September 20, 2022

Helberg Properties Limited
c/o Arcanos Property Management Corporation
542 Mount Pleasant Road, Suite 302
Toronto, ON M4S 1M7

Attn: Ali Saneinejad, Principal
ali@collageworks.ca

Dear Mr. Saneinejad:

Re: Air Quality and Land Use Compatibility Assessment
50 Speers Road, Oakville, ON
Gradient Wind File 22-209 - Land Use Compatibility

1. INTRODUCTION AND TERMS OF REFERENCE

Gradient Wind Engineering Inc. (Gradient Wind) has been retained by Helberg Properties Limited to undertake a land use compatibility study for a development located at 50 Speers Road in Oakville, Ontario in support of Official Plan and Zoning By-Law Amendment (ZBA) applications.

The scope of work within our mandate for this study includes a preliminary review and a professional opinion in terms of expected air quality and noise impacts on the development, such as the impact of emissions from nearby commercial and industrial sources, as applicable. The study is based on the Ontario Ministry of Environment, Conservation and Parks (MECP) Land Use Compatibility Guidelines (D-Series) and other relevant MECP guidelines, as well as digital maps retrieved from the Town of Oakville Zoning By-law.

The proposed development comprises a 27-storey residential tower with three levels of underground parking. The tower rises on a 6-storey L-shaped podium. An outdoor amenity area resides to the southeast of the tower. The ground floor of the tower contains residential occupancies, an indoor amenity space, a lobby/office, service rooms, and a loading ramp area north of the building. Access to the building is provided from the west side of the tower fronting Speers Road. Levels 7-19, 20-25 and 26-27 feature floorplate changes.

The development site is located on a rectangular-shaped parcel that is bordered by Speers Road to the northwest. Also, a GO Metrolinx Rail Line runs approximately 260 metres to the northwest of the study site. Queen Mary Drive is approximately 150 metres to the northeast, and Kerr Street is approximately 100 metres to the southwest. The site is surrounded by high-rise, mixed-use and residential apartments and condominiums from northeast to southwest, counterclockwise, with Oakwood Public School to the east, and low-rise residential to the southeast.

The development will replace an existing midrise multi-tenant residential building. The intent is to add a high-rise residential apartment building. The Town of Oakville's Zoning By-law 2014-014 designates the study site's area as an "RH - Residential High", which already permits sensitive land uses. The site is bordered by a "CU - Commercial Use" zone to the east (Oakwood Public School) and an "RL - Residential Low" zone to the south. The remaining zoning areas surrounding the study site are "RH - Residential High".

The primary sources of transportation noise impacting the development are Speers Road, the GO Metrolinx Rail Line, and Kerr Street. GO Metrolinx Rail Line is not a concern for ground vibrations as it is located farther than 75 metres[1] from the study site. The noise impacts of the transportation sources on the study site shall be analyzed in detail during the Site Plan Control (SPC) application.

The current land use compatibility assessment also provides commentary on the potential impact of existing nearby stationary sources on the subject sites.

It should be noted that information regarding complaints and/or concerns with regard to air quality and/or noise are predominantly obtained via a Freedom of Information (FOI) request made to the Ministry of Ontario Freedom of Information Office. Complaint history gathered from this request is typically a useful tool during the preliminary evaluation stage of the nearby facilities. However, taking into account the exceptionally long processing time necessary for each FOI request, in addition to the intrinsic nature of the focus area and its surroundings, Gradient Wind concluded that the information gathered from the FOI request would not be a crucial aspect of the analysis and would likely have a negligible impact on the overall findings.

[1] Dialog and J.E. Coulter Associates Limited, prepared for The Federation of Canadian Municipalities and The Railway Associated of Canada, May 2013

2. METHODOLOGY

2.1 Identifying Critical Points of Impingement

The critical points of impingement for this study include fresh-air intakes, public sidewalks, walkways, building entrances, balconies, and terraces/green roofs devoted to common amenity space. Different receiver location types can have varying exposure times and sensitivities to pollutants. For instance, fresh-air intakes continuously provide air to the building's mechanical systems and can affect a large number of the building's occupants, making them the most sensitive. Main entrances operate intermittently, predominantly during daytime hours; therefore, the sensitivity of these locations is lower.

2.2 Identifying Emissions Sources

Following the definition of the critical points of impingement, a review of the study area was conducted to locate sources of airborne pollutants and odours. In general, emission sources that are considered potentially influential to residential properties include nearby, existing commercial/industrial facilities.

Industrial processes are bound by the requirements of Section 9 of the Environmental Protection Act (EPA) R.S.O 1990 and Ontario Regulation (O. Reg.) 419/05 - Air Pollution and Local Air Quality. Section 9 of the Environmental Protection Act states that "*No person shall, except under and in accordance with an environmental compliance approval, use, operate, construct, alter, extend or replace any plant, structure, equipment, apparatus, mechanism or thing that may discharge or from which may be discharged a contaminant into any part of the natural environment other than water*". Despite compliance with Section 9 of the EPA, a facility may be liable under Section 14 of the EPA if they permit the discharge of a contaminant, including odour, which causes an adverse effect. Under O. Reg 419/05 "*a person shall not discharge a contaminant or cause or permit the discharge of a contaminant into the natural environment, if the discharge causes or may cause an adverse effect*".

In order to obtain and maintain an Environmental Compliance Approval (ECA) (formerly referred to as a Certificate of Approval (CoA)), the emitting source must show compliance with O. Reg. 419/05. Compliance with O. Reg. 419/05 for air emissions is shown through an Emissions Summary and Dispersion Modelling (ESDM) report. An ESDM report quantifies all emissions from a facility and must demonstrate, through air dispersion modelling, that contaminant concentrations are below standards prescribed in O.Reg 419/05 at all points of impingement.

To minimize the potential for adverse impacts of industrial activities on sensitive land uses, the MECP has provided guidelines for adequate buffering of incompatible land uses under "Guideline D-6 Compatibility Between Industrial Facilities and Sensitive Land Uses". The minimum separation distances are based on both the size of a facility and the scope of industrial activities within the facility, classified as Class I, II, or III, for light, medium and heavy industrial uses, respectively. Table 1 summarizes the recommended separation distance and potential area of influence for each class (see Figure 1). A sensitive development may be permitted within an industrial influence zone if appropriate air quality studies are undertaken and potential causes of adverse effects are mitigated.

TABLE 1: D-6 RECOMMENDED SEPARATION & INFLUENCE AREA

Class	Minimum Recommended Separation Distance (m)	Potential Influence Area (m)
I	20	70
II	70	300
III	300	1000

We conducted a survey of the surrounding facilities within the potential influence areas via aerial imagery and a search of the MECP "Access Environment" database of registered ECA and Environmental Activity and Sector Registry (EASR) permit holders. Our survey revealed that there are several Class I and II facilities around the study site, however, they are not within the potential influence areas and only one of the Class II industries is still active. No Class III industry was identified within 1 km (1000 m) of the study site. Some of the notable Class II facilities that are identified within 1000 metres of the site are described below. The Class II facilities listed below can also be seen in Figure 1.

2.2.1 Class II Industries out of the Potential Influence Area

165 Wyecroft Road

An Environmental Compliance Approval (ECA # 6993-9LMJ53), dated July 11, 2014, is defined for the address 165 Wyecroft Road. The approval is for a steel drum manufacturing facility, known as Greif Brothers Canada Inc., and consists of the following processes and support units rolled steel cutting, drum forming (shaping and welding), drum body and parts painting and lining (paint spray booths), drum body and parts curing and baking (ovens), drum finishing (silk screening, touch-up painting, use of solvents, adhesives and seam compounds), including the Equipment and any other ancillary and support processes

and activities. The facility is located more than 700 metres to the west of the study site which is beyond the potential influence area. Moreover, the facility is not active anymore. Therefore, no adverse noise, vibration, dust, emissions and odour impact from the facility is expected to impact the study site.

656 Kerr Street

A manufacturing, research, development and testing centre for the automotive heat exchanger products facility, known as Dana Canada Corp. and located at 656 Kerr Street, holds an Ammended Environmental Compliance Approval (ECA # 4354-93HMEV), dated May 5, 2014. The activities in the facility include the following processes and support units: Nickel Plating; Stamping, Forming and Pre-Assembly; Brazing; and Testing Laboratories. The facility previously was approved for an exhaust system serving an aluminum fines operation with an Environmental Compliance Approval (ECA # 6652-4KSQFU), dated June 13, 2000, for Long Manufacturing Ltd. The facility is located approximately 340 metres to the northwest of the study site which is beyond the potential influence area. Therefore, no adverse noise, vibration, dust, emissions and odour impact from the facility is expected to impact the study site.

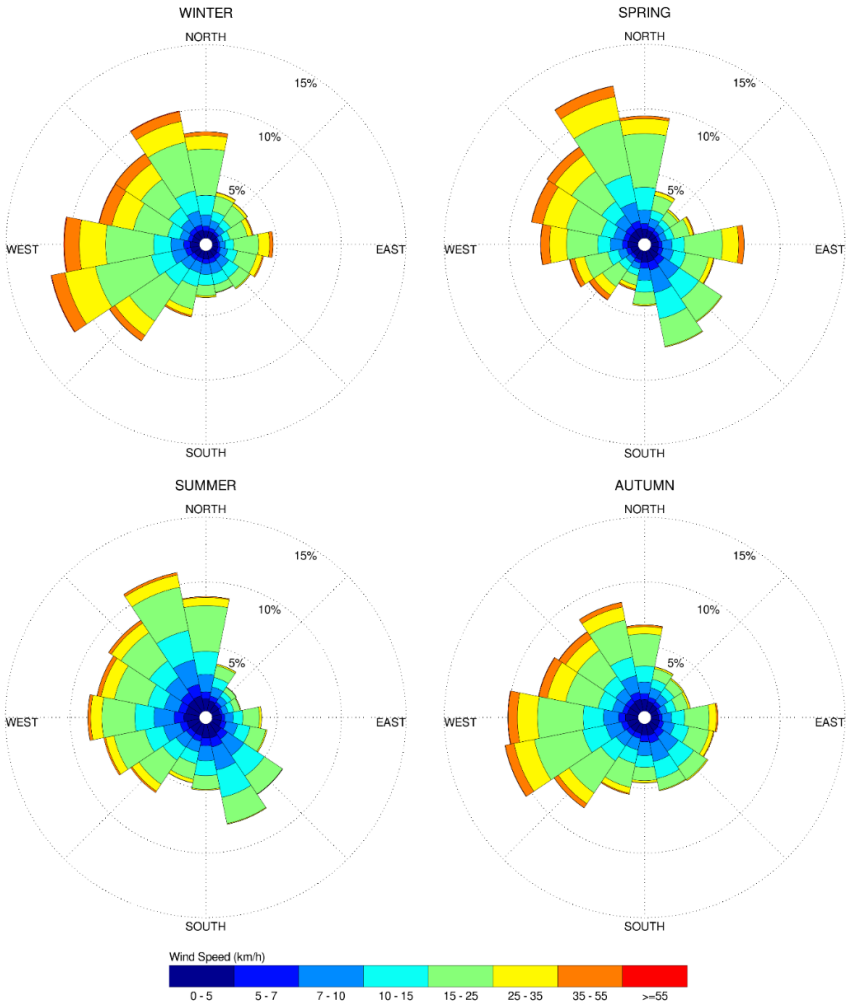
2.3 Meteorological Data Analysis

A statistical model for winds in the Toronto area was developed from approximately 40-years of hourly meteorological wind data recorded at Lester B. Pearson International Airport and obtained from Environment and Climate Change Canada. Wind speed and direction data were analyzed for each month of the year in order to determine the statistically prominent wind directions and corresponding speeds, and to characterize similarities between monthly weather patterns. Based on this portion of the analysis, the four seasons are represented by grouping data from consecutive months based on similarity of weather patterns, and not according to the traditional calendar method.

The statistical model of the area's wind climate, which indicates the directional character of local winds on a seasonal basis, is illustrated on the following page. The plots illustrate the seasonal distribution of measured wind speeds and directions in kilometres per hour (km/h). Probabilities of occurrence of different wind speeds are represented as stacked polar bars in sixteen azimuth divisions. The radial direction represents the percentage of time for various wind speed ranges per wind direction during the measurement period. The common wind speeds and directions can be identified by the longer length of the bars. For the area, the most common winds concerning pedestrian comfort occur from the southwest

clockwise to the north, as well as those from the east. The directional preference and relative magnitude of the wind speed vary somewhat from season to season, with the summer months displaying the calmest winds relative to the remaining seasonal periods. Although the prevailing winds are westerly and northwesterly, easterly winds are favourable for the subject site which will force emissions, if any, from the industries to the west, away from critical points of impingement on the subject site.

SEASONAL DISTRIBUTION OF WIND
LESTER B. PEARSON INTERNATIONAL AIRPORT, TORONTO, ONTARIO



Notes:

1. Radial distances indicate percentage of time of wind events.
2. Wind speeds are mean hourly in km/h, measured at 10 m above the ground.

2.4 Potential Stationary Noise Impacts – Existing Buildings

Gradient Wind also investigated the potential stationary noise impacts from nearby properties surrounding the subject site. As previously mentioned, the study site is bordered by Speers Road to the northwest. Also, a GO Metrolinx Rail Line runs to the northwest of the study site, and Kerr Street is approximately 100 metres to the southwest. The transportation noise sources will constitute a higher portion of the background noise levels.

Gradient Wind conducted a survey of the study site, using the satellite view of the area, some of the neighbouring residential buildings, such as the development located at 55 Speers Road, have rooftop mechanical equipment. The 55 Speers Road development has a cooling tower located on the rooftop. The direct sightline between this equipment and the study sight is blocked by the screen surrounding the equipment. Therefore, the noise levels at the façade of the study building are not anticipated to exceed the NPC-300 requirements. If any exceedance occurs, the noise levels can be controlled by STC-rated exterior walls. The mechanical equipment serving the other neighbouring buildings is small, therefore, not a concern for stationary noise impacts on the study site and is expected to be masked by the background noise generated by the transportation sources.

With regards to the impacts of the proposed building on the surroundings and itself, by careful placing and judicious selection of noise-generating equipment like cooling towers, chillers, and generators, stationary noise impact from the proposed building can comply with the sound level limits defined in NPC-300. Where necessary, noise screens, silencers, and other noise control measures can be added.

3. TRANSPORTATION AIR QUALITY AND NOISE IMPACTS

3.1 Noise

The primary sources of transportation noise impacting the site include Speers Road, the GO Metrolinx Rail Line, and Kerr Street. GO Metrolinx Rail Line is not a concern for ground vibrations as it is located farther than 75 metres. The subject property will be compatible with existing transportation noise sources with the inclusion of noise mitigation measures, such as upgrading building components, ventilation requirements, noise barriers, and Warning Clauses if required.

3.2 Air Quality

Similarly, the dominant sources of transportation emissions include Speers Road, the GO Metrolinx Rail Line, and Kerr Street. This is based on their distance relative to the subject site as well as their roadway classifications.

Roadways are not considered within the MECP D-Series guidelines. However, the City of Toronto has created a report detailing the impacts of roadway traffic pollution on sensitive buildings and ways to mitigate such impacts which also applies to Oakville as the town is part of the Greater Toronto Area. This report is titled *"Avoiding the TRAP: Traffic-Related Air Pollution in Toronto and Options for Reducing Exposure".*

Based on Gradient Wind's experience, emissions from roadways such as Speers Road and Kerr Street, and railways such as the GO Metrolinx Rail Line, may at times approach ambient air quality standards set out by the MECP. However, any trivial impacts can be addressed with filtration of the fresh air intakes and Energy Recovery Ventilators.

The following is a list of a few suggested mitigation strategies presented in the TRAP report to address air pollution impacts from transportation sources:

- Implementing barriers between sources and sensitive areas (i.e., physical or vegetation).
- Consideration for the location and orientation of individual buildings and outdoor amenity areas (i.e., position sensitive areas as far as possible from roadways and buffered by transitional uses).
- Mechanical building ventilation with Minimum Efficiency Reporting Value (MERV) 8 certification particulate filters.
- Where possible, only open windows on the side of buildings that face away from TRAP sources.
- Locating ventilation intakes away from transportation sources (i.e., the highest point of the building).

It should be noted that only opening windows on the side of buildings that face away from TRAP sources may not be feasible from a design and administrative perspective. Therefore, it is important to include appropriate ventilation systems in sensitive spaces such as centralized air conditioning, or similar equipment, to allow residents to keep windows closed and achieve a comfortable indoor environment.

With that notion, the subject property is considered to be compatible with existing TRAP sources with the inclusion of select air quality mitigation measures described above.

4. RESULTS AND CONCLUSIONS

The study site is bordered by Speers Road to the northwest. Also, a GO Metrolinx Rail Line runs to the northwest of the study site and Kerr Street is approximately 100 metres to the southwest. The site is surrounded by high-rise, mixed-use and residential apartments and condominiums from northeast to southwest, counterclockwise, with Oakwood Public School to the east, and low-rise residential to the southeast.

The zoning of the study site is already defined as “RH – Residential High” and there are recently built high-rise examples in close vicinity to the study site such as “55, 65 and 71 Speers Road, 66 and 70 Shepherd Road” and residential buildings such as 41 Speers Road, 80 Speers Road, and 30 Speers Road. The current zoning already permits sensitive land uses. Therefore, the proposed development at 50 Speers Road should be granted approval for the proposed residential use. Our survey revealed that there are several Class I and II facilities around the study site, however, they are not within the potential influence areas. No Class III industry was identified within 1 km (1000 m) of the study site. Therefore, no nearby facilities are expected to have adverse impacts on the site with regard to emissions, noise and vibrations, and odour. No land compatibility issues or conflicts with the existing or future employment lands are expected.

In keeping with standard building construction and good engineering practice, as well as the Town of Oakville and MECP guidelines, the following comments and recommendations are provided to be incorporated into the design of the building to ensure indoor air quality and noise levels are maintained to acceptable standards for the proposed development:

(i) Based on the findings of this report, Gradient Wind concludes that the residential sensitive land use is feasible, as the proposed building is within the "RH – Residential High" zoning area (see Appendix A) and there are already existing residential buildings in close vicinity of the property. Also, the study site is within the growth area in the adapted Liveable Oakville plan as per the Town of Oakville Zoning By-law 2014-014, Map 19 (7a) for Zoning within Kerr Village (See Figure A).

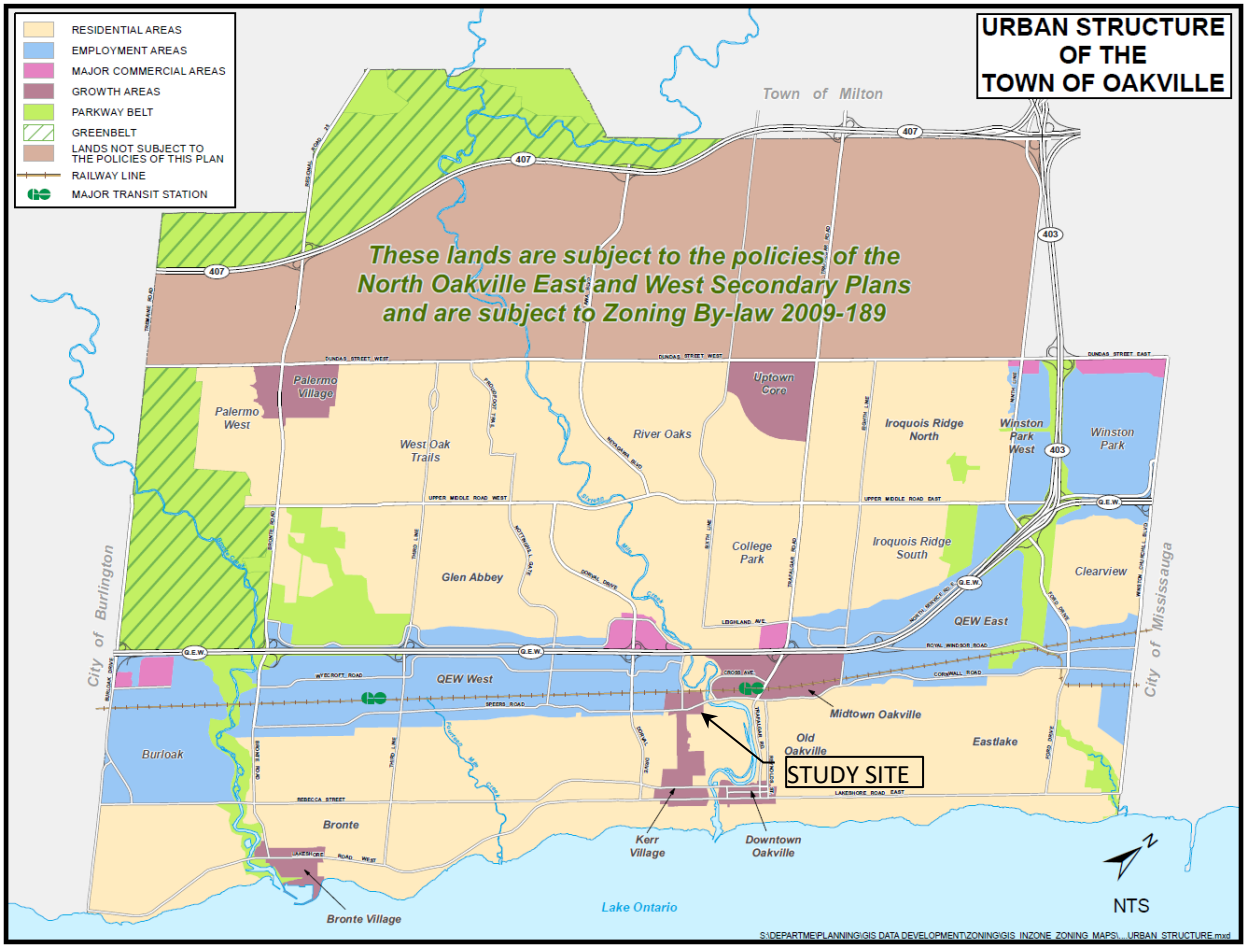


FIGURE A: LIVABLE OAKVILLE PLAN MAP

(ii) The identified industries operating with a valid ECA are out of the potential influence areas defined by Ontario Guideline D-6 Compatibility between Industrial Facilities.

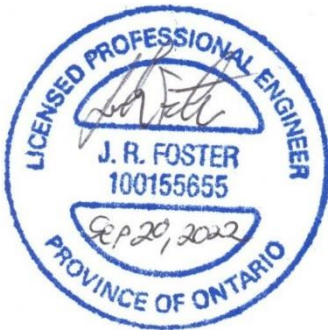
(iii) The development can incorporate mitigation strategies to address emission impacts from TRAP sources, as outlined in Section 3.

(iv) In line with standard building practices, appropriate provisions include the design, installation, operation, and maintenance of air filtration at the fresh air intakes of the mechanical systems serving all habitable areas, including the addition of air conditioning. The areas that would not require filtered air would be parking garages and utility spaces. Minimum Efficiency Reporting Value (MERV) 8 certification filters should be used for this development in all occupied spaces. Details of the air filtration system will be designed by the mechanical engineers during the detailed design phase.

This concludes our land use compatibility study and report. If you have any questions or wish to discuss our findings, please advise us. In the interim, we thank you for the opportunity to be of service.

Sincerely,

Gradient Wind Engineering Inc.



Efser Kara, MSc, LEED GA
Acoustic Scientist

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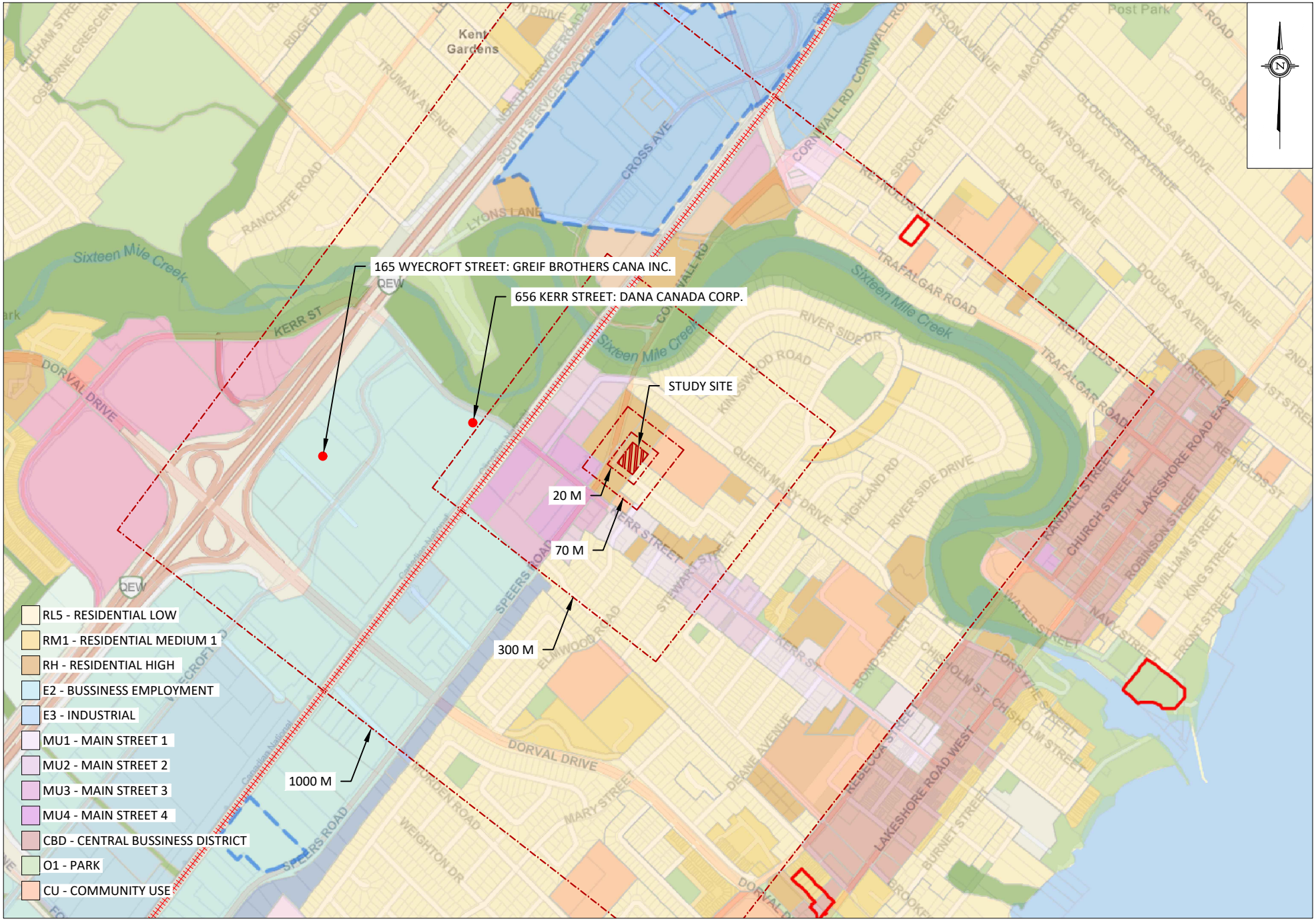
Gradient Wind File 22-209 - Land Use Compatibility



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127 WALGREEN ROAD, OTTAWA, ON
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PROJECT	50 SPEERS ROAD, OAKVILLE LAND USE COMPATIBILITY ASSESSMENT		DESCRIPTION
SCALE	1:14000 (APPROX.)	DRAWING NO.	GW22-209-1
DATE	AUGUST 9, 2022	DRAWN BY	E.K.

FIGURE 1:
PROPERTY LINE AND SURROUNDING CONTEXT

APPENDIX A

ZONING MAP

127 WALGREEN ROAD, OTTAWA, ON, CANADA K0A 1L0 | 613 836 0934
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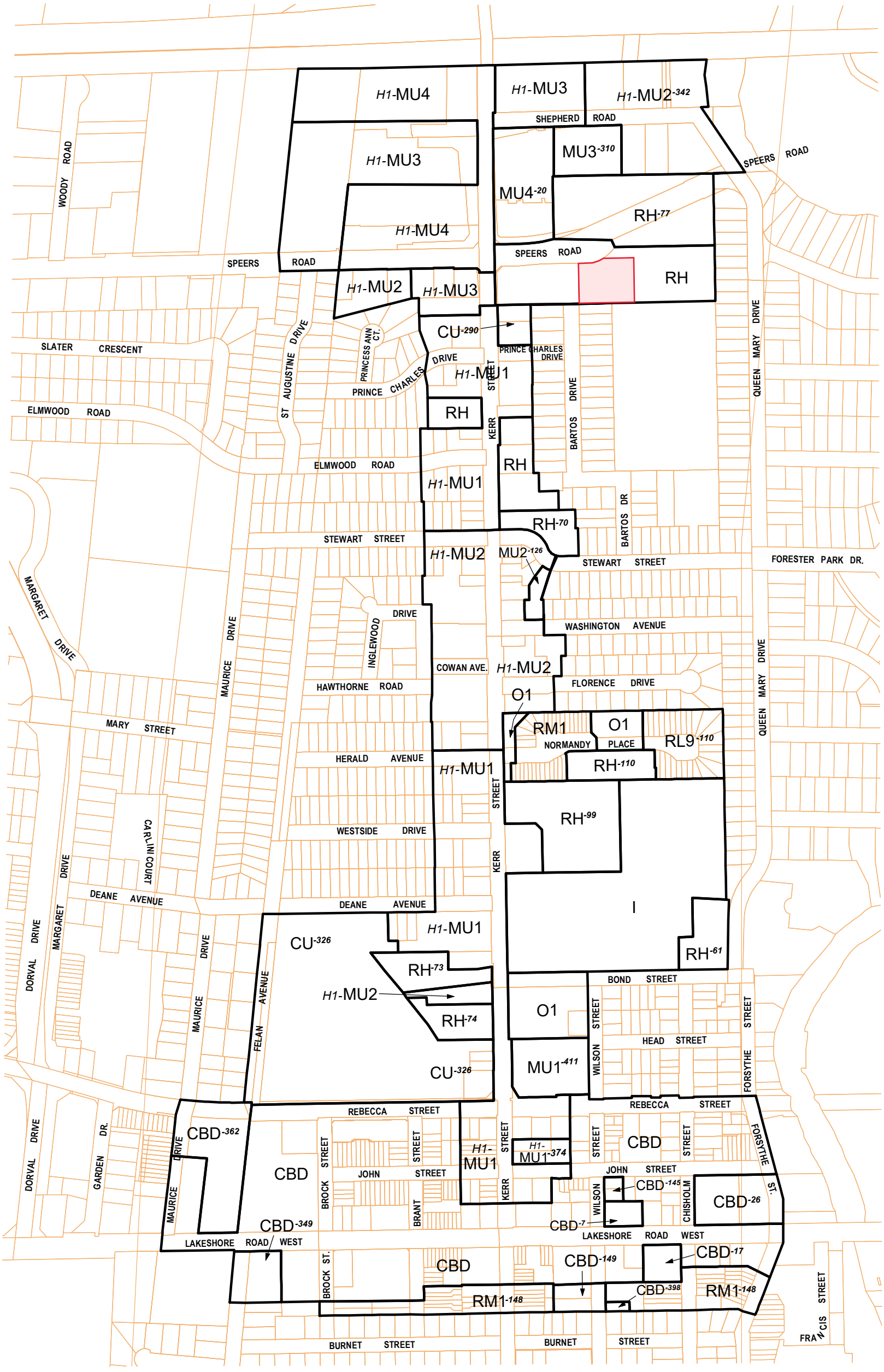

ZONING BOUNDARY

TOWN OF OAKVILLE

Zoning By-law 2014-014

Community Development Commission
Strategic Business Services

0 125 250 375 500 Meters

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19(7a)