



December 20, 2022

Branthaven Belmont Oakwood Inc.
c/o Brant Haven Development
720 Oval Court
Burlington, ON L7L 6A9

Email: dmadeira@branthaven.com

Attention: Dave Madeira, Director of Land Development

Re: Natural Heritage Constraints Analysis

Vacant Parcel at Southeast Corner of Oakwood Drive, Niagara Falls, Ontario
Pinchin File: 308990

As requested by Branthaven Belmont Oakwood Inc. (Client), Pinchin Ltd. (Pinchin) is pleased to submit the following Natural Heritage Constraints Analysis (NHCA) to assess the development constraints of potential natural heritage features for the subject property located at the southeast corner of Oakwood Drive, Niagara Falls, Ontario (Site).

1.0 BACKGROUND AND OBJECTIVE

It is Pinchin's understanding that the Site of an approximately 5.40-hectare parcel of land is currently vacant in the City of Niagara Falls. The Site and Study Area are shown on Figure 1 in **Appendix A**. Natural heritage features on the Site potentially include meadows and marshes according to the Niagara Peninsula Conservation Authority (NPCA) mapping. The Client proposes to construct a residential development on the Site consisting of 33 blocks of townhouses with associated amenities.

According to the Client's pre-consultation with the City of Niagara Falls and Region of Niagara on December 2, 2021, a Constraints Analysis was required by the Region for the proposed development. In order to support the development application, a Constraints Analysis for the unevaluated wetlands as per the Regional of Niagara Official Plan (Policy 7.B.1.8) is required to determine if it is significant or requires further study, and if determined significant or requiring further study, then a subsequent Scoped EIS as per the Regional Official Plan (Policy 7.B.2) will be required as part of the approval requirement by the municipal and regional governments for the proposed residential development.



2.0 POLICY CONTEXT

2.1 Region of Niagara Official Plan

The Site is designated as an “Urban Area” under Schedule A of the Regional Official Plan (Region of Niagara, 2014). A full range of residential, commercial and industrial uses are permitted generally within this designation. Policy 7.B was reviewed to identify that Core Natural Heritage System consists of four areas including: a) *Core Natural Areas including Environmental Protection Areas or Environmental Conservation Areas*; b) *potential natural heritage corridors connecting the Core natural Areas*, c) *Greenbelt Natural Heritage and Water Resources Systems*; and d) *fish habitat*. Schedule C does not show the Site as being a part of the Core Natural Heritage System.

Policy 7.B.1.8 states that if there are environmental features or functions that have not been adequately evaluated, the areas shall be evaluated by a qualified biologist in consultation with the Region and other relevant agencies. If the evaluation finds one or more natural heritage features meeting the criteria for identification as Core Natural Heritage System components, the appropriate policies shall apply. As a result of the Region’s request on review and comments received from the Region, the City and NPCA, a Constraints Analysis was completed to assess the wetlands and vegetated communities on the Site, with the results presented in Section 4.0 below.

3.0 STUDY METHODOLOGY

3.1 Vegetation Surveys

Vegetation communities within the Study Area with feasible access were assessed and described using the provincial Ecological Land Classification (ELC) system. The *Ecological Land Classification for Southern Ontario: First Approximation and its Application* (Lee et al., 1998) was referenced to classify the habitats to ecosite. Ecosites classified within the Study Area were then applied to polygons and mapped using aerial imagery and Geographic Information System.

The vegetation communities were sampled for their structure, species composition, and habitat characteristics. This information was supplemented by floristic surveys at the time of the Site visit. Species names generally follow the nomenclature of Flora Ontario (Newmaster and Ragupathy, 2012) and the NHIC from the Ministry of Natural Resources and Forestry (MNRF, 2018a).

3.2 Woodland Assessment

Assessment of the Site followed the criteria outlined in the Niagara Region’s Official Plan Chapter 7: Natural Environment (Niagara Region, 2015). To be identified as Significant Woodlands, one or more of the following criteria must be met:

- a) Contain threatened, endangered or species of concern.



- b) In size, be equal to or greater than:
 - a. 2 hectares, if located within or overlapping Urban Area Boundaries
 - b. 4 hectares, if located outside Urban Areas and north of the Niagara Escarpment
 - c. 10 hectares, if located outside Urban Areas and south of the Escarpment
- c) Contain interior woodland habitat at least 100 metres in from the woodland boundaries
- d) Contain older growth forest and be 2 hectares or greater in area
- e) Overlap or contain one or more of the other significant natural heritage features listed in Policies 7.B.1.3 or 7.B.1.4; or
- f) Abut or be crossed by a watercourse or water body and be 2 or more hectares in area.

Each of these woodland evaluation criteria will be discussed in Section 4.0 below. The woodland edge will be staked by a qualified Ontario Land Surveyor and shown on the relevant topographic survey, if available.

3.3 Wetland Assessment

Wetland assessment in the Study Area followed the criteria outlined in the *Ontario Wetland Evaluation System* (OWES) 3rd Edition (MNR, 2013). The OWES framework evaluation criteria therein provide an appropriate benchmark to work from. In particular, soil classification, the “50% rule”, and the presence of wetland species and wetland indicator species form a useful basis for evaluation of the upland-wetland transition on the Site. According to the OWES, the “50% rule” is defined as that if 50% or more of the relative vegetation cover in a given area consists of wetland plants (including wetland tolerant species and wetland indicator species), then the area should be considered a “wetland”. Wetland indicator species are plant species that cannot live in upland areas, as compared with wetland species which include wetland indicator species and plant species that can tolerate both wetland and upland habitats.

Additionally, the Coefficient of Wetness (CW) was used in our assessment. This CW is an indicator varying from -5 (obligate wetland) to 5 (obligate upland) that describes the tolerances to wetness of an individual plant species. The OWES also has guidelines on feature size and complexing criteria. The OWES defines a wetland as greater than 2 ha but features greater than 0.5 ha can be included with justifications. Although OWES further allows features smaller than 0.5 ha to be evaluated, it is only for a feature having a specialized habitat. For wetland complexing, biological and hydrological features, functions and values are considered in the evaluation on and off the feature or site.



4.0 SURVEY RESULTS

4.1 Vegetation Survey

The vegetation surveys were conducted in the summer season on June 28, 2022. The weather during the Site assessment was sunny, with a temperature of 22° Celsius. A total of six vegetation communities and 48 plant species were identified on the Site. These vegetation communities were observed during the Site investigations and can be visualized on Figure 2 in **Appendix A**. Selected Site photographs of the vegetation communities are included in **Appendix B**.

Dry – Fresh Mixed Meadow (MEMM3): This vegetated community is one of the largest on the Site and is found in two patches, one on the west side of the Site and another along the eastern edge. The western patch is bounded by Oakwood Drive to the north and west and the Common Reed Graminoid Mineral Meadow Marsh to the east. This community is composed of common meadow species, namely Kentucky Bluegrass (*Poa pratensis*), Canada Goldenrod (*Solidago canadensis*), Common Mullein (*Verbascum Thapsus*), Yellow Sweet-clover (*Melilotus officinalis*), Oxeye Daisy (*Leucanthemum vulgare*) and Reed Canary Grass (*Phalaris arundinacea*). Throughout the meadow there are also several Manitoba Maple (*Acer negundo*) and Large-toothed Aspen (*Populus grandidentata*) saplings. This community has several areas that have been disturbed. Along the edges of Oakwood Drive there are stockpiles of soil and clear signs of garbage dumping and in the northwest corner of the Site there was a small group of people observed to be living in tents. Another clear sign of disturbance within this community is the raised areas in elevation, coming from the north side of the Site where there is a road access, the meadow appears to have naturalized over an intended roadway or access as there is a ridge which is approximately 10 m higher than the rest of the meadow which suggests historical disturbance.

Common Reed Graminoid Mineral Meadow Marsh (MAMM1-12): This vegetated community is another large community within the Site and is found primarily on the eastern portion of the Site, with other small patches found to the west. This community is almost entirely composed of Common Reed (*Phragmites australis*) with a few immature Large-toothed Aspen and Bebb's Willows (*Salix bebbiana*) found throughout. A soil core was taken within this community showing a layer of silty clay loam which continued to a depth of 59 cm before transitioning into a saturated clay which continued for the extent of the core which ended at a depth of 108 cm. Mottles and gleys were observed within this core sample, at a depth of 70 cm and 75 cm respectively.

Gray Dogwood Deciduous Shrub Thicket (THDM2-4): This vegetated community is found in patches along the edges of the Site. This thicket community is primarily composed of Gray Dogwood (*Cornus racemose*). To a lesser extent, other species observed within this thicket community include Common Buckthorn (*Rhamnus cathartica*), Staghorn Sumac (*Rhus typhina*) and Fireberry Hawthorn (*Crataegus chrysoarpa*). The groundcover within this community is composed of Kentucky Bluegrass and dense patches of Canada Goldenrod.



Sumac Deciduous Shrub Thicket (THDM2-1): This vegetated community is found on the southwest side of the Site and is bounded by the Dry – Fresh Mixed Meadow to the west, north and east, and the Fresh – Moist Manitoba Maple Deciduous Woodland to the south. This community is dominated by Staghorn Sumac with Common Buckthorn while the groundcover is almost entirely composed of Canada Goldenrod. Also observed within this community is a row of sediment fencing which has been left to deteriorate, along this disposed fencing there appears to be a small amount of drainage accumulating.

Fresh – Moist Manitoba Maple Deciduous Woodland (WODM5-3): This wooded community is found immediately south of the Thicket community described above. It is primarily composed of early successional Manitoba Maple with some Sugar Maple. Along the edges of this community there are dense patches of Gray Dogwood, and Sugar Maple (*Acer saccharum*) and Green Ash (*Fraxinus pennsylvanica*) saplings. The groundcover is sparse within this woodland area.

Fresh – Moist Poplar Deciduous Woodland (WODM5-1): This last community is found along the northern edge of the Site, adjacent to Oakwood Drive. This community is primarily composed of Large-toothed Aspen and Trembling Aspen (*Populus tremuloides*) while the understory is densely packed with Common Buckthorn and Gray Dogwood.

4.2 Wetland Assessment

Niagara Region noted that an OWES evaluation and complex review may be required for the wetland pockets on the Site to determine if they should be complexed in with the Niagara Falls Slough Forest Wetland Complex, a Provincially Significant Wetland (PSW) in the vicinity. A review of the Niagara Falls Slough Forest Wetland Complex and a characteristics comparison of it with the wetland pockets onsite have been conducted based on NDMNRF's OWES including biological, social and/or hydrological functions, as well as watersheds, distance and lacustrine wetlands (NDMNRF, 2013). Further, important features to note include whether the wetlands are within 750 m from each other and in the same headwater area (NDMNRF, 2013).

Based on these guidelines, the Common Reed Graminoid Mineral Meadow Marsh (**MAMM1-12**) is greater than the 0.5 ha required by the OWES to be evaluated as a significant wetland. Secondly, from a complexing perspective it is approximately 600 m from the nearest PSW, namely Niagara Falls Slough Forest Wetland Complex to the east. Despite the proximity, the wetland on Site does not likely share headwaters with the PSW as they are separated by a large Hydro Canal. The wetland on Site is also very different species composition from the PSW as it is a meadow marsh with little to no trees, and the PSW is a slough forest. The wetland is dominated by over 90% invasive Common Reed which is not considered to be a wetland indicator under OWES, therefore it does not pass the 50% rule. Additionally, the wetland pockets on Site do not contain any plant or wildlife Species of Conservation Concern. However, the presence of mottles and gley within the soil, and the presence of 30 cm deep standing water in the marsh confirms that the marsh is a wetland.



As a result of this analysis, it does qualify as a wetland to be evaluated under OWES and does not need to be complexed with other adjacent, larger wetlands that met OWES evaluation criteria. The marsh will likely be considered “Other Evaluated Wetland” and not a PSW by the Niagara Region, and an EIS is required if development will directly alter this community or adjacent communities within 30m.

4.3 Woodland Assessment

Following the criteria from the Niagara Region Official Plan (i.e. Policy 7.B.1.8 as per the Regional Staff), at this time the woodlands would not be considered significant. The details of this woodland assessment are described in the table below.

Criteria	Assessment
Contain threatened, endangered, or other species of concern	No threatened, endangered or special concern species and their evidence were observed at the time of Site visit or subsequent targeted surveys.
In size, be equal or great than 2 hectares	No, woodland is less than 0.5 hectare.
Contain Interior woodland habitat at least 100 meters from the woodland boundaries	No, woodland is less than 50 metres at its widest.
Contain older growth forest and be 2 hectares of greater in area	No. the woodland is less than 2 hectares and the trees are early successional.
Overlap or contain one or more of the other Significant Natural Heritage Features listen in Policies 7.B.1.3 or 7.B.1.4	No other Significant Natural Heritage Features overlapped or contained in the woodland.
Abut or be crossed by a watercourse of water body and be 2 or more hectares in area	No, no watercourse or waterbody present and the area is less than 2 hectares in size.

As shown in the table above, at this time the woodland would not qualify as a Significant Woodland under the Policy 7.B.1.8 in the Niagara Region Official Plan. Hence, it does not warrant to be included in the Core Natural Heritage System indicated in Policy 7.B.1.8. The woodlands on the Site are all under 2 hectares in size and do not contain any species of conservation concern. The small size of the woodlands means that they do not provide adequate habitat for forest obligate species, as these species require more forest interior that is farther from the edges and other disturbances. The woodland communities on the Site are also very isolated and do not make up a larger forest network, making them unlikely to be used as a wildlife corridor.



5.0 CONCLUSION AND RECOMMENDATION

Ecological analysis of the survey data from the field assessment conducted on June 28, 2022, by Pinchin concludes that the vegetation communities present on the Site represent a Mixed Meadow, Common Reed Graminoid Mineral Marsh, Gray Dogwood Deciduous Shrub Thicket, Sumac Deciduous Shrub Thicket, Manitoba Maple Deciduous Woodland, and a Poplar Deciduous Woodland. The woodland and wetland communities on the Site were further evaluated under the Niagara Region Core Natural Heritage System. The woodlands were determined to not be significant according to the evaluation criteria due to their small size and lack of species of concern.

Due to the large size of the wetland, a staking exercise may be required in order to determine the extent of the wetland within the Site. In addition to this, if an encroachment or impacts to the wetland are anticipated, an EIS and potentially an Ecological Offsetting Plan may be required in order to ensure that there are no negative impacts to the natural heritage features within the Site. To accommodate future development, alternative design options may be considered to properly utilize the Site for development potentials without an Ecological Offsetting Plan. Nonetheless, the wetland on the Site primarily consists of Common Reed that are invasive species in Ontario and this Region. It is recommended that an invasive management program is to be put in place for the removal of this wetland if an encroachment or impact to the wetland is required to accommodate the proposed development.

6.0 TERMS AND LIMITATIONS

The enclosed Natural Heritage Assessment has been prepared to assess the potential natural heritage features, on the Site within the Study Area in order to determine the development limit on this Site. The information contained herein as a result of the natural heritage features regarding the proposed residential development is solely provided to the Client as a reference only.

Conclusions derived are specific to the immediate area of study and cannot be extrapolated extensively away from the study location. Field surveys have been analyzed for the specific features within a limited time frame that are expected to be present at the Site, and the absence of information relating to a specific feature does not indicate that it is not present.

No environmental assessment can wholly eliminate uncertainty regarding the potential for recognized environmental conditions on a property. Performance of this Natural Heritage Assessment to the standards established by Pinchin is intended to reduce, but not eliminate, uncertainty regarding the potential for recognized environmental conditions on the Site and recognizes reasonable limits on time and cost.

This work was performed subject to the Terms and Limitations presented or referenced within the duly authorized proposal for this project. Information provided by Pinchin is intended for Client use only. Pinchin will not provide results or information to any party unless disclosure by Pinchin is required by law.



Any use by a third party of reports or documents authored by Pinchin or any reliance by a third party on or decisions made by a third party based on the findings described in said documents, is the sole responsibility of such third parties. Pinchin accepts no responsibility for damages suffered by any third party as a result of decisions made or actions conducted. No other warranties are implied or expressed.

7.0 REFERENCES

- Government of Ontario. 2013. O.Reg. 155/06: Niagara Peninsula Conservation Authority: Regulation of Development, Interference with Wetland and Alterations to Shorelines and Watercourses. Retrieved in October 2022 at: <https://www.ontario.ca/laws/regulation/060155>
- Lee, H., Bakowsky, W., Riley, J., Bowles, J., Puddister, M., Uhlig, P., & McMurray, S. 1998. Ecological Land Classification for Southern Ontario: First Approximation and its Application. North Bay: Ontario Ministry of Natural Resources, Southcentral Science Section, Science Development and Transfer Branch.
- Ministry of Natural Resources and Forestry. 2020. Make a Natural Heritage Area Map. Accessed in October 2022 at: Natural Heritage Information Centre Website: <https://www.ontario.ca/page/natural-heritage-information-centre>
- Niagara Peninsula Conservation Authority, 2018. NPCA Policy Document: Policies for the Administration of Ontario Regulation 155/06 and The Planning Act - September 2018.
- Niagara Region. 2012. Environmental Impact Study Guidelines. Retrieved in October 2022 at: <https://www.niagararegion.ca/living/icp/policy-plan/pdf/RPPA%205-2012%20EIS%20Guidelines.pdf>
- Niagara Region. 2014. Region of Niagara Official Plan. Accessed in October 2022 at: <https://www.niagararegion.ca/living/icp/policy-plan.aspx>



8.0 CLOSURE

Should you have any questions or concerns regarding the contents of this technical letter, please do not hesitate to contact the undersigned.

Yours truly,

Pinchin Ltd.

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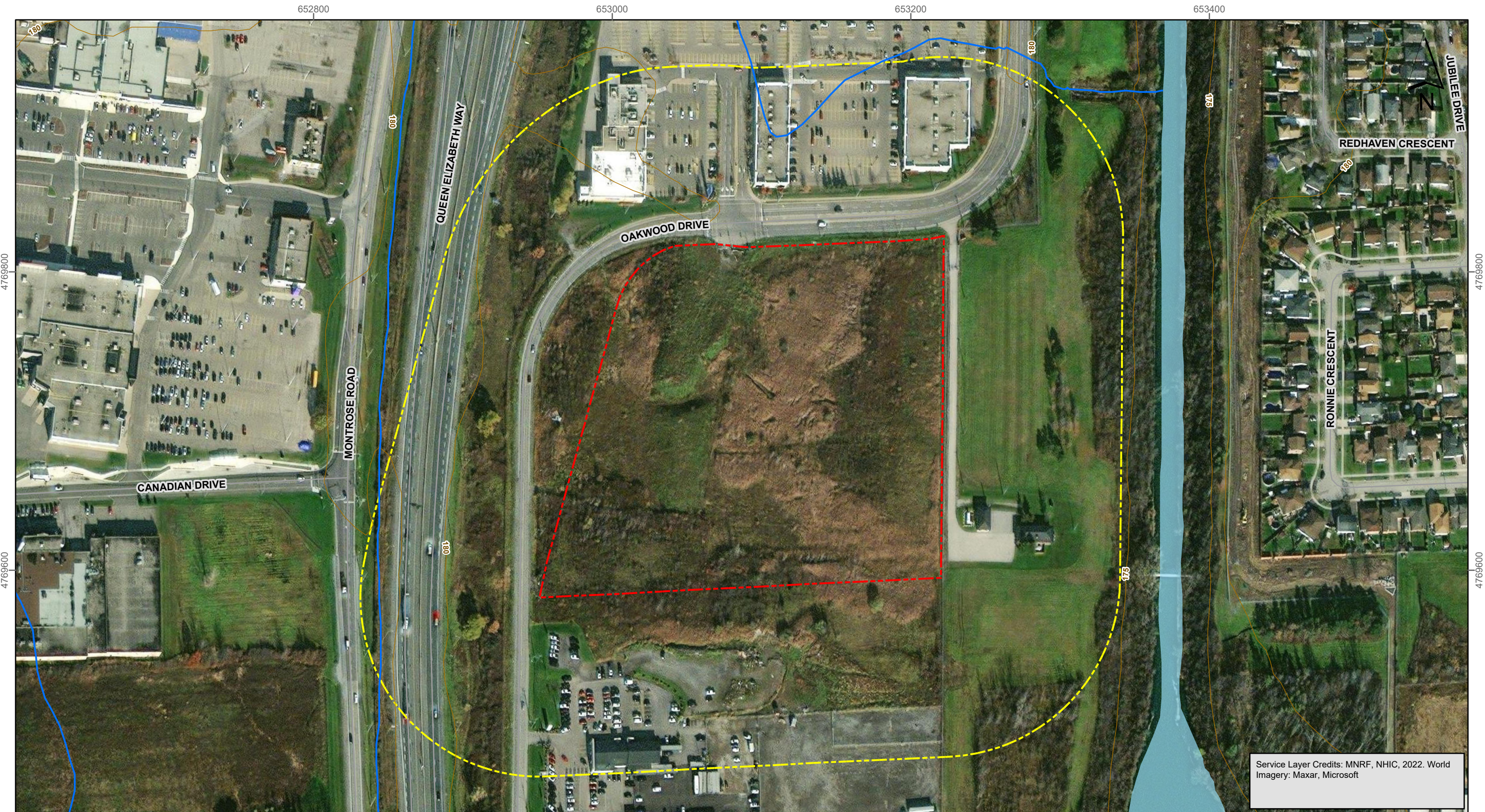
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Encl: Appendix A – Site Figures

Appendix B – Site Photographs

308990 Natural Heritage Constraints Analysis Oakwood Dr Niagara Falls ON Dec 20 2022.docx

**APPENDIX A
SITE FIGURES**



Service Layer Credits: MNR, NHIC, 2022. World Imagery: Maxar, Microsoft

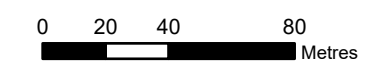


PROJECT NAME: Constraints Analysis and Scoped Environmental Impact Study
CLIENT NAME: Brantven Belmont Oakwood Inc.
PROJECT LOCATION: Vacant Parcel at Southeast Corner of Oakwood Drive, Niagara Falls, Ontario
FIGURE NAME: Study Area

PROJECT NO. 308990.000
DATE: June 2022
SCALE: 1:2,400
FIGURE NO. 1

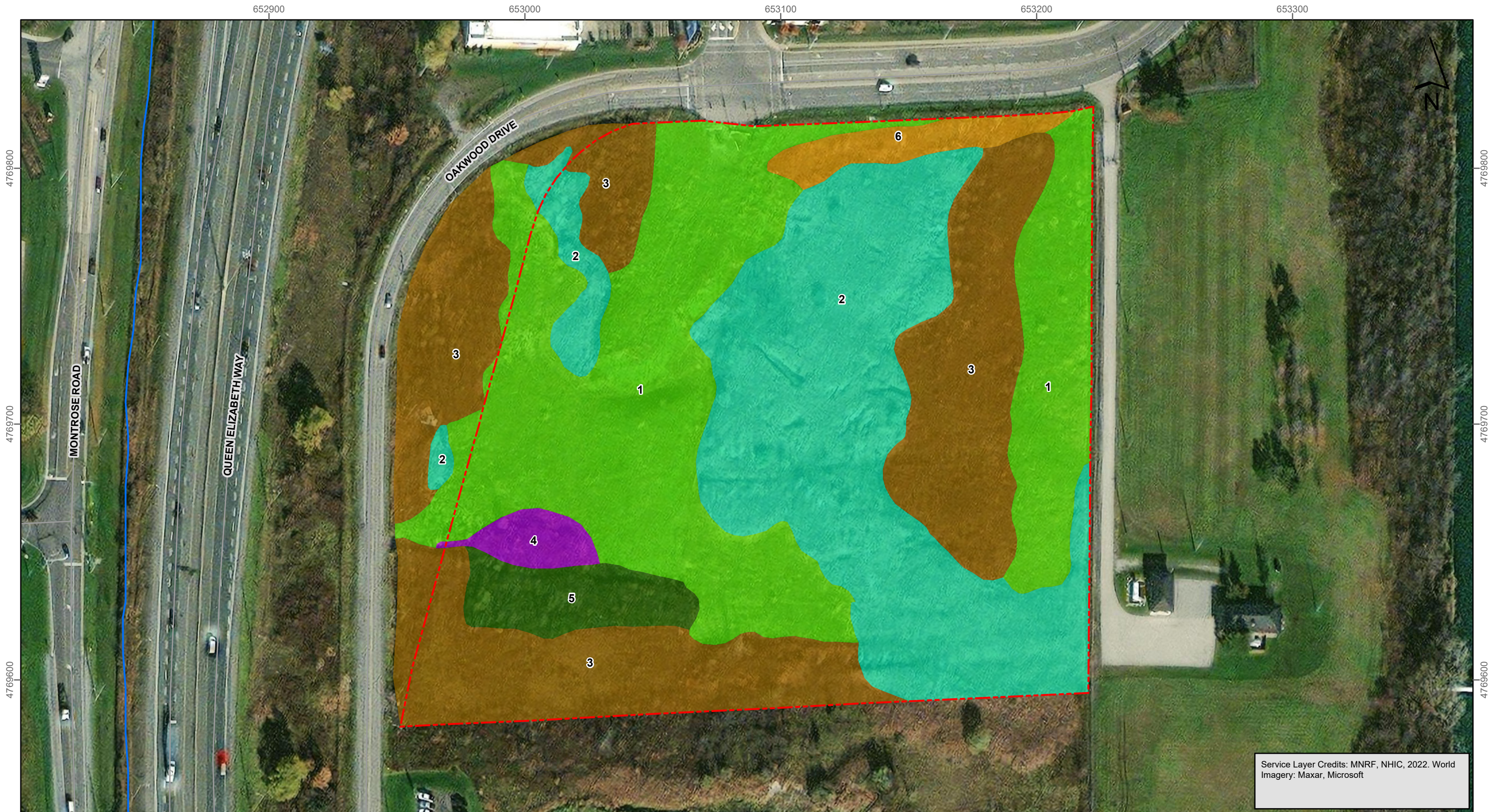
LEGEND
--- Site Boundary
--- Study Area (120 m)
--- Waterbody
--- Roadway
--- Watercourse
--- Topography Contours (5 m)

NOTES
 1. All features and measurements are approximate and subject to field verification. This map is for planning purposes only.
 2. Use dimensions as shown, do not scale drawing.
 3. This map is not to be used for legal purposes.



Coordinate System: NAD 1983 CSRS UTM Zone 17N
 Projection: Transverse Mercator
 Datum: North American 1983 CSRS

DRAWN BY: MH REVIEWED BY: SR REVISION: 0



Service Layer Credits: MNRF, NHIC, 2022. World Imagery: Maxar, Microsoft



PROJECT NAME: Constraints Analysis and Scoped Environmental Impact Study
CLIENT NAME: Brantaven Belmont Oakwood Inc.
PROJECT LOCATION: Vacant Parcel at Southeast Corner of Oakwood Drive, Niagara Falls, Ontario
FIGURE NAME: Ecological Land Classification

PROJECT NO. 308990.000
DATE: October 2022
SCALE: 1:1,400
FIGURE NO. 2

LEGEND	
Site Boundary	Ecological Land Classification
Roadway	1. MEMM3 Dry - Fresh Mixed Meadow
Watercourse	2. MAMM1-12 Common Reed Graminoid Mineral Meadow Marsh
	3. THDM2-4 Gray Dogwood Deciduous Shrub Thicket
	4. THDM2-1 Sumach Deciduous Shrub Thicket
	5. WODM5-3 Fresh - Moist Manitoba Maple Deciduous Woodland
	6. WODM5-1 Fresh - Moist Poplar Deciduous Woodland

NOTES

- All features and measurements are approximate and subject to field verification. This map is for planning purposes only.
- Use dimensions as shown, do not scale drawing.
- This map is not to be used for legal purposes.

0 10 20 40 Metres

Coordinate System: NAD 1983 CSRS UTM Zone 17N
 Projection: Transverse Mercator
 Datum: North American 1983 CSRS

DRAWN BY: MH REVIEWED BY: EO REVISION: 0

**APPENDIX B
SELECTED SITE PHOTOGRAPHS**

SELECTED SITE PHOTOGRAPHS

(All photos taken on June 28, 2022)



Photo 1. View of the Common Reed Graminoid Mineral Marsh Meadow



Photo 2. View of the Dry – Fresh Mineral Mixed Meadow



Photo 3. View of Fresh – Moist Manitoba Maple Deciduous Woodland



Photo 4. View of Sumac Deciduous Shrub Thicket and garbage dumped at the Site.