## **Wetland Compensation Concept Plan**

Part of Lot 27, Concession 10, Township of Otonabee-South Monaghan County of Peterborough, Ontario

## D.M. Wills Project Number 10874



**D.M. Wills Associates Limited**Partners in Engineering, Planning and Environmental Services
Peterborough

**April 2021** 

Prepared for: Life at the Woodland Inc., c/o Rubal Kundra





# **Summary of Revisions**

Revision No.	Revision Title	Date of Release	Description of Revisions
0	Draft Wetland Compensation Concept Plan	April 15, 2021	Draft Submission to Client
1	Final Wetland Compensation Concept Plan	February 7, 2022	Final Submission to Client

This report has been formatted considering the requirements of the Accessibility for Ontarians with Disabilities Act.



## **Table of Contents**

1.0	Introduction	
2.0	Wetland Compensation Planting Plan Goals and Objectives	7
3.0	Project Lands	7
4.0	Existing Conditions	7
4.1	Terrestrial	7
5.0	Description of the Proposed Development	8
5.1	Proposed Residential Development	8
6.0	Compensation Wetland Options	8
6.1	Compensation Concept Area 1	8
6.2	Compensation Concept Area 2	9
6.3	Compensation Concept Area 3	9
7.0	Conclusions and Recommendations	9
	Figures	
Fiaure	e 1 – Project Lands	2

# **Appendices**

Appendix A – Wetland Compensation Concept Areas



### 1.0 Introduction

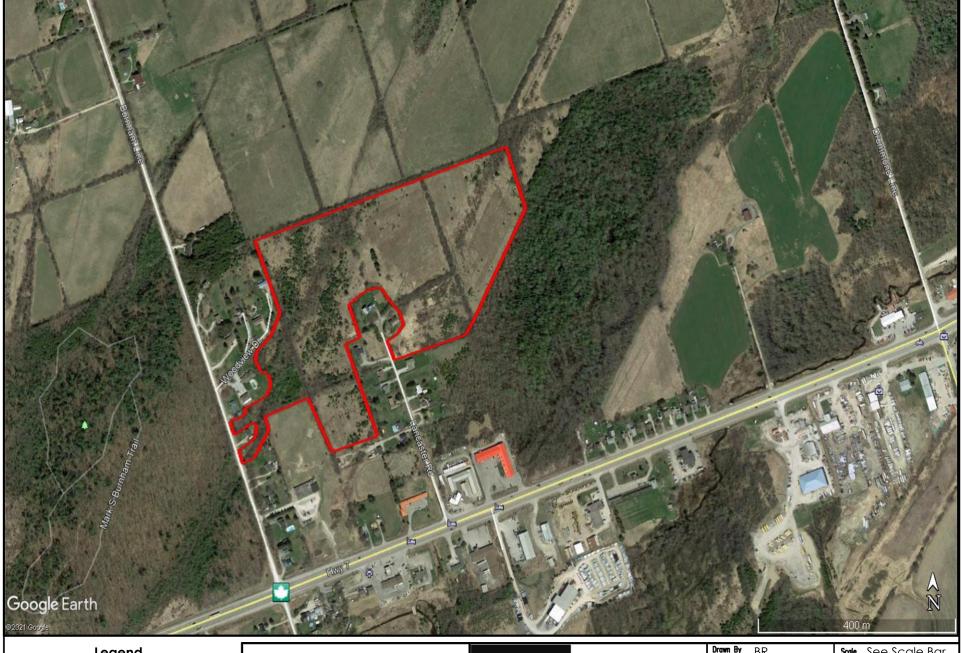
D.M. Wills Associates Limited (Wills) was retained by Mr. Rubal Kundra of Life at the Woodland Inc. (Client) to complete a Wetland Compensation Concept Plan for the loss of wetland habitat associated with the wetland areas around Burnham Line impacted by the proposed residential development. The proposed development is a plan of subdivision with 27 lots.

The Project Lands cover an area directly east of Burnham Line, see Figure 1 for details.

The proposed development is located on lands regulated by the Otonabee Region Conservation Authority (ORCA) and as such, are subject to Ontario Regulation 167/06 (O. Reg. 167/06). Wills submitted a report titled Addendum to Species at Risk (SAR) Assessment and Wetland Report, dated August 2019, which described existing natural heritage features and wildlife, and outlined environmental protection and mitigation measures related to proposed lot development in the vicinity.

The development footprint (i.e. area of impact) within/adjacent to the wetland is approximately 404.9 m<sup>2</sup>, which includes vegetation clearing, grading, and construction of the proposed residential development.

This Wetland Compensation Concept Plan will address the requirements of ORCA and comply with the Provincial Policy Statement, 2020 (PPS). The purpose of the Wetland Compensation Concept Plan is to detail the proposed wetland mitigation and protection activities to conform with O. Reg. 167/06, and provincial goals of achieving no net loss (and more recently, net gain) of wetlands (MNRF, 2015; APAC-C 11-2016). Three (3) areas of Wetland Compensation are proposed, and all three (3) are in excess of the 3:1 ratio that was requested by ORCA in a meeting prior to the preparation of this report. The measures outlined herein will maintain and enhance the form and function of the wetland features identified within the Project Lands.



Legend

Project Lands ——

## Figure 1 – Project Lands

Part of Lot 27, Concession 10, Township of Otonabee-South Monaghan



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Brain by BR	2006 266 20016 BOL
Checked	Date March 2021
Project No. 10874	<b>Drawing File No.</b> Figure 1



## 2.0 Wetland Compensation Planting Plan Goals and Objectives

The goals and objectives of the Wetland Compensation Concept Plan include:

- 1. Achieve a net gain in wetland function.
- 2. Where possible, maintain existing hydrological and ecological linkages by locating the compensation wetland within the same drainage area as the impacted wetland.

# 3.0 Project Lands

The Project Lands encompass approximately 16.1 ha (39.8 acres) located east of Burnham Line. They are legally described as Part Lot 27, Concession 10, within the Township of Otonabee-South Monaghan (Subject Property).

Surrounding land uses to the south of the Project Lands are generally within the "Hamlet" area designation as defined in the Otonabee-South Monaghan Official Plan. Mark S. Burnham Provincial Park is located directly to the west of Burnham Line, and agricultural fields are located to the north of the Project Lands. Lands designated as "rural" in the Otonabee-South Monaghan Official Plan are located to the west of the Project Lands.

The Project Lands are predominantly undeveloped including wetland and terrestrial meadow features. A watercourse runs through a wetland located at the southwest portion of the Project Lands. Refer to **Section 4.0** for details regarding surrounding natural heritage features.

# 4.0 Existing Conditions

#### 4.1 Terrestrial

Field investigations were undertaken by Wills on May 30 and May 31, 2019 to conduct wetland delineations throughout the Project Lands according to the Ontario Wetland Evaluation System Southern Manual (MNRF, 2014). Results of this investigation confirmed that the area of the proposed work is made up of one community type – SWD2-1 (Black Ash Mineral Deciduous Swamp).

Although there are a number of vegetation community types on the Project Lands, none are significant with respect to rarity. The surrounding land is residential and agricultural, dominated by residential houses, and agricultural fields. There is a watercourse feature located in the southeastern portion of the Project Lands. The watercourse flows to the southeast in the southeastern portion. Towards the north end of the watercourse, a high point in the topography is found where the watercourse then flows northwest. The watercourse is located in the SWD2-1 community.



## 5.0 Description of the Proposed Development

## 5.1 Proposed Residential Development

The proposed development contains a private road with 27 associated residential lots. The construction of the road and residential lots will infill approximately 404.9 m² of the existing wetland located towards the northern portion of the Project Lands. In order to offset the impact of the development, ORCA has required a 3:1 compensation. Three (3) areas of wetland compensation have been considered in this report. The proposed works and Wetland Compensation Concept Areas are provided in **Appendix A.** 

## **6.0** Compensation Wetland Options

To facilitate construction of the private road and 27 lots, an area of existing wetland habitat equal to approximately 404.9 m<sup>2</sup>will be impacted. To compensate for this infill, a compensation area, equal to three (3) times greater than the disturbed wetland area, will be created in the Project Lands.

Three (3) Wetland Compensation Concept Areas have been identified as potential offsetting areas. Compensation Concept Area 3 has been divided into two (2) smaller areas, identified as Area 3A and 3B. The sizes of each Compensation Concept Area are as follows:

- Compensation Concept Area 1: 1,216.9 m<sup>2</sup>
- Compensation Concept Area 2: 1,318.3 m<sup>2</sup>
- Compensation Concept Area 3:  $834.8 \text{ m}^2 + 433.5 \text{ m}^2 = 1,268.3 \text{ m}^2$

**Section 6.1** to **Section 6.3** will investigate each Compensation Concept Area individually, and will look at the potential benefits and limitations of each Compensation Concept Area. The existing terrestrial conditions of each Compensation Concept Area will be assessed, and a prospective ELC community for the Compensation Concept Area will be identified. See **Appendix A** for the location of each Compensation Concept Area.

## 6.1 Compensation Concept Area 1

Compensation Concept Area 1 is located towards the southern end of the Project Lands, along the south side of the Black Ash Mineral Deciduous Swamp (SWD 2-1). At this portion of the wetland, the watercourse flows in a southwest direction. Located just south of the wetland is a relatively dense Eastern White Cedar (*Thuja occidentalis*) stand. The northwestern portion of this stand is the proposed location of Compensation Concept Area 1.

Eastern White Cedar stands are commonly located adjacent to wetland community types such as Black Ash Mineral Deciduous Swamps. Eastern White Cedars have the capability to grow in both upland and wetland habitats, making their stands very



common where a low-lying area (i.e. wetland) gradually becomes upland, generally known as transition zones.

The wetland community to be constructed in Compensation Concept Area 1 could be a White Cedar – Hardwood Organic Mixed Swamp Ecosite (SWM4-1). As not all of the Eastern White Cedar stand will be impacted by Compensation Concept Area 1, the introduction of Eastern White Cedars in a wetland environment would allow for a natural transition into the existing Eastern White Cedar stand. This would also increase the width of the wetland and an existing choke point, where it is currently approximately 5 m wide.

## 6.2 Compensation Concept Area 2

Compensation Concept Area 2 is located towards the northeastern end of the Project Lands along the northwest side of a Black Ash Mineral Deciduous Swamp (SWD 2-1). This wetland is located to the east of the wetland that is described as Compensation Concept Area 1. The existing wetland is of lesser quality than the wetland located to the west, as vegetation is sparser, and there is no standing water. The existing wetland is surrounded by a Cultural Meadow (CUM) ELC community. The Cultural Meadow is on relatively steep slopes, sloping down towards the southeast.

The wetland community to be constructed in Compensation Concept Area 2 would be a Black Ash Mineral Deciduous Swamp (SWD 2-1), with additional Trembling Aspen (Populous tremuloides) planted within it. This would match the existing wetland conditions, and provide additional habitat as an animal movement corridor as this small wetland is in close vicinity to larger, unevaluated wetland to the southeast.

## 6.3 Compensation Concept Area 3

Compensation Concept Area 3 is divided into Area 3A and 3B. Compensation Concept Area 3A is located just to the north of Compensation Concept Area 1, while Area 3B is located towards the north end of the Project Lands, along the east side of the same existing wetland. Where Area 3A is proposed, the existing habitat is a Deciduous Forest (FOD) ELC community that slopes up towards the northwest. Where Area 3B is proposed, the existing habitat is a Cultural Woodland (CUW). Topography in this area is relatively flat.

The wetland community to be constructed in Compensation Concept Area 3A and 3B would be a Black Ash Mineral Deciduous Swamp (SWD 2-1), as that matches the existing wetland habitat conditions at both Areas. As vegetation is sparser in Areas 3A and 3B than the rest of the existing wetland, the construction of these Concept Areas would provide an enhanced buffer to the watercourse that is found within the existing wetland.

#### 7.0 Conclusions and Recommendations

The Wetland Compensation Concept Plan provides details on the proposed three (3) Compensation Concept Areas, of which one (1) will provide direct compensation (over 3:1) for the removal of approximately 1,214.8 m<sup>2</sup> of wetland on the Project Lands.



Based on the three (3) Compensation Concept Area options, Wills is of the opinion that Compensation Concept Area 1 will provide the greatest benefit to the impacted wetland and habitat on the Project Lands. Compensation Concept Area 1 is located on the same wetland that is proposed to be infilled, thereby limiting overall impact to the overall health of the wetland. As discussed in **Section 6.1**, Compensation Concept Area 1 is within an existing Eastern White Cedar stand. The construction of a White Cedar – Hardwood Organic Mixed Swamp would allow for the introduction of Eastern White Cedars into the existing wetland, as well as a natural transition from the Black Ash Mineral Deciduous Swamp into the Eastern White Cedar stand, of which a part of will remain following construction.

Compensation Concept Area 2 is not located on the same wetland that is proposed to be infilled. It is proposed to be constructed on a wetland of lesser quality. While Compensation Concept Area 2 will maintain and improve conditions as an animal movement corridor, the overall benefit to the impacted wetland's health does not match Compensation Concept Area 1, therefore, Compensation Concept Area 2 is not recommended over Compensation Concept Area 1.

Compensation Concept Area 3 is divided into two (2) smaller Areas adjacent to the impacted wetland. Compensation Concept Area 3 is a viable option for wetland compensation, as it is located on the impacted wetland. Area 3A and 3B would also provide an improved buffer to the watercourse which is located within the wetland. However, Wills believes that by dividing Compensation Concept Area 3 into two (2) smaller sections, this limits the overall benefit to the impacted wetland.

If Compensation Concept Area 1 is chosen, direct compensation and buffer improvements (over 3:1 ratio) will be achieved. This would conform with ORCA's watershed development policies, O.Reg. 167/06 and the provincial goals of achieving no net loss of wetlands.

Details and associated mitigation measures on the approved Compensation Concept Area will be included in the Wetland Compensation Plan, that will follow this report. A detailed planting plan will be included, as well as environmental protection/mitigation measures that will ensure existing hydrological functions, ecological structure, habitat function and long-term resilience of the wetland features found within the Project Lands are maintained.

Respectfully submitted,

Ben Radford, B.Sc. Project Biologist

BR/TJ/avg

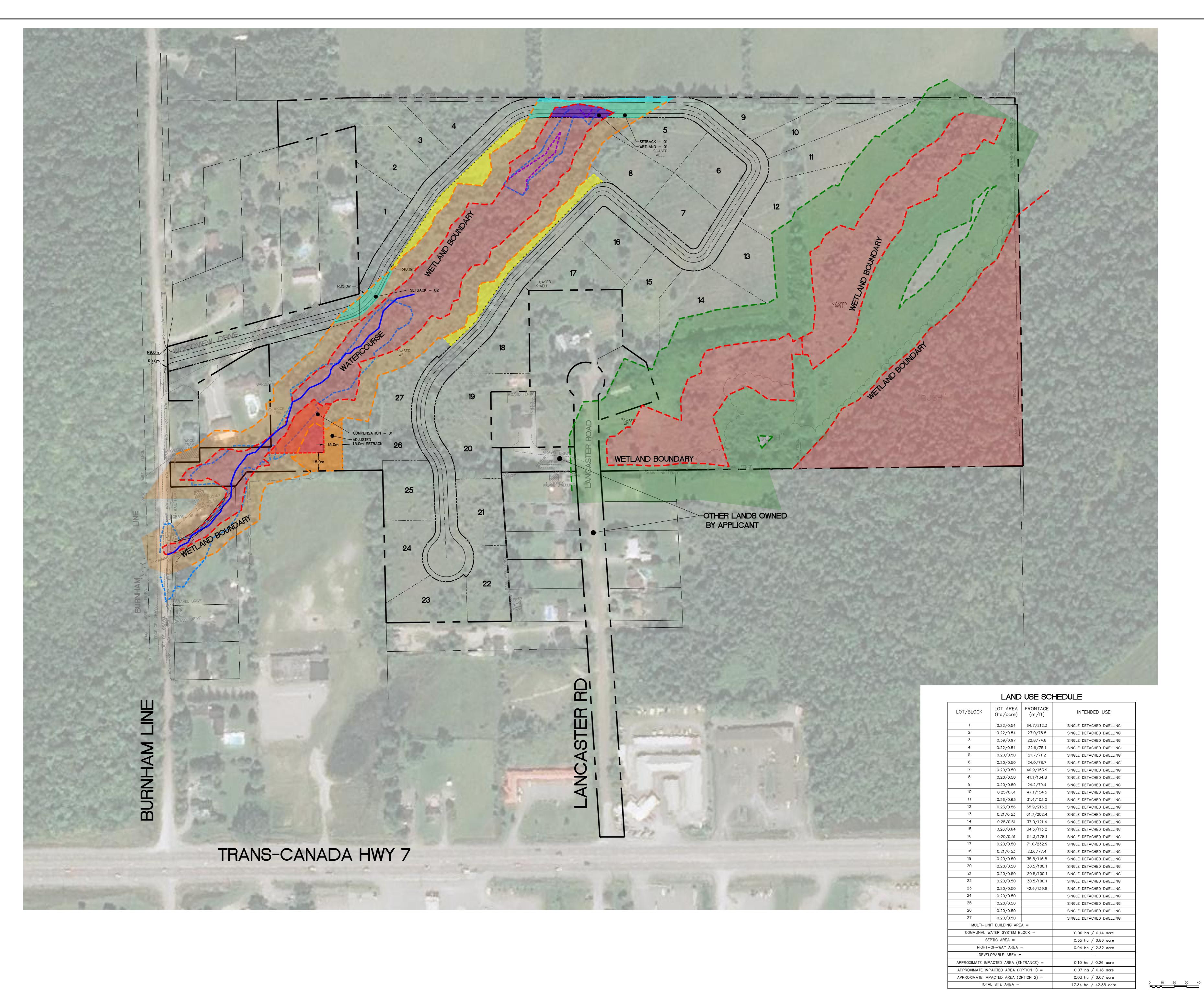
Tyler Jones, B.Sc. Senior Biologist

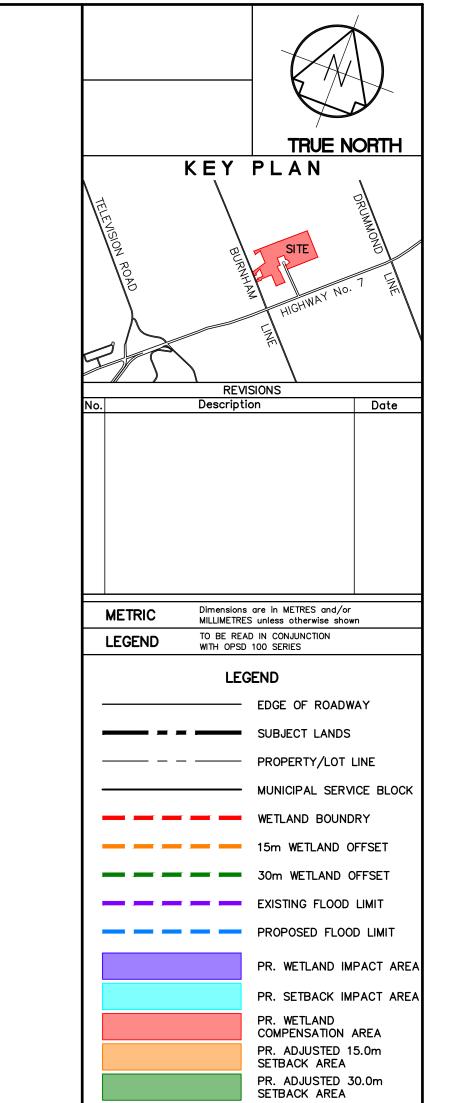
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# Appendix A

**Wetland Compensation Concept Areas** 

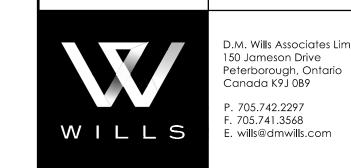






PR. UNDEVELOPED AREA

**OPTION 1** 

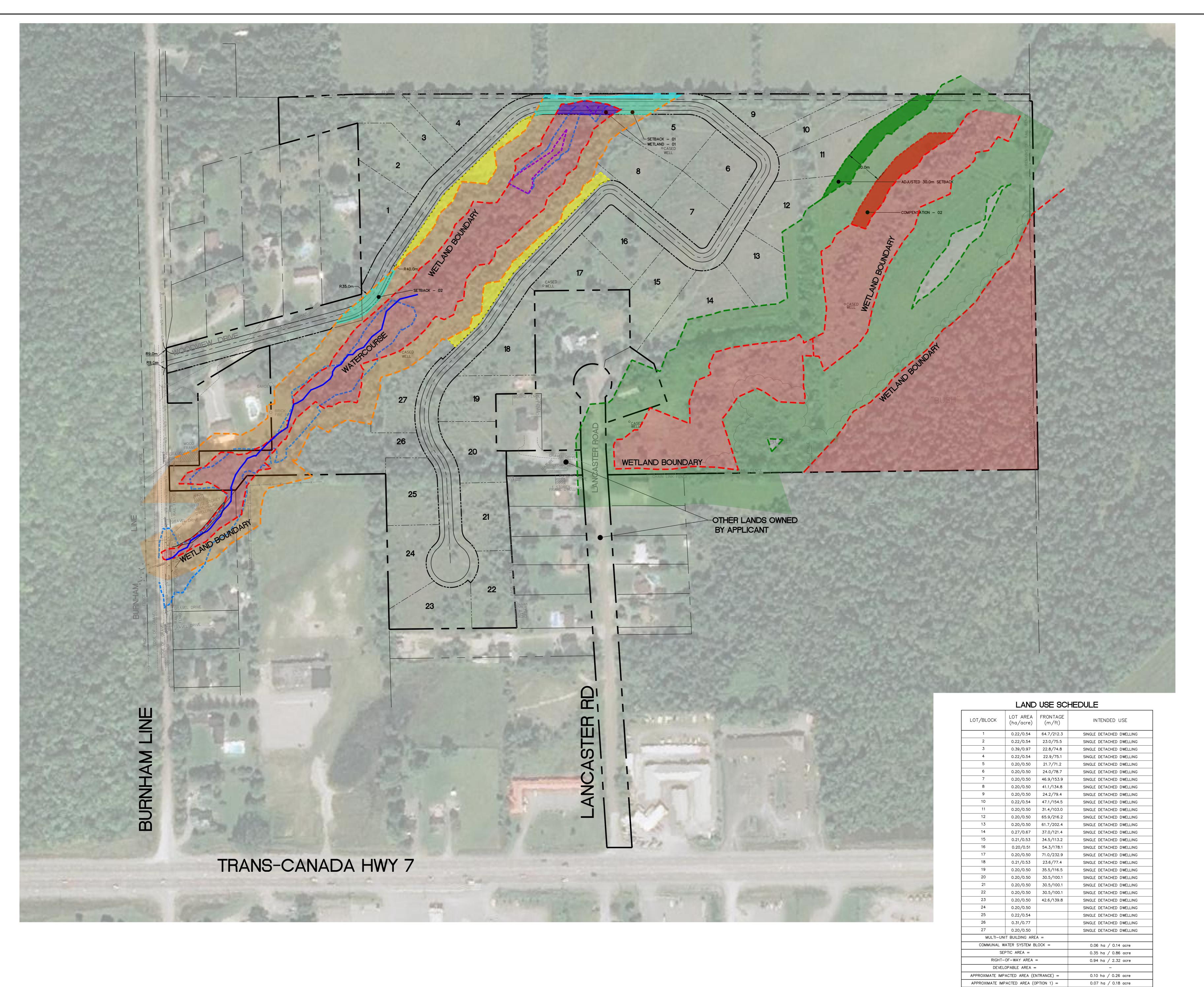


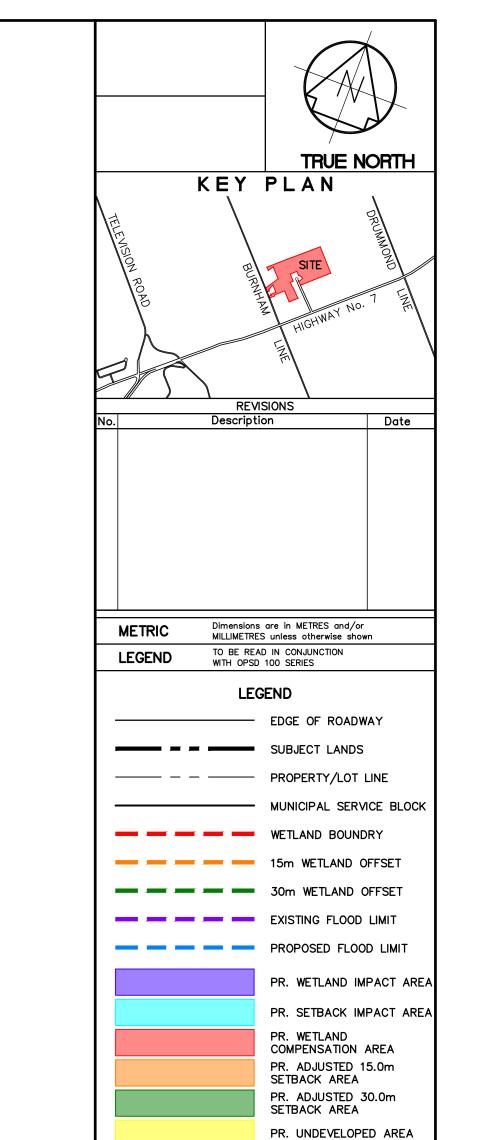
P. 705.742.2297 F. 705.741.3568 E. wills@dmwills.com Project Name/Location

LIFE AT THE WOODLAND OTONABEE-SOUTH MONAGHAN

DRAFT PLAN /w WETLAND BOUNDARIES

SCALE: Horz. 1:1000 Vert. Plot Date: March 19, 2021 Project No.: 10874 Dwg File No.: 10874 - SP - CPT1X COM





OPTION 2



150 Jameson Drive
Peterborough, Ontario
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Project Name/Location

OTONABEE-SOUTH MONAGHAN

DRAFT PLAN
/w WETLAND BOUNDARIES

 signed By: -- SCALE: Horz. 1:1000 Vert.

 Plot Date: March 19, 2021

 ecked By: -- Project No.: 10874

 signeer: -- Dwg File No.:10874 - SP - QPT2X CQMI

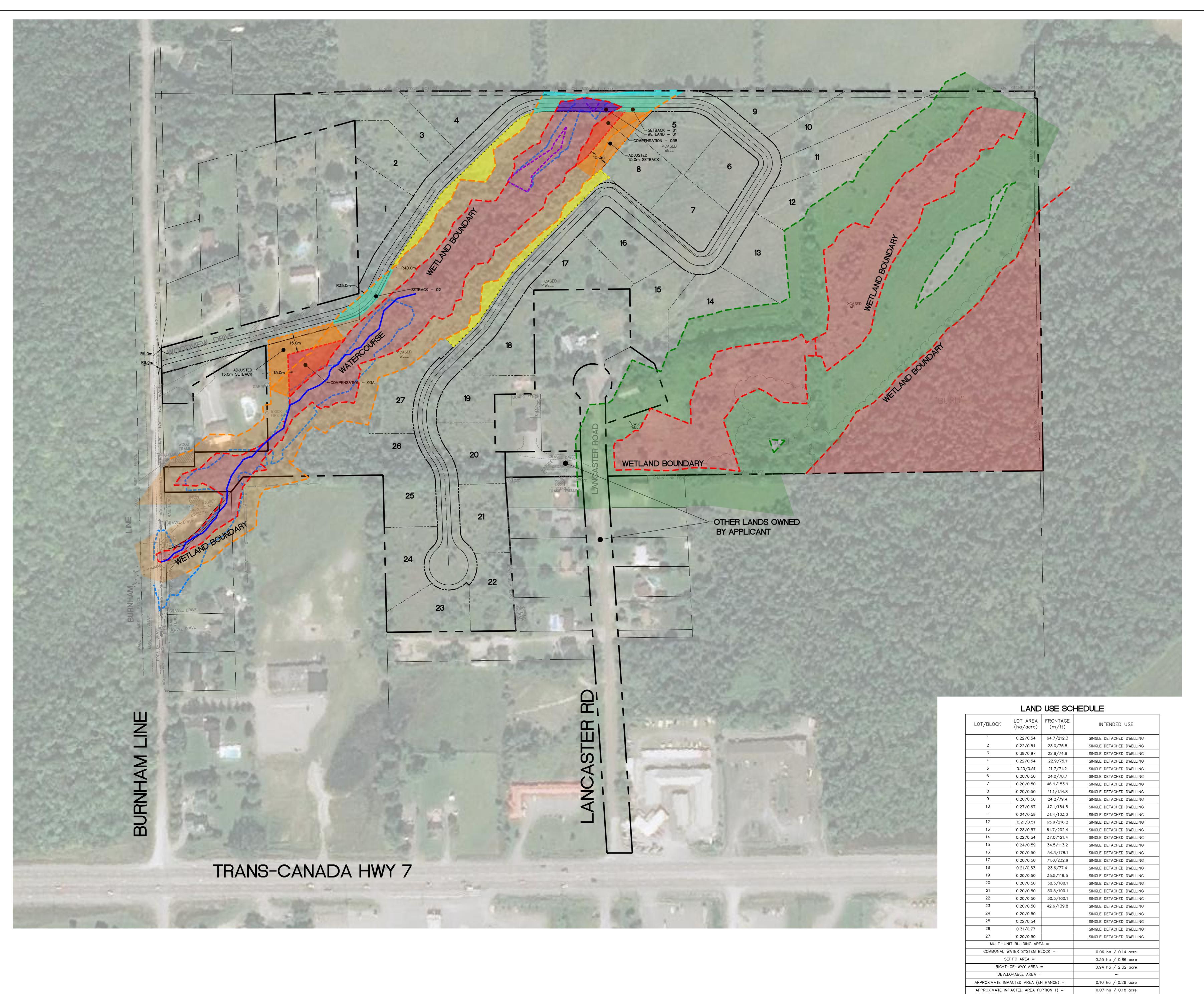
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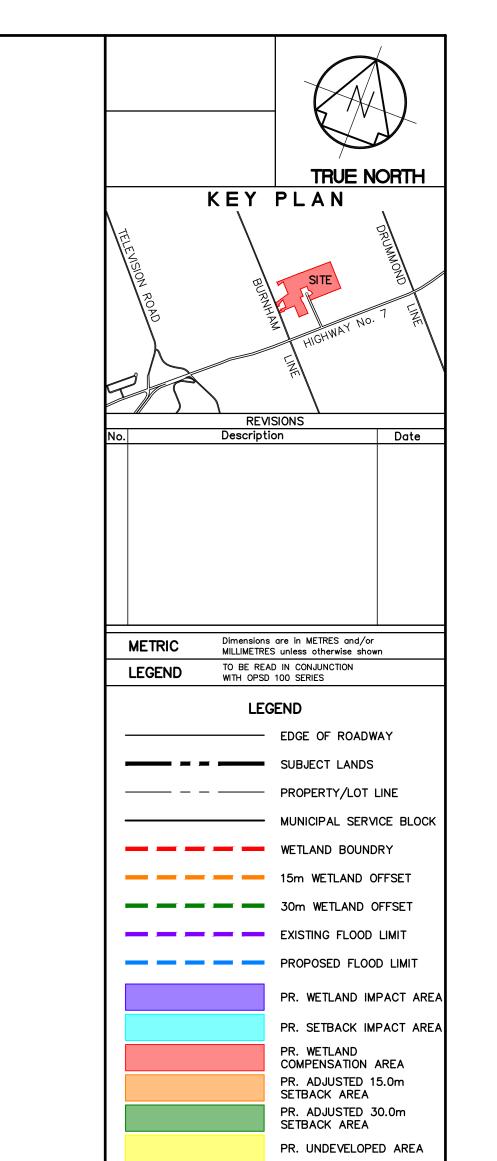
0.03 ha / 0.07 acre

17.34 ha / 42.85 acre

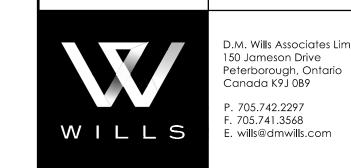
APPROXIMATE IMPACTED AREA (OPTION 2) =

TOTAL SITE AREA =





OPTION 3



P. 705.742.2297 F. 705.741.3568 E. wills@dmwills.com Project Name/Location

LIFE AT THE WOODLAND

OTONABEE-SOUTH MONAGHAN DRAFT PLAN /w WETLAND BOUNDARIES

SCALE: Horz. 1:1000 Vert. Plot Date: March 19, 2021 Project No.: 10874 Dwg File No.:10874 - SP - CPT3X COM

0 10 20 30 40

0.03 ha / 0.07 acre

17.34 ha / 42.85 acre

APPROXIMATE IMPACTED AREA (OPTION 2) =

TOTAL SITE AREA =