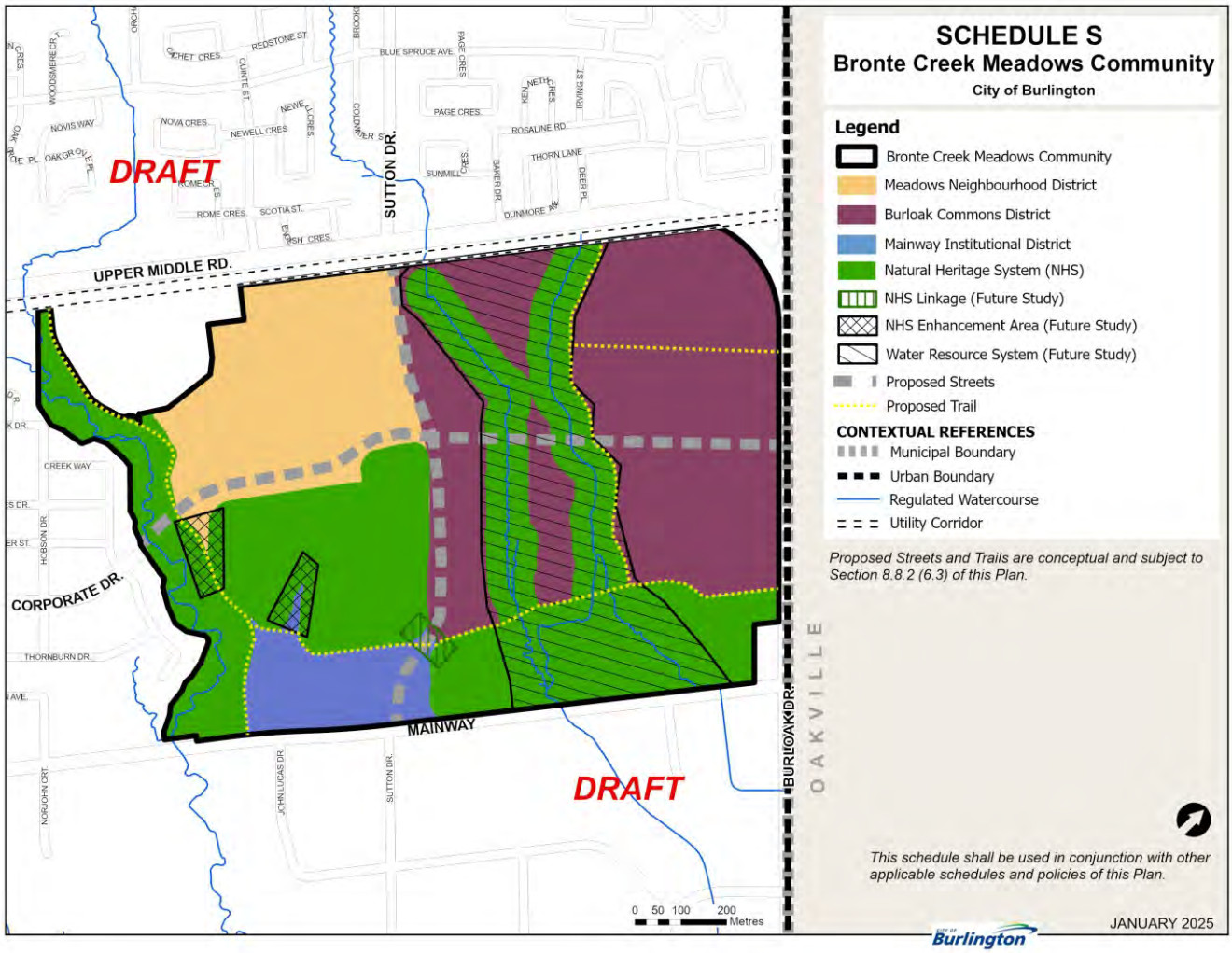
Figure 7 Natural Hazards

Figure modified from Terrastory Environmental (2025).

Figure 8

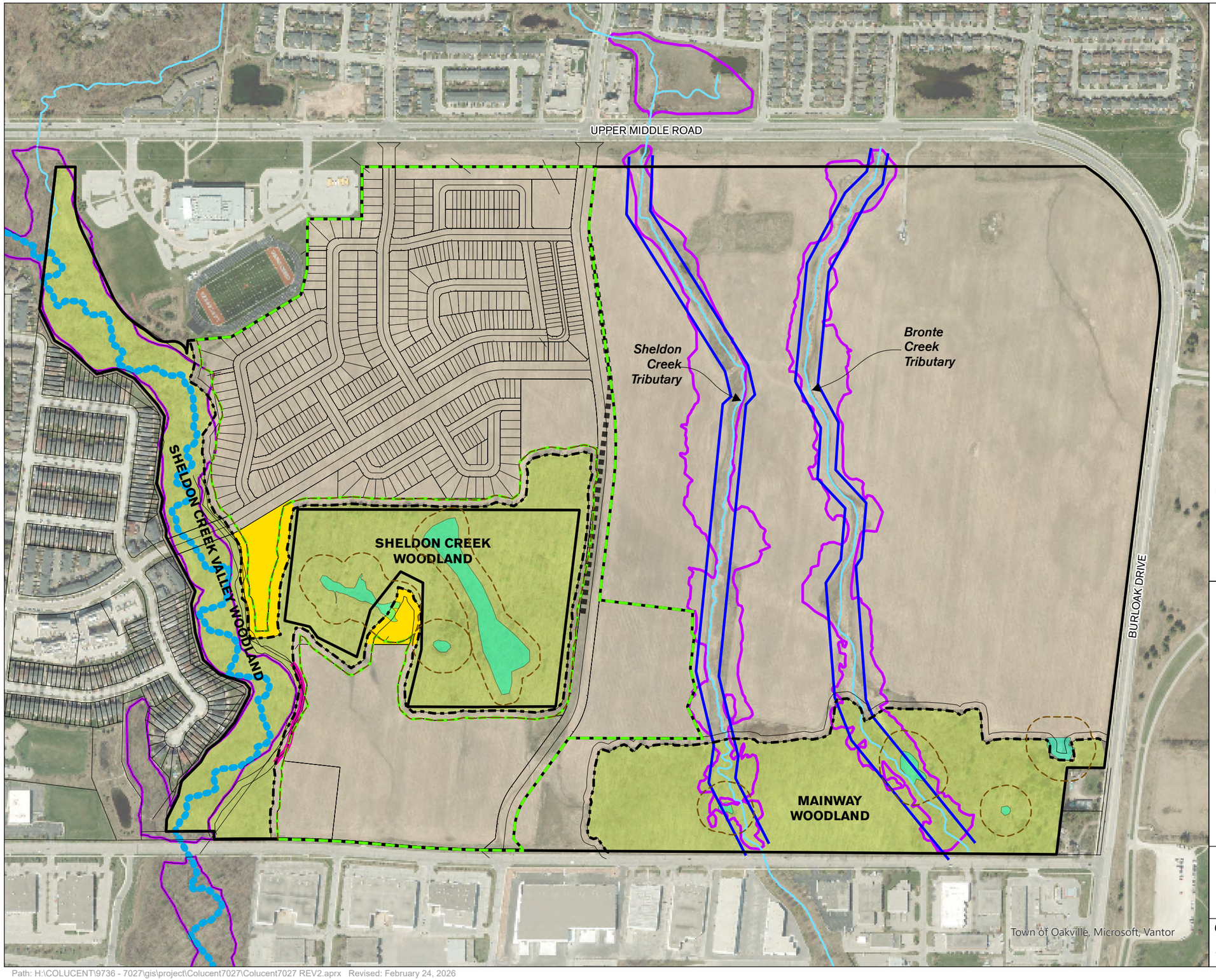
Official Plan Amendment No. 4

Attachment 3 to OPA 4 – Bronte Creek Meadows Community Schedule



This Schedule is drawn from Official Plan Amendment No. 4 to the Official Plan of the Burlington Planning Area, Approved, May 20, 2025.

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- Main Branch of Sheldon Creek in the Valley
- Meanderbelt
- Floodplain
- Wetland Area Within Woodlands
- Woodland Areas (approximate)
- Enhancement Areas to Key Features
- Development Limit
- Staked Dripline
- Limit of Phase 1. (Draft Plan of Proposed Subdivision, Bousfields Inc. June 18, 2025)
- Buffer

Draft Plan of Proposed Subdivision, Bousfields Inc. February, 2026.

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Environmental Impact Assessment

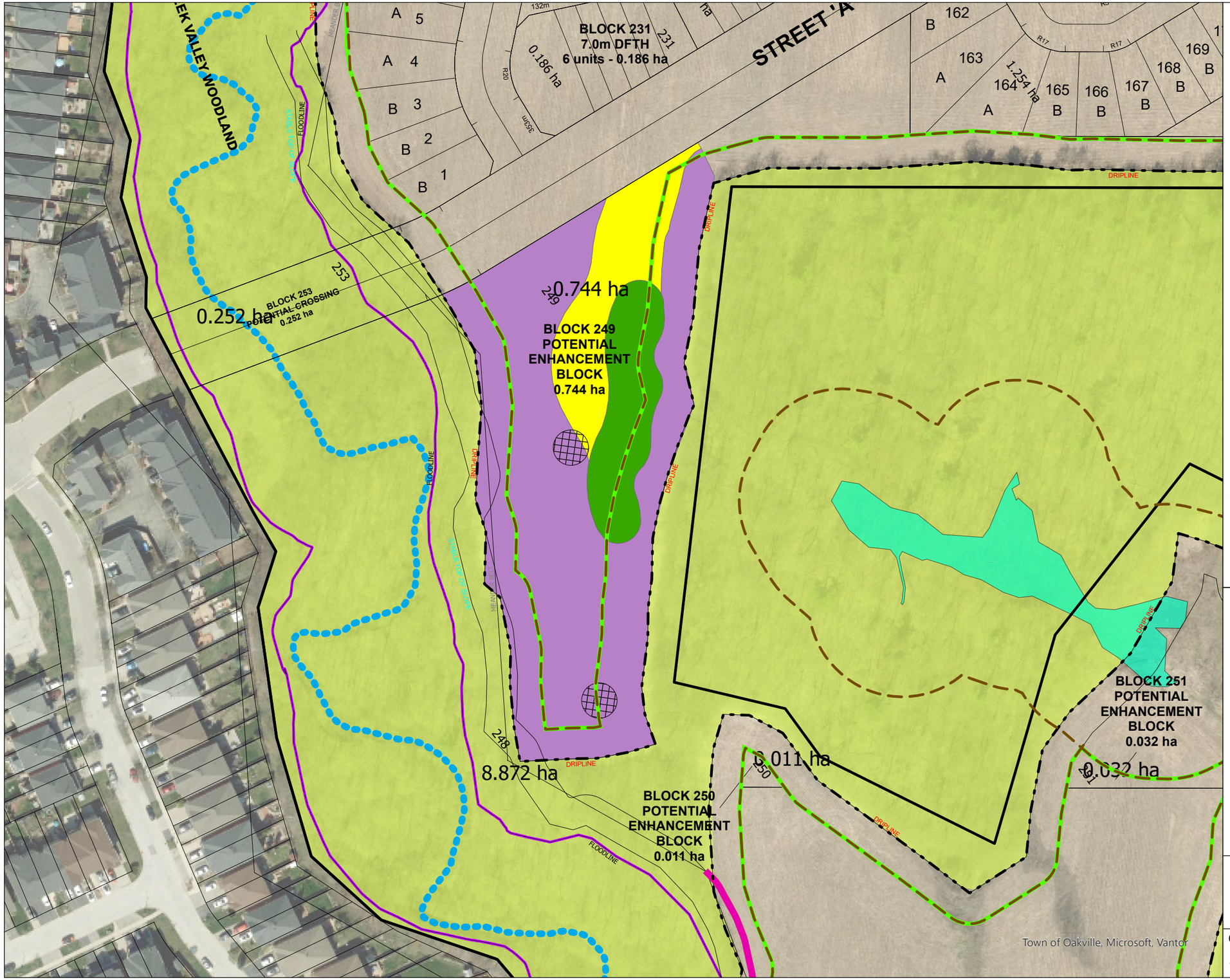
LOCAL LANDSCAPE CONTEXT

Natural Heritage Feature Limits

Prepared by: Colucent Environmental

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Figure 9



- Stable Top of Slope Outside Woodland Limit
- Main Branch of Sheldon Creek in the Valley
- Floodplain
- Wetland Area Within Woodlands
- Woodland Areas (approximate)
- Development Limit
- Staked Dripline

Enhancements to Key Features - Area 1

- Created Wetland Feature: berm directed flows and deep pools
- Forest Habitat Creation
- Meadow and Cultural Thicket Area
- Hibernacula Creation
- Buffer

Draft Plan of Proposed Subdivision, Bousfields Inc. February, 2026.

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Bronte Creek Meadows
Environmental Impact Assessment

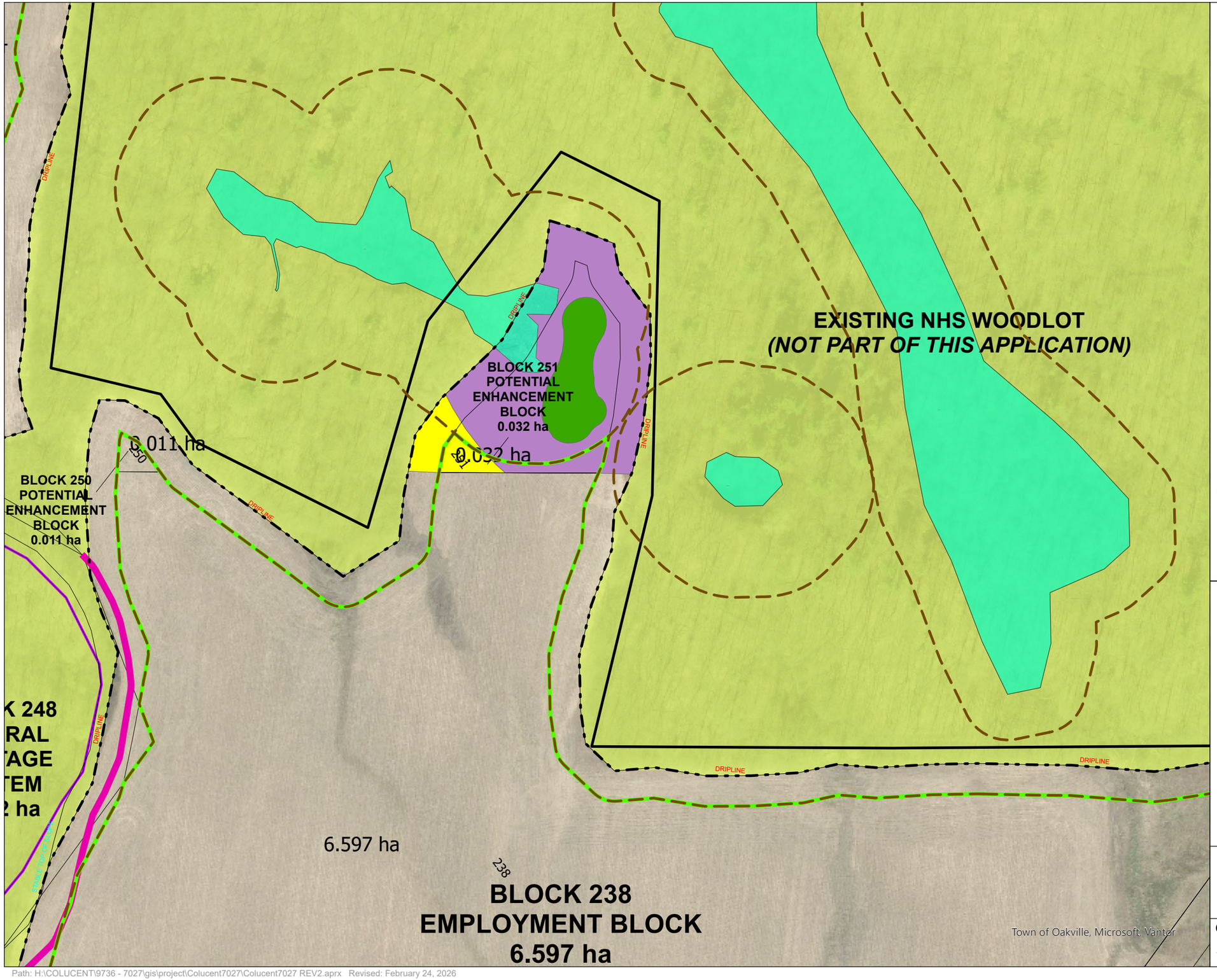
LOCAL LANDSCAPE CONTEXT

Enhancements to Key Features Area 1

Prepared by: Colucent Environmental

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Figure 10



- Stable Top of Slope Outside Woodland Limit
- Floodplain
- Wetland Area Within Woodlands
- Boundary of Woodland Features
- Development Limit
- Staked Dripline

Enhancements to Key Features - Area 2

- Created Wetland Feature: berm directed flows and deep pools
- Forest Habitat Creation
- Meadow and Cultural Thicket Area
- Buffer

Note: Southern limits of enhancement are subject to verification.

Draft Plan of Proposed Subdivision, Bousfields Inc.February, 2026.

Contains information licensed under the Open Government Licence– Ontario. Base map data from Ontario Ministry of Natural Resources, Ontario GeoHub Land Information Ontario (LIO) Warehouse Open Data Produc ts.https://geohub.lio.gov.on.ca/. Greenbelt: Office of the Ontario Ministry of Municipal Affairs and Housing. Woodland: TerraStory June 2024. Coordinate system: NAD 1983, UTM Zone 17T. Air photo: Microsoft Virtual Earth.

alinea

ALINEA LAND CORPORATION
Bronte Creek Meadows
Environmental Impact Assessment

LOCAL LANDSCAPE CONTEXT

Enhancements to Key Features Area 2

Prepared by: Colucent Environmental

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1:1,250

Figure 11

ATTACHMENT 2:

Photolog (Representative Photographs)

Representative Photographs, Bronte Creek Meadows Lands
Alinea Land Corporation

(Photos by Tom Hilditch, Colucent Environmental Inc. on:
Oct 15, 2023, Dec 28, 2023, Feb 20, 23, 2024, Aug.20, 2024 and Nov 20, 2024)



Photo 1. Sheldon Creek, looking north, north of Mainway, October 15, 2023



Photo 2. Sheldon Creek, looking north; south of Sheldon Creek Woodland, October 15, 2023



Photo 3. Sheldon Creek, looking north; north of Mainway, October 15, 2023



Photo 4. Sheldon Creek, looking north; south of Sheldon Creek Woodland, October 15, 2023



Photo 5. Sheldon Creek, looking north; west of Sheldon Creek Woodland, October 15, 2023



Photo 6. East bank of Sheldon Creek; west of Sheldon Creek Woodland, October 15, 2023



Photo 7. Remnants of White Pine stump fence; relict of early settlement deforestation, October 15, 2023



Photo 8. Looking north; actively cropped field between Sheldon Creek Woodland (right) and the valley land forest along Sheldon Creek (left), October 15, 2023



Photo 9. Looking south across wetland SCW-1 in the Sheldon Creek Woodland, October 15, 2023



Photo 10. Looking south in the Sheldon Creek Woodland; near southern edge, October 15, 2023



Photo 11. Looking east, near the southern edge of the Sheldon Creek Woodland, October 15, 2023

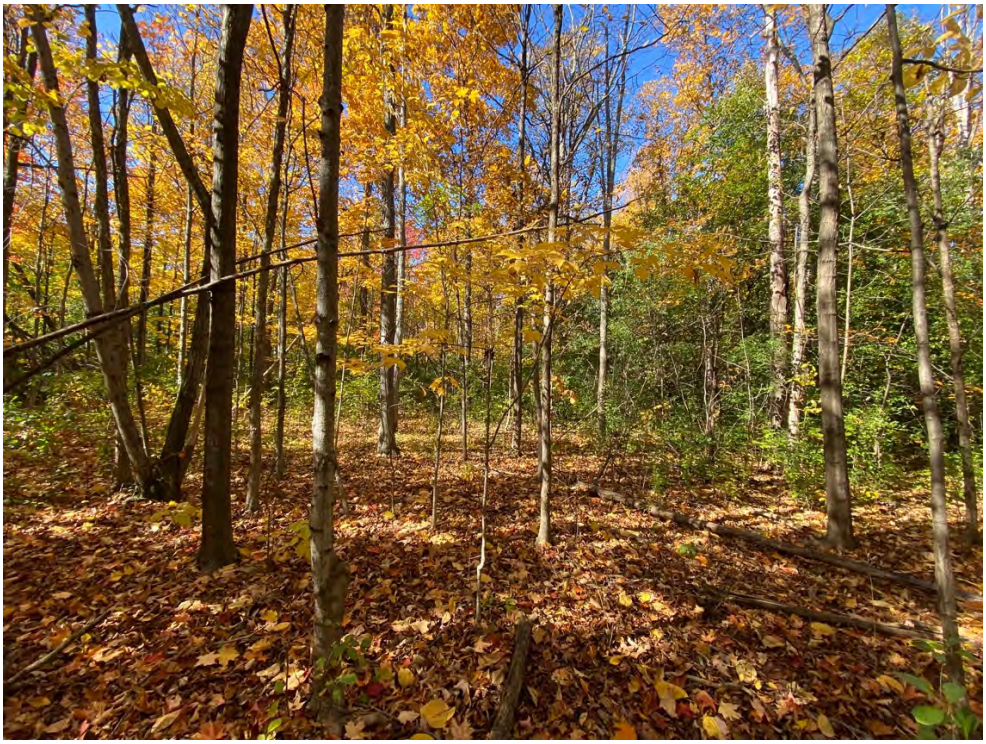


Photo 12. Looking north, near the northern edge of the Sheldon Creek Woodland, October 15, 2023



Photo 13. Looking north, near the northern edge of the Sheldon Creek Woodland, October 15, 2023



Photo 14. Looking west towards the southeastern edge of Sheldon Creek Woodland, October 15, 2023



Photo 15. Area of reddish pink Chinguacousy soils in actively farmed field, December 28, 2023



Photo 16. Looking north at a tributary of Sheldon Creek, as it enters Mainway Woodland, December 28, 2023



Photo 17. Looking north at the tributary of Sheldon Creek in Mainway Woodland, December 28, 2023



Photo 18. Looking north at the tributary of Sheldon Creek in the Mainway Woodland, December 28, 2023



Photo 19. Looking south along the tributary of Sheldon Creek at the Mainway box culvert, December 28, 2023



Photo 20. Wetland BCW-1 in Mainway Woodland along the tributary of Bronte Creek, December 28, 2023



Photo 21. Tributary of Bronte Creek as it reaches the catch basin at Mainway, December 28, 2023



Photo 22. Tributary of Bronte Creek as it enters the catch basin at Mainway, December 28, 2023



Photo 23. Overland runoff along field edge; west side of Sheldon Creek Tributary, December 28, 2023



Photo 24. Looking south along the Bronte Creek Tributary, towards Mainway Woodland, December 28, 2023



Photo 25. Looking north along the Bronte Creek Tributary, north of Mainway Woodland, December 28, 2023



Photo 26. Looking north along the Bronte Creek Tributary, at BH 151-23, December 28, 2023



Photo 27. Looking south along the Bronte Creek Tributary, at BH 151-23, December 28, 2023



Photo 28. Looking south in Wetland SCW-1, August 20, 2024



Photo 29. Looking west in Wetland SCW-1, August 20, 2024



Photo 30. Looking west at the northern flow entry point to Wetland SCW-3



Photo 31. Looking west inside the northern flow entry point to Wetland SCW-3; short, eroded channel, before flows become diffused overland



Photo 32. Looking south inside Wetland SCW-3; note debris piling, August 20, 2024



Photo 33. Looking south inside Wetland SCW-3; no defined channel, August 20, 2024



Photo 34. Looking west at ill-defined inlet to Wetland SCW-2, August 20, 2024



Photo 35. Looking east across open water in Wetland SCW-2, August 20, 2024



Photo 36 Looking southeast at ill-defined outlet from Wetland SCW-2, August 20, 2024



Photo 37 Looking northwest along eastern Sheldon Creek Woodland edge, November 20, 2024



Photo 38 Looking north along eastern Sheldon Creek Woodland edge, November 20, 2024



Photo 39 Looking north along eastern Sheldon Creek Woodland edge, November 20, 2024



Photo 40 Looking north at northeastern corner of Sheldon Creek Woodland, November 20, 2024



Photo 41 Looking east toward northeastern corner of Sheldon Creek Woodland, November 20, 2024,



Photo 42 Looking east toward northeastern corner of Sheldon Creek Woodland, November 20, 2024,



Photo 43 Looking southeast at northern edge of Sheldon Creek Woodland, November 20, 2024



Photo 44 Looking south along the western edge of Sheldon Creek Woodland, November 20, 2024



Photo 45 Looking south toward the southwestern edge of Sheldon Creek Woodland, November 20, 2024



Photo 46 Looking southeast at the opening between Sheldon Creek Woodland and the Sheldon Creek Valley Woodland, November 20, 2024



Photo 47 Looking north at the active farmed field between the western edge of Sheldon Creek Woodland (right) and the valley land forest along Sheldon Creek (left), November 20, 2024



Photo 48 Looking north into the active farmed field and meadow in the southcentral gap in the southern edge of Sheldon Creek Woodland, November 20, 2024

ATTACHMENT 3:

Tables

TABLE 1: NATURAL HERITAGE ASSESSMENT

FUNCTIONS & FEATURES / LOCATION	SHELDON CREEK VALLEY	SCW-1	SCW-2	SCW-3	GENERAL SENSITIVITY TO IMPACTORS	POTENTIAL BUFFER ROLE AS PART OF MITIGATION
Carbon sequestration and storage	Medium	High	High	High	Low	Negligible
Local climate and air quality	Medium	Low	Low	Low	Low	Negligible
Moderation of Risks (i.e., floods, storms)	Medium	Medium	Medium	Low to Medium	Medium	SWM strategy dependent
Erosion Prevention	Medium	Medium	Medium	Low	Low to Medium	SWM strategy dependent
Pollination	Medium	Low	Low to Medium	Low	Low	Negligible; Buffers may allow a focus on new pollinator habitat creation
Ground water discharge-headwaters (i.e., ground and surface water interactions)	Absent	Absent	Absent	Absent	Low	Geotechnical / engineering controls as required

FUNCTIONS & FEATURES / LOCATION	SHELDON CREEK VALLEY	SCW-1	SCW-2	SCW-3	GENERAL SENSITIVITY TO IMPACTORS	POTENTIAL BUFFER ROLE AS PART OF MITIGATION
Ground water recharge-seasonal or permanent	Low	Low	Low	Low	Low	Geotechnical / engineering controls as required
Ground water quality and temperature effects	Low	Low	Low	Low	Low	Geotechnical / engineering controls as required; Habitat creation areas may include opportunities for infiltration galleries (size and area dependent)
Floodwater and flow regulation, storage	High	Low to Medium	Low to Medium	Low	Medium	SWM strategy dependent
Erosion control/shoreline stabilization/sediment stabilization	High	Low to Medium	Low to Medium	Low	Low	SWM strategy dependent
Quality and temperature effects	High	Medium to High	Medium to High	Low	Low	Buffers may add canopy cover which will contribute to quality and temperature control

FUNCTIONS & FEATURES / LOCATION	SHELDON CREEK VALLEY	SCW-1	SCW-2	SCW-3	GENERAL SENSITIVITY TO IMPACTORS	POTENTIAL BUFFER ROLE AS PART OF MITIGATION
Sediment/toxicant reduction and retention	Medium	Medium to High	Medium to High	Low	Low	Buffers may contribute to sediment deposition before entering aquatic systems (depending upon flow distance and surface roughness)
Organic contributions – invertebrates and debris	High	Medium to High	Medium to High	Low	Low	Buffers may add canopy and riparian cover which will contribute to organic contributions
Biogeochemical processes – cycling, removal and/or storage	High	Medium to High	Medium to High	Low	Low	Negligible
Decomposition processes	Medium	Medium to High	Medium to High	Low to Medium	Low	Limited role of buffers, if any
Biological diversity	Medium to High	Medium to High	High	Medium to High	Medium	Buffers contribute to biodiversity conservation and increase importance of pedestrian access barriers/communication

FUNCTIONS & FEATURES / LOCATION	SHELDON CREEK VALLEY	SCW-1	SCW-2	SCW-3	GENERAL SENSITIVITY TO IMPACTORS	POTENTIAL BUFFER ROLE AS PART OF MITIGATION
Community structure	Medium	Medium	Medium	Low to Medium	Medium	Buffers contribute to biodiversity conservation and increase importance of barriers/communication
Species richness	Medium	Medium to High	Medium to High	Medium to High	Low	Negligible
Productivity	Medium	Medium to High	Medium to High	Medium	Low	Negligible
Soils Formation	Medium	Medium	Medium	Low	Low	Negligible
Deer, Waterfowl, Reptiles, bats	Low to Medium	Low to Medium	Low to Medium	Low to Medium	Low to Medium	Buffers will protect forest edges; opportunities for bat roost installations; net increase in bat abundance
Area dependent	Low to Medium				Low to Medium	Buffers can contribute to reduced noise and light; scale of settlement area

FUNCTIONS & FEATURES / LOCATION	SHELDON CREEK VALLEY	SCW-1	SCW-2	SCW-3	GENERAL SENSITIVITY TO IMPACTORS	POTENTIAL BUFFER ROLE AS PART OF MITIGATION
						expansion will limit buffer utility
Colonial nesting	Absent	Absent	Absent	Absent		Negligible
Winter mammal cover	Low	Low	Low	Low	N/A	Negligible
Waterfowl nesting	Low	Low	Low	Low	N/A	Negligible
Amphibian breeding	Low	Low to Medium	Medium to High	Absent	Low to Medium	Buffers will increase foraging and distribution habitat, especially on the created habitat areas
Turtle nesting	Absent	Absent	Absent	Absent	Low to Medium	Buffers may incorporate created nesting features for turtles
Seeps and springs	Absent	Absent	Absent	Absent	N/A	Negligible
Vegetation communities at risk	Absent	Absent	Absen	Absen	Low to Medium	Buffers will help conserve the hickory canopy in SCW-3

FUNCTIONS & FEATURES / LOCATION	SHELDON CREEK VALLEY	SCW-1	SCW-2	SCW-3	GENERAL SENSITIVITY TO IMPACTORS	POTENTIAL BUFFER ROLE AS PART OF MITIGATION
Species at risk	Present	Present	Present	Present	Low to Medium	Buffers can contribute to reduced noise and light
Wetland scarcity	N/A	N/A	N/A	N/A	N/A	Buffers can contribute to wetland conservation (SCW-1, SCW-2)
Riparian	Medium to High	Low to Medium	Low to Medium	Low	Low	N/A
Cross-terrain	Low	Low	Low	Low	Low	N/A
Degree of natural barriers	Low	Low	Low	Low	Low	N/A
Degree of artificial barriers	Low	Low	Low	Low	Low	N/A
Indirect barriers and influences (e.g., concentration of access and intrusion)	Low to Medium	Low	Low	Low	Medium to High	N/A
Productive	N/A	N/A	N/A	N/A	Low	N/A

FUNCTIONS & FEATURES / LOCATION	SHELDON CREEK VALLEY	SCW-1	SCW-2	SCW-3	GENERAL SENSITIVITY TO IMPACTORS	POTENTIAL BUFFER ROLE AS PART OF MITIGATION
Consumptive	Low	N/A	N/A	N/A	Low	N/A
Recreation/passive	Low	N/A	N/A	N/A	Low	Buffers and restoration areas may accommodate human access (trails)
Wellness	Low to Medium	N/A	N/A	N/A	Low	N/A
Source of water	High	Medium	Medium	Medium	Medium	Negligible
Sustainability of supply	Medium to High	Low to Medium	Medium	Low to Medium	Medium	Negligible to Low
Natural or artificial source	Low to Medium	Medium	Medium	Medium	Medium	Negligible to Low
Resilience of vegetation and wildlife	Low to Medium	Low to Medium	Medium	Medium	Low	Negligible to Low
Predicted climate change effects/resiliency	Low to Medium	Low	Low	Low	Low	Negligible
Flood damage prevention	Low to Medium	Low to Medium	Low to Medium	Low to Medium	Low	Negligible to Low

NOTES:

1. This functional assessment tool has been developed from a variety of key domestic and international resource materials by Colucent Environmental Inc.
2. The assessment of features, functions and processes is a relative, not absolute exercise
3. LGL has provided specific input and examples, especially related to impacts
4. This table has been expanded to include an indication of the sensitivity of features and functions

SUMMARY OF KEY FINDINGS; SENSITIVITY AND BUFFER ROLES (See Attached Working Table)

- The sensitivity to impactors column is a useful summary to highlight the more sensitive features and functions
- Most sensitivity scores are low or low to medium; higher scores are as follows:

Medium Sensitivity to Impactors:

- Moderation of Risks (i.e., floods, storms); Floodwater and flow regulation, storage. Biological Diversity; Vegetation Community Structure; Viability & Resilience (water source and sustainability). Water related factors are addressed primarily through the SSWS and MESP

Medium to High Sensitivity to Impactors:

- Indirect barriers and influences (e.g., addressing concentration of access and intrusion
- The mitigation hierarchy incudes avoidance, minimization, mitigation and enhancements/offsets
- Buffers are one aspect of mitigation, and this table provides guidance where buffers will be more beneficial in reducing negative impacts and increasing opportunities for nature positive outcomes

TABLE 2: PHASE 1 IMPACT MITIGATION SUMMARY

FEATURE & LOT/BLOCK REFERENCE	VEGETATION COMMUNITY CHARACTER & CONDITION	FEATURE & FUNCTION SENSITIVITY	PREDICTED IMPACTS	IMPACT MITIGATION	BUFFER SPECIFIC COMMENTS (Final buffer recommendations are also presented in Table 3, EIA section 6.4)	SUMMMARY OF PREDICTED CHANGES
Corporate Drive Extension Street A	Bridge crossing West Branch of Sheldon Creek	Presence of endangered bat species, provincially rare spider, Spined Micrathena and a provincially rare lichen species (*Arhtonia lapadicola*). Potential day roosts and foraging for Silver-haired Bat, Hoary Bat, Red Bat, Little Brown Bat, other Myotis species. Tri-coloured Bat was recorded in all wooded areas.	Removal of narrow corridor (about 20 m wide) of woodland to allow the construction of the extension of Corporate Drive across the Sheldon Creek Valley Woodland. Indirect effects on adjacent, new woodland edges, especially south and west facing woodland edges. Exposed slope and valley soils will be prone to erosion. Kuntz Forestry Consulting Inc, (2026) Tree Preservation plan illustrates specific tree removal associated with Street A	The bridge deck and road surface across the Sheldon Creek were designed to control the new forest opening to be about 20 m or less, to limit canopy fragmentation. The planning and design of this crossing will require a more detailed assessment of site-specific terrestrial ecology and aquatic information within, upstream and downstream of the crossing. Construction timing will be required to follow and specified windows to minimize impacts on terrestrial and aquatic species. Understanding effects on bats may be associated with impacts on some trees, artificial bat roost structures may be installed in numbers, types and locations determined during detailed crossing vegetation surveys. Specialized opportunities exist to consider measures to increase the populations of rare	N/A	The extension of Corporate Drive will introduce a forest canopy gap in the intact Sheldon Creek Valley Forest Block (recommended to be <20m). This will affect Significant Woodland and Significant Wildlife Habitat. e.g., may reduce the availability of woodland to support some area sensitive species. Localized negative impacts on SAR bats and Spined Micranthena are predicted

FEATURE & LOT/BLOCK REFERENCE	VEGETATION COMMUNITY CHARACTER & CONDITION	FEATURE & FUNCTION SENSITIVITY	PREDICTED IMPACTS	IMPACT MITIGATION	BUFFER SPECIFIC COMMENTS (Final buffer recommendations are also presented in Table 3, EIA section 6.4)	SUMMMARY OF PREDICTED CHANGES
				lichens (e.g., in collaboration with researchers, institutions such as the Royal Botanical Garden, RBG).		
District 1 Meadows **Sheldon Creek Valley Woodland** Residential Lots 1 - 18	FODM7-2 Adjacent to lots; Fresh - Moist Green Ash - Hardwood Lowland Deciduous Forest	Presence of endangered bat species, provincially rare spider, Spined Micrathena and a provincially rare lichen species (*Arhtonia lapadicola*). Potential day roosts and foraging for Silver-haired Bat, Hoary Bat, Red Bat, Little Brown Bat, other Myotis species. Tri-coloured Bat was recorded in all wooded areas.	Localized negative impacts on Spined Micranthena are possible, as this species has been observed in the forested area adjacent to these proposed lots. The adjacent woodland has been negatively affected by Emerald Ash Borer, resulting in some standing dead ash trees and an impacted, semi-open forest canopy. Potential impacts may occur from the use of adjacent natural areas by new residents and pets.	Enhancement measures will focus on the removal of existing invasive plant species in the woodland edge and the prevention of invasive plants from becoming established in the buffer. The buffer should be restored with a grass and forb meadow, with a degree of minor surface roughness to slow overland flow that moves towards the Sheldon Creek valley, and to facilitate adsorption and deposition of any sediment. Fencing (e.g., chain link) and access controls (e.g., signage) should be discussed with the city to optimize ecological conservation and respectful, sustainable human access to retained natural areas.	The proposed buffer is 10 m from the greater of the stable top of bank and the woodland dripline. Buffers of 10 m from the dripline includes an average of about 3 m from tree trunk to dripline, making the 10 m buffer about 3 times the radius of the dripline) more than adequate for vegetation protection). The buffer should be vegetated with a suitable native plant dry meadow mix, that will favour pollination and grassland habitat use.	Full protection of native woodland in the Sheldon Creek valley, with a naturally vegetated buffer. Water quality will be improved in formerly tilled areas draining to the Sheldon Creek valley. Conservation of all habitats for species at risk.
District 1 Meadows	Adjacent to west: FODM7-2	Presence of endangered bat species, provincially rare spider, Spined Micrathena and	The enhancement works will contribute to: • Increased plant and wildlife biodiversity	The bridge deck and road surface across the Sheldon Creek were designed to control the new forest opening to be	Buffers are one form of mitigation to mitigate against impactors adjacent to natural features. They are not needed in the Enhancement Areas	Adjacent Key Natural Features will be conserved and enlarged over time, if/as proposed

FEATURE & LOT/BLOCK REFERENCE	VEGETATION COMMUNITY CHARACTER & CONDITION	FEATURE & FUNCTION SENSITIVITY	PREDICTED IMPACTS	IMPACT MITIGATION	BUFFER SPECIFIC COMMENTS (Final buffer recommendations are also presented in Table 3, EIA section 6.4)	SUMMMARY OF PREDICTED CHANGES
Sheldon Creek Valley Woodland Potential Enhancement Area Blocks 249, 252	Fresh - Moist Green Ash - Hardwood Lowland Deciduous Forest Adjacent to east: FODM5-3 Dry Fresh Sugar Maple Oak Forest	a provincially rare lichen species (*Arhtonia lapadicola*). Potential day roosts and foraging for Silver-haired Bat, Hoary Bat, Red Bat, Little Brown Bat, other Myotis species. Tri-coloured Bat was recorded in all wooded areas.	• Increased reptile and amphibian populations (by directly addressing limiting factors, i.e., short hydroperiods, absence of confirmed hibernacula) • Significantly improved connectivity in areas of higher biological productivity (e.g., within and between Sheldon Creek Valley Woodland and Sheldon Creek Woodland • Potential for increased socio-cultural opportunities through carefully planned and managed access to the larger Natural Heritage System	about 20 m or less, to limit canopy fragmentation. The planning and design of this crossing will require a more detailed assessment of site-specific terrestrial ecology and aquatic information within, upstream and downstream of the crossing. Construction timing will be required to follow and specified windows to minimize impacts on terrestrial and aquatic species. Understanding effects on bats may be associated with impacts on some trees, artificial bat roost structures may be installed in numbers, types and locations determined during detailed crossing vegetation surveys. Specialized opportunities exist to consider measures to increase the populations of rare lichens (e.g., in collaboration with researchers, institutions such as the Royal Botanical Garden, RBG).	where development and alteration are not proposed. In the case of Enhancement Areas, ecological restoration may occur close to natural features, subject to confirming that potential direct or indirect effects on natural vegetation (e.g., treed edge) will be limited and appropriately managed (e.g., through standard and accepted arboricultural practices). **Figures 10** and **11** in the EIA provide conceptual restoration measures for enhancement areas.	enhancement measures are implemented. Biodiversity will be increased through the creation of varied habitat blocks and increased surface water wetlands. The widened Sheldon Creek West Branch natural areas, better connecting with the Sheldon Creek Woodland will result in wildlife population increases along and proximate to that valley.

FEATURE & LOT/BLOCK REFERENCE	VEGETATION COMMUNITY CHARACTER & CONDITION	FEATURE & FUNCTION SENSITIVITY	PREDICTED IMPACTS	IMPACT MITIGATION	BUFFER SPECIFIC COMMENTS (Final buffer recommendations are also presented in Table 3, EIA section 6.4)	SUMMMARY OF PREDICTED CHANGES
District 1 Meadows **Sheldon Creek Woodland** (north side) Blocks 162 - 187	FODM5-3 Dry Fresh Sugar Maple Oak Forest FODM-2 Dry Fresh Oak Maple Hickory Deciduous Forest	Presence of endangered bat species, provincially rare spider, Spined Micrathena and a provincially rare lichen species (*Arhtonia lapadicola*). Potential day roosts and foraging for Silver-haired Bat, Hoary Bat, Red Bat, Little Brown Bat, other Myotis species. Tri-coloured Bat was recorded in all wooded areas.	These residential blocks are situated along the northern limit. Potential impacts may occur from the use of adjacent natural areas by new residents and pets.	Potential fencing and access controls should be discussed with the city to optimize ecological conservation and respectful, sustainable human access to retained natural areas. Opportunities to improve the condition of wetland SCW-3 should be assessed in detail as part of the forest management plan. e.g., may be benefits creating low berms to direct/manage some surface flows, this reducing scouring or any undesirable inundation.	10 m buffer from tree dripline.	The large, retained block of Sheldon Creek Woodland (mostly already in public ownership will persist on this landscape for the long term.
District 2 **Sheldon Creek Valley Woodland** Employment Block (west), Block 238	FODM7-2 Fresh - Moist Green Ash - Hardwood Lowland Deciduous Forest FODM5-8 - Dry - Fresh Sugar Maple- White Ash Deciduous Forest	The silty clayey soils are relatively impermeable, with restrictions on tree root spread. Presence of endangered bats species, provincially rare spider, Spined Micrathena and a provincially rare lichen species (*Arhtonia lapadicola*). Potential day roosts and foraging for Silver-haired Bat, Hoary Bat, Red Bat, Little Brown Bat, other Myotis species.	Potential edge effects on the retained woodland edge.	Enhancement measures will focus on the removal of existing invasive plant species in the woodland edge and the prevention of invasive plants from becoming established in the buffer. The buffer should be restored with a grass and forb meadow, with a degree of minor surface roughness to slow overland flow that moves towards the main valley, and to facilitate adsorption and deposition of any sediment.	The refined buffer is 10 m from the greater of the stable top of bank and the woodland dripline. Buffers of 10 m from the dripline include an average of about 3 m from tree trunk to dripline, making the 10 m buffer about 3 times the radius of the dripline (more than adequate for vegetation protection).	Full protection of native woodland in the Sheldon Creek valley, with a naturally vegetated/restored buffer. Local water quality will be improved in formerly tilled areas draining to the Sheldon Creek valley.

FEATURE & LOT/BLOCK REFERENCE	VEGETATION COMMUNITY CHARACTER & CONDITION	FEATURE & FUNCTION SENSITIVITY	PREDICTED IMPACTS	IMPACT MITIGATION	BUFFER SPECIFIC COMMENTS (Final buffer recommendations are also presented in Table 3, EIA section 6.4)	SUMMMARY OF PREDICTED CHANGES
		Tri-coloured Bat was recorded in all areas.		Potential fencing and access controls should be discussed with the city to optimize ecological conservation and respectful, sustainable human access to retained natural areas.		
District 2 **Sheldon Creek Valley Woodland** Potential Enhancement Area Blocks 250, 251	FODM5-3 Dry- Fresh Sugar Maple - Oak Deciduous Forest SWDM1-2 Oak Mineral Deciduous Swamp (SWDM1-2)	Endangered bats, including potential maternity roosts for Silver-Haired Bat and/or Big Brown Bat were recorded in the Sheldon Creek Woodland. Wetland SCW-3 (Oak Mineral Deciduous Swamp), which is a provincially rare vegetation community. Significant habitat for anurans in Wetlands SCW-1 and SCW-2. Two provincially rare bryophytes (Floating Crystalwort and Fringed Heartwort) in Wetland SCW-2. One provincially rare spider species (Spined Micrathena) in Wetland SCW-3. One provincially rare bee (Spring Beauty Miner Bee).	The enhancement works will contribute to: • Increased plant and wildlife biodiversity • Increased reptile and amphibian populations and mobility by directly addressing limiting factors, i.e., short hydroperiods, absence of confirmed hibernacula) • Significantly improved connectivity within the Sheldon Creek Woodland Potential for increased socio-cultural opportunities through carefully planned and managed access to the larger Natural Heritage System	Mitigation and enhancement measures will focus on the removal of existing invasive plant species in the woodland edge and the prevention of invasive plants from becoming established in the buffer. This second enhancement area may allow the City to continue to demonstrate leadership and innovation (e.g., mindful of the need to manage the impacts of some growing trends, including natural plant harvesting and foraging).	The buffer/setback is 10 m from the woodland dripline. The buffer should be restored with a grass and forb meadow, with a degree of minor surface roughness to slow overland flow and promote some local infiltration. Potential fencing (e.g., chainlink) and access controls (e.g., signage) should be discussed with the City to optimize ecological conservation and respectful, sustainable human access to retained natural areas. Wetland buffers can be applied to help define the development limit. The greater of the 15 m wetland buffer and the 10 m woodland buffer will be determinant to the development limit where SCW-3 is close to the woodland edge	The buffer/setback is 10 m from the woodland dripline will conserve the Sheldon Creek Woodland. The 15 m buffer from wetland SCW-3 will conserve this local wetland feature. **Figures 10** and **11** in the EIA provide conceptual restoration measures for enhancement areas.

FEATURE & LOT/BLOCK REFERENCE	VEGETATION COMMUNITY CHARACTER & CONDITION	FEATURE & FUNCTION SENSITIVITY	PREDICTED IMPACTS	IMPACT MITIGATION	BUFFER SPECIFIC COMMENTS (Final buffer recommendations are also presented in Table 3, EIA section 6.4)	SUMMMARY OF PREDICTED CHANGES
		One provincially rare lichen (Speckled Blister Lichen).				
Sheldon Creek Woodland **Street B**	FODM2 Dry - Fresh Oak - Maple - Hickory Deciduous Forest Minor meadow and thicket	The eastern edge of the Sheldon Creek woodland has been previously impacted by the installation of servicing. The impacts affected deep and surface soils, mixing soil strata and bringing shale debris to surface. That work occurred along the woodland edges and affected the rooting systems and caused some tree mortality.		The formerly disturbed edge along the west side of proposed Street B will be subject the removal of existing invasive plant species in the woodland edge and the prevention of invasive plants from becoming established in the buffer.	A buffer of 7.5 m from the current intact, healthy woodland edge will allow for the conservation of the woodland and important features. It is understood that portions/edges of some of this buffer may need to be made available for the periodic inspection of pre-existing servicing. We understand that the city supports the specific design of this adjacent road (e.g., lane configuration) could be delayed until detailed design. Some additional discussion should occur during the road design to consider and optimize natural feature conservation and enhancement, while considering potential human access to the Sheldon Creek Woodland.	Restoration of portions of a previously disturbed woodland edge and the conservation and enhancement of the eastern-facing woodland edge.
Sheldon Creek Woodland	Sheldon Creek and Mainway Woodlands	There is no sensitivity of this local landscape to impacts. The	Positive opportunity to increase east-west wildlife connectivity	Enhancement measures will focus on the removal of	Buffer design will be integrated with the SWM design on this	Full protection of native woodland in the Sheldon Creek

FEATURE & LOT/BLOCK REFERENCE	VEGETATION COMMUNITY CHARACTER & CONDITION	FEATURE & FUNCTION SENSITIVITY	PREDICTED IMPACTS	IMPACT MITIGATION	BUFFER SPECIFIC COMMENTS (Final buffer recommendations are also presented in Table 3, EIA section 6.4)	SUMMMARY OF PREDICTED CHANGES
Stormwater Management Ponds Blocks 240, 241	are close to this proposed SWM block	SWM facilities will be designed to enhance habitat (foraging and movement) for smaller wildlife species	(through Block 241) by smaller ground-based species.	existing invasive plant species in the woodland edge and the prevention of invasive plants from becoming established in the buffer. The buffer should be restored with a grass and forb meadow. Planning and design of the SWM facility includes an opportunity for increased natural cover. Mitigation measures should consider the introduction of specialized habitat that will increase biodiversity and habitat for species at risk (e.g., bat roosting boxes, deeper amphibian breeding areas, odonate breeding and feeding habitat). To facilitate an ongoing level of safe passage of small wildlife (e.g., rodents, other small mammals, amphibians, reptiles. Localized Eco passages should be installed between the Sheldon Creek Woodland and SWM Block 228, under proposed Street B.	area. There is no technical reason for a buffer to protect the SWM pond (created feature) More dense vegetation plantings should occur on both sides of proposed Street B in the stretch of road situated between Sheldon Creek Woodland and SWM Block 228. to encourage small wildlife movement towards one box culvert and two smaller associated piped culverts. The box culvert may include periodic windows e.g., open grate sections) to allow light to penetrate to the floor of the box culvert to encourage wildlife passage. The specific design of this micro-linkage should include the use of low wildlife fencing and appropriate cover. Recognizing that this linkage function will be affected by auto and pedestrian traffic, an opportunity exists to inform users with wildlife signage and information.	valley, with a naturally vegetated buffer. Introduction of a micro-scale wildlife linkage under proposed Street B to provide safe passage for smaller, land-based wildlife.