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V3.8.1

REGIONAL MUNICIPALITY OF NIAGARA
SOUTH NIAGARA FALLS WASTEWATER SOLUTIONS

Agricultural Screening

Agricultural Screening Report – Short Listed WWTP Sites

**AGRICULTURAL SCREENING FOR PROPOSED
SOUTH NIAGARA FALLS WASTEWATER
TREATMENT PLANT**

Prepared For:

The Regional Municipality of Niagara

Prepared By:



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C20003

May 13, 2020

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1. Introduction

GM BluePlan Engineering Limited is preparing a Class EA for the proposed South Niagara Falls Wastewater Treatment Plant (WWTP) which will be situated on approximately 16.19 ha. One of the requirements of the Class EA is to include an agricultural screening for candidate sites. To inform the Class EA, Colville Consulting was retained by the Regional Municipality of Niagara to complete an agricultural screening of four alternative locations for a new wastewater treatment plant in South Niagara Falls.

It is understood that through a pre-screening process, four candidate sites for the proposed wastewater treatment plant have been identified and are shown in **Figure 1**. These sites have been identified as Sites # 1, 4, 5, and 8. All of these candidate sites are located within the City of Niagara Falls urban area and therefore no prime agricultural areas will be impacted by the proposed development, however, Colville Consulting was asked to complete an agricultural screening of the four locations. The study purpose is to determine the level of impact on agricultural resources, uses and related infrastructure should the site be selected for the new South Niagara Falls WWTP.

The four candidate sites, hereby referred to by site number, are all located within the City of Niagara Falls' urban area. Three of the four candidate sites (#1, #4 & #5) are located in built-up areas. Site #1 is located in an area zoned for industrial uses. Sites #4 and #5 are located in the City of Niagara Falls commercial area. Site #8 is located east of the QEW between the Welland River and Rexinger Road. The lands are designated for Resort Commercial uses. This site is comprised of three separate parcels, approximately 38, 18 and 12 hectares. The majority of the lands are actively cultivated and farm infrastructure remains on site.

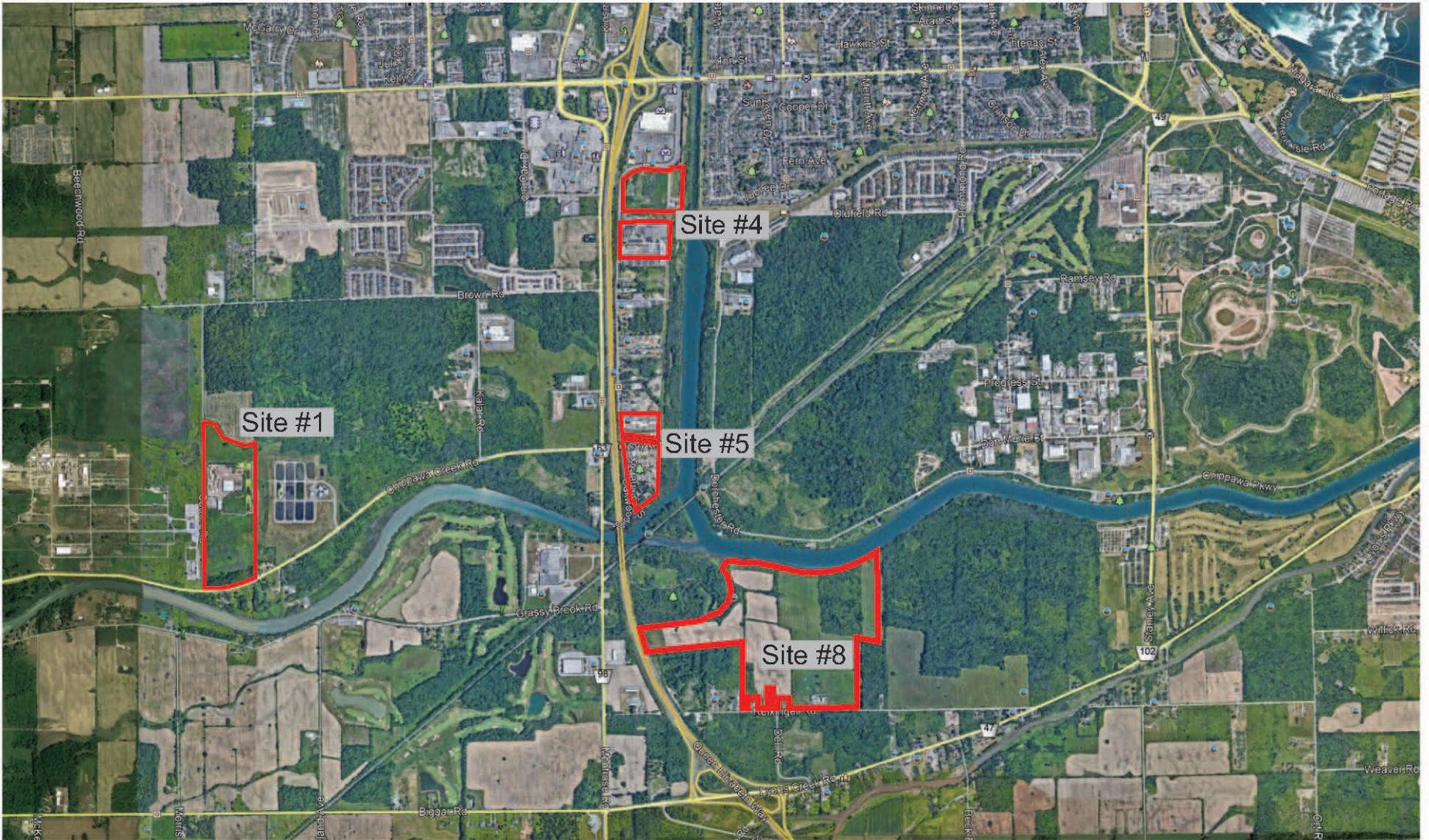
1.1 Study Area

The Study Area will include all lands within 300 meters of each candidate site. All lands within the Study Area will be included within the agricultural screening

1.2 Scope of Study

The agricultural screening will review each candidate site, and the adjacent lands, to identify agricultural resources and elements of the Agri-Food Network which may be impacted by the construction of a new WWTP. The agricultural screening will assess each candidate site and through a comparative analysis, list the candidate sites in order of potential impact on the agricultural system. The scope of work will primarily consist of a desktop review and reconnaissance site investigations of the four sites and includes:

- A review of background information such as soil and Canada Land Inventory (CLI) agricultural capability information and land use information obtained through a review of aerial photographic imagery;
- A reconnaissance level land use survey to identify agricultural and non-agricultural land uses on and in close proximity to each Site;
- A comparative analysis of the four candidate sites using the information collected; and
- A summarization of our findings.



Candidate Sites

Prepared for:



Prepared by:



South Niagara Falls Wastewater Treatment Plant

Figure 1
Site Locations

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FILE: C20003

2. Methodology

2.1 Background Data Collection

Multiple online sources of information were consulted to establish a baseline of knowledge about each potential site location before the land use survey was conducted. This includes The City of Niagara Falls Official Plan (2019), *The soils of the Regional Municipality of Niagara Volume 1*, OMAFRA's Agricultural Information Atlas (Ag_Maps), Google Earth Pro (for current aerial imagery), as well as some general information provided by the client.

2.2 Land Use Survey

A land use survey was conducted on January 22nd to identify land uses both on and adjacent to all four candidate sites. Agricultural uses, agricultural-related uses, on-farm diversified uses, non-agricultural uses were identified and mapped.

3. Study Findings

3.1 Regional Soils

Using OMAFRA's Agricultural Information Atlas (Ag_Maps), the soil resource information was reviewed. This includes the soil series and Canada Land Inventory (CLI) mapping. No information was provided for Sites #4 and #5 because these lands have already been developed and are not available for agricultural uses. Soils information is only for Sites #1 and #8.

3.1.1 Soil Series

The majority of the lands of Sites #1 and #8 have imperfectly to moderately drained soils that are moderately to slowly permeable. The Niagara and Ontario soil series are the most common soils mapped. **Table 1** summarizes the soil series mapped.

Table 1: Regionally Mapped Soils Series for Site #1 and #8

Soil Series	Site #1	Site #8
Niagara	X	X
Niagara - Loamy Phase		X
Ontario		X
Welland		X
Cashel – Heavy Red Phase		X
Alluvium		X
Not Mapped	X	X

3.1.2 CLI Agricultural Land Classification

Specialty Crop Areas and CLI Classes 1, 2 and 3 are prime agricultural lands in agricultural and rural designations. No prime agricultural lands will be impacted as these lands are already designated for non-agricultural uses.

Ag_Maps provides CLI capability ratings for Sites #1 and #8 (see **Table 2** and **Table 3**). The CLI information is not available for Sites #4 and #5 because these two sites are located within a built-up portion of the City of Niagara Falls. **Figure 2** shows the CLI Capability mapping for Site #1 and **Figure 3** shows the CLI Capability mapping for Site #8.

Site #1 is predominately (66.20%) shown as 'Not Mapped' and the remaining approximately third of the parcel (8.47 ha) is mapped as CLI Class 3 lands. Not Mapped areas are typically areas that are no longer suitable for, or able to be, cultivated.

Approximately 67.06 ha (82.36 %) of Site #8 is mapped as CLI Class 3 land. Approximately 6.71 ha (8.24%) is mapped as CLI Class 4 and only 4.21 ha (5.17 %) is mapped as CLI Class 5 lands.

Table 2: Regional CLI Capability Ratings for Site #1.

CLI Rating	Area (Ha)	% of Subject Lands
CLI Class 3D	3.70	14.76%
CLI Class 3DT	3.59	14.33%
CLI Class 5I	1.18	4.71%
NOT MAPPED	16.59	66.20%
Totals	25.06	100.00%

Table 3: Regional CLI Capability Rating for Site #8.

CLI Rating	Area (Ha)	% of Subject Lands
CLI Class 3	67.06	82.36%
CLI Class 3D	49.30	60.55%
CLI Class 3WD	11.63	14.28%
CLI Class 3DT	6.13	7.53%
CLI Class 4T	6.71	8.24%
CLI Class 5I	4.21	5.17%
Not Mapped / Water	3.44	4.23%
Totals	81.42	100.00%

Site #8 contains the greatest amount of land that can be used for agricultural production. It is comprised of three distinct parcels. Where agricultural lands have been designated for non-agricultural uses (e.g., included within an urban boundary as a result of settlement area expansion), to minimize the agricultural impacts, the lands should remain in agricultural production as long as it is feasible. Siting the South Niagara Falls WWTP at Site #8 would have the greatest impact on the remaining lands currently used for agricultural crop production. However, given the total size of this candidate site (81.42 ha) and the relatively smaller area required for the WWTP facility (16.19 ha), the potential impact on lands currently in agricultural production will be minimized to the extent possible.

3.2 Land Use

OMAFRA's Agricultural Systems Portal was accessed to identify whether any components of the agricultural system are located on or adjacent to the four Candidate sites. As shown in **Figure 4**, there were some elements of the agri-food system located near the four sites but none of these are located within the 300 m study area surrounding each site.

A reconnaissance level land use survey was completed and the land uses observed on and adjacent to the Candidate sites were recorded. The following summarizes the survey results.

3.2.1 Agricultural Uses

Site #1

The majority of Site #1 is part of an industrial site and is close to other industrial lands. Those lands that are not developed are disturbed and/or idle (not used for agriculture). The only lands used for agricultural production are located immediately to the north of Site #1. These lands are used for annual cultivation of common field crops such as soybeans and corn. **Figure 5** shows the land uses on and surrounding Site #1.

There are four residential dwellings and a commercial operation located along the south side of Chippawa Creek Road.

Sites #4 and #5

There are no agricultural uses or the potential for agricultural uses at Sites #4 and #5. The majority of these lands have been developed for commercial uses or for future non-agricultural uses. **Figure 6** and **Figure 7** show the land uses on and surrounding Site #4 and #5, respectively.

Site #8

Although now within the urban area, the majority of Site #8 is still used for agricultural purposes. Hay and row crop are grown on the cleared portions of the two properties that form Site #8. There is a farm operation that is comprised of an empty livestock facility. Historical photographic imagery shows that the barns housed livestock (Holsteins) as late as 2014.

The farm still harvests hay and several farm implements and machinery are stored in the barns. **Figure 8** shows the land uses on and surrounding Site #8.

3.2.2 Agricultural Related Uses

No agricultural-related uses were observed on any of the four sites.

3.2.3 On-Farm Diversified Uses

No on-farm diversified uses were observed on any of the four sites.

3.2.4 Non-Agricultural Uses

Site #1

There is a variety of non-agricultural uses on site #1, #4 and #5. Site #1 has an auto wrecking facility. #4 has various commercial operations on site, while #5 has a camp resort and concrete supplier.

3.3 Land Improvements

There are no agricultural investments in infrastructure or land improvements (such as tile drainage installations) at Sites #1, 4 and 5.

As mentioned above, there is still farm infrastructure at Site #8. Although there is no tile drainage associated with the farm, there are surface drains constructed to improve drainage. Development has the potential to negatively effect on the surface drainage and negatively impact crop yields.

4. Comparative Analysis

To assess the candidate sites and identify which sites would have the most/least impact on agriculture, six potential impacts (elements) were considered:

- The amount and quality of land impacted;
- Presence of agricultural infrastructure;
- Presence of investments in land improvements;
- Potential disruption of farm operations resulting from traffic;
- Potential for direct impact on agricultural operations or components of the agri-food sector; and
- Potential for indirect impacts on agricultural operations or components of the agri-food sector.

The potential impacts were assessed simply by assigning “No Impact”, “Low to Moderate Impact” and “High Impact” to each element considered. This assessment is displayed in **Table 4** and concludes that locating the proposed WWTP on Site #8 will have the greatest potential impact on agriculture. Sites #4 and #5 will have the least impact. Site #1 will also have a very low potential to impact agriculture.

5. Mitigation

To minimize potential impacts of construction and operation of the WWTP at Site #1, ensure that access to the cultivated fields to the north of the site is maintained and the lands remain accessible to farm machinery. This would be particularly important in the spring and fall seasons.

No mitigation is required for Sites #4 and #5.

Should Site 8 ultimately be selected for the proposed WWTP facility, it is recommended that the facility be located in the western portion of the Site to minimize potential impacts on the existing farm operation to the extent possible. This would minimize the direct impact and loss of farm infrastructure, land improvements and disruption to the existing farm operation.

Table 4: Agricultural Screening - Comparative Analysis

8,47Agricultural Screening		Site #1			Site #4			Site #5			Site #8		
	Elements Assessed		Feature	Potential Impact		Feature	Potential Impact		Feature	Potential Impact		Feature	Potential Impact
Agriculture	Amount and quality of land impacted		CLI Class 3 soils	Approximately 8.47 ha of CLI Class 3 land potentially impacted. The rest is Not Mapped (Urban Area)		Soil Not Mapped (Urban Area)	No arable lands impacted. Potential Impact: None		Soil Not Mapped (Urban Area)	No arable lands impacted. Potential Impact: None		CLI Class 3 Soils	At most, approximately 16.19 ha of the 67.06 ha of CLI Class 3 lands potentially impacted (67.06 ha Class 3, & 10.92 of Class 4 & 5). Although these lands are in the urban area, they are being cultivated for common field crops. Potential Impact: Loss of lands being farmed.
	Presence of agricultural infrastructure		Not Present	No agricultural infrastructure on site. Potential Impact: None		Not Present	No agricultural infrastructure on site. Potential Impact: None		Not Present	Potential Impact: None		Farm operation	Crawford Farm Former livestock operation. Infrastructure still in place. Potential Impact: High (Loss of Infrastructure)
	Presence of investment in land improvements		Not Present	No evidence of tile drains or other land improvements. Potential Impact: None		Not Present	No evidence of tile drains or other land improvements. Potential Impact: None		Not Present	No evidence of tile drains or other land improvements. Potential Impact: None		Surficial Drains	Surface drains have been constructed to improve drainage in agricultural fields. Potential Impact: Disruption of surface drainage impacting crops. Potential Impact: High (Loss of investment)
	Traffic: Potential disruption of the ability to move farm equipment on roads during key seasons		Garner Rd. and Chippawa Creek Rd.	Adjacent to Garner Rd. & Chippawa Creek Rd., potential for construction to temporarily affect access to field north of Site #1 Potential Impact: Low		No Farms present or in close proximity	No farms on or adjacent to site. Potential Impact: None		No Farms present or in close proximity	No farms on or adjacent to site. Potential Impact: None		Rexinger Rd.	Potential for construction to temporarily affect access to farm fields Potential Impact: Low to Moderate
	Direct Impact to Farm Operations or to components of the Agri-Food Sector		Not Present	No farm operations or components of the Agri-food sector present on site Potential Impact: None		Not Present	No farm operations or components of the Agri-food sector Present on site Potential Impact: None		Not Present	No farm operations or components of the Agri-food sector Present on site Potential Impact: None		One farm operation present on Site	Direct impact on Crawford Farm Potential Impact: High (Loss of Infrastructure and good quality arable lands)
	Indirect Impact to neighbouring farm operations or components of the Agri-Food Sector		Not Present	No adjacent farm operations or components of the Agri-Food Sector Potential Impact: None		Not Present	No adjacent farm operations or components of the Agri-Food Sector Potential Impact: None		Not Present	No adjacent farm operations or components of the Agri-Food Sector Potential Impact: None		Adjacent Lands are Cultivated	No adjacent farm operations or components of the Agri-Food Sector Potential Impact: None
Conclusions Potential Impacts		No to Low Impact – Preferred			No Impact – Preferred			No Impact – Preferred			No to High Impact – Least Preferred		
Legend:			No Potential Impact			Low to Moderate Potential Impact			High Potential Impact				

6. Conclusion

This agricultural screening exercise has determined that the proposed South Niagara Falls WWTP will have no impact on agriculture or agricultural uses if situated on Site's #4 or #5.

The potential impact of locating the WWTP at Site #1 will be insignificant. Locating the WWTP at Site #1 will have the potential to remove 8.47 ha of CLI Class 3 lands. There is also a limited potential for construction of the facility to disrupt access to farm fields the cultivated lands to the north of the Site. The implementation of mitigation measures will ensure that potential impacts are avoided or minimized to the extent possible.

The potential for impact on the continuing agricultural cultivation of the lands is greatest at Site 8. It is the only location where the location of the WWTP has the potential to have a direct impact on agricultural lands, investments in infrastructure and land improvements and an existing farm operation.

Approximately 16.19 ha of CLI Class 3 and/or 4 land will be removed from agricultural production and an existing farm operation is located within Site 8. Development within Site 8 will not impact the Agricultural Land Base (prime agricultural area) as these lands are already located within the urban boundary and are designated for non-farm land uses. However, agricultural uses continue for the short- term. Implementing the mitigation recommended measures will avoid or minimize the potential impacts on the existing agricultural use on the majority of the Site.

Respectfully submitted by:

A rectangular box containing a handwritten signature in blue ink that reads "Sean Colville".

Sean Colville, B.Sc., P.Ag.
Colville Consulting Inc.

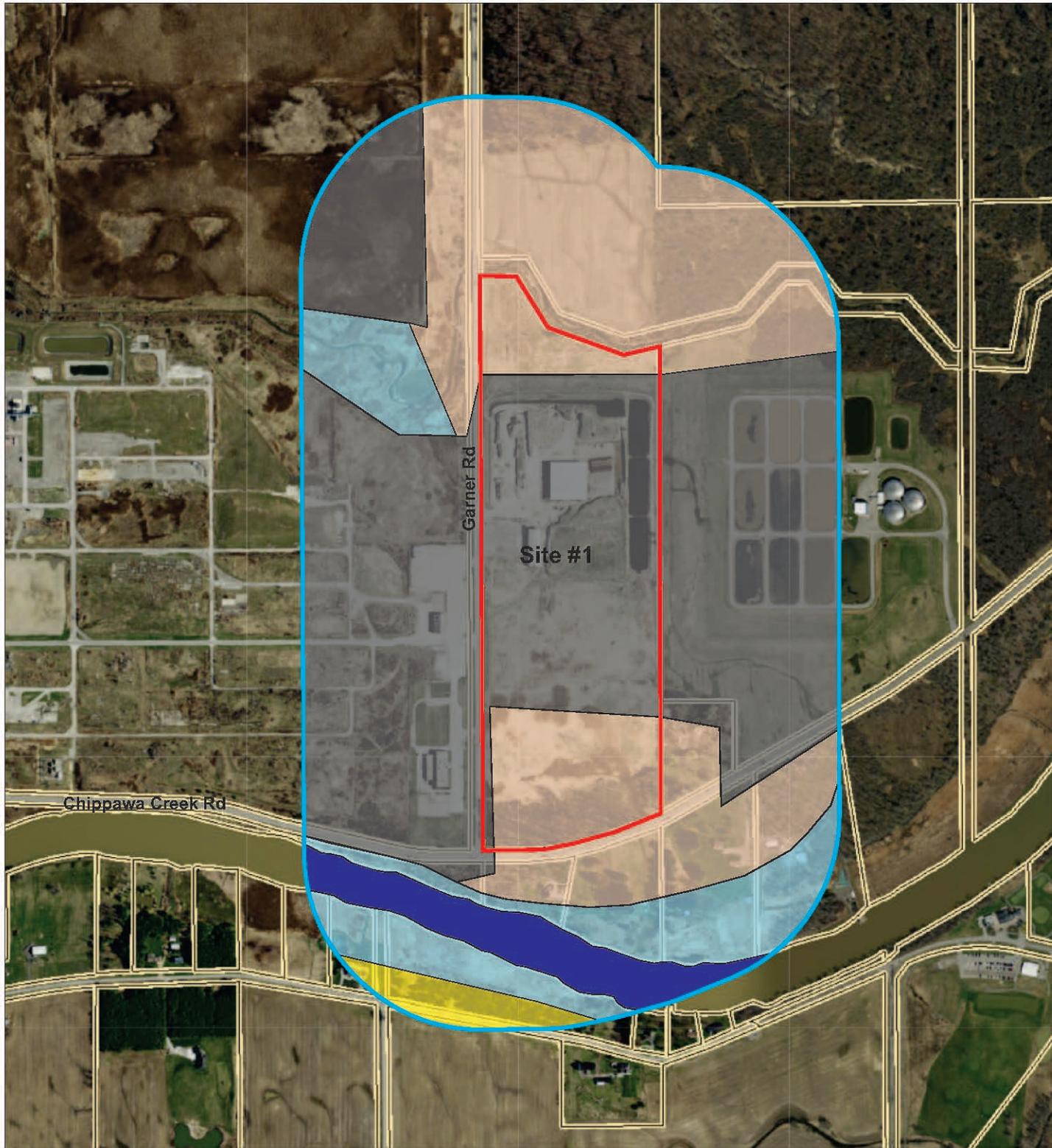
7. References

OMAFRA. Agriculture Information Atlas. Available Online: <http://www.gisapplication.lrc.gov.on.ca/AIA/Index.html?viewer=AIA.AIA&locale=en-US>

OMAFRA. The soils of the Regional Municipality of Niagara Volume 1

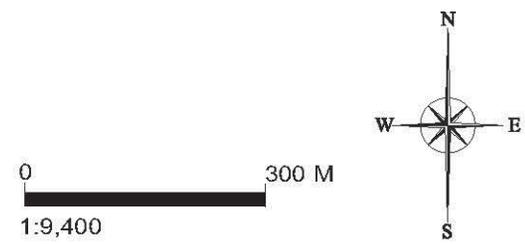
Ontario Ministry of Agriculture, Food and Rural Affairs website, May 2004. Classifying Prime and Marginal Agricultural Soils and Landscapes: Guidelines for Application of the Canada Land Inventory in Ontario.

City of Niagara Falls Official Plan. Consolidation Amended to April 2019.



Legend

- Subject Lands
- Study Area (300m)
- Class 3 - Niagara Soils
- Class 4 - Ontario soils
- Class 5 - Alluvium Soils
- Not Mapped



**South Niagara Falls
Wastewater Treatment Plant**

**Figure 2
CLI Capability - Site No. 1**

Prepared for: 

Prepared by: 



Legend

- Subject Lands
- Study Area (300m)
- Class 3 - Niagara Series
- Class 4 - Ontario Series
- Class 5 - Alluvium
- Not Mapped
- Water

- Non-farm Residential Dwelling
- Existing Farm Operation
- ⊕ Cemetery
- Commercial
- Industrial

0 150 M 300 M

1:7,250

**South Niagara Falls
Wastewater Treatment Plant**

**Figure 3
CLI Soil Capability - Site No. 8**

Prepared for:

**Niagara
Region**

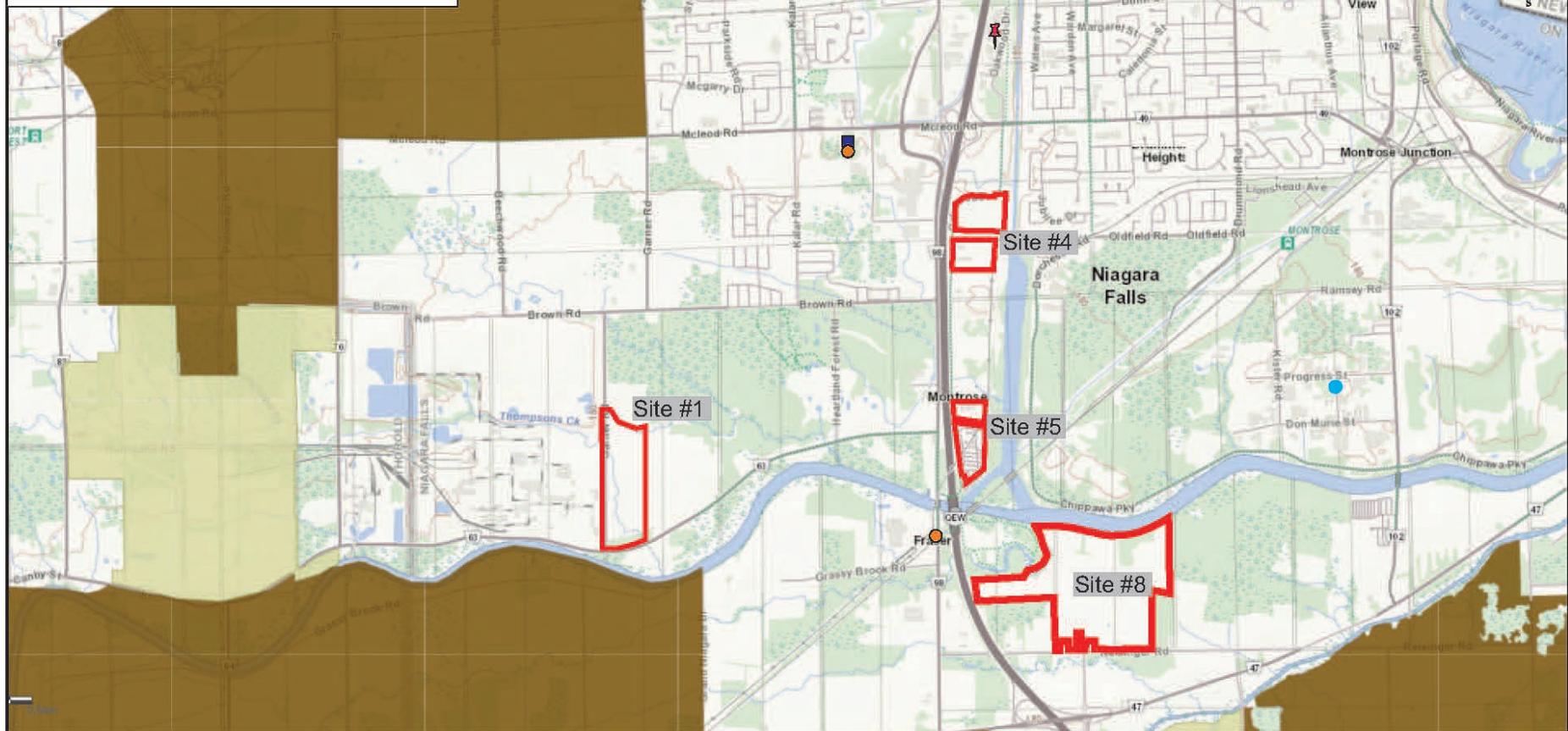
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CONSULTING INC.**

Agricultural System Portal

Agricultural Land Base

-  Prime Agricultural Area
-  Candidate Area
-  Non-Agricultural Designations



Components of the Agri-Food Sector

-  2.1.1 Beverage Manufacturing - Breweries (Ontario Craft Brewers)
-  2.2 Farmers' Markets (Ontario Farmers' Markets)
-  2.4 Frozen Food Manufacturing - (GFFHA)
-  2.6 Refridgerated warehousing and storage (GFFHA)
-  2.7.3 Livestock Assessts and Services - Meat Distribution 4111, 41313, 41314, 41316, 44521, 44522 (GFFHA)
-  2.7.4 Provincially Licenced Meat Plants (OMAFRA)

South Niagara Falls Wastewater Treatment Plant

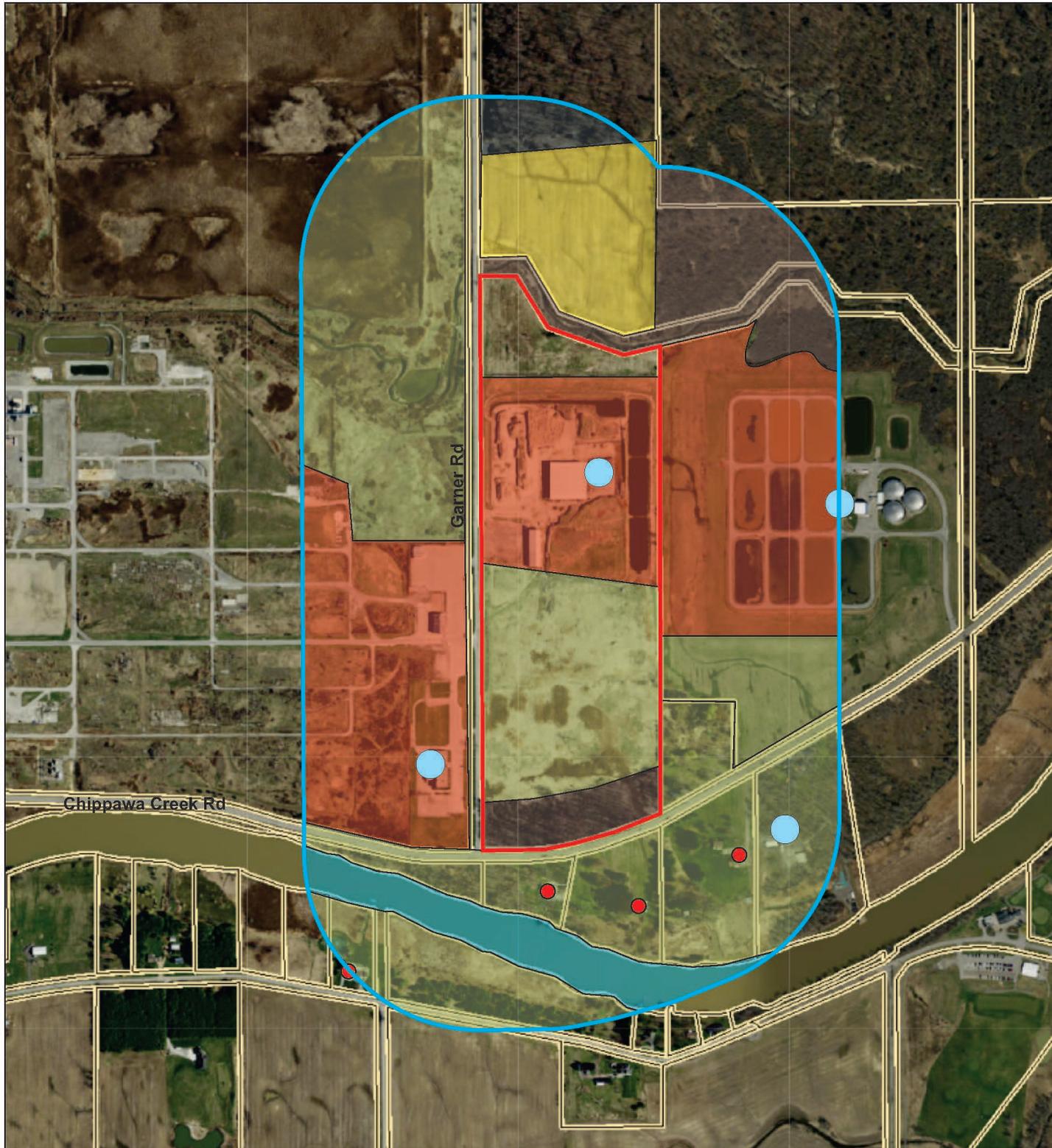
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Figure 4 Agri-Food Sector

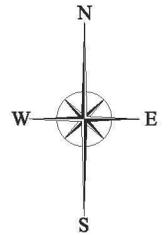
DATE: March 25, 2020

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Legend

- Subject Lands
- Study Area (300m)
- Row Crops (Corn & Soybeans)
- Industrial Lands
- Disturbed-Idle Lands
- Forested
- Non-farm Residential Dwelling
- Existing Farm Operation
- ✝ Cemetery
- Industrial



0 150 M 300 M
1:9,410

**South Niagara Falls
Wastewater Treatment Plant**

**Figure 5
Land Use - Site No. 1**

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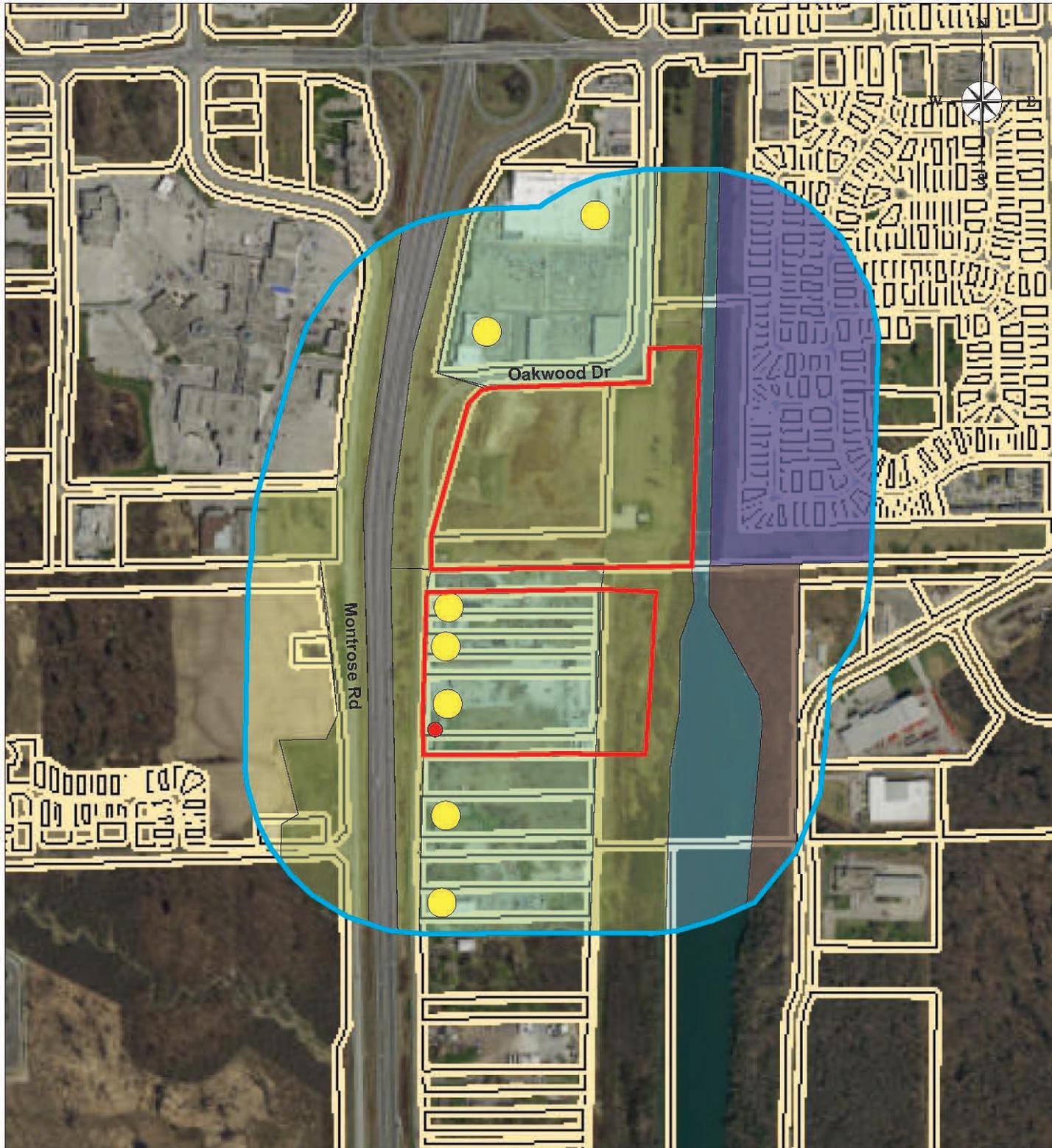


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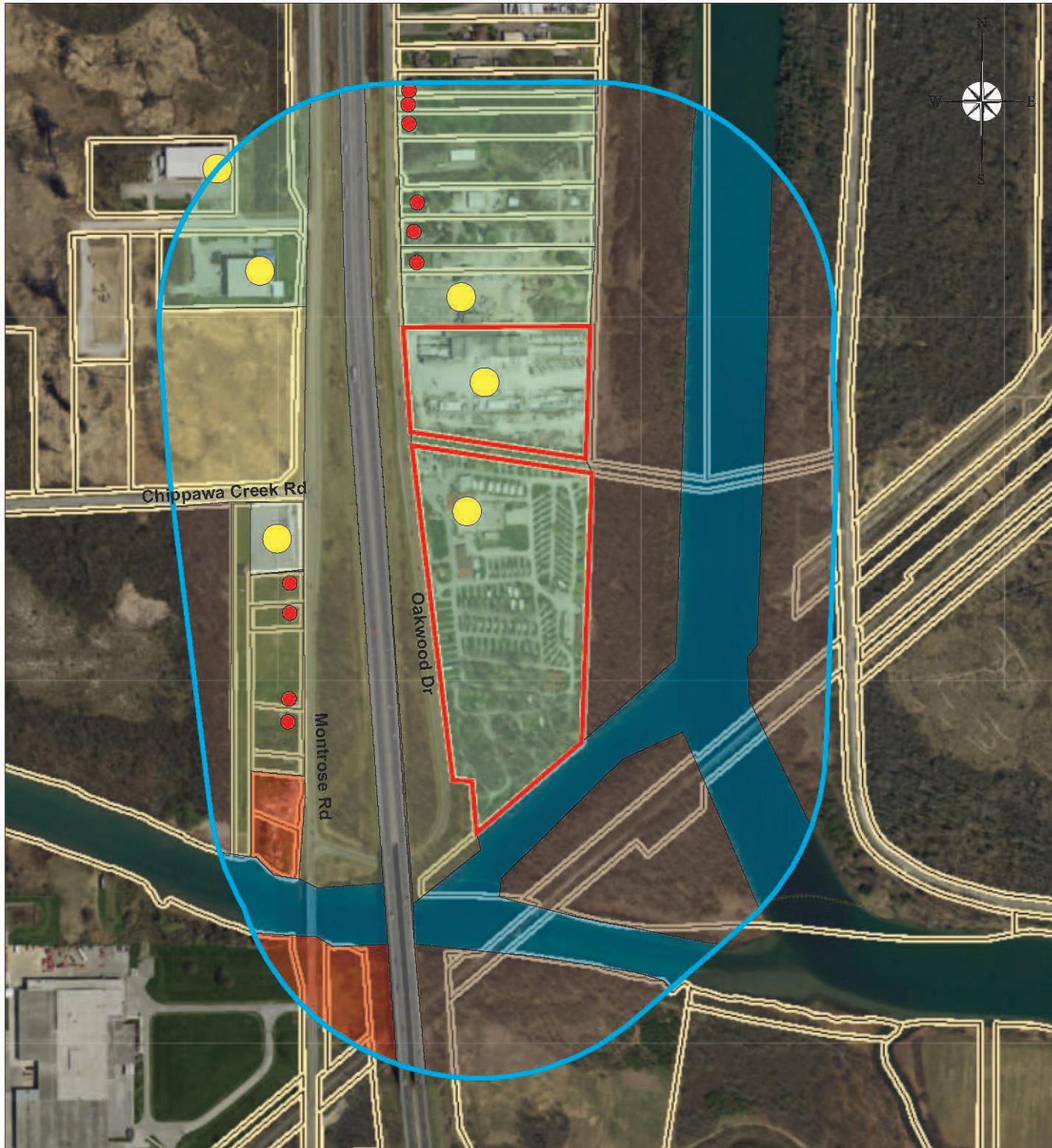
- Legend**
- Subject Lands
 - Study Area (300m)
 - Forage (Hay)
 - Industrial Lands
 - Disturbed-Idle Lands
 - Forested
 - Commercial
 - Water
 - Residential
 - QEW
 - Non-farm Residential Dwelling
 - Existing Farm Operation
 - + Cemetery
 - Commercial

**South Niagara Falls
Wastewater Treatment Plant**

**Figure 6
Land Use Mapping - Site No. 4**

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Prepared by: 



- Legend**
- Subject Lands
 - Study Area (300m)
 - Forage (Hay)
 - Industrial Lands
 - Disturbed-Idle Lands
 - Forested
 - Commercial
 - Water
 - QEW
 - Non-farm Residential Dwelling
 - Existing Farm Operation
 - Cemetery
 - Commercial

**South Niagara Falls
Wastewater Treatment Plant**

**Figure 7
Land Use - Site No. 5**

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Legend

- Subject Lands
- Study Area (300m)
- Forage (Hay)
- Disturbed-Idle Lands
- Forested
- Row Crop (Corn)
- Water
- Industrial/Commercial
- QEW
- Non-farm Residential Dwelling
- Existing Farm Operation
- Cemetery
- Commercial
- Industrial

0 150 M 300 M

1:7,250

**South Niagara Falls
Wastewater Treatment Plant**

**Figure 8
Land Use - Site No. 8**

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