



BURNSIDE

**Guideline D-6 Compatibility Study for
Proposed Development
Riverview Grain Elevator**

**Riverview Grain Ltd.
106438 Southgate Road 10
Southgate, ON N0C 1B0**



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106438 Southgate Road 10
Southgate, ON N0C 1B0**

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**February 2026
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Revision	Date	Description
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Executive Summary

R.J. Burnside & Associates Limited (Burnside) was retained by Riverview Grain Ltd (Riverview Grain) at 106438 Southgate Rd 10, Southgate, Ontario, N0C 1B0 to document the potential dust, odour, and noise impacts from the proposed industrial development, at Riverview Grain (the Site) on the local residences surrounding this facility in support of a change in zoning to allow commercial operations.

This report was prepared in accordance with Ministry of the Environment, Conservation and Parks (MECP) Guideline D-6 *“Compatibility between Industrial Facilities and Sensitive Land Uses”* (Guideline D-6). The objective of the guideline is *“to prevent or minimize the encroachment of sensitive land use upon industrial land use and vice versa, as these two types of land uses are normally incompatible, due to possible adverse effects on sensitive land use created by industrial operations”*.

The closest sensitive land uses surrounding the proposed development area that could be impacted by the proposed development are reviewed in this study.

Potential dust, odour, noise, and vibration sources at the proposed industrial development are reviewed and assessed in this study for the potential to impact the sensitive receptors.

The following findings are presented based on the results of this D-6 Study:

- No adverse effect from dust is expected from the proposed development.
- Odour is not emitted from the proposed development.
- No adverse effect from noise is expected from the proposed development.
- Vibration is not emitted by the proposed development.

Therefore, no compatibility issues were identified between the surrounding receptors and the proposed development.

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1.0 Introduction

R.J. Burnside & Associates Limited (Burnside) was retained by Riverview Grain Ltd (Riverview Grain) at 106438 Southgate Rd 10, Southgate, Ontario, N0C 1B0 to document the potential dust, odour, and noise impacts from the proposed industrial development, at Riverview Grain (the Site) on the local residences surrounding this facility in support of a change in zoning to allow commercial operations.

This report was prepared in accordance with Ministry of the Environment, Conservation and Parks (MECP) Guideline D-6 *“Compatibility between Industrial Facilities and Sensitive Land Uses”* (Guideline D-6). The objective of the guideline is *“to prevent or minimize the encroachment of sensitive land use upon industrial land use and vice versa, as these two types of land uses are normally incompatible, due to possible adverse effects on sensitive land use created by industrial operations”*¹.

The closest sensitive land uses surrounding the proposed development area that could be impacted by the proposed development are reviewed in this study.

Potential dust, odour, noise, and vibration sources at the proposed industrial development are reviewed and assessed in this study for the potential to impact the sensitive receptors.

A Facility is defined as *“a transportational, commercial, industrial, agricultural, intensive recreational or utilities/services building or structure and/or associated lands (e.g., abattoir, airport, railway, sewage treatment plant, landfill, manufacturing plant, generation stations, sports/concerts stadium, etc.) which produce(s) one or more 'adverse effect(s)' on a neighbouring property or properties”*.

2.0 Guideline D-6

The Guideline D-6 *“is intended to be applied in the land use planning process to prevent or minimize future land use problems due to the encroachment of sensitive land uses and industrial land uses on one another”*¹.

An Industrial Facility is considered a facility or activity related to the assemblage and storage of substances / goods / raw materials, their processing and manufacturing; and / or the packaging and shipping of finished products². The guideline categorizes industrial facilities into three classes (Class I, II or III) according to the nature of their

¹ Ministry of the Environment. Guideline D-6: Compatibility Between Industrial Facilities and Sensitive Land Uses, July 1995.

² Ministry of the Environment. Guideline D-1, Procedure D-1-3: Land Use Compatibility: Definitions, July 1995.

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emissions, physical size, production volumes and intensity / scheduling of their operations.

Each category has a defined minimum separation distance between a sensitive land use and an industrial facility, and a potential influence area. If a sensitive land use is found within the minimum separation distance, a detailed assessment of the impacts is usually required to determine whether the two uses are compatible unless it is clear that the impacts will be negligible.

If a sensitive land use is found within the potential influence area, then a qualitative assessment should be done to determine whether a detailed assessment is required. Table 1 contains a summary of the minimum separation distance (MSD) and potential influence areas (PIA) for each class category.

Table 1: Recommended Minimum Separation Distances and Potential Influence Areas

Class	Recommended Minimum Separation Distance (m)	Potential Influence Area (m)
1	20	70
2	70	300
3	300	1000

Guideline D-6 Minimum Separation Distances and Potential Influence Areas

Dust, odour, noise, and vibration assessments must be completed if the D-6 Study determines the surrounding industry will have an impact on the proposed development.

If the D-6 study indicates that a sensitive receptor is within the MSD for the business and the business emits a contaminant then a detailed study is required to assess whether there is a significant impact on that business.

If the D-6 study indicates that a sensitive receptor is within the PIA for a business and that business emits a contaminant then a detailed study may be required to assess whether there is a significant impact on the sensitive receptor depending on the amount of emission.

3.0 Zoning

The location of the Site is presented in Figure 1, and the land use designation of the Site and surrounding area is presented in Figure 2.

The Site of the proposed Industrial development is currently zoned as Agricultural (A1) and Environmental Protection (EP) as shown in Figure 2. The zoning on this property will be changed to allow a commercial grain elevator at the north end of the property.

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The areas to the north are zoned A1 and EP. The areas to the east are zoned A1 and EP. The areas to the south are zoned A1, EP, and Wetland Protection (W). The areas to the west are zoned A1, EP, and W. See Figure 2.

4.0 Study Area

According to Guideline D-6, the impact from the potential influence areas must be evaluated for all sensitive land uses. Residential land use is considered sensitive land 24 hours/day. Potential influence areas are defined as the areas within which adverse effects may be experienced. Figure 3 shows the property on which the development is proposed. Figure 3 also shows the 300 m radius around the property.

5.0 Vibration

No significant industrial vibration sources will be installed at the proposed development.

While noise and vibration impact from the railway is not considered in the D-6 guideline, as a standard practice both, noise and vibration, should be considered as part of the planning approval.

The Site is not located near any rail line; therefore, noise and vibration studies due to rail line are not required.

Based on the information above, vibration is not addressed further in this study.

6.0 Impact Study

The purpose of this study is to evaluate any potential dust, odour, and noise impacts from the proposed industry development. All the sensitive receptors within the defined area were considered in the study.

This facility will prepare and apply for an Environmental Activity and Sector Registry (EASR) based on the site NAICS code being "493130 - Farm product warehousing and storage"³. An EASR requires all contaminants emitted to the air to meet MECP standards and guidelines at the property line; therefore, sources of air contaminants were not assessed in this study. Criteria for dust, odour, and noise must be met at sensitive receptors instead of the source property line. As a result, sources of dust, odour, and noise are assessed in this study to determine if the proposed business will cause an adverse effect at the existing sensitive receptors.

³<https://www23.statcan.gc.ca/imdb/p3VD.pl?Function=getVD&TVD=1369825&CVD=1370970&CPV=493130&CST=27012022&CLV=5&MLV=5>

6.1 Source Classification and Characterization

Sources are classified using the table below. Selections appropriate to this facility are highlighted.

Table 2: Ministry of Environment: D-Series' Industrial Categorization Criteria⁴

Item	Class 1	Class 2	Class 3
Noise	Sound not audible off property	Sound occasionally audible off property	Sound frequently audible off property
Dust and Odour	Infrequent and not intense	Frequent and occasionally intense	Persistent and / or intense
Vibration	No ground-borne vibration on plant property	Possible ground-borne vibration, but cannot be perceived off property	Ground-borne vibration can frequently be perceived off property
Air Quality	Low probability of fugitive emissions	Occasional outputs of either point source or fugitive emissions	High probability of fugitive emissions
Scale of Production	Small scale plant or scale is irrelevant in relation to all other criteria for this Class	Medium level of production allowed	Large production levels
Outside Storage	Minimal storage	Outside storage permitted	Outside storage of raw and finished products
Process	Self-contained plant or building	Open process – outdoor storage of wastes or materials	Open process – outdoor storage of wastes or materials
Process Outputs	Produces/stores a packaged product	Periodic outputs of minor annoyance	Frequent outputs of major annoyances
Possibility of Fugitive Emissions	Low probability of fugitive emissions	Occasional outputs of either point source or fugitive emissions	High probability of fugitive emissions
Hours of Operation	Daytime operations only	Shift operations permitted	Daily shift operations permitted

⁴ Halton Region's list of Categories and examples based on MECP's Guideline D-6-1 Industrial Categorization Criteria

Item	Class 1	Class 2	Class 3
On-Site Movement	Infrequent movement of products and/or heavy trucks	Frequent movement of products and/or heavy trucks with the majority of movements during daytime hours	Continuous movement of products and employees

Therefore, this facility has been classified as a Class 2 facility. Based on Table 1, this facility has a 70 m MSD and 300 m PIA. As a result, sensitive receptors within 300 m were identified.

The business has the potential to emit dust from gravel driveways and noise from delivery trucks.

Odour is not expected at this facility.

6.2 Sensitive Receptors

An initial survey of the surrounding residential land use and their locations was conducted using aerial imagery. Several dwellings are considered within the study area. A summary of the sensitive receptors included in the assessment is shown in Table 3. Table 3 includes the sensitive receptor address, the direction relative to the proposed development, the separation distance (property line to property line), and whether the sensitive receptor is further from the proposed development than the recommended separation distances set out in Guideline D-6.

Table 3: Nearest Sensitive Receptors

ID	Address	Description	Relative Direction	Minimum Distance (Property Line to Property Line) (m)	Does the facility meet the minimum separation distance?	Is the facility outside the potential influence area?
Sensitive Receptors within MSD						
1	106399 Southgate Rd 10	Farm	West	0	No	No
2	106398 Southgate Rd 10	Farm	Northwest	0	No	No
3	106544 Southgate Rd 10	Farm	East	0	No	No

Existing sensitive receptors and vacant lots were identified to determine the potential for an adverse effect from the proposed development.

6.2.1 Receptor 1 (POR1)

Receptor 1 (POR01) is a two-story detached house at 106399 Southgate Rd 10 located west of the proposed development.

The dwelling's property line is 0 m from the property line with the proposed development. This receptor is inside the MSD and PIA.

6.2.2 Receptor 2 (POR2)

Receptor 2 (POR2) is a two-story detached house at 106398 Southgate Rd 10 located northwest of the proposed development.

The dwelling's property line is 0 m from the property line with the proposed development. This receptor is inside the MSD and PIA.

6.2.3 Receptor 3 (POR3)

Receptor 3 (POR3) is a two-story detached house at 106544 Southgate Road 10 located east of the proposed development.

The dwelling's property line is 0 m from the property line with the proposed development. This receptor is inside the MSD and PIA.

6.2.4 Additional Sensitive Receptors

When preparing this assessment, the closest sensitive receptors are listed above. There are no other sensitive receptors within 300 m of the property line of the proposed development. The next closest sensitive receptors are approximately 400 m east of the site property boundary on Southgate Rd 10, 500 m west of the property boundary on Southgate Rd 10, and 1000 m south of the property boundary on Concession Rd 4.

6.3 Compatibility Assessment

There are three sensitive land uses within the MSD of the facility, so a detailed assessment is required for all emitted contaminants; however, the proposed development is close to the centre of the property so the separation distance from the operations to the receptors described above is much larger than the 0 m measured in Table 2.

The discussion below is based on that understanding.

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The proposed industrial development is a Class II industry. It is located at 106438 Southgate Rd 10, Southgate, Ontario. The facility will operate a grain elevator. Activities related will be storage and shipping of agricultural products (grain).

6.3.1 Identification of Emissions

The facility has the potential to emit dust as tractors, wagons and trucks drive over the gravel driveways. Emissions from the delivery of grain to the facility, and shipping of grain is covered by the EASR which does not allow an exceedance of particulate criteria off property. Traffic on site will not exceed 25 trucks per day. The assessment below assumes that all the trucks are transport trucks weighting 65,500 kg which is a conservative assumption.

For noise emissions, HVAC will be limited to the main building with AC only in the office. The one unit on site is a Mitsubishi Ductless split Heat-Pump (12,000 BTU heating, 14,400 BTU cooling). Trucks are expected to arrive at the site and turn off their engines during loading, so they are not expected to emit noise for more than 10 minutes each. The grain will be loaded into the silos from the receiving pit using screw conveyors which are quiet. The site could see up to 25 trucks in a day during peak harvest time. That activity will average at three trucks per hour over an 8-hour day. Therefore, truck noise emissions are expected to be limited to 30 minutes per hour.

6.3.2 Assessment of Dust Emissions

The closest sensitive receptor (POR1) is west of the site. The point of impingement has been considered to be the closest point on the building.

The US EPA (Chapter 13.2.2) provides a method to estimate the emission of dust from unpaved roads. Using Equation 1a:

$$E = k (s/12)^a (W/3)^b,$$

assuming (from Table 13.2.2-2), $k=4.9$, $a=0.7$, and $b=0.45$. From Table 13.2.2-3, $s = 6.9\%^5$.

Each truck travels approximately 350 m on site (175 m each way). The Ministry of Transport for Ontario (MTO) guide for vehicle weights does not allow any vehicle to exceed 63,500 kg⁶ ($W=63,500/1000 \text{ kg/tonne} * 2.2 \text{ ton/tonne}=40.15 \text{ ton}$). The emission would then be:

⁵ Source: AP-42 c11s09 Table 119-3, Range: 3.8-15.1%, Geometric mean=6.9%

⁶ <https://gfo.ca/wp-content/uploads/2018/01/MTO%20Guide%20to%20Vehicle%20Weights.pdf>, Section 8, Table 30.

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$$E = 4.9 (6.9/12)^{0.7} (40.15/3)^{0.45} = 10.69 \text{ lb/VMT} / 2.2 \text{ lb}^* 1000 \text{ g} / 1.6 \text{ km/mile} = 3,037 \text{ g/VKT.}$$

With 25 trucks per day, the emission is 3,037 g/VKT * 0.35 km/truck * 25 trucks/ 3600 s/h / 24 h/day = 0.3075 g/s. Since the trucks travel from the road to the equipment and back, the emission rate above was doubled in the model (0.615 g/s spread over 175 m source).

Using the above information and the AERMOD model (v22112) following the Guidance in Guideline A-11: Air Dispersion Modelling Guideline for Ontario (ADMGO), the maximum concentration at the three receptors was predicted to be 62.46 µg/m³ over a 24-hour period. Since the particulate criterion is 120 µg/m³ over a 24-hour period, this model shows a maximum of (62.46/120=) 52% of criterion.

Note that this model assumes the following:

- Every truck is 63,500 kg. The average truck weight is more likely to be 40,000 kg which will reduce the emission and impact.
- The facility uses calcium chloride to keep dust to a minimum, but that mitigation has not been included in the model. Dust mitigation measures typically achieve a 90% reduction so the impact will likely be 10% of the modelled impact (or 5.2% of criterion).

Therefore, road dust is not expected to cause a compatibility issue.

6.3.3 Assessment of Odour Emissions

Grain may smell dusty but generally doesn't have a significant odour. Odour is not expected to cause a compatibility issue.

6.3.4 Assessment of Noise Emissions

The MECP's primary noise screening process uses 96 dBA as the noise emission from an idling truck. The trucks will be no closer than 350 m from the house or 320 m from the closest point possible for the Outdoor Point of Reception.

The MECP's Secondary Noise Screening Method Guide ⁷, Equation 2 is:

$$SL = L_W - 10 \times \text{Log}_{10} \left(2 \pi D_A^2 \right) - \text{Barrier Adjustment} + \text{Tonality Adjustment} + \left(10 \times \text{Log}_{10} \left(\frac{t}{60} \right) \right)$$

⁷ <https://www.ontario.ca/page/secondary-noise-screening-method-guide>, Section Equation 2 – Manufacturer's specifications of sound power levels

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Where:

L_W = Sound Power Level in dBA.

D_A = Actual Source Distance (ASD) from the noise source to the affected POR measured in metres.

Barrier Adjustment = 5 dBA if an acoustic barrier (as defined in NPC-300) breaks the line-of-sight between the source and the POR.

Tonality Adjustment = 5 dBA if the noise is tonal, as referenced in NPC-104.

Intermittency Adjustment = $10 \times \text{Log}_{10} \left(\frac{t}{60} \right)$ if the noise source operation is intermittent. The Preparer must provide the duration of the operation, t , measured in minutes per hour.

If a truck were to idle at the end of the driveway for 60 minutes in 1 hour (entire hour), the impact would be:

$$SL = 96 \text{ dBA} - 10 \times \text{LOG}_{10}(2 \times 3.14 \times (320)^2) - 0 \text{ (no barrier)} + 0 \text{ (trucks not tonal)} + 0 \text{ (no time adjustment)} = 38 \text{ dBA.}$$

The nighttime criteria are 40 dBA so the truck could idle for the entire night at the end of the driveway and not exceed the noise criteria. Therefore, noise will not exceed criteria at the property to the west (POR2).

Note that this model assumes the following:

- The truck operates for 60 minutes at the closest possible location. Since the estimated operation time is 30 minutes per hour, the impact is expected to be 3 dB lower.
- Noise will be emitted over a 175 m path which will reduce the noise slightly as the closest point is modelled.
- Ground attenuation and atmospheric attenuation do not occur, so the modelled impact is conservative.

All other receptors are further away so will experience less noise.

Noise is not expected to cause a compatibility issue.

7.0 Conclusions

This report was prepared in order to document the potential dust, odour, noise and vibration impacts from the proposed industrial development at 106438 Southgate Rd 10, Southgate, Ontario.

All the sensitive receptors within 300 m of the study area were considered in the assessment.

The following findings are presented based on the results of this D-6 Study:

- No adverse effect from dust is expected from the proposed development.
- Odour is not emitted from the proposed development.
- No adverse effect from noise is expected from the proposed development.
- Vibration is not emitted by the proposed development.

Therefore, no compatibility issues were identified between the surrounding receptors and the proposed development.

8.0 Recommendations

To ensure that the conclusions above are realized, the following recommendations are made. Note that these recommendations are based on the information collected and the findings of this D-6 study and match the intentions of the developers at this time:

1. This report should be updated to ensure compliance with the Township and regulatory agency requirements should the current development plan and layout for the Site change significantly.
2. An application for an Environmental Activity and Sector Registry (EASR) should be prepared for the facility.

9.0 Limitations and Use of Report

R.J. Burnside & Associates Limited has completed this report in accordance with generally accepted standards and practices. The conclusions and recommendations in this report are professional opinions based upon our understanding of anticipated Site conditions at the time of this assessment. To the best of our knowledge, the information contained in our report is accurate; however, Burnside does not guarantee the accuracy and reliability of the information provided by other persons or agencies. Burnside is not responsible for environmental concerns that are not visible or otherwise disclosed to us.

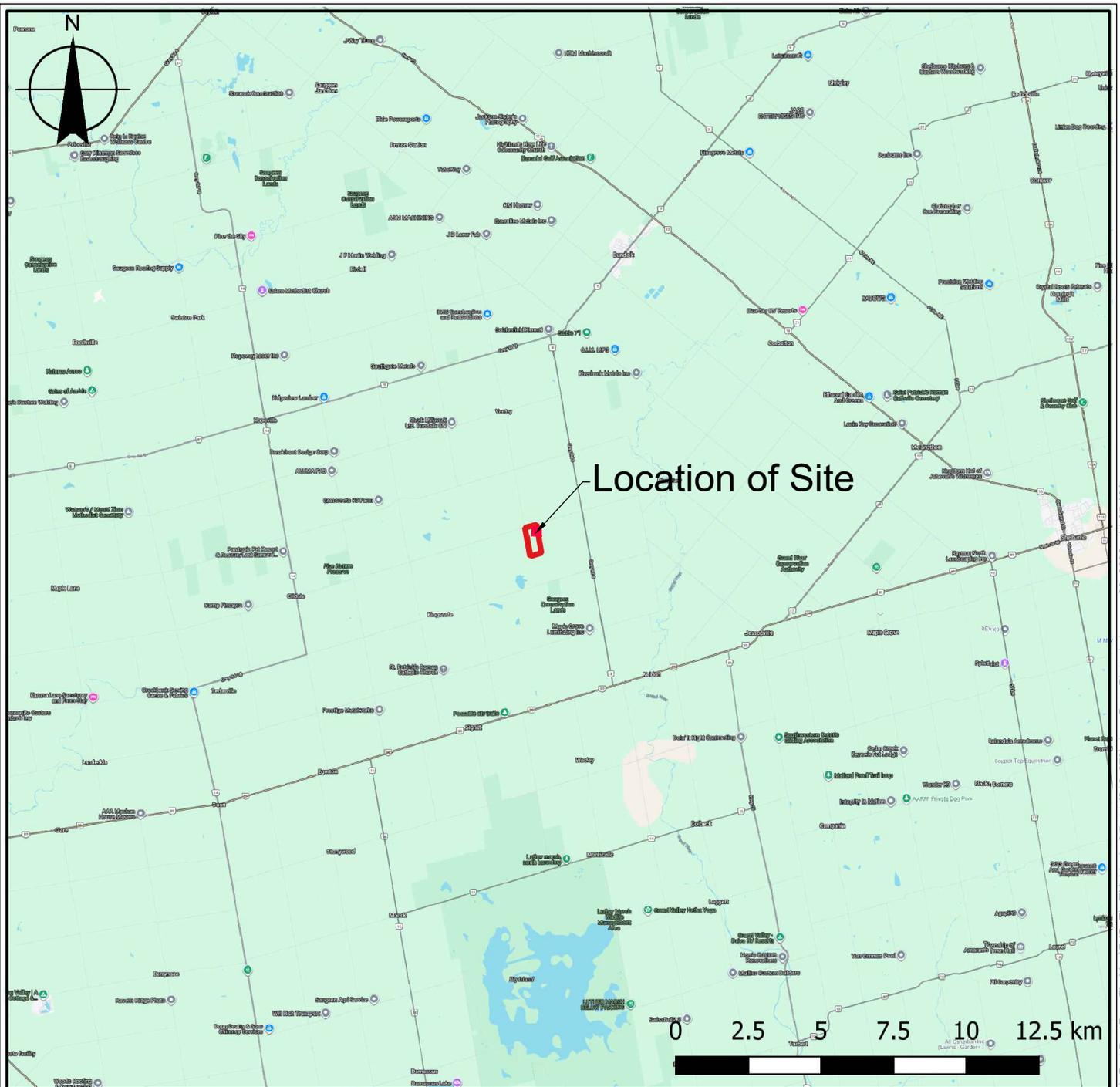


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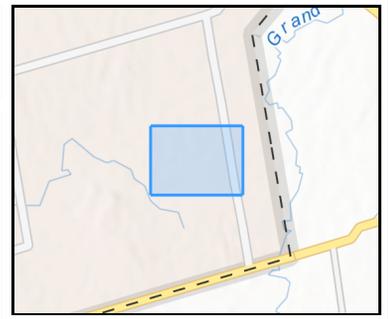
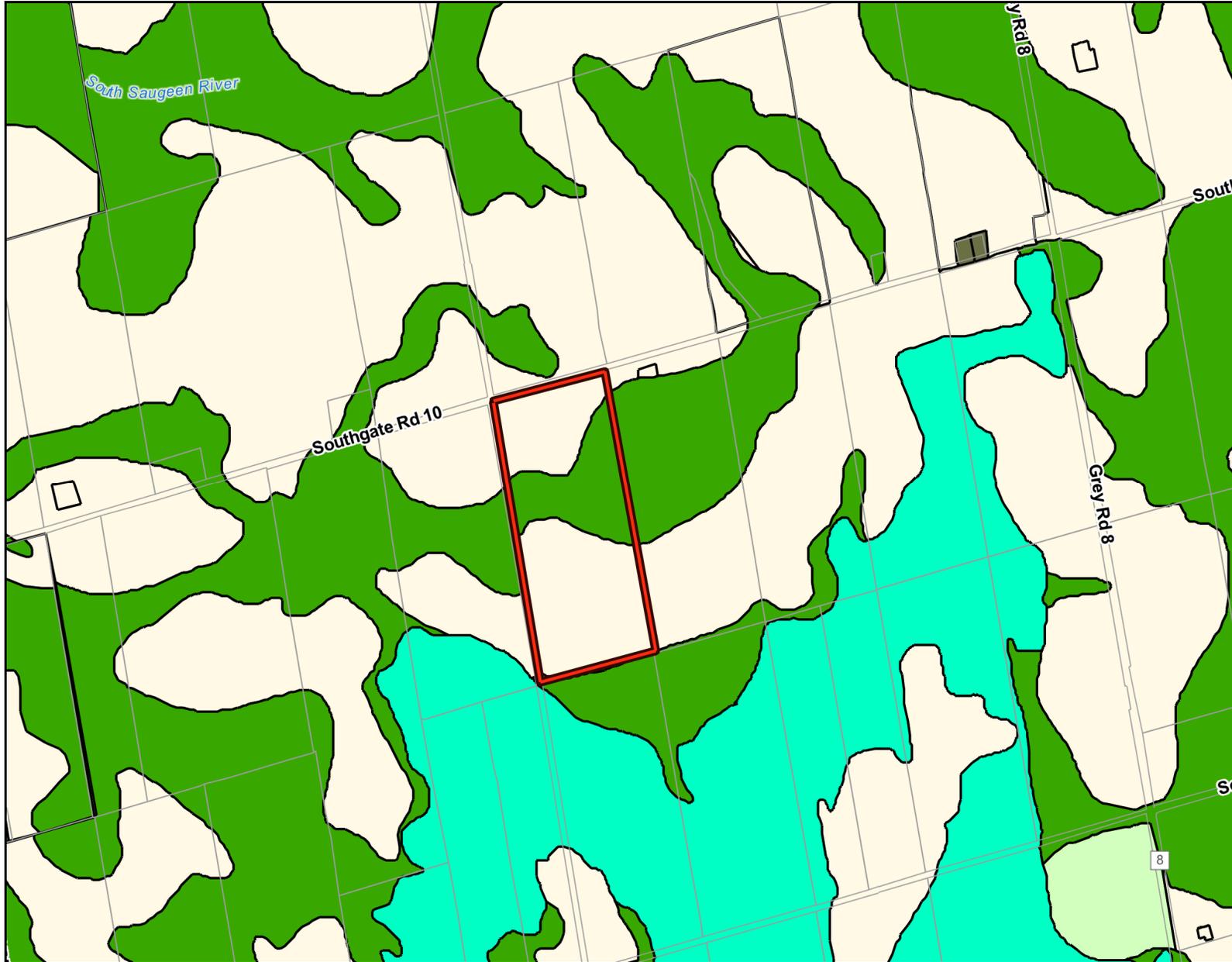
[THE DIFFERENCE IS OUR PEOPLE]

Figures

Figures



			
Client			
Rosendale Farms			
Figure Title			
Land Use Compatibility D-6			
Site Location Map			
Drawn	Checked	Date	Figure No. 1
ME	HW	January 2026	
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Legend

Assessment Parcel



Zoning - Southgate

-  A1 Agricultural
-  EP Environmental Protection
-  OS Open Space
-  R6 Residential Type 6
-  W Wetland Protection

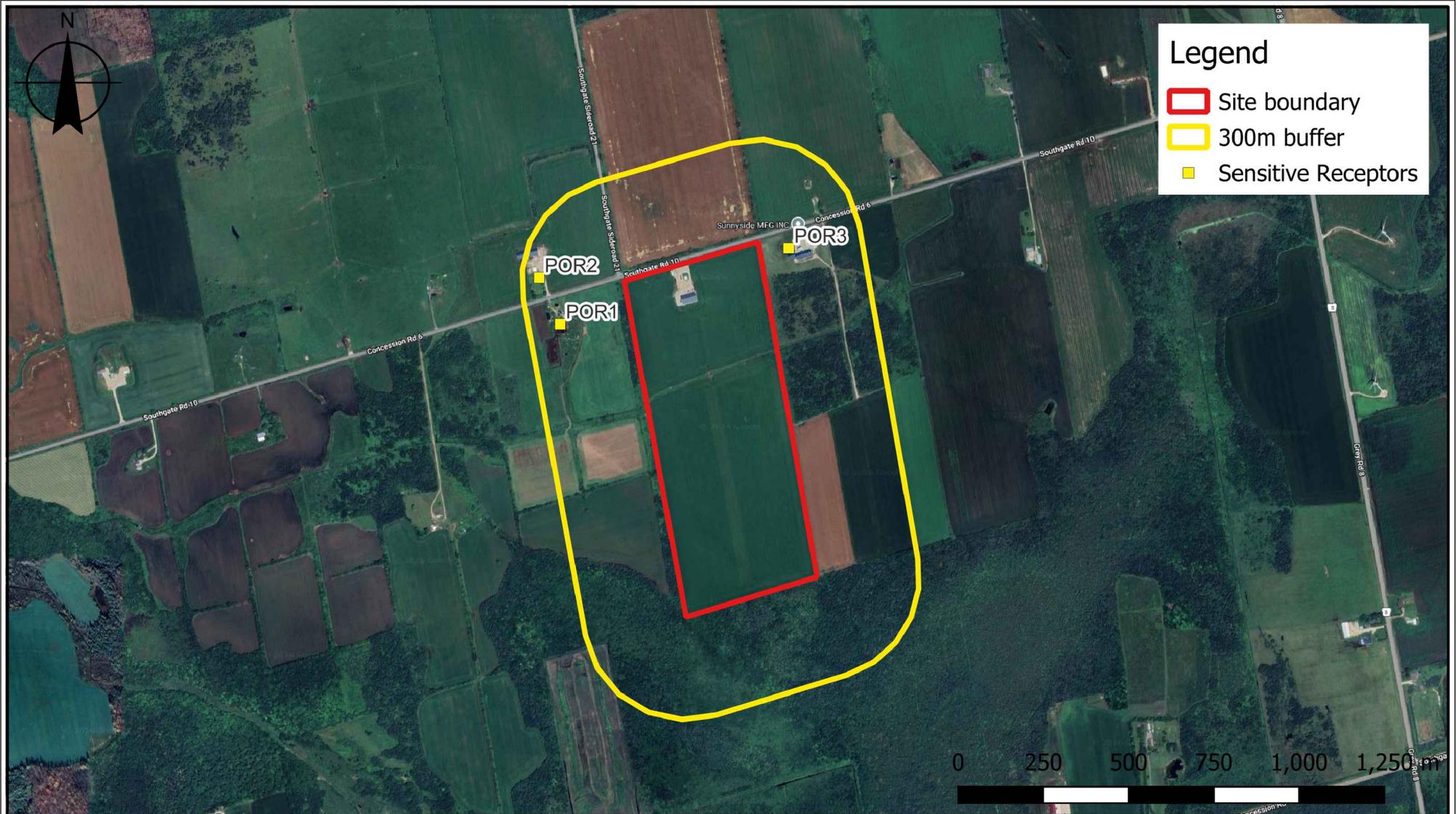
 Site Boundary

Notes

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Legend

- Site boundary
- 300m buffer
- Sensitive Receptors

		Figure Title Land Use Compatibility D-6 Sensitive Receptors - POR		
Client Rosendale Farms	Drawn ME	Checked HW	Date January 2026	Figure No. 3
	Scale 1:16,000		Project No. 300061382.0000	

