

Scoped Environmental Impact Study

Proposed Plan of Subdivision

7283 Grimsby Road, Township of West Lincoln

Prepared For:
RVL Contracting Inc.

Prepared By:
Beacon Environmental Limited

Date:
2024-09-24

Project:
220062



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1. Introduction

Beacon Environmental Limited (Beacon) was retained by RVL Contracting Inc. to undertake an Environmental Impact Study (EIS) in support of a proposed draft plan of subdivision to be located at 7283 Grimsby Road (Part of Lots 16 and 17), Township of West Lincoln (**Figure 1**), hereafter referred to as the subject property. The subject property is comprised of 4.27 ha, with 3.17 ha located within the boundaries of a Regional Hamlet Settlement Area (Regional Road 12 Hamlet). The proposed development includes the creation of six new lots and construction of a rural residential subdivision within the Hamlet boundary. The property is currently zoned as a Development Holding Zone, and it will be rezoned along with the plan of subdivision application.

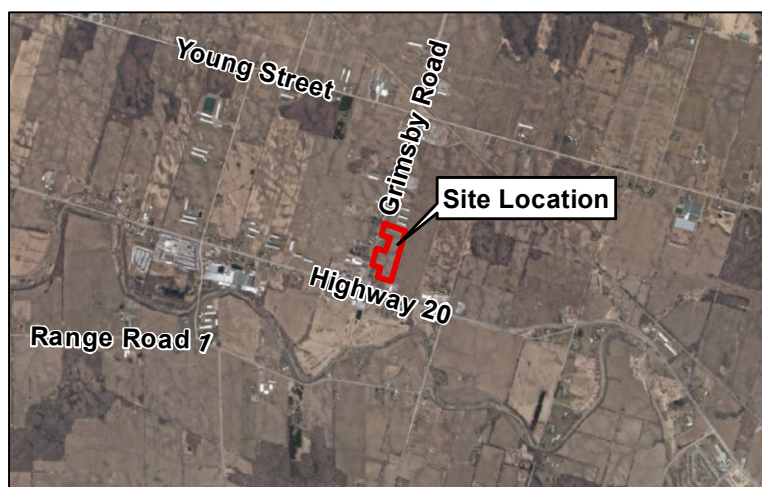
This EIS has been prepared following the requirements of the Environmental Impact Guidelines of the Niagara Region (2018) and the Niagara Peninsula Conservation Authority (NPCA 2022). A term of reference for conducting the EIS was provided to the Niagara Region and Niagara Peninsula Conservation Authority (NPCA) for review and approval was provided (**Appendix A**). For the subject property, and immediate adjacent lands, a background review, field investigations, and assessment of natural heritage features and functions were undertaken by Beacon in 2024. A photographic record is provided in **Appendix B**.



1.1 Overview of Study Area

The property fronts Grimsby Road, and residential homes, commercial properties, and farms lie adjacent to the boundaries. Currently all the land is farmed crop land (**Photographs 1 & 2**) and no natural vegetation communities occur within or adjacent to the subject property. A number of headwater drainage features are found throughout the fields and the NPCA has identified one regulated drainage feature that crosses Grimsby Road onto the subject lands. This watercourse is also identified as intermittent/permanent supporting fish habitat by the Niagara Region and Township of West Lincoln (OP Schedule C-4). Flows from the subject property is southward to a watercourse that conveys flow via a culvert under Highway 20 to Twenty Mile Creek, which is located 160 m to the south of the Highway.

2. Scope of the EIS

The EIS terms of reference that was provided to the Niagara Region and NPCA identified that the EIS would be scoped to address the potential impacts to the headwater drainage features associated with the property. For the EIS an assessment was made to determine if impacts on regulated watercourses would require a permit from the Conservation Authority pursuant to Section 28.1 of the *Conservation Authorities Act* and *Ontario Regulation 41/24* and determine conformity with the Regions Official Plan Policies 3.1.9.4 and 3.1.10 with respect to a requirement of a Vegetation Protection Zone (VPZ) for watercourses that support a permanent or intermittent flow. The assessment of the drainage features was undertaken following the Headwater Drainage Feature Assessment (HDFA) protocol (TRCA/CVC 2014).



Site Location		Figure 1
Scoped Environmental Impact Study Grimsby Road EIS - Township of West Lincoln		
		Project: 220062 Last Revised: March, 2020
Client: RVL Contracting Inc. c/o Upper Canada Consultants		Prepared by: DU Checked by: JD
	1:5,000	Inset Map: 1:50,000
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The identification of a regulated watercourse was based on the definition of Regulation 41/24 as follows:

- **watercourse** means a defined channel, having a bed and banks or sides, in which a flow of water regularly or continuously occurs.

2.1 Field Surveys

Following the HDFA, the headwater drainage features were assessed during the March spring freshet thought to mid June on the following dates, March 15, April 16, May 14, and June 10. HDFA field assessment data forms were completed during the March assessment and are provided in **Appendix C**. The assessment for the months of April, May and June focused on flow conditions within the headwater drainage features.

In addition, though no formal surveys were conducted for flora and fauna, the occurrence for the potential Species at Risk was undertaken during each survey date.

3. Summary of HDFA

3.1 Headwater Drainage Features

For the subject property, ten (10) headwater drainage features were assessed following the HDFA. A brief summary of each is provided below. The location of these features is shown on **Figure 2**.

Headwater Drainage Feature 1

This drainage feature originates to the north of Grimsby Road where surface water is collected by roadside ditching and grass swale/ditching between residential homes (**Photograph 3**). Water is conveyed via a culvert under Grimsby Road onto the subject property and then flows southeast through the properties farm field and then onto another farm field along the east boundary of the property (**Photographs 4, 5 & 6**). Primary flow occurred during March through mid April through a broad shallow swale. No defined banks or bed is present. Flow was absent by May through June (**Photographs 7 & 8**). As the feature exits the properties east boundary no defined watercourse is present in the adjacent farm field which is regularly ploughed and planted (**Photograph 9**).

Headwater Drainage Feature 2

This short feature conveys surface water flows from a residential yard northward to drainage feature 1. No defined watercourse is present, with standing water and shallow broad flows only occurring during March and April (**Photographs 10 & 11**). No defined banks or bed is present.



Legend

Subject Property

Hamlet Boundary Line

Headwater Drainage Features

Headwater Drainage Features

Figure 2

Scoped Environmental Impact Study
Grimsby Road EIS - Township of West Lincoln

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Project: 220062
Last Revised: August 2024

Client: RVL Contracting Inc. c/o
Upper Canada Consultants

Prepared by: BD
Checked by: RH

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C:\ODB\OneDrive - Beacon Environmental\GeoSpatial\Geo Projects\2020\220062 Grimsby Road EIS\MXD\20240820_Figure02_HeadwaterDrainageFeatures_220062.mxd

Headwater Drainage Feature 3

This feature is located in the eastern portion of the subject lands and receives flow from upslope drainage features 4, 9 and 10. The feature is a narrow 20 cm wide, 2-5 cm deep ploughed channel. No defined banks or bed is present. Flow was minimal in March, and only standing water was present in April (**Photographs 12 & 11**). No water was present in May and June.

Headwater Drainage Feature 4

This short feature conveys surface water flows from a residential yard southward to drainage feature 6. No defined watercourse is present, with standing water and shallow broad flows only occurring during March and April (**Photographs 14 & 15**).

Headwater Drainage Feature 5

No watercourse feature was identifiable during the March survey. Only a small standing water pond was present in the farm field (**Photograph 16**).

Headwater Drainage Feature 6

This drainage features conveys flows from upstream features 7 and 8 southward to the east boundary. Two sections were identified. Section 6A supports standing water and shallow broad flows only occurring during March and April (**Photographs 17 & 18**). No flow was present by May (**Photograph 19**). No defined banks or bed is present.

Section 6B approaching the south boundary supports a narrow 25 cm wide, 2-5 cm deep ploughed channel (**Photographs 20 & 21**). No defined banks or bed is present. Flow was minimal in March and April and only standing water was present in April. No water was present in May and June.

Headwater Drainage Features 7 & 8

These short drainage features convey surface water flows from residential yards eastward to drainage feature 6B. No defined watercourse is present, with standing water and shallow broad flows only occurring during March and April (**Photographs 22 & 23**).

Headwater Drainage Feature 9

Located in the western portion of the subject lands along Grimsby Road this feature conveys surface water through the farm field to drainage feature 6A. Two sections were identified. Section 9A supports standing water and shallow broad flows only occurring during March and April (**Photographs 24 & 25**). No defined banks or bed is present, and the feature is regularly ploughed through.

Section 9B, the south section approaching feature 6A, supports a narrow 20 cm wide, 2-5 cm deep ploughed channel (**Photographs 26 & 27**). No defined banks or bed is present. Flow was minimal in March and April and only standing water was present in April. No water was present in May and June.

Headwater Drainage Feature 10

This drainage features collects surface water from ditching along Grimsby Road and conveys flow to feature 9B. The feature supports a narrow 20 cm wide, 2-5 cm deep ploughed channel (**Photographs 28 & 29**). No defined banks or bed is present. Flow was minimal in March and April and only standing water was present in April. No water was present in May and June.

4. Fish Habitat

Based on the assessment, the drainage features within the subject lands support an ephemeral flow regime, with flow only present during March and April. Therefore, these features do not support permanent fish habitat. Drainage features 1 and 6 flow from the property southward through an active farm field and are ploughed through (**Photograph 9 & 20**) and these sections also are ephemeral and do not support permanent fish habitat. With respect for the potential for the drainage features to support to seasonal fish habitat, for example upstream migration from Twenty Mile Creek, field assessment identified that spring flows within these drainage features are minimal, and upstream spring fish migration from the creek through the adjacent farm field and onto the subject property is not possible. No fish were observed during March and April.

5. Habitat for Species at Risk

No species of flora or fauna that are listed by the *Endangered Species Act* (ESA 2007) as endangered, threatened, or special concern were found to occur or are expected to occur within the subject lands or adjacent lands.

6. Assessment of Management Requirements for Headwater Drainage Features

Based on the assessment of the headwater drainage features support ephemeral flows. None of the drainage features support a defined a bed or banks or sides. Therefore, these features do not represent regulated water courses as defined by *Ontario Regulation 41/24*. No wetlands or riparian habitats are associated with the features. They are located in active farm field and are frequently ploughed through, and many are maintained ploughed furrows. They provide no ecological functions and only the hydrological function is to convey surface water flows downstream to aquatic habitats associated with Twenty Mile Creek located 420 m downstream of the property. **Table 1** provides a summary of their assessment and required management following the HDFG. Following Figure 2 in the HDFA, the management assessment flow chart for the ten drainage features is as follows: Limited Hydrology – No Wetland – No Recharge Hydrology – No Contributing Terrestrial Habitat – No Management Required.

Table 1. Assessment of Management Requirements for Alterations to the Headwater Drainage Features

Drainage Feature	Step 1		Step 2	Step 3	Step 4	HDF Management Assessment
	Hydrology	Modifiers	Riparian	Fish Habitat	Terrestrial Habitat	
1	Ephemeral Contributing Functions	Road Culverts Ploughed through	Important Functions	No Fish Habitat Present Limited Function	No Terrestrial Habitat Present Limited Function	No Management Required
2	Ephemeral Contributing Functions	Ploughed through	Important Functions	No Fish Habitat Present Limited Function	No Terrestrial Habitat Present Limited Function	No Management Required
3	Ephemeral Contributing Functions	Ploughed through	Important Functions	No Fish Habitat Present Limited Function	No Terrestrial Habitat Present Limited Function	No Management Required
4	Ephemeral Contributing Functions	Ploughed through		No Fish Habitat Present Limited Function	No Terrestrial Habitat Present Limited Function	No Management Required
5	N/A not found					N/A
6	Ephemeral Contributing Functions	Ploughed through	Limited Functions	No Fish Habitat Present Limited Function	No Terrestrial Habitat Present Limited Function	No Management Required
7	Ephemeral Contributing Functions	Ploughed through	Valued Functions	No Habitat Present Limited Function	No Terrestrial Habitat Present Limited Function	No Management Required
8	Ephemeral Contributing Functions	Ploughed through	Limited Functions	No Fish Habitat Present Limited Function	No Terrestrial Habitat Present Limited Function	No Management Required
9	Ephemeral Contributing Functions	Ploughed through	Limited Functions	No Fish Habitat Present Limited Function	No Terrestrial Habitat Present Limited Function	No Management Required
10	Ephemeral Contributing Functions	Ploughed through	Limited Functions	No Fish Habitat Present Limited Function	No Terrestrial Habitat Present Limited Function	No Management Required

Figure 2 Present the Location of the Headwater Drainage Features

7. Proposed Development and Mitigation

The draft plan/grading plan for the proposed subdivision is provided in **Appendix D**. The plan will create 6 residential lots and will be accessed from Grimsby Road via Joshua Court. A stormwater pond will be located at the end of the Joshua Court turn bulb.

The entire development area will be graded, and all the headwater drainage features will be either removed or altered. The first section of feature 1, directly south of Grimsby Road will not be altered and remain flowing through farmed field. The southern section of feature 1 will be realigned via the construction of a grass swale along the north boundary and then southward along the east boundary to where the feature currently exits the property. The plan in **Appendix D** shows a cross section of the grass swale, which is 0.5 m deep with a 1.2 m flat bottom with sides at a 1:3 slope.

The site will be graded so that current flows from features 6, 7, 8, 9 and 10 will be directed via grass swale to a grass swale along the south boundary, which will then go northward along the east boundary to discharge at the location where feature 6B currently exits the property. Flows associated with features 4 and 3 will be directed to discharge to the current exit location of feature 1. Stormwater associated with Joshua Court will be collected and conveyed to the stormwater pond, which will discharge southward to location where feature 6B currently exits the property.

The grading plan will ensure that existing surface water flows within the subject property will discharge to the existing exit locations, at feature 1 and feature 6. Therefore, current downstream flows from the property will continue to flow to 20 Mile Creek.

7.1 NPCA Permit Requirements

None of headwater drainage features were identified to represent a regulated watercourse as defined by *Ontario Regulation 41/24* and no permit is required for their removal/alteration from the NPCA pursuant to Section 28.1 of the *Conservation Authorities Act*. In addition, no wetland areas which would be regulated by the NPCA occurs within or adjacent to the subject property.

7.2 Niagara Region

No natural heritage features that are identified by Niagara Region Natural Environment System (NES) occur within or adjacent to the subject property. In addition, for the Region's NES the headwater drainage features do not represent key hydrologic features, which are defined as watercourses that support a permanent or intermittent flow regime. Therefore the Region's development policies for key hydrological features do not apply.

Environmental Planning staff in review the proposed EIS TOR identified that consistent with Niagara Region Official Plan policy 3.1.20.2, the EIS should assess how enhancements to ecological function, ecological integrity, or biodiversity of the natural environment system can be achieved. At present surface water flows associated with the drainage features within the property flow through active farm field and do not support any ecological functions. The plan identifies that post development flows will occur in vegetated grass swales, which is an ecological function enhancement when compared to existing conditions.

8. Conclusion

This EIS has been prepared in support of a proposed plan of subdivision to be located at 7283 Grimsby Road in the Township of West Lincoln. The assessment of the subject property has identified the area is currently actively farmed and that no natural heritage features or functions are found within or adjacent to the property. In addition, no permanent or intermittent watercourse or feature that is regulated by the NPCA occurs.

This EIS concludes that with the implementation of the recommended natural enhancement design for grass swales for the control of surface water, the proposed plan of subdivision is in conformity with the natural heritage development policies of the Township of West Lincoln, Niagara Region and the NPCA.

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