REPORT

1393 GRAHAM'S LANE

BURLINGTON, ONTARIO

LAND USE COMPATIBILITY STUDY (AIR QUALITY & NOISE)
RWDI # 2303584
April 16, 2024

SUBMITTED TO

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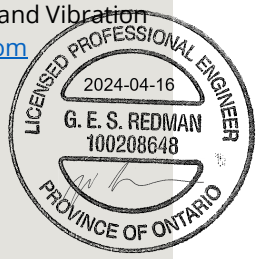
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Index	Date	Author	Reviewed By
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1 INTRODUCTION

Rowan Williams Davies & Irwin Inc. (RWDI) has been retained by Altus Group to complete a Land use Compatibility Study for the proposed residential development to be located at 1393 Graham's Lane in Burlington, Ontario (subject lands). This study was completed as a feasibility-level assessment of the land use compatibility. The location of the proposed development is shown in **Figure 1**.

Land use in the study area consists primarily of industrial, commercial, and residential. The land uses immediately adjacent to the subject lands are predominantly industrial uses.

The scope of this study was to identify any existing and potential land use compatibility issues and evaluate options to achieve appropriate design, buffering and/or separation distances between the proposed sensitive land uses and nearby employment areas and/or major facilities. A screening level air dispersion modelling study was completed for this property and was used to inform conclusions and recommendations. Additionally, a detailed study of noise and vibration has been completed for this property in the RWDI report "1393 Graham's Lane – Noise and Vibration Impact Study" (NVIS) dated March 8, 2024. Conclusions from the study are summarized within this report.

2 LAND USE COMPATIBILITY POLICIES AND GUIDELINES

2.1 Halton Region Land Use Compatibility Guidelines

Halton Region has created a guideline document (Halton Region 2014) to provide guidance and identify a process for assessing land use compatibility. The intent of the guideline is to "minimize adverse effects of "industrial, transportation and utility" uses that emit noise (vibration), odour or air pollution on sensitive uses (e.g., residential)". The Halton Region guidelines adopt the Ministry of the Environment, Conservation, and Park's D-6 Land-Use Compatibility Guidelines which are discussed in Section 2.4.

2.2 Provincial Policy Statement

The following excerpts from the Provincial Policy Statement, 2020 (Ontario 2020) help identify the general intentions of land uses within Ontario with respect to air quality and noise effects for proposed residential developments:

- Section 1.2.6.1 of Part V states the following:
  "*Major* facilities and *sensitive land uses* shall be planned and developed to avoid, or if avoidance is not possible, minimize and mitigate any potential adverse effects from odour, noise and other contaminants, minimize risk to public health and safety, and to ensure the long-term operational and economic viability of *major facilities* in accordance with provincial guidelines, standards and procedures."
- Section 1.2.6.2 of Part V states the following:

"Where avoidance is not possible in accordance with policy 1.2.6.1, planning authorities shall protect the long-term viability of *existing* or planned industrial, manufacturing or other uses that are vulnerable to encroachment by ensuring that the planning and development of proposed adjacent sensitive land uses are only permitted if the following are demonstrated in accordance with provincial guidelines, standards and procedures:

a) There is an identified need for the proposed use;
b) Alternative locations for the proposed use have been evaluated and there are no reasonable alternative locations;
c) Adverse effects to the proposed sensitive land use are minimized and mitigated; and
d) Potential impacts to industrial, manufacturing or other uses are minimized and mitigated."

2.3 Provincial Compatibility Guidelines

The Ministry of Environment, Conservation and Parks' (MECP) D-series guidelines deal with land use compatibility in Ontario. The most relevant guideline in the present case is D-6, Compatibility between Industrial Facilities (MOE 1995). It provides a classification scheme for industries based their potential for emissions that could cause adverse effects. The classification scheme is summarized in Table 1.

Table 1: D-6 Industry Classification Scheme

Class	Descriptors
I	• Small scale • Self-contained • Packaged product • Low probability of fugitive emissions • Daytime operations only • Infrequent and/or low intensity outputs of noise, odour, dust, vibration
II	• Medium scale • Outdoor storage of wastes or materials • Periodic outputs of minor annoyance • Low probability of fugitive emissions • Shift operations • Frequent movement of products and/or heavy trucks during daytime
III	• Large scale • Outside storage of raw and finished products • Large production volumes • Continuous movement of products and employees during shift operations • Frequent outputs of major annoyance • High probability of fugitive emissions

For each class of industry, the guideline provides an estimate of potential influence area and a minimum recommended separation distance, which are set out in Table 2.

Table 2: D-6 Separation Distances

Class	Potential Influence Area (m)	Minimum Separation Distance (m)
I	70	20
II	300	70
III	1,000	300

Guideline D-6 (MOE 1995) recommends the following:

1. In Section 4.3,
   "No incompatible development other than that identified in Section 4.10, Redevelopment, Infilling and Mixed-Use Areas should occur [within the recommended minimum separation distances]."
2. With respect to how separation distance should be measured:
   a) In Section 4.4.2,
      "Measurement shall normally be from the closest existing, committed and proposed property/lot line of the industrial land use to the property/lot line of the closest existing, committed or proposed sensitive land use."
   b) In Section 4.4.3,
      "Where site-specific zoning or site plan control precludes the use of the setback for any activity associated with the industrial use that could create an adverse effect … then the setback can be included as part of the measurement, rather than measuring from the industrial property line."
   c) In Section 4.4.5,
      "Where there is no existing industrial facility within the area designated/zoned for industrial land use, determination of the potential influence area shall be based upon a hypothetical "worst case scenario" for which the zoned area is committed."
   d) In Section 4.5.1,
      "…no sensitive land uses shall be permitted within the actual or potential influence areas of Class I, II or III industrial land uses, without evidence to substantiate the absence of a problem."
   e) In Section 4.10.3,
      "When a change in land use is proposed [in an area of urban redevelopment, infilling or transition to mixed use] for either industrial or sensitive land use, less than the minimum separation distance … may be acceptable subject to either the municipality or the proponent providing a justifying impact assessment (i.e., a use specific evaluation of the industrial processes and the potential for off-site impacts on existing and proposed sensitive land uses). Mitigation is the key to dealing with less than the minimum to the greatest extent possible."

3 METHODOLOGY

The tasks consisted of reviewing the following items:

- The official plan and applicable secondary plans or regeneration areas, relevant decisions by the Ontario Land Tribunal, Site and Area Specific Policies (SASP), and zoning by-laws for the surrounding area;
- Surrounding land uses and activities during a site visit to the area;
- Published satellite imagery and street-based photography;
- Searching MECP Access Environment website for Environmental Compliance Approval (ECA) and Environmental Sector and Activity Registry (EASR) permits for existing industries within 1,000 m of the subject lands;
- Guidelines D-1 (Land Use Compatibility) and D-6 (Compatibility between Industrial Uses) from the MECP; and,
- Meteorological data for the study area.

RWDI reviewed wind data from Hamilton RBG Met Station, the nearest meteorological station to the subject lands, to assist in the assessment. A summary of the directional distribution of winds over a period from 2000-2020 is shown in **Figure 2**. The compass directions in the figure refer to the direction from which the wind blows, the concentric circles represent frequencies of occurrence, and the various colours represent wind speed ranges in m/s as indicated in the legend. The wind in the study area comes most frequently from directions between west-northwest and southwest, and east-northeast, and least frequently from the directions between south-southwest and east-southeast, and north-northeast.

4 RESULTS

The review considered the influence of the sensitive land use conversion request on industrial uses in the surrounding employment areas. The potential impact of future sensitive land use lead consideration of any proposed expansions or intensifications that are known. Potential future industrial uses in the employment areas that are not currently proposed are also considered. The results of the review are outlined below.

4.1 Existing and Proposed Industrial Uses

Table A-1 in **Appendix A** lists all identified Class I industries within 300 m, and all Class II and III industries within 1,000 m that have MECP-issued environmental permits related to air and noise emissions. Permits to take water are not included in the table. In addition to a review of available permits, a review of satellite imagery was conducted to verify there are no significant small industrial facilities that are not subject to environmental permits. A number of small commercial and institutional buildings were identified within the vicinity of the proposed development (within 300 m) that could have some environmental influence on the proposed development. These have also been noted in Table A-1 in **Appendix A**. The locations of the identified industries are presented in **Figure 3**. More details on these industries are presented in **Appendix A**.

Table 3 lists the facilities whose potential influence areas extend to the proposed development on the subject lands, when measured from the lot line of the facility, or those that may have an influence on the proposed development. Guideline D-6 (MOE 1995) recommends that no sensitive uses be permitted within the influence areas "without evidence to substantiate the absence of a problem". The facilities are discussed below. All of these facilities operate under an ECA or an EASR with the exception of the small commercial buildings as noted in Table A-1.

Table 3: Facilities whose Potential Influence Areas Impact the Subject Lands

Industry Class	Industry	Potential Influence Area	Actual Separation Distance (Metres)[1]
III	Solenis Canada	1,000	134
I	Smit Autobody	70	20
I	Hi Tech Collision	70	67
III	Nalco Canada Co	1,000	926
II	Sun Chemical Limited	1,000	228
N/A	Frew Energy	N/A	20
N/A	Various Commercial Businesses (1440 Graham's Ln)	N/A	55
N/A	Advanced Temperature Control / Arctic Traveler	N/A	20
I	Sonic Auto	70	90[2]
N/A	Various Commercial Businesses (1421 Graham's Ln)	N/A	0 (adjacent)
N/A	Royal Canadian Legion Branch	N/A	0 (adjacent)
N/A	Dream Pools Ltd. / Creature Comfort HVAC Inc. / BodyFit4Life	N/A	0 (adjacent)
I	Burlington Hydro Transformer Station	70	50

1. Separation distance is from the property line of the subject lands to the property line of the industry.
2. Although beyond the 70 m distance, there appear to be open bay doors which may make activities clearly audible at the development.

4.1.1 Solenis Canada

This facility has changed ownership from Ashland Chemicals and is now called Solenis. This facility is a specialty chemical manufacturer. There are no ECA or EASRs registered under the new company name however, ECA records were present for the former facility name Ashland Canada Corp, (ECA# 3448-8PJRH). The Ashland Canada Corp., ECA includes a defoamer process, emulsion size blending process, various chemical operations controlled by a venturi wet scrubber, and storage tanks. The facility has a production limit of 40 million kilograms per year of various products. Emission stacks appear to be low-lying and contained within the processing area. The yard is paved and there is no evidence of outdoor storage. Exhaust from storage tanks, truck loading operations, and various chemical processes are potential sources of odour emissions. As part of the facility's ECA, they are required to comply with MECP criteria at and beyond the property boundary. However, the proposed development would introduce new elevated receptors which would not have been considered previously when assessing compliance with MECP criteria.

The proposed development is approximately 134 m from the facility and is within the 300 m minimum recommended setback for Class III facilities. The proposed development is located southeast of the site. The wind rose provided in **Figure 2** indicates winds blowing to the southeast are not the predominant wind direction, however, are still expected approximately 10% of the time. This increases the likelihood of impacts from the facility on the proposed development.

The facility has several above ground storage tanks along the eastern property boundary in close proximity to the proposed development. Emergency release scenarios under the Federal Environmental Emergency Regulations (E2 planning) should be considered for possible impacts at the proposed development. It is recommended the facility be engaged to determine the contents of the tanks and whether or not they have existing E2 plans.

Screening level air quality modelling was completed considering a unit rate emission (1 g/s) from the facility sources for comparative purposes since actual maximum emission rates were not available. This modelling was intended to determine how potential impacts at the proposed development compared to impacts predicted at the property line and beyond without the development. **Figure 4** shows the regulatory grid receptors in accordance with MECP guideline A11, and the proposed development receptors (both ground level and elevated) considered in the modelling assessment. Modelling was completed using the U.S EPA gaussian dispersion model AERMOD, version 22112 which is the current regulatory model in Ontario. Potential sources located at Solenis were represented using three (3) volume sources as individual sources parameters were not available. Release height sensitivity was considered in three (3) scenarios: 1) ground level release, 2) 3 metres elevation release, and 3) 5 metre elevation release. Predicted concentrations at the proposed development were higher than the existing sensitive receptors in all three scenarios. Modelling results are summarized in **Tables 4**.

Table 4: Screening Modelling Results

Scenario	Maximum Predicted Concentrations Property Line (µg/m³)	Maximum Predicted Concentrations at the Proposed Development Receptors (µg/m³)
1-Hour Averaging Period		
Ground Level Release	6216	1004
3 Metre Release	5056	852
5 Metre Release	4247	810
24-Hour Averaging Period		
Ground Level Release	3145	171
3 Metre Release	2671	184
5 Metre Release	7930	185
Annual Averaging Period		
Ground Level Release	1004	36
3 Metre Release	899	37
5 Metre Release	721	36

Based on the preliminary modelling predicted concentrations at the property boundary and beyond without the development are higher than those predicted at the development itself. This suggest that the facility will be compliant at the proposed development for all MECP criteria. Therefore, from an air quality perspective this facility is not expected to significantly impact the proposed development.

As the proposed development will become the closest elevated point of reception to Solenis, the facility's sound levels should be assessed in detail and were as part of the NVIS.

To assess the facility from a noise perspective, sound level spot-measurements were collected along the perimeter of the facility. These were used to establish a representative a cumulative facility sound level. The facility sound levels were then modelled at the proposed development, which will become the closest elevated receptor. Sound levels at the upper floors of the facades facing Solenis are in marginal excess of the Class 1 sound level limits.

Exceedances due to stationary sources are generally addressed through at-source mitigation, by the use of silencers, cantilevered barriers, and replacement of louder equipment with quieter equipment. Such mitigation measures are generally feasible, although detailed work is necessary to establish the cost. Mitigation measures should be implemented in agreement with the source owner but should not occur until the analysis is refined further with more detailed noise modelling information.

An alternative to the application of mitigation measures on the surrounding businesses is the special designation from the municipality. This designation allows the mitigation of stationary sources to occur on the development, subject to the declaration of a "Class 4" from the City of Burlington. With a Class 4, central air conditioning is provided so that residents can close their windows, and the default sound level limits increase. The façade limits increase by 10 dB while the outdoor point of reception limits increase by 5 dB. In sound levels modelled for this feasibility assessment would demonstrate compliance with a Class 4.

4.1.2 Smit Autobody

This business appears to be an automotive sales office with an associated body shop (it appears that this business also includes activities at 1392 Graham's Lane). The business operates under a Certificate of Approval (CofA), Number 2361-5PFQ9L, dated July 29, 2003, which notes the presence of a paint booth. Compliance with MECP's Air Contaminants Benchmark list must be demonstrated at the property line. Based on aerial imagery the paint booth appears to have been removed. Therefore, emissions are not expected to be significant at the subject site.

Operating conditions within the CofA note that the associated paint booth fan must be maintained and ensure compliance with NPC-205. Based on the character of the area when the CofA was issued, the proposed development will become the closest point of reception. The sound levels of this business at the subject site were assessed in the detailed NVIS and predicted to be compliant with Class 1 sound level limits.

4.1.3 Hi Tech Collision

This facility is an automotive refinishing/repair shop. The facility does not have and ECA or EASR permit but there is a tall paint booth stack located at the facility. The paint booth stack is a potential source of odour emissions however, there are existing residences located 43 m southeast of the facility. The proposed development is located 67 m northwest of the facility which is within the recommend area of influence for class I facilities of 70 m. Based on local meteorological data provided in **Figure 2**, the predominant winds are from the west/southwest which would blow emissions away from the proposed development the majority of the time. Winds from the southeast are expected to be infrequent decreasing the likelihood of impact. Overall, this facility is not expected to be a significant source of noise or air quality emissions.

4.1.4 Nalco Canada Co.

Nalco Canada Co. is a chemical manufacturer and a subsidiary of Ecolab. This facility meets the criteria of a class III, however given the proximity of existing residences the zone of influence is expected to be similar to that of a class II facility. The facility has a list of CofAs which have been consolidated in a site-wide ECA. Given the facility's NAICS code, it is required to comply with a number of federal and provincial level environmental requirements. Thus, the facility has an extensive environmental public record. The facility's ESDM summary table shows compliance with all ACB limits at their property line. Although the proposed development would introduce new, elevated receptors the proposed development is located 926 m from the facility and is not expected to impact compliance with air standards. Odour-based limiting concentrations are not higher than 12% of the ACB limit at the property line. The proposed development is not expected to be subject to any odours from this facility. There is evidence of some outdoor storage at the facility. The yard is paved and based on aerial imagery appears to be well maintained. Although heavy truck traffic is anticipated activities at this facility are not expected to contribute to potential fugitive dust impacts at the proposed development. The AAR summary table shows that the facility is in compliance with NPC-300 limits at the nearest sensitive receptors immediately west of the facility. The proposed development is almost 1,000 m from this facility, thus even at its elevation, the development will not place any additional constraints on this facility nor would the facility have any audible sounds at the development. Therefore, this facility has insignificant air and noise emission impacts at the proposed development.

4.1.5 Sun Chemical Limited

This facility is a medium sized Pigment/Ink Manufacturing facility. The facility is self-contained with no evidence of outdoor storage. The ECA states that there are dust collectors, an oil scrubber, and various exhaust vents present at the facility. All stacks are low-lying and the facility is not expected to be a significant sources of fugitive dust or odour emissions. There are existing residences located 75m west of the facility which suggests its zone of influence is less than that of a typical class II facility. The proposed development is located approximately 228 m east of the facility with existing intervening residences. Given the separation distance and the contained nature of the operation this facility is not expected to be a compatibility issue for air quality or noise.

4.1.6 Various Commercial Businesses

This section is intended to address the number of small commercial and institutional buildings surrounding the subject site, including:

- Frew Energy
- Businesses at 1440 Graham's Ln
- Advanced Temperature Control / Arctic Traveler
- Sonic Auto
- Businesses at 1421 Graham's Ln
- Royal Canadian Legion Branch
- Dream Pools Ltd. / Creature Comfort HVAC Inc. / BodyFit4Life
- Transformer Staton

The subject site is surrounded by small commercial and institutional buildings. Based on RWDI's observations, activities at these businesses could be audible at times. The businesses are well contained without any visible tall stacks. Parking areas are primarily paved and as such dust due to vehicle traffic is not an issue. Odours were not noted at the subject site. Therefore, from an air quality perspective, these businesses are not expected to have significant impacts on the subject site. Noise, however, was assessed in greater detail as part of the NVIS. A cumulative assessment (e.g. all sources of noise operating simultaneously) of these commercial businesses concluded that sound levels at the subject site will be in marginal excess of the default Class 1 sound level limits

Exceedances due to stationary sources are generally addressed through at-source mitigation, by the use of silencers, cantilevered barriers, and replacement of louder equipment with quieter equipment. Such mitigation measures are generally feasible, although detailed work is necessary to establish the cost. Mitigation measures should be implemented in agreement with the source owner but should not occur until the analysis is refined further with more detailed noise modelling information.

A Class 4 designation is not strictly applicable to facilities without environmental permits. However, should the subject site receive a Class 4 designation as part of the compatibility with permitted facilities, predicted sound levels would demonstrate compliance with the Class 4 limits.

4.2 Future Industrial Uses

The zoning map for the surrounding area is provided in **Figure 5**. Mixed use lands surround the subject lands to the north and east. Residential lands are located immediately south. Employment land uses are located west of the site across an open space corridor.

The subject lands and the mixed-use area immediately surrounding the subject lands are zoned MXE. Permitted uses on the subject lands and immediate surrounding area include various commercial, institutional and retail operations, as well as industrial uses permitted a GE2 zone. GE2 zoning allows for auxiliary dwellings, however, NPC-300 does not consider these types of dwellings as noise sensitive land uses.

There are currently no significant industrial activities in the immediate vicinity of the subject sites, but there are some businesses permitted under GE2 zoning related to the sales of fuels, machinery and equipment. The remainder of the immediate lands are primarily commercial and institutional. The conversion of the subject lands to allow residential use will limit the types of businesses that could operate within the immediate vicinity but is not expected to further restrict the operations of the currently established businesses. Existing businesses are already restricted by existing low-, and high-rise residential uses along Ghent Avenue. Also, the existing nature of the area does not indicate the possibility of new industries that have more intensive environmental footprints than those already present to move into the area. Meaning that there already are restrictions on the new types of businesses (e.g. Class II or Class III facilities) that could occupy the lands immediately north, east and south of the site.

Employment lands to the northwest, beyond the rail corridor, are already largely restricted by existing residential developments south of Upper Hager Creek and Fairview Street, as well as north of Plains Road. There are elevated receptors in the area (i.e. tall residential buildings) but these are located south of Graham's Lane. The subject site is on the north side of Graham's Lane, thus will become the closest elevated receptor. Although ground-level emissions are already restricted by existing closer residences, any emissions (air or noise) that affect taller receptors could affect the subject site, thus the subject site could place some restriction on the eastern portion of the Employment Lands, i.e. where Solenis is currently located.

Further to the above, the Burlington GO Mobility Hub preferred land use concept plan (Wood, 2021) identifies the area the subject lands are located in as a mixed-use 1 (low mid scale intensity). The concept plan identifies the areas to the north (immediately east of Solenis) as mixed-use 2 (mid high scale intensity) which are likely to feature high density residential being so close to a key transit hub. As such, any developments within this area will have a greater effect on employment uses than the subject lands.

Therefore, the potential future development on the subject lands is not expected to have a significant additional effect on the ability of new or expanded uses to be located in mixed use areas, but could place some restriction on the eastern portion of the Employment lands to the northwest.

4.3 Transportation Facilities

The subject lands are adjacent to an active freight spur line to the west, approximately 100 m south of Fairview Street, and approximately 230 m west of Brant Street. Other roadways in the area are distant or not significant emitters of air and noise emissions. The Lakeshore West rail corridor is located approximately 400 m to the north. The rail corridor includes Metrolinx and VIA commuter rail, and the Canadian National Railway (CNR) freight traffic.

Other than minor projects, like surface rehabilitation and bridge repairs, the Ministry of Transportation currently does not have any plans involving major reconfiguration or expansion of the QEW in this area. Nor does the City of Burlington for the adjacent major roadways. Thus, any effects of the transportation facilities on the site, as described within, are expected to only change as a result of the organic growth in traffic.

4.3.1 Noise

Elevated sound levels on the proposed development due to the proximity to the adjacent rail lines, freight spur line, Fairview Street and Brant Street are expected. Upgraded Sound Transmission Class (STC) ratings for façade components including windows, walls and doors will be required at the subject lands. Based on the latest available traffic data provided by the City of Burlington as well as rail data by Metrolinx, the maximum STC requirement is STC-31 for windows. The maximum requirement applies to the south façade of Tower B. Requirements for other facades vary from windows meeting Ontario Building Code requirements to STC-30. These are achievable with commercially available windows.

Due to the separation distance to the rail, sound and vibration from the freight spur line could affect the western portion of the subject lands. As such noise and vibration measurements of the spur line were conducted as part of the NVIS. Ground-borne vibration was measured to be below the applicable criteria.

4.3.2 Air Quality

The City of Toronto Report: "Reducing Health Risks from Traffic Related Air Pollution in Toronto" (Toronto 2017) states that:

> "Health risk from TRAP is higher within 500 m of highways with an average daily traffic volume of 100,000 vehicles or more, and within 100 m of arterial roads with an average daily traffic volume of 15,000 vehicles or more".

The City's report: "Avoiding the TRAP: Traffic-Related Air Pollution in Toronto and Options for Reducing Exposure" (Toronto 2017) states that the most widely reported mitigation strategy for traffic-related air pollutants (TRAP) is separation distances or buffer zones, with some environmental agencies (California and British Columbia) recommending a setback of 150 m from major highways with annual average traffic volumes of 100,000 vehicle or more per day and 100 m from roads with annual average traffic volumes of 15,000 vehicle or more per day.

In the case of the subject lands, Fairview Street and Brant Street are considered major arterial roadways. Brant Street is located 200 m north of the proposed development which is beyond the recommended separation distance of 100 m. Based on traffic data from 2017, Fairview Street has an annual average traffic volume of 31,016 and is classified as a major arterial road. Fairway Street is located 97 m west which is just within 100 m of the proposed development. While Fairview Street is located within the recommended buffer zone, there is likely to be additional onsite setback which will increase the separation distance over 100 m to sensitive receptor locations. Utilizing onsite setback to achieve the recommended setback distance should be considered during the detail design phase. Overall, given the

anticipated traffic volumes and separation distance Fairview Street is not expected to have significant air quality impacts on the proposed development.

In addition, there is an active freight spur located immediately south of the proposed development. This spur is used to transport materials in and out of the Solenis yard. Locomotive traffic is expected to be infrequent, however, there is the potential for idling on the spur adjacent to the proposed development which could potentially contribute to air quality impacts.

5 CONCLUSIONS

A land use compatibility assessment was completed for the proposed development, located at 1393 Graham's Lane in Burlington, Ontario. Several facilities within the surrounding area were identified to be within the Area of Influence, where the Solenis chemical manufacturing facility is located within the minimum separation distance. The following should be noted:

- Solenis has several storage tanks located along the eastern property boundary, the industry should be engaged to determine the contents of the tanks and if any E2 planning (environmental emergency) has been completed in order to properly consider the potential impacts of accidental releases at the proposed development.
- A detailed study of the noise and vibration sources surrounding the site was completed. Details can be found in the study. At a high level, the findings in that report are:
    - Adjacent road and rail sources of noise were assessed as part of the detailed noise study, which concluded that improved building components would be required.
    - Influences from surrounding businesses and industries were modelled on the proposed development and were concluded to be in marginal excess of the MECP Class 1 sound level limits. The NVIS provides a list of recommendations to be explored in future work.
    - Rail vibration from the adjacent spur line was measured and was found to be below the applicable vibration criteria.

Based on our review, it is recommended that the development team contact Solenis Canada to determine the contents of the storage tanks and if there are any E2 plans in place. Additionally, a detailed assessment of the noise and vibration sources surrounding the site are recommended. This was already completed under a separate cover and should be reviewed in conjunction with this study. With the implementation of the recommendations in the NVIS report, the proposed development will not impede the ability of adjacent industries to operate through MECP permitting.

6 REFERENCES

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Ontario—See Government of Ontario.

Wood, *Pre-Feasibility Noise and Vibration Study, Burlington Mobility Hubs*, August 2021, < https://www.getinvolvedburlington.ca/22749/widgets/92352/documents/65165>

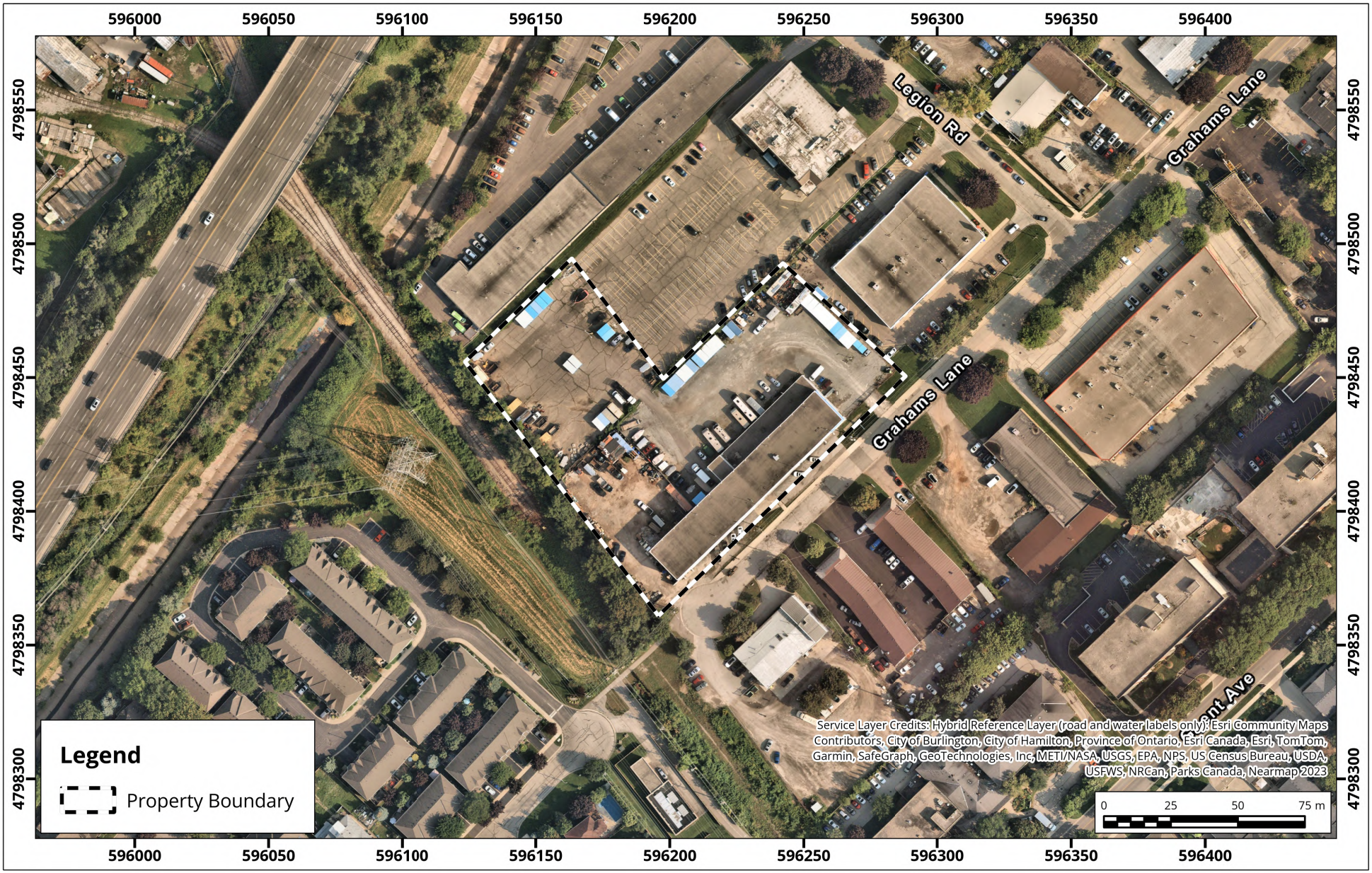
7 STATEMENT OF LIMITATIONS

This report dated April 11, 2024, was prepared by Rowan Williams Davies & Irwin Inc. ("RWDI") for Altus Group. The findings and conclusions presented in this letter have been prepared for the Client and are specific to the project described herein ("Project"). The conclusions and recommendations contained in this letter are based on the information available to RWDI when this letter was prepared. Because the contents of this report may not reflect the final design of the Project or subsequent changes made after the date of this report, RWDI recommends that it be retained by Client during the final stages of the project to verify that the results and recommendations provided in this letter have been correctly interpreted in the final design of the Project.

The conclusions and recommendations contained in this letter have also been made for the specific purpose(s) set out herein. Should the Client or any other third party utilize the letter and/or implement the conclusions and recommendations contained therein for any other purpose or project without the involvement of RWDI, the Client or such third party assumes any and all risk of any and all consequences arising from such use and RWDI accepts no responsibility for any liability, loss, or damage of any kind suffered by Client or any other third party arising therefrom.

Finally, it is imperative that the Client and/or any party relying on the conclusions and recommendations in this letter carefully review the stated assumptions contained herein and to understand the different factors which may impact the conclusions and recommendations provided.

FIGURES



Site Location

Map Projection: NAD 1983 UTM Zone 17N

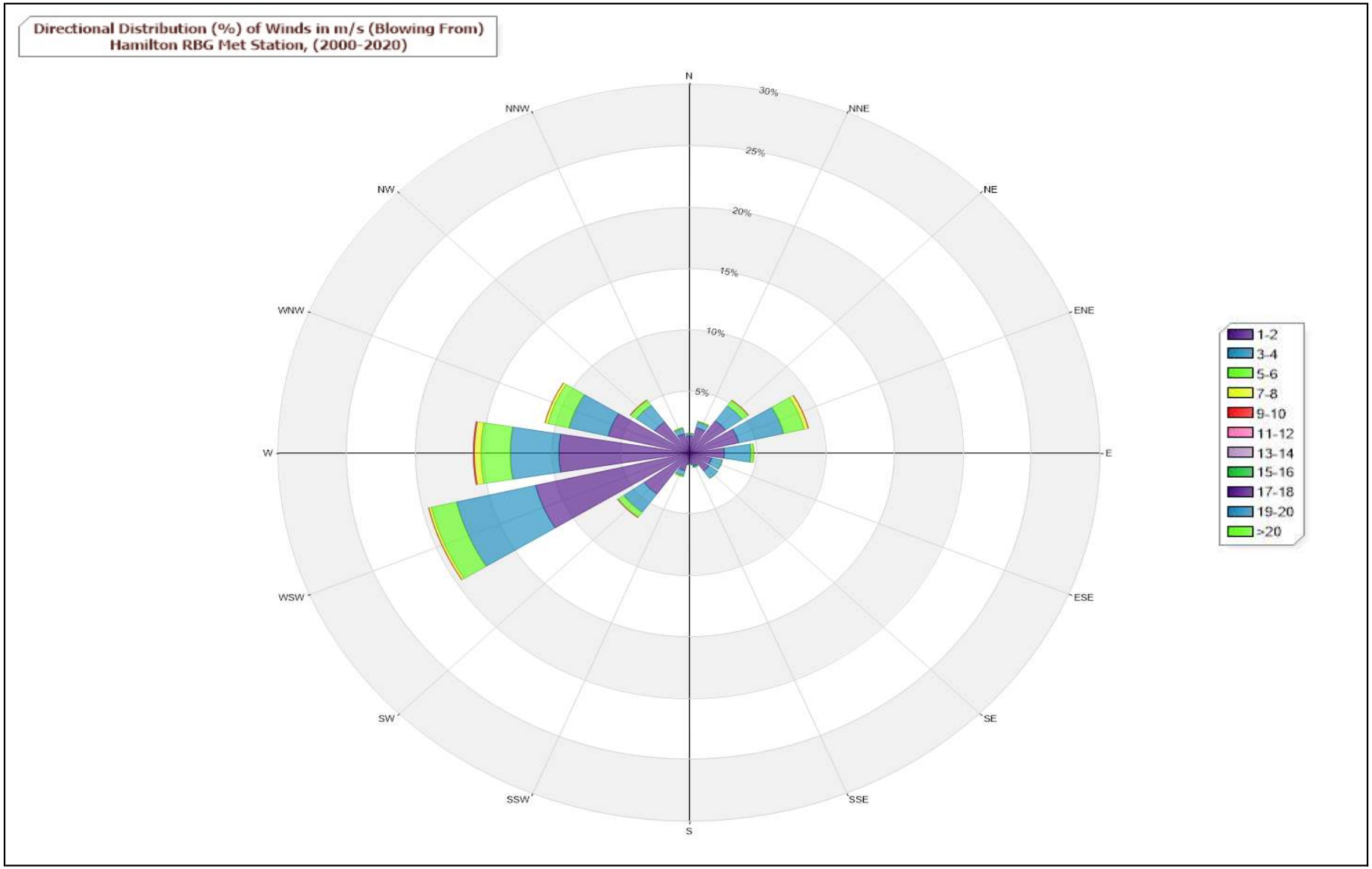
1393 Graham's Lane - Burlington, Ontario

True North

Project #: 2303584

Drawn by: PIP	Figure:	1
Approx. Scale:		1:2,000
Date Revised: Feb 21, 2024		

Map Document: C:\Working Folder\Jobs_Americas\P2303584_1393Graham'sLane\P2303584_1393Graham'sLane.aprx

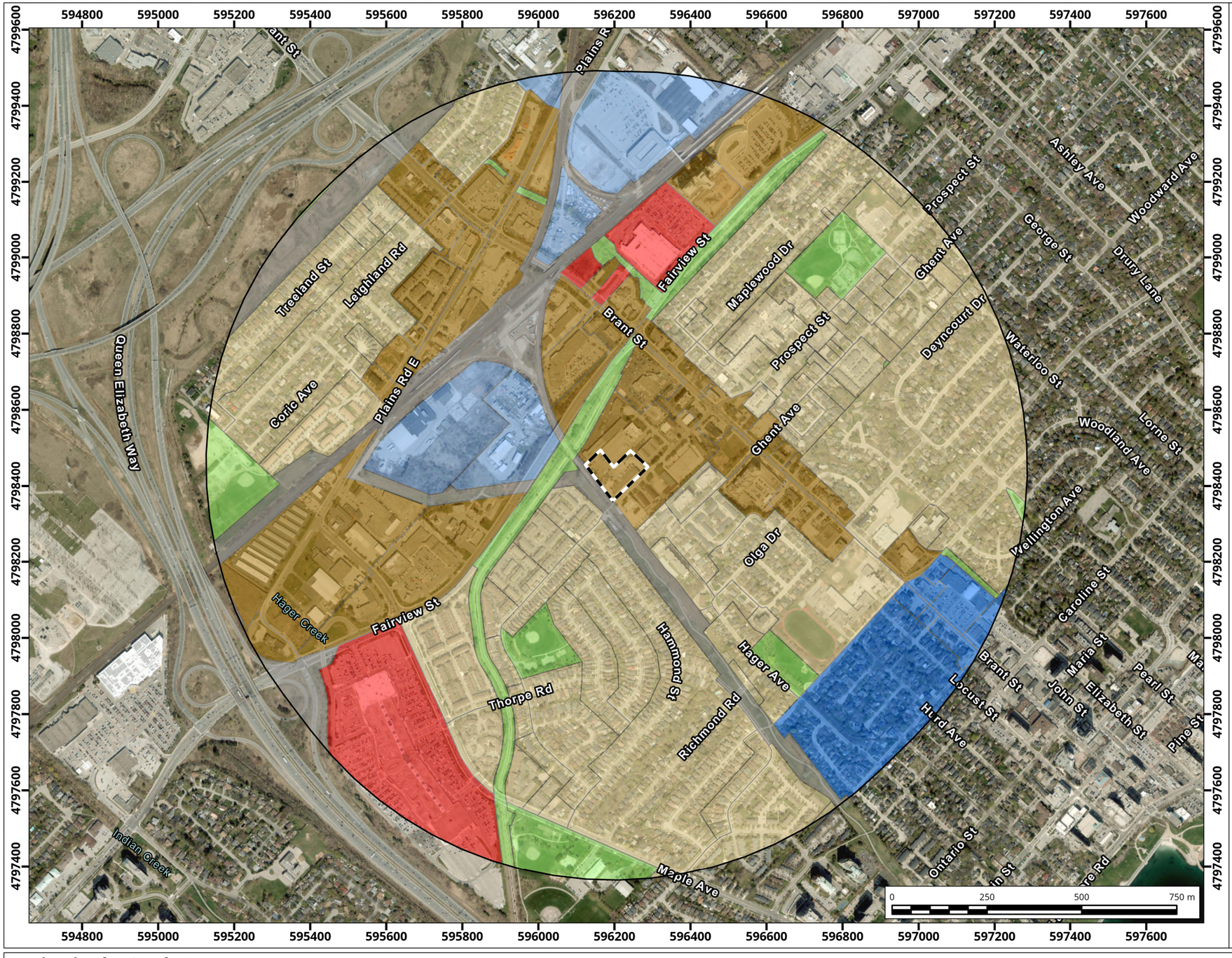


Directional Distribution (%) of Winds in m/s (Blowing From) Hamilton RBG Met Station (2000-2020)

1393 Graham's Lane, Burlington

RWDI# 2303584

Drawn by: MDKB	Figure: 2
Approx. Scale: not to scale	
Date Revised: February 23, 2024	



Legend

- Property Boundary
- 1,000m

Zoning Classification

- Commercial
- Downtown
- Employment
- Mixed Use
- Open Space & Parks
- Residential
- Development & Utilities

Service Layer Credits: Hybrid Reference Layer (road and water labels only): Esri Community Maps Contributors, City of Burlington, City of Hamilton, Province of Ontario, Esri Canada, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA, USFWS, NRCan, Parks Canada
World Imagery: Town of Oakville, Maxar, Zoning Data from City of Burlington

Zoning in the Study Area

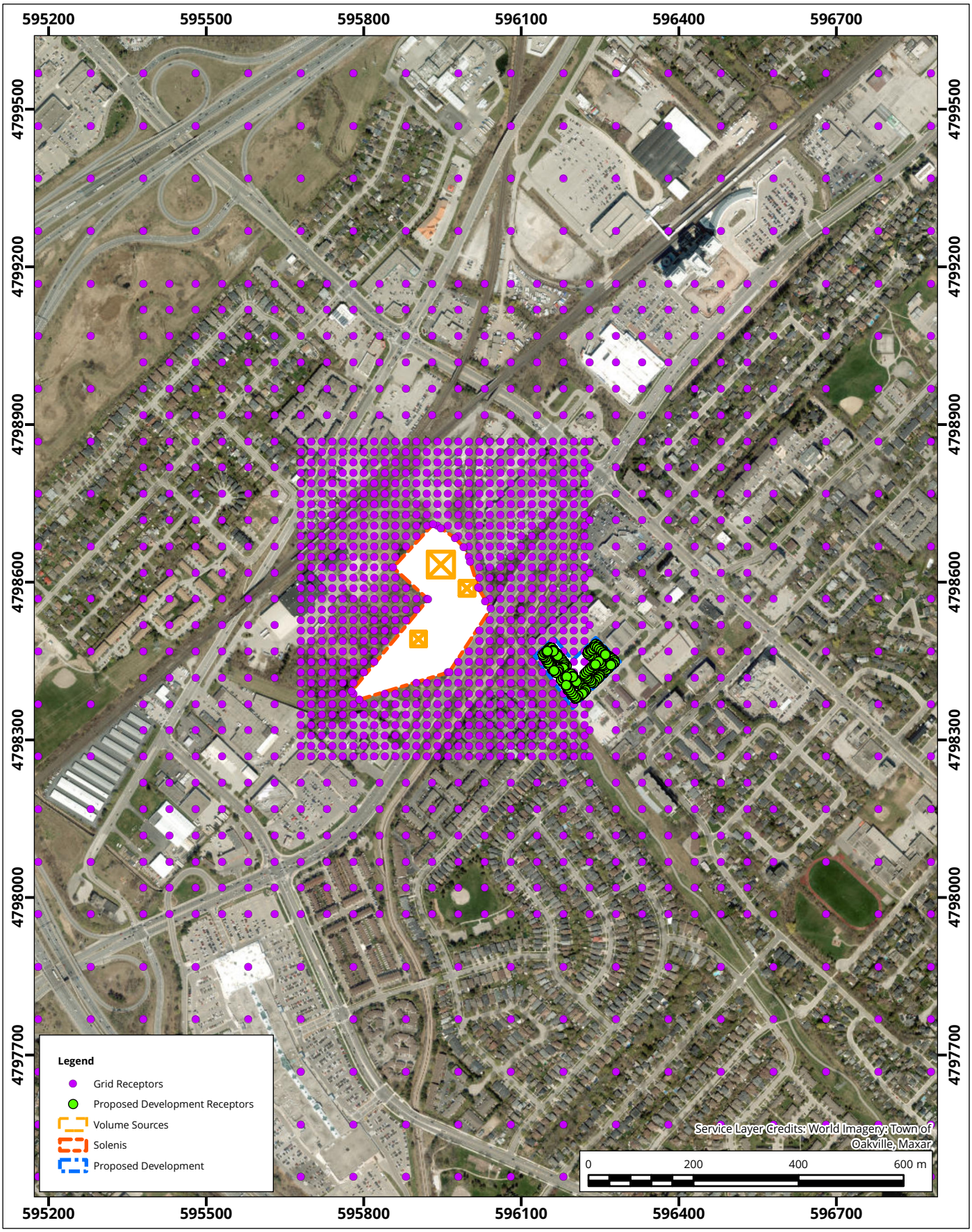
Map Projection: NAD 1983 UTM Zone 17N
1393 Graham's Lane - Burlington, Ontario

True North

Project #: 2303584

Drawn by:	PIP	Figure:	3
Approx. Scale:			1:11,000
Date Revised:			Jan 30, 2024

Map Document: C:\Working\Folder\Jobs_Americas\P2303584_1393GrahamsLane\P2303584_1393GrahamsLane.aprx



Site Layout Showing Solenis Sources, Proposed Development Receptors, and Existing Residential Receptors

True North

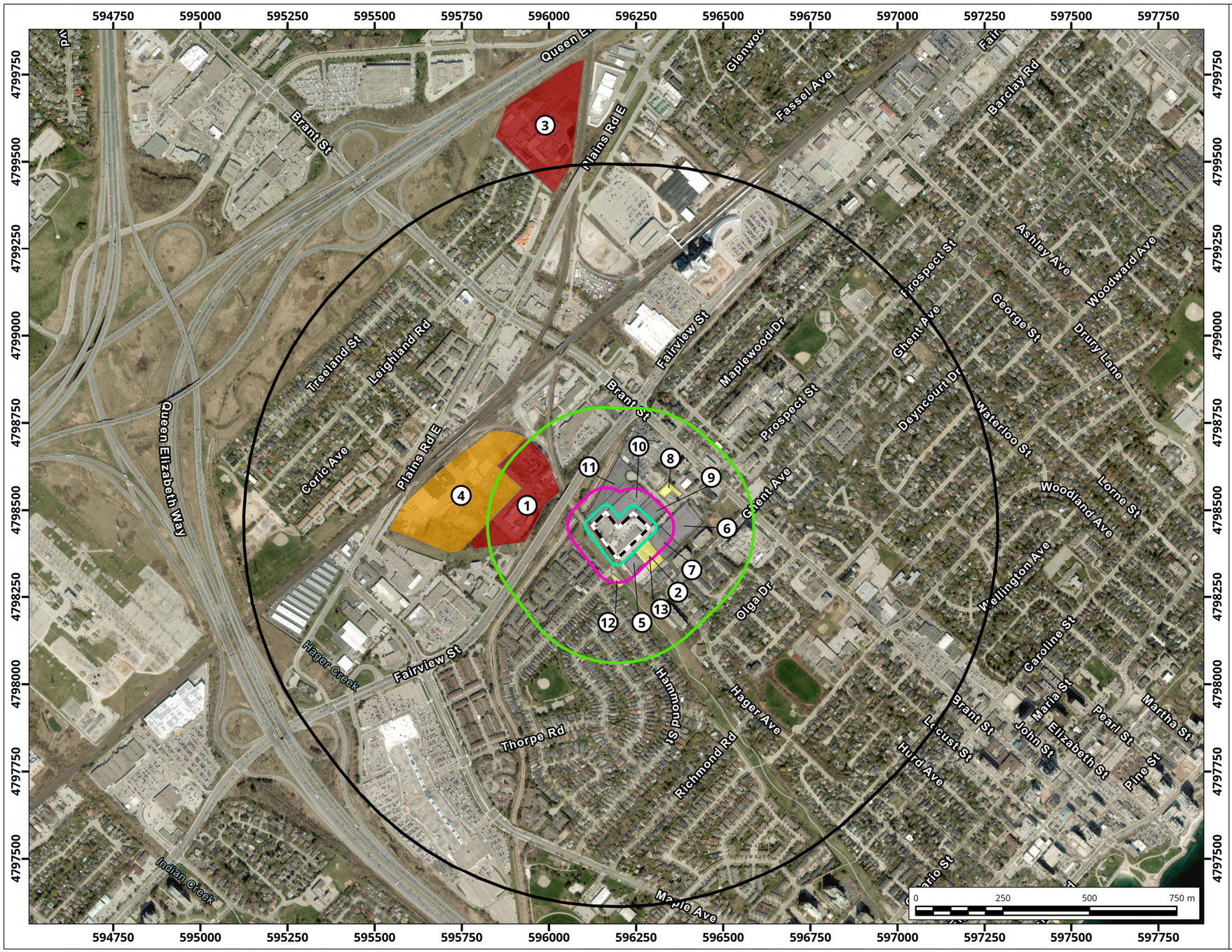
Map Projection: NAD 1983 UTM Zone 17N

1393 Graham's Lane, Burlington Ontario

Project #: 1804633

Drawn by: MDKB	Figure: 4
Exact Scale:	1:10,000
Date Revised:	Feb 29, 2024

Map Document: C:\GIS\2303584 Graham's Lane\GrahamsLane.aprx



Legend

- Class I Industries
- Class II Industries
- Class III Industries
- N/A
- Property Line
- 20 m Setback
- 70 m Setback
- 300 m Setback
- 1,000 m Setback

ID	Business Name	Class
1	Solenis Canada	III
2	Smit Autobody	I
3	ONDEO Nalco Canada Co.	III
4	Sun Chemical Limited	II
5	Frew Energy	NA
6	Various Commercial Businesses	NA
7	Advanced Temperature Control/Arctic Traveler	NA
8	Sonic Auto	I
9	Various Commercial Businesses	NA
10	Royal Canadian Legion Branch	NA
11	Dream Pools Ltd./Creature Comfort HVAC Inc/BodyFit4Life	NA
12	Transformer Station	I
13	Hi Tech Collisions	I

Service Layer Credits: Hybrid Reference Layer (road and water labels only): Esri Community Maps Contributors, City of Burlington, City of Hamilton, Province of Ontario, Esri Canada, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA, USFWS, NRCan, Parks Canada

Proposed Development and Surrounding Sites of Interest

Map Projection: NAD 1983 UTM Zone 17N

1393 Graham's Lane - Burlington, Ontario

True North

Project #: 2303584

Drawn by:	PIP	Figure:	5
Approx. Scale:		1:12,000	
Date Revised:		Feb 29, 2024	

Map Document: C:\Working\Folder\Jobs_Americas\P2303584_1393Graham'sLane\P2303584_1393Graham'sLane.aprx

APPENDIX A

1393 Graham's Lane Landuse Compatibility Report
Burlington, ON

RWDI# 2303584

Table A-1: List of Industrial and Non-Industrial Facilities Around the Proposed Development with Potential for Air/Noise Emissions

Map Icon Number	BUSINESS NAME	ADDRESS	TYPE OF APPROVAL / FACILITY / EQUIPMENT	APPROVAL / REGISTRATION NUMBER	Comment on Operations	Tall Stacks Present	Approximate Distance to Site (m) [1]	D-6 Classification [2]	Area of Influence (m)	Minimum Separation Distance (m)	Within Min Separation Distance?	Within Area of Influence?
1	Leggat Pontiac Buick Cadillac Limited	653 Brant St.	ECA-AIR	8538-5QBP3U	Currently occupied by the Halton Catholic District School Board. The environmental permit listed for this location is no longer relevant. This is not a commercial or an industrial facilities. There are no indications of potentially significant sources of odour, dust or noise commonly associated with some institutional buildings, such as dust collectors, emergency generators, large cooling and heating equipment. No significant emissions.	N	605	N/A	N/A	N/A	N/A	N/A
2	Ivanhoe Cambridge II Inc.	900 Maple Ave.	ECA-AIR	5970-6LDN3J, R-003-5155751432, R-010-4112516687	Environmental permits for heating systems and standby generator. This is a commercial property surrounded by existing residential. As the property is required to meet air emission limits at the property line, air emissions are not expected to be an issue. From a noise perspective, environmental permits require compliance at the nearest residential buildings, which are significantly closer than the proposed development. Therefore, noise is not significant.	N	661	N/A	N/A	N/A	N/A	N/A
3	Solenis Canada	942 Brant St.	ECA-AIR	3448-8PJRH9	This facility has changed ownership and is now called Solenis. This facility is a specialty chemical manufacturer. There is no ECA or EASRs registered under the new company name however, ECA records were present for the former facility name Ashland Canada Corp. The Ashland Canada Corp., ECA includes a defoamer process, emulsion size blending process, various chemical operations controlled by a venturi wet scrubber, and storage tanks. The facility has a production limit of 40 million kilograms per year of various products. Emission stacks appear to be low-lying and contained within the processing area. The yard is paved and there is no evidence of outdoor storage. Exhaust from storage tanks, truck loading operations, and various chemical processes are potential sources of odour emissions. The facility is required to comply with MECP criteria at and beyond the property boundary. However, the proposed development would introduce new elevated receptors which will not have been considered when assessing MECP compliance. The proposed development is approximately 134 m from the facility and is within the 300 m minimum recommended setback for class III facilities. However, there are existing residences 114m from the facility which suggest its zone of influence is less than that of a typical class III facility. There is a rail spur located adjacent to the proposed development used by the industry for transporting materials. In addition, the facility has several large storage tanks in close proximity to the eastern property boundary nearest the proposed development. Tanks within 300 m could pose potential emergency release concerns, the facility should be engaged to determine if any existing E2 planning protocols exist. Given that there are existing residences closer to the facility than the proposed development and there are no tall stacks present this facility is expected to be compatible from an air quality perspective. However, E2 concerns should be considered during detailed design. From a noise perspective, the potential to be a significant source of emissions. In order to properly assess the potential noise impacts detailed modelling assessments are	N	134	Class III	1000	300	Yes	Yes
4	Hercules Canada Inc.	942 Brant St.	ECA-AIR	8-3062-83-006, 8-3062-83-006, 8-300-064-77-776	Their corporation has been inactive since February 18, 2010 based on the Canadian Company Registry. This facility no longer exists at this location.	N	253	Class III	1000	300	Yes	Yes
5	Smit Autobody	1400 / 1392 Graham's Lane	ECA-AIR	2361-5PFQ9L	Automotive sales offices with an associated body shop (it appears that this business also includes activities at 1392 Graham's Lane). The business operates under a CofA noting the presence of a paint booth. Compliance must be demonstrated at the property line, therefore emissions are not expected to be significant at the development. However, odour could be notable at the upper stories. Operating conditions within the CofA note that the associated paint booth fan must be maintained and ensure compliance with NPC-205. Based on the character of the area when the CofA was issued, the proposed development will become the closest point of reception. Assessment of this business is recommended.	N	20	Class I	70	20	No	Yes

Map Icon Number	BUSINESS NAME	ADDRESS	TYPE OF APPROVAL / FACILITY / EQUIPMENT	APPROVAL / REGISTRATION NUMBER	Comment on Operations	Tall Stacks Present	Approximate Distance to Site (m) [1]	D-6 Classification [2]	Area of Influence (m)	Minimum Separation Distance (m)	Within Min Separation Distance?	Within Area of Influence?
6	ONDEO Nalco Canada Co.	1055 Truman St.	ECA-AIR	8-3122-99-006, 8-3178-98-006, 8-3068-82-006, 8-300-022-83-836, 8-300-131-80-806, 8-300-009-82-826, 8-3334-91-997 3220-97-006 8-3468-94-006 8-3028-96-006 8-3432-93-006, 1357-9SYQ4B	Nalco Canada Co. is a chemical manufacturer and a subsidiary of Ecolab. This facility meets the criteria of a class III, however given the proximity of existing residences the zone of influence is expected to be similar to that of a class II facility. The facility has a list of CofAs which have been consolidated in a site-wide ECA. Given the facility's NAICS code, it is required to comply with a number of federal and provincial level environmental requirements. Thus, the facility has an extensive environmental public record. The facility's ESDM summary table shows compliance with all ACB limits at their property line. Although the proposed development would introduce new, elevated receptors the proposed development is located 926 m from the facility and is not expected to impact compliance with air standards. Odour-based limiting concentrations are not higher than 12% of the ACB limit at the property line. The proposed development is not expected to be subject to any odours from this facility. There is evidence of some outdoor storage at the facility. The yard is paved and based on aerial imagery appears to be well maintained. Although heavy truck traffic is anticipated activities at this facility are not expected to contribute to potential fugitive dust impacts at the proposed development. The AAR summary table shows that the facility is in compliance with NPC-300 limits at the nearest sensitive receptors immediately west of the facility. The proposed development is almost 1,000 m from this facility, thus even at its elevation, the development will not place any additional constraints on this facility nor would the facility have any audible sounds at the development. Therefore, this facility has insignificant air and noise emission impacts at the proposed development.	N	926	Class III	300	70	No	No
7	1704326 Ontario Inc.	2188 Queensway Dr.	ECA-AIR	8863-8GGNUU	This permit has been issued to ELR Enterprises which are no longer at this address. The CofA is for a small paint spray booth. It does not appear that the paint booth has been decommissioned but there are no current businesses that conduct work similar to that of ELR Enterprises. It has been conservatively assumed that another tenant could move into ELR Enterprises location and resume use of the paint booth. As compliance has been shown with ACB limits at the property line, the proposed development will not affect the permit nor would it be subject to any emissions or odours from the operation of this paint booth at the current separation distance. The paint booth has an indoor fan thus sound levels are minimal. At the separation distance the proposed development will not experience notable noise from the operation of this paint booth.	N	981	Class I	70	20	No	No
8	Sun Chemical Limited	1274 Plains Rd. E	ECA-AIR	0564-4R5SFL, 1946-8DWSMN	This facility is a medium sized Pigment/Ink Manufacturing facility. The facility is self-contained with no evidence of outdoor storage. The ECA states that there are dust collectors, an oil scrubber, and various exhaust vents present at the facility. All stacks are low-lying and the facility is not expected to be a significant sources of fugitive dust or odour emissions. There are existing residences located 75m west of the facility which suggests its zone of influence is less than that of a typical class II facility. The proposed development is located approximately 228 m east of the facility with existing intervening residences. Given the separation distance and the contained nature of the operation this facility is not expected to be a compatibility issue for air quality or noise.	N	228	Class II	300	70	Yes	Yes
9	Bull Moose Tube Limited	2170 Queensway Dr.	ECA-AIR, ECA-WASTE MANAGEMENT SYSTEMS	2430-CSLNZU, 5611-7B4PUX	This is a pipe manufacturer with activities that include cutting, forming, welding and galvanizing. The facility has a recently-issued ECA (Air & Noise) showing compliance with ACB limits at the property line and with NPC-300 noise limits at the nearest residential receptors, which include high-rise towers immediately across the rail corridor. Given the separation distance and the demonstrated compliance with both air and noise emissions at adjacent high-rise residential development (and ground-level for air), the proposed development will not encroach on this permit nor would it be subject to any significant air and noise emissions from this facility.	N	816	Class II	300	70	No	No
10	Rondar Inc.	2170 Queensway Dr.	ECA-WASTE DISPOSAL SITES	1618-4MSKRB	This permit is for PCB Destruction Facility Waste Management System operated by Rondar Inc. at Bull Moose Tube Limited. There are no additional air or noise emissions that have not already been captured under Bull Moose's ECA (Air & Noise) described above.	N	816	Class I	70	20	No	No
11	Greater Toronto Transit Authority	2120 Queensway Dr.	ECA-AIR	8283-7G8RD2	This permit is for the operation of a 200 kW diesel standby generator. The current address is 2132 Queensway Drive, which is in the same general area. This is a small generator that is periodically tested and has been shown to be in compliance with air and noise limits at the property line and nearest residential receptors. Given the nature of the source and the proposed development's separation distance, the development is not expected to encroach on the permit nor would it be subject to any significant air and noise emissions, or odours, from the testing of this generator.	N	704	N/A	N/A	N/A	N/A	N/A
12	HYDRO ONE NETWORKS INC	701 Brant St.	EASR-Air Emissions	R-010-8110297218	Hydro One Network Inc,'s Bronte Transformer Station is located at this address. The EASR shows compliance with air emissions at the property line, as well as with NPC-300 sound level limits at the nearest high-rise noise sensitive receptors (hotels). Therefore, the proposed development is not expected to encroach on this site's permit nor are the transformer station air and noise emissions expected to be significant at the development.	N	469	Class I	70	20	No	No
13	Cogeco Cable Canada LP	760 Brant St.	EASR-Standby Power System	R-002-9844707899	This permit is for a small standby power system associated installed in a commercial plaza shared with other businesses. The site is surrounded by existing residential uses and compliance (air and noise) has been shown. The proposed development is not expected to encroach on this permit nor is it expected to be subject to any significant air and noise emissions from the testing of this generator.	N	200	N/A	N/A	N/A	N/A	N/A

Map Icon Number	BUSINESS NAME	ADDRESS	TYPE OF APPROVAL / FACILITY / EQUIPMENT	APPROVAL / REGISTRATION NUMBER	Comment on Operations	Tall Stacks Present	Approximate Distance to Site (m) [1]	D-6 Classification [2]	Area of Influence (m)	Minimum Separation Distance (m)	Within Min Separation Distance?	Within Area of Influence?
14	CORPORATION OF THE CITY OF BURLINGTON	1255 Fairview St.	EASR-Standby Power System	R-002-2418662074	This permit for a small standby power system associated with a City of Burlington fire station. The permit indicates compliance with residential developments across the street, thus it is expected to be compliant with the proposed development. The development will not encroach on this permit nor would it place additional environmental restrictions, nor would it be subject to any significant air and noise emissions, or odours, from the testing of this standby system.	N	289	N/A	N/A	N/A	N/A	N/A
15	Leggat Automotive Group	629 Brant St.	EASR-Automotive Refinishing Facility	R-001-9606301705	This permit has been issued under O. Reg. 245/11 and O.Reg. 347/12 to permit an automotive refinishing facility. Compliance for these facilities is based on a horizontal distance from stack to property line. The separation distance is beyond any of the compliance distances noted in either of the regulations. Based on this, the proposed development will not encroach on this permit nor would it be subject to any significant air or noise emissions.	N	658	Class I	70	20	N/A	N/A
16	MEMORY CARE INVESTMENTS (OAKVILLE) LTD.	2170 Ghent Ave.	EASR-Standby Power System, EASR-Heating System	R-002-1408894833, R-003-9408956574	This business is no longer at this location. The site is currently empty awaiting municipal approvals. Its future is presently unknown, however, none of the permitted activities are currently present. As this site is completely surrounded by existing residential uses, including low-rise condos, there are already existing environmental restrictions. The proposed development will not add more restrictions.	N	895	N/A	N/A	N/A	N/A	N/A
17	Frew Energy	1380 Graham's Ln	N/A	N/A	This is a mobile fuel supplier. There are minimal rooftop sources of noise, as well as some truck activities. The effects of these should be assessed in the noise impact study. There is outdoor storage of transport vehicles in the yard and frequent truck traffic is expected. Movement of heavy vehicles is a potential source of fugitive dust emissions. However, the yard is paved and based on aerial imagery appears to be well maintained. Therefore, this facility is not expected to contribute to potential emissions of fugitive dust. There is no evidence of significant odour sources at this facility. Air quality impacts from this facility on the proposed development are expected to be insignificant.	N	20	N/A	N/A	N/A	N/A	N/A
18	Various Commercial Businesses	1440 Graham's Ln	N/A	N/A	This property includes a number of small commercial businesses. There do no indications of heavy manufacturing or sources of air emissions (e.g. stacks). There are a number of small HVAC units on the roof the noise effects of which should be assessed.	N	55	N/A	N/A	N/A	N/A	N/A
19	Advanced Temperature Control/Arctic Traveler	1416 Graham's Ln	N/A	N/A	Both businesses are equipment suppliers. There are minimal outdoor activities and rooftop ventilation. There are no stacks, thus air emissions are not expected to be significant at the proposed development. The yard is paved and is not expected to be a source of fugitive dust emissions. There is no evidence of activities that could contribute to odour emissions. The outdoor activities (trucks) and rooftop ventilation should be assessed for noise.	N	20	N/A	N/A	N/A	N/A	N/A
20	Burlington Car Wash & Detailing Center	1448 Graham's Ln	N/A	N/A	This is a self-contained car wash and detailing business. There are no significant sources of air or noise on the rooftop. A bay door is present but facing away from the proposed development. Therefore, this not a significant source of air or noise emissions.	N	130	N/A	N/A	N/A	N/A	N/A
21	Sonic Auto	1439 Graham's Ln	N/A	N/A	This is a body shop with open bay doors that could be audible at the proposed development. Thus, it should be assessed for noise. There is one low-lying stack on the rooftop. The facility does not have an ECA or EASR approval so no air emissions are expected. Auto body shops commonly have paint booths which can be a source of odour, however there does not appear to be a typical paint booth stack present. If a paint booth is present on site it is required to comply with all MECP criteria at and beyond the property boundary. The facility is located 90m from the proposed development which is beyond the recommended minimum setback for a class I facility of 70m. Thus, air emissions and associated odour impacts are not expected to be significant.	N	90	Class I	70	20	No	No
22	Various Commercial Businesses	1421 Graham's Ln	N/A	N/A	This property includes a number of small commercial businesses. There do no indications of heavy manufacturing or sources of air emissions (e.g. stacks). There are a number of small HVAC units on the roof the noise effects of which should be assessed.		0 (adjacent)	N/A	N/A	N/A	N/A	N/A
23	Royal Canadian Legion Branch	828 Legion Rd	N/A	N/A	This is a veterans' organization. There are no commercial or industrial activities, but the building has several large rooftop ventilation and cooling units which should be assessed for their noise emissions. There do not appear to be any stacks or trucking activities, thus air emissions are not expected to be an issue at the proposed development.	N	0 (adjacent)	N/A	N/A	N/A	N/A	N/A
24	Dream Pools Ltd./Creature Comfort HVAC Inc/BodyFit4Life	850 Legion Rd	N/A	N/A	This property includes a number of small commercial businesses. There do no indications of heavy manufacturing or sources of air emissions (e.g. stacks). There are a number of small HVAC units on the roof the noise effects of which should be assessed.	N	0 (adjacent)	N/A	N/A	N/A	N/A	N/A
25	Transformer Station	1370 Stephenson Dr	N/A	N/A	This is a transformer station which has significant noise mitigation features (barrier walls and silencers). These have likely been implemented to mitigate sound levels at the nearby subdivision, the proposed development will introduce higher noise receptors, thus this transformer station should have its noise impacts assessed. Air emissions are not expected to be significant.	N	50	Class I	70	20	No	Yes
26	Hi Tech Collisions	1392 Graham's Lane	N/A	N/A	This facility is an automotive refinishing/repair shop. The facility does not have and ECA or EASR permit but there is a tall paint booth stack located at the facility. The paint booth stack is a potential source of odour emissions however, there are existing residences located 43 m southeast of the facility. The proposed development is located 67 m northwest of the facility. Based on local meteorological data, predominant winds are from the west/southwest which would blow emissions away from the proposed development. Winds from the southeast are expected to be infrequent decreasing the likelihood of impact. Overall, this facility is not expected to be a significant source of noise or air quality emissions.	N	67	Class I	70	20	No	Yes

Map Icon Number	BUSINESS NAME	ADDRESS	TYPE OF APPROVAL / FACILITY / EQUIPMENT	APPROVAL / REGISTRATION NUMBER	Comment on Operations	Tall Stacks Present	Approximate Distance to Site (m) [1]	D-6 Classification [2]	Area of Influence (m)	Minimum Separation Distance (m)	Within Min Separation Distance?	Within Area of Influence?

Notes:

[1] ECA - Environmental Compliance Approval; EASR - Environmental Activity Sector Registry; CofA - Certificate of Approval

[2] Distances are measured parcel edge to edge.

[3] Classification is based on a combination of considering D-6 category examples as well as site specific factors such as proximity to existing residential, presence or absence of tall stack(s), presence of mitigation measures stated in ECA, and proximity of site to the subject lands.