Millcroft Greens Corporation
Millcroft Greens Development

Compatibility Study
Air Quality
Burlington, ON

SLR Project No: 241.20082.00000
September 2020

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Compatibility Study
Air Quality
Burlington, ON

SLR Project No.: 241.20082.00000, Version 1

Prepared by
SLR Consulting (Canada) Ltd.
150 Research Lane, Suite 105
Guelph, ON N1G 4T2

for

Millcroft Greens Corporation
4900 Palladium Way, Suite 105
Burlington, ON L7M 0W7

September 30, 2020

Prepared by:



Jenny Graham, P. Eng.
Senior Air Quality Engineer

Prepared by:



Nigel Taylor, M.Sc., EP
Principal, Air Quality

Distribution: 1 copy – Millcroft Greens Corporation
1 copy – SLR Consulting (Canada) Ltd.

EXECUTIVE SUMMARY

SLR Consulting (Canada) Ltd. (SLR), was retained by Millcroft Greens Corporation to conduct a Compatibility Study focusing on air quality, odour and dust for their proposed residential development, to be located at 2155 Country Club Drive in Burlington, Ontario. This assessment has been completed in support of the development applications with the City of Burlington. This assessment has considered:

- Industrial air quality, odour, and dust emissions;
- Transportation-related air pollution;

Based on the review completed, the proposed development is anticipated to be compatible with the surrounding land uses from an air quality perspective.

VERSIONS

Version	Date	Comment
1	April 24, 2020	• Draft Report
2	April 30, 2020	• Draft Report
3	May 4, 2020	• Final Report
4	September 30, 2020	• Final Report (Update to concept plan)

TABLE OF CONTENTS

Executive Summary ii

1. Introduction 1

2. Description of Development and Surroundings 2

2.1 Proposed Development 2
2.2 Surroundings 2
2.3 Land Use Designations In the Area 2

3. Assessment Framework 2

3.1 Provincial Policy Statement 3
3.2 Halton Region's Regional official Plan Guidelines: Land Use Compatibility Guidelines 4
3.2.1 Requirements for Assessments 6
3.2.2 Requirements for Minimum Separation Distances 6
3.3 Halton Region's Regional Official Plan Guidelines: Air Quality Guidelines 6

4. Nearby Industries 7

4.1 Class III Heavy Industries 7
4.1.1 Walker Emulsions 7
4.2 Class I Light and Class II Medium Industries 7
4.2.1 Contracting and Warehousing/Distribution Facilities 8
4.2.2 Auto Facilities 9
4.2.3 Manufacturing Facilities 9
4.2.4 Waste facilities 10
4.3 Summary 11

5. Transportation sources 11

6. Air Quality Guidelines and Assessment 11

6.1 Industrial Sources 11
6.1.1 Guidelines and Regulations 11

6.1.2 Local Meteorology 13
6.1.3 Site Visit 13
6.1.4 Discussion of Potential Air Quality Impacts from industrial sources 14
6.2 Transportation Sources 14
6.3 Summary of Air Quality, dust and Odour Conclusions And Recommendations 15
7. Conclusions 16
8. References 17
9. Statement Of Limitations 18

TABLES

Table 1: Guideline D-6 - Potential Influence Areas and Recommended Minimum Setback Distances for Industrial Land Uses 4
Table 2: Guideline D-6 - Industrial Categorization Criteria 5
Table 3: Proposed Clarification of Human Receptors (MECP 2008) 12

FIGURES

Figure 1: Site and Context Plan
Figure 2: Surrounding Land Uses
Figure 3: Area Zoning Map
Figure 4: Guideline D-6 Separation Distances to 1000 Metres
Figure 5: Wind Frequency Distribution Diagram (Wind Rose), Burlington Piers (1991-2015)

APPENDIX

Appendix A: Development Concept Plan

1. INTRODUCTION

SLR Consulting (Canada) Ltd. (SLR), was retained by Millcroft Greens Corporation to conduct an air quality land use compatibility study for their proposed residential development, to be located at 2155 Country Club Drive in Burlington ("the Project"). This assessment has been completed in support of development applications with the City of Burlington.

Potential environmental impacts from the following sources have been considered:

- Industrial air quality, odour, and dust emissions;
- Transportation-related air pollution;

In this assessment, SLR has reviewed the surrounding industrial land uses and major facilities in the area with respect to the following guidelines:

- Halton Region's Land Use Compatibility Guidelines (LUCG);
- The Provincial Policy Statement;
- Ministry of the Environment, Conservation and Parks ("MECP") Guidelines D-1 and D-6;
- Ontario Regulation 419/05: *Air Pollution – Local Air Quality* and its associated air quality standards and assessment requirements; and
- The MECP's draft policies on odour impacts and assessment.

This report is intended to meet the requirements for a land-use compatibility study with respect to air quality, in accordance with Halton Region's LUCG. This report identifies existing and potential land use compatibility issues and identifies and evaluates options to achieve appropriate design, buffering and/or separation distances between the proposed sensitive land uses, including residential uses, and nearby Employment Areas and/or major facilities. Recommended measures intended to eliminate or mitigate negative impacts and adverse effects are provided, where warranted.

2. DESCRIPTION OF DEVELOPMENT AND SURROUNDINGS

2.1 PROPOSED DEVELOPMENT

The subject property, located at 2155 Country Club Drive, currently includes the Millcroft Greens golf course. The current development proposal includes four new blocks of single-family homes, and a six-storey mid-rise residential building. Blocks A and B include new single-family homes to be located at the northwest corner of the intersection of Upper Middle Road with the CN rail line. Block C includes new single-family homes on the north side of Country Club Drive, just east of Berwick Drive and Block D includes new single-family homes on the east side of Millcroft Park Drive just north of Turnberry Road. Lastly, the mid-rise residential building will be located on the south side of Dundas Street, just west of Millcroft Park Drive. A context plan of the area highlighting the various development sites is shown in Figure 1 and the development concept plan is provided in Appendix A.

2.2 SURROUNDINGS

The entire development site is bounded by Dundas Street to the north, Appleby Line to the east, Upper Middle Road to the south and Walkers Line to the west. Generally surrounding the site are low-rise residential subdivisions in all directions. There are commercial properties located at the intersections of Walkers Line with Dundas Street, Dundas Street with Appleby Line and Upper Middle Road with Appleby Line. There are also light industrial buildings located south of the intersection of Uper Middle Road and Appleby Line. The CN Rail line crosses the southeast corner of the site. The site surroundings are shown in Figure 2.

2.3 LAND USE DESIGNATIONS IN THE AREA

The City of Burlington Zoning Map for the area can be seen in Figure 3. Blocks A, B, C, D and E are all located on lands currently zoned as O1 (open space). The various blocks are generally surrounded by lands zoned for residential use (zoning designations R2.3, R3.2 or RM). Surrounding the subdivision site are generally residentially zoned lands. The nearby rail-line is zoned for utility services (S). At the intersection of Upper Middle Road and Appleby Line, as well as at the intersection of Dundas Street and Appleby Line, lands are zoned for commercial use (CR).

3. ASSESSMENT FRAMEWORK

The intent of this report is to identify any existing and potential land use compatibility issues and to identify and evaluate options to achieve appropriate design, buffering and/or separation distances between the proposed sensitive land uses, including residential uses, and nearby Employment Areas and/or major facilities. Recommended measures intended to eliminate or mitigate negative impacts and adverse effects are provided, where warranted.

The requirements of Ontario's planning regime are organized such that generic policy is informed by specific policy, guidance, and legislation, as follows:

- The Provincial Policy Statement ("PPS") sets out goals – making sure adjacent land uses are compatible from a health and safety perspective and are appropriately buffered; then
- The Halton Region's Regional Official Plan sets out land-use compatibility guidelines and air quality guidelines for new development;

- The Regional Official Plan takes into consideration The Ministry of the Environment, Conservation & Parks ("MECP") D-series of guidelines which set out methods to determine if assessments are required (areas of influence, recommended separation distances, and the need for additional studies); then

- MECP and Municipal regulations, policies, standards and guidelines set out the requirements of additional air quality studies and the applicable policies, standards, guidelines and objectives to ensure that adverse effects do not occur.

3.1 PROVINCIAL POLICY STATEMENT

The PPS "provides policy direction on matters of provincial interest related to land use planning and development. As a key part of Ontario's policy-led planning system, the Provincial Policy Statement sets the policy foundation for regulating the development and use of land. It also supports the provincial goal to enhance the quality of life for all Ontarians."

The PPS is a generic document, providing a consolidated statement of the government's policies on land use planning and is issued under section 3 of the Planning Act. Municipalities are the primary implementers of the PPS through policies in their local official plans, zoning by-laws and other planning related decisions, such as Halton Region's Regional Official Plan. The current 2020 PPS came into effect on May 1, 2020. Policy direction concerning land use compatibility is provided in Section 1.2.6 of the PPS.

From the current 2020 version:

> "1.2.6 Land Use Compatibility
>
> 1.2.6.1 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.
>
> 1.2.6.2 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."

The goals of the PPS are implemented through Municipal and Provincial policies, as discussed below. Provided the Municipal and Provincial policies, guidelines, standards and procedures are met, the requirements of the PPS will be met.

3.2 HALTON REGION'S REGIONAL OFFICIAL PLAN GUIDELINES: LAND USE COMPATIBILITY GUIDELINES

The purpose of Land Use Compatibility Guidelines development by the Region (LUCG) is to "identify how land use compatibility issues may be addressed by municipalities during a development proposal…" The LUCG were developed by the Region in consideration of the Provincial D-Series of Guidelines, prepared by the Ontario Ministry of the Environment, Conservation and Parks (MECP) in 1995 for planning guidance in evaluating land use compatibility. Section 2 of the LUCG identifies the relevant provincial guidelines and regulations which are to be considered in conducting air quality assessment in Ontario:

> *"The D-Series are used for development applications that require the re-designation (Official Plan Amendment) or rezoning of land uses (Zoning By-law amendment). The MOE's D-Series are only applicable when a:*
>
> - *New sensitive land use requires a land use amendment and is proposed to be located within the influence, or potential influence, area of an impacting use, such as an existing industrial land use; or when a*
> - *New industrial use requires a land use amendment and is proposed to be located near an existing sensitive residential use."*

Included in the Region's summary is a discussion of the "potential areas of influence" approach, as presented in the D-series of guidelines when assessing compatibility of industrial uses with more sensitive uses such as residences.

In preparing the LUCG, the Region has clarified an aspect concerning recommended minimum separation distances. In the LUCG, it is understood that areas of influence of various industrial processes will be site specific. Actual areas of influence are determined through appropriate studies allowing for industrial activities to be compatible with more sensitive land uses within the area of influence and within recommended minimum separation distances which are presented in Table 1. Appropriate studies can provide mitigation strategies, if required.

Table 1: Guideline D-6 - Potential Influence Areas and Recommended Minimum Setback Distances for Industrial Land Uses

Ministry of Environment: D-Series – INDUSTRIAL USES Potential Areas of Influence and Minimum separation Distances*		
Industrial Facility	Potential Area of Influence (metres)	Minimum Separation Distance (metres)
Class I	70	20
Class II	300	70
Class III	1000	300

A summary of the D-6 Industrial Categorization criteria considered in the LUCG is listed in Table 2. It is worth noting that the Region has made minor alterations to the table from what appears in the D-6 guidance.

Table 2: Guideline D-6 - Industrial Categorization Criteria[1]

Ministry of Environment: D-Series' Industrial Categorization Criteria			
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 /or 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	• Low probability of fugitive emissions	• High probability of fugitive emission
Hours of Operation	• Daytime operations only	• Shift operations permitted	• Daily shift operations permitted
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
Examples (not comprehensive)	• Electronics manufacturing and repair • Furniture repair and refinishing • Beverages bottling • Auto parts supply • Packaging and crafting services • Distribution of dairy products • Laundry and linen supply	• Magazine printing • Paint spray booths • Metal command • Electrical production manufacturing • Manufacturing of dairy products • Dry cleaning services • Feed packing plant	• Manufacturing of paint and varnish • Organic chemicals manufacturing • Breweries • Solvent recovery plants Soaps and detergent manufacturing • Manufacturing of resins and costing • Metal manufacturing

[1] Halton Regional Official Plan Guidelines – Land Use Compatibility Guidelines (www.halton.ca/common/pages/UserFile.aspx?fileId=121105, accessed January, 2015)

3.2.1 REQUIREMENTS FOR ASSESSMENTS

Guideline D-6 requires that studies be conducted to assess impacts where sensitive land uses are proposed within the potential area of influence of an industrial facility. This report is intended to fulfill this requirement.

The D-series guidelines reference previous versions of the air quality regulation (Regulation 346). However, the D-Series of guidelines are still in force, still represent current MECP policy and are specifically referenced in numerous other current MECP policies. In applying the D-series guidelines, the current policies, regulations, standards and guidelines have been used (e.g., Regulation 419).

3.2.2 REQUIREMENTS FOR MINIMUM SEPARATION DISTANCES

Guideline D-6 also *recommends* that no sensitive land use be placed within the Recommended Minimum Separation Distance. However, it should be noted that this is a recommendation, only. Section 4.10 of the Guideline allows for development within the separation distance, in cases of redevelopment, infilling, and transitions to mixed use, provided that the appropriate studies are conducted and that the relevant air quality and noise guidelines are met.

3.3 HALTON REGION'S REGIONAL OFFICIAL PLAN GUIDELINES: AIR QUALITY GUIDELINES

The Region's Air Quality Guidelines (AQG) were developed along with a number of other guidelines for land use planning which came out of the Regional Official Plan Amendment (ROPA 38). In general terms, the AQG recommends consideration of local industrial sources and transportation features when evaluating the siting of a residential land use.

The AQG acts as a summary document of the applicable guidelines for a particular undertaking.

> *"2.1 Under the Region's policy 143(12), any source emission studies may only be applicable when sensitive land uses (residential, natural heritage) are proposed with these 3 conditions present:*
>
> 1) *Within 30 m of a major arterial road or provincial highway or within 150 m of provincial freeway;*
> 2) *In proximity to an industrial use; and a*
> 3) *Utility use"*

SLR conducted a review of identified industrial uses and roadways/highways, as referred to in items 1) and 2) of Section 2.1 listed above, as well as the rail line.

4. NEARBY INDUSTRIES

The land-uses within 1000m of the proposed site are shown in Figure 2. The surrounding land-uses were reviewed using aerial imagery, available information online and during a site visit to the area to observe industrial operations. Employment/industrial uses were only identified in one area, southeast of Upper Middle Road. Figure 4 shows the Guideline D-6 setback distances from the project for the identified industrial lands. Note that these lands only lie within proximity to the proposed Block A and B single/detaches homes. The remaining Blocks C, D and E are not located within the area of influence of the identified industries.

Within Ontario, facilities which emit significant amounts of contaminants to the environment are required to obtain and maintain an Environmental Compliance Approval (an "ECA") from the MECP or submit an Environmental Activity and Sector Registry ("EASR"). ECA's/ EASRs within 1 k m of the Project were obtained from the MECP's *Access Environment* website.

The identified industries and their operations were classified in accordance with the D-6 Guidelines and are discussed below.

4.1 CLASS III HEAVY INDUSTRIES

One heavy industry with a Class III designation was identified within 1000m of the proposed development site:

- Walker Emulsions (7)

4.1.1 WALKER EMULSIONS

Walker Emulsions is an asphalt emulsion, wax emulsion and asphalt cutback manufacturing facility. The site contains several outdoor storage tanks. Due to the potential for persistent and/or intense odours from the manufacturing of asphalt and wax, the site is conservatively considered a Class III facility. A site visit was conducted to observe odours from the facility and is discussed further in Section 6.1.3.

The facility is located within the 1000m area of influence for a Class III industry, however, the Project site meets the recommended minimum separation distance of 300m. The proposed Blocks A and B are located approximately 475m from Walker Emulsions. There are closer existing residences to the southwest of the facility, within approximately 250m – 300m of Walker Emulsions. In addition, there are existing residential properties on the north side of Upper Middle Road, and immediately adjacent to Blocks A and B.

4.2 CLASS I LIGHT AND CLASS II MEDIUM INDUSTRIES

The majority of identified industries identified southeast of Upper Middle Road are small in nature and considered Class I light or Class II medium industries. These industries are identified in Figure 4, and are identified by the corresponding ID noted below.

The Class II identified industries are considered manufacturing and waste facilities and include:

- Lafretnz Road Services (4)
- Clean Harbors (5)
- ELG Canada Inc. (6)

The Class I identified industries are considered auto facilities, contracting companies, manufacturing

facilities and warehousing/distribution sites, and include:

- Shipway Stairs (1)
- Complete Coating Protection In. (2)
- Penske Truck Rental (3)
- Metrican Stamping (8)
- Ecodyne Limited (9)
- Obrien Lifting Solutions (10)
- Crystal Cap Cleaners Inc. (11)
- Burlington Auto Works (12)
- Vanchem Performance Chemicals (13)
- Pollard Enterprises Ltd. (14)
- 1770 Appleby Line – Vacant Warehouse (15)
- Canadian Portable Structures (16)
- Shop-Vac of Canada Ltd. (17)
- Magnum Steel & Tube (18)
- Jones Tool & Machine Co. (19)
- ABS Machining Inc. (20)
- Comtek Advanced Structures (21)
- Crown Relocations – Toronto (22)
- Great Lakes Combustion (23)
- Desi's Aluminum (24)
- Arzon Limited (25)

All identified Class I industries are beyond the 70m area of influence from each of the proposed development sites. All identified Class II industries are beyond the 300m area of influence from the Project. Figure 4 shows the location of each of these industries relative to the Class I and Class II area of influence setbacks from the Project. Further details regarding each of the industries and their classification are provided below.

There are many existing residences located in proximity to the employment area, including residences on the east side of Appleby Line and on the north and south side of Upper Middle Road. There are low-rise residences immediately adjacent to the proposed homes at Blocks A and B.

4.2.1 CONTRACTING AND WAREHOUSING/DISTRIBUTION FACILITIES

There are several contracting facilities located southeast of Upper Middle Road, including Shipway Stairs (1), Obrien Lifting Solutions (10), Pollard Enterprises (14), and Great Lakes Combustion (23). Shipway stairs is a stair contractor, designing and building custom stairways. Obrien Lifting Solutions is a crane dealer, providing sales services, parts and servicing technicians. This facility holds an ECA to operate a paint booth (ECA #8275-8M7QJU). Pollard enterprises is a roofing contractor, providing roofing solutions, servicing and maintenance. Great Lakes Combustion is an HVAC contractor providing install and servicing technicians as well as in-house fabrication.

Warehousing/distribution facilities include 1770 Appleby Line (15), Magnum Steel & Tube (18), Crown Relocations (22) and Desi's Aluminum (24). During a site visit conducted to the area, it was noted that the

1770 Appleby Line warehouse site is currently vacant. Previously this facility was operated by Shop-Vac Canada Limited, but their sign has been removed. There is currently a Maple Reinders (construction company) sign on the fence for the property. An internet search identified that this site was purchased by NYX Capital (Blue Bird Self Storage) in December 2018, to be converted into a self-storage facility. Magnum Steel and Tube is a steel distributer of electric welded steel tubing. Crown Relocations is a moving service, including a warehouse for storage. Desi's Aluminum is a windows, door and soffit designer and supplier.

Overall, the contracting facilities and warehousing/distribution facilities generally include storage/warehousing of products and minor servicing/repair activities. Each site is considered small in scale, self-contained, contains no or minimal outdoor storage, and has a low probability of any fugitive emissions of dust or odour. Therefore, each of these facilities is considered a Class I facility.

All facilities are located outside of the Class I area of influence. Therefore, no further assessment is required, and these facilities are not anticipated to be a compatibility concern from an air quality perspective.

4.2.2 AUTO FACILITIES

There are three auto facilities located southeast of Upper Middle Road: Complete Coating Protection Inc. (2), Penske Truck Rental (3) and Burlington Auto Works (12). Complete Coating Protection provides interior and exterior car washing and detailing servicing; air quality emissions are not expected from these types of activities. Penske Truck Rental is a truck rental agency also providing repairs; this facility holds an ECA to operate a paint booth (ECA# 0708-4QNRGB). Burlington Auto Works is an auto repair shop.

As suggested in the D-6 Industrial Categorization criteria considered in the LUCG, automotive repair shops are listed as a Class II facility partly due to the operation of spray-paint booths. However, given that the MECP has a specific Environmental and Activity Sector Registry (EASR) for this industry with specific operating condition requirements that limit emissions, auto-repair shops are now generally considered Class I facilities. Auto-repair shops are regulated under Ontario Regulation 347/12: regulations under part II.2 of the Act – Automotive Refinishing.

All auto facilities have been considered Class I facilities in this assessment. All facilities are located outside of the Class I area of influence. Therefore, no further assessment is required and, therefore, these facilities are not considered to be a compatibility concern from an air quality perspective.

4.2.3 MANUFACTURING FACILITIES

There are several manufacturing facilities which were identified southeast of Upper Middle Road. The identified manufacturing facilities include: Lafrentz Road Services (4), Metrican Stamping (8) Ecodyne Limited (9), Crystal Cap Cleaners Inc. (11), Vanchem Performance Chemicals (13), Canadian Portable Structures (16), Shop-Vac of Canada Limited (17), Jones Tool & Machine Co (19), ABS Machining Inc. (20), Comtek Advanced Structures (21) and Arzon Limited (25).

Lafrentz Road Services manufactures road marking products including durable cold-plastic markings and solvent-waterborne road paint. The facility holds an ECA for a dust collector for the paint mixing drums and minor maintenance welding operations (ECA# 6102-AE3R8A). The website notes the paint products do not have VOC emissions. The scale of the facility is small, however, as paint products have the potential to be

odorous and the site does have outdoor storage, it has been conservatively categorized as a Class II facility. A site visit was conducted to observe odours from the facility and is discussed further in Section 6.1.3.

Metrican Stamping conducts metal stamping, value-added assembly tool and die repair and welding. The facility has a sales centre on Corporate Drive and manufacturing facility on Artisans Court. The facility holds an ECA for automotive parts stamping (ECA# 7900-B6XUSM). Ecodyne Limited manufactures industrial water treatment equipment. Crystal Cap Cleaners manufactures cleaning equipment for robotic painting systems. Vanchem Performance Chemicals is a green chemical solution company, producing environmentally friendly, chrome-free chemicals used in wastewater treatment. Canadian Portable Structures manufactures portable buildings. Shop-Vac of Canada is a manufacturer of vacuums, providing vacuum parts and servicing. Jones Tool & Machine Co and ABS Machining Inc. are both machining manufacturers. Comtek Advanced Structures designs, manufacturers and repairs composite components for jet and regional aircrafts. Arzon Limited manufactures thin-wall high frequency welded brass and aluminum tubes. Each of these facilities are small in scale, self-contained and have a low probability of fugitive emissions due to the nature of their operations. During the site visit, no large stacks indicative of emission dispersion, heavy vehicle activity or outdoor storage areas were observed at any of these facilities. Therefore, each of these facilities are considered to be Class I.

All of the manufacturing facilities are located outside of the respective Class I and Class II potential areas of influence. The Lafretnz Road Services facility is located on the border of the 300m setback from Blocks A and B of the proposed development. It meets the minimum separation distance of 70m to the Project. In addition, there are existing residences south of Itabashi Way in closer proximity (approximately 275m) to the facility than the proposed Blocks A and B of the Project (approximately 300m). There are also existing residences immediately adjacent to the proposed residences. This suggests that the facility is already compatible with residential land use and the proposed residences do not introduce a new sensitive use in the area. This facility was observed during the site visit, as is discussed in Section 6.1.3.

Since all manufacturing facilities are located outside of their respective areas of influence, no further assessment is required and, subsequently, these facilities are not anticipated to be a compatibility concern from an air quality perspective.

4.2.4 WASTE FACILITIES

There are two waste facilities identified southeast of Upper Middle Road: Clean Harbors (5) and ELG Canada Inc. (6) The Clean Harbors site is listed as an environmental consultant. Their website notes this location offers emergency response, field services and oil recycling. The site holds an ECA for a waste disposal site, accepting a large variety of waste types (ECA# A210108). ELG Canada Inc. is a metal scrap yard, with outdoor storage. Both facilities were observed during the site visit to the area, discussed further in Section 6.1.3.

Both facilities are considered Class II. Due to collection of waste, the Clean harbors site has the potential for occasional odours but is small in scale. During the site visit to the area, odours were not detected from this facility. The ELG Canada site is also small in scale but contains outdoor storage on approximately half of their site. Generally, the outdoor storage of scrap metal products has the potential to be a source for road dust associated with vehicular movement on site. However, it is expected that the potential for impact

will be in the direct vicinity of the scrap metal facility, with an adequate buffer between the industrial facility and the proposed development features. This site was observed during the site visit to the area and is discussed further in Section 6.1.3.

Both facilities are located outside of the Class II area of influence. Therefore, no further assessment is required and, subsequently, these facilities are not anticipated to be a compatibility concern from an air quality perspective.

4.3 SUMMARY

Overall, surrounding the five development blocks are mainly residential properties and commercial buildings. There is one area of light-industrial buildings, located east of the proposed Block A and B residences. All identified facilities are either Class I or Class II and are located outside of their respective potential areas of influence. In addition, there are existing residences in similar or closer proximity to the identified industrial facilities. Therefore, it is expected that these facilities are currently compatible with residential land-use. The proposed development plans do not introduce new residential receptors significantly closer to existing industries than any existing residences.

5. TRANSPORTATION SOURCES

As some of the development blocks lie within 30m of a major arterial road, and adjacent to the CN Rail line, the Halton region's Air Quality Guidelines require that these transportation routes be considered as a potential air quality source. The following transportation sources require consideration:

- Dundas Street
- Upper Middle Road
- CN Rail Line

6. AIR QUALITY GUIDELINES AND ASSESSMENT

6.1 INDUSTRIAL SOURCES

6.1.1 GUIDELINES AND REGULATIONS

Within Ontario, facilities which emit significant amounts of contaminants to the environment are required to obtain and maintain an Environmental Compliance Approval (an "ECA") from the MECP or submit an Environmental Activity and Sector Registry ("EASR"). Facilities with an ECA/EASR should already meet the MECP guidelines for air quality contaminants at their property line. Six of the identified industries hold ECA's.

6.1.1.1 Air Quality Contaminants

Under O.Reg. 419/05, a facility is required to meet prescribed standards for air quality contaminants at their property boundary line and any location off-site. The MECP does not require industries to assess their emissions at elevated points off-site, if a receptor does not exist at that location. While the introduction of mid-rise residential properties could trigger a facility to re-assess compliance at new receptor locations, the introduction of new low-rise receptors does not introduce any new receptors, as

the facility is already required to be in compliance at grade-level at their property line.

The Project mainly includes low-rise residences. Block E includes a mid-rise residential building along Dundas Street East. This block is not located near the light industrial lands, therefore, there are no new elevated points of reception introduced in close proximity to industrial activities as part of the Project.

6.1.1.2 Odour

There are a select few compounds that are provincially regulated from an odour perspective; however, there is no formal regulation with respect to mixed odours. Impacts from mixed odours produced by industrial facilities are generally only considered and regulated by the MECP in the presence of persistent complaints (ECO 2010).

The MECP assesses mixed odours, in Odour Units, following draft guidelines. One odour unit (1 OU) has been used as a default threshold. This is the concentration at which 50 % of the population will just detect an odour (but not necessarily identify/recognize or object to it). Recognition of an odour will typically occur between 3 and 5 odour units. The following factors may be considered:

- Frequency – How often the odour occurs. The MECP typically allows odours to exceed 1 OU with a 0.5 % frequency.
- Intensity – The strength of the odour, in odour units. 1 OU is often used in odour assessments in Ontario.
- Duration – How long the odour occurs.
- Offensiveness – How objectionable the odour is. The MECP may allow for a higher concentration of pleasant smells such as baking as opposed to off-putting smells such as rotting garbage or rancid meat.
- Location – Where the odour occurs. The MECP assesses at odours where human activity is likely to occur.

The MECP has decided to apply odour-based standards to locations "where human activities regularly occur at a time when those activities regularly occur," which is generally accepted to be places that would be considered sensitive such as residences and public meeting places. As a guide, the MECP has provided proposed clarification of human odour receptors, as shown in the following table:

Table 3: Proposed Clarification of Human Receptors (MECP 2008)

Receptor Category	Examples	Exposure Type	Type of Assessment
Permanent potential 24-hour sensitivity	Anywhere someone could sleep including any resident or house, motels, hospitals, senior citizen homes, campgrounds, farmhouse, etc.	Individual likely to receive multiple exposures	Considered sensitive 24 hours per day
Permanent daily hours but with definite periods of shutdown/closure	Schools, daycares, community centres, soccer fields, farmland, churches, bicycle paths, hiking areas, lakes, commercial or institutional facilities (with consideration of hours of operation such as night clubs, restaurants, etc.)	Individual could receive multiple exposures	Nighttime or daytime exclusion only (consider all other hours)
Seasonal variations with clear restrictions on accessibility during the off season	Golf courses, amusement parks, ski hills, other clearly seasonal private property	Short term potential for exposure	Exclusions allowed for non-seasonal use
Transient	Open fields, roadways, easements, driveways,	Very short term potential	Generally would not be

	parking lots, pump houses	for exposure, may not be a single resident exposed to multiple events	included as human receptors unless otherwise specified.

Note that commercial facilities are considered to be odour sensitive points of reception, as well as community spaces and residences. The MECP odour policy would apply to the commercial uses in the existing commercial plazas, as well as the proposed development.

6.1.1.3 Dust

Ontario Regulation 419/05 also provides limits for dust, including limits for suspended particulates and dust fall. Under Reg. 419/05, these air quality limits must be met at the property line and all points beyond. This is not changed by the addition of the Project. That is to say, the existing mutual property line is already a point of reception for dust, and the limits must already be met at that location.

6.1.2 LOCAL METEOROLOGY

Surface wind data was obtained to generate a wind rose from data collected at the Burlington Piers Meteorological station from 1991to 2015, as shown in Figure 5. As can be seen in the wind rose, predominant winds are from the west and southwest quadrants, while winds from the northwest, south and southeast may be less frequent. Prevailing winds from the west and southwest would direct any emissions from the industrial area away from the proposed residential development site.

6.1.3 SITE VISIT

A site visit was conducted to the area on April 27, 2020 to observe activity at the industries identified on Ironstone Drive and Corporate Drive. During the site visit, weather was sunny with light winds blowing from the north. Note that the site visit was conducted during an unprecedented time due to COVID-19 work restrictions. While local activity was observed and majority of the facilities appeared to still be in operation, field observations may not be representative of normal activity.

Overall, majority of the facilities were self contained buildings, with minimal outdoor storage noted. No heavy movement or large exhaust stacks were observed.

Outside of the Lafrentz Road Services facility, within approximately 60-70m of the facility, paint-type odours were detected. Odours were intermittent and described as mild, but identifiable as a paint-type odour, occurring for approximately 20-30 seconds at a time. Odours were detected walking past the facility; during a second walk by the site an hour later, odours were not detected.

No odours were detected near the Clean Harbours facility. The facility appears to be quite small and contain office space. Based on these observations, it is not expected that a large amount of waste is disposed of or stored at this site.

At the ELG Canada Inc. scrap metal site, outdoor storage of scrap metal was observed on the west portion of the site, with activity (movement, sorting, etc.) observed in this area. On the roadway at the entrance to the facility, fugitive dust was not noted.

Outside of the Walker Emulsions facility, no asphalt/wax odours were detected along Corporate Drive during the site visit.

Along Upper Middle Road, near the proposed development site, no paint-type odours or other types of odours from industry were detected. Further discussion regarding industrial air emissions is provided in Section 6.1.4

6.1.4 DISCUSSION OF POTENTIAL AIR QUALITY IMPACTS FROM INDUSTRIAL SOURCES

Walker Emulsion, a Class III facility is the only identified facility within its respective area of influence. The Project meets the minimum separation distance of 300m for a Class III facility, and is located 475m from Walker Emulsion. During the site visit, no asphalt/wax type odours were detected in the vicinity of this facility or downwind on Corporate Drive. There are several existing residences located on the south and north side of Upper Middle Road, in similar or closer proximity to walker Emulsion. This suggests that the facility is currently compatible with the residential land uses. The Project does not introduce a new worst-case sensitive receptor for the facility. From an air quality facility, the Walker Emulsion facility does not represent a compatibility concern.

All other identified Class I and II facilities are also located are located outside of their respective area of influence. Therefore, no further assessment is required from an air quality perspective. During the site visit to the area, odours were only detected from one facility – Lafrentz Road Services. Paint-type odours were detected along Ironstone Drive, in front of this facility. Odours were only detected within approximately 60-70m of this facility. Outside of this area, no paint-type odours were detected. The proposed site is approximately 300m from this facility. Along upper Middle Road, near the proposed development site, paint odours were not detected. Lastly, there are existing residences on Itabashi Way, in similar or closer proximity to the Lafrentz Road Services facility (approximately 275m away). Odour impacts from this facility are not anticipated at the proposed development. Similarly, as odours and fugitive dust impacts were not observed in the vicinity of any of the other Class I or II facilities, and the minimum recommended separation distance is met for all facilities, air quality impacts are not anticipated to result in a compatibility concern.

Of the five proposed blocks of residential development, only two Blocks (A and B) of single-detached homes are located in proximity to the identified industrial lands. The remaining blocks are surrounded by primarily residential lands, and commercial buildings. Furthermore, there are existing residences located immediately adjacent and in between the proposed Blocks A and B.

6.2 TRANSPORTATION SOURCES

Block A is located approximately 30m from Upper Middle Road. Blocks A and B are located approximately 30m – 40m from the CN rail line. Block E is setback approximately 10m – 15m from Dundas Street. The remaining Blocks C and D are not located in proximity to an arterial roadway or rail line and, therefore, do not require consideration of transportation air quality emissions.

Upper Middle Road is a 4-lane arterial road. On the north side of Upper Middle Road, west of Itabashi Way, there are existing residences in similar proximity to the arterial roadway as the proposed Block A residences (approximately 25-30m).

The CN Halton Subdivision main track is used by freight trains. The existing residences between Blocks A and B are in similar proximity to the CN rail line as the proposed new single-detached homes (approximately 30-40m).

Dundas Street is 5 lanes adjacent to the proposed Block E development. Immediately southwest of Block E there are existing homes in similar proximity to Dundas Street (approximately 20m). It is noted the proposed Block E residential development will be higher in elevation (six-storeys) compared to the existing low-rise homes. However, since roadway emissions act like a line source, with minimal upward momentum, the introduction of elevated receptors does not introduce a new worst-case receptor location.

Due to the presence of existing residences in similar proximity to Dundas Street, Upper Middle Road and the CN rail line, it is our opinion that a detailed transportation study regarding air quality is not required for the proposed development. The following common mitigation strategies for Transportation related Air Pollution (TRAP) could be considered when designing the building and the HVAC system, to minimize air quality impacts from the adjacent transportation sources:

- Filtration – use of air filtration systems to reduce indoor levels of contaminants;
  - MERV filters 5-8 deemed appropriate for "Commercial Buildings" and "Better Residential Buildings"
  - MERV filters 9-12 deemed appropriate for "Better Commercial Buildings" and "Superior Residential Buildings"
- Intake/Amenity Location – locate fresh air intakes and outdoor amenity spaces away from roadways and loading docks;
- HVAC System – timing the ventilation schedule to avoid bringing in fresh air during the peak rush hour vehicle volumes; mechanical HVAC can also be used to provide more make-up air than is exhausted to slightly pressurize the building positively, minimizing the infiltration of polluted air through the building envelope;
- Physical Barriers – installation of physical barriers (for example, fence or noise barrier) to limit initial dispersion of pollutants and increase vertical mixing;
- Vegetation Buffer – use of a vegetation buffer/barrier to block site line to roadways and filter out particle emissions; coniferous varieties should be used to ensure efficacy year-round; porosity of 0.5-0.9 is considered ideal; and
- Prevailing Winds – Consideration of prevailing winds with respect to building orientation for dispersion, location of barriers and location of fresh air intakes.

6.3 SUMMARY OF AIR QUALITY, DUST AND ODOUR CONCLUSIONS AND RECOMMENDATIONS

The potential for air quality impacts on the proposed development, including dust and odour, have been reviewed. The proposed residential development lies outside of the area of influence for the identified industries, with the exception of Walker Emulsions. No odours were detected from the Walker Emulsions facility during a site visit to the area. During the site visit, odours were detected from only one facility – Lafrentz Road Services. Paint-type odours were detected only within the local vicinity of the facility. Based on observations made during the site visit, odour impacts from this facility are not expected at the proposed development site. The proposed development site lies outside of the minimum recommended

separation distance for all facilities. Furthermore, there are many existing residences located in similar proximity to both the identified industries and transportation sources. Therefore, a detailed air quality assessment is not required for the proposed Millcroft Greens development.

7. CONCLUSIONS

An air quality compatibility review has been completed, examining the potential for air quality, dust and odour impacts from road and rail sources and from nearby industrial land uses to affect the proposed development Project.

This study has included a review of the industrial facilities and transportation sources in the area. A site visit to the area was conducted to confirm land uses in the study area.

Based on our review, the Project, will not affect the industrial facilities' compliance with applicable Provincial environmental policies, regulations, approvals, authorizations and guidelines. The Project is:

- Not anticipated to result in increased risk of complaint and nuisance claims;
- Not anticipated to result in operational constraints for the major facilities;
- Not anticipated to result in constraints on major facilities to reasonably expand, intensify or introduce changes to their operations;

8. REFERENCES

Environmental Commissioner of Ontario (ECO, 2010), *Review of Posted Decision: Developing an Odour Policy Framework*, April 2010.

Halton Region (2014), *Air Quality Guidelines* – Regional Official Plan Guidelines.

Halton Region (2014), *Land Use Compatibility Guidelines* – Regional Official Plan Guidelines.

Ontario Ministry of the Environment, Conservation & Parks (MECP, 1995), Guideline D-1: *Land Use Compatibility*

Ontario Ministry of the Environment, Conservation & Parks (MECP, 1996), Guideline D-2: *Compatibility Between Sewage Treatment and Sensitive Land Uses*

Ontario Ministry of the Environment, Conservation & Parks (MECP, 1994) Guideline D-3: *Environmental Considerations For Gas Or Oil Pipelines And Facilities*

Ontario Ministry of the Environment, Conservation & Parks (MECP, 1994), Guideline D-4: *Land Use On or Near Landfills and Dumps*

Ontario Ministry of the Environment, Conservation & Parks (MECP, 1996), Guideline D-5: *Planning for Sewage & Water Services*

Ontario Ministry of the Environment, Conservation & Parks (MECP, 1995), Guideline D-6: *Compatibility Between Industrial Facilities and Sensitive Land Uses*

Ontario Ministry of the Environment, Conservation & Parks (MECP, 2008), *Technical Bulletin, Standards Development Branch, Methodology For Modelling Assessments Of Contaminants With 10-Minute Average Standards And Guidelines Under O. Reg. 419/05*, April 2008.

Ontario Ministry of Municipal Affairs and Housing (MMAH, 2014). *Provincial Policy Statement*

Ontario Ministry of Municipal Affairs and Housing (MMAH, 2019). Draft *Provincial Policy Statement.*

Ontario Regulation 419/01 – *Local Air Quality.*

9. STATEMENT OF LIMITATIONS

This report has been prepared and the work referred to in this report has been undertaken by SLR Consulting (Canada) Ltd. (SLR) for Millcroft Greens Corporation, hereafter referred to as the "Client". It is intended for the sole and exclusive use of the Client. The report has been prepared in accordance with the Scope of Work and agreement between SLR and the Client. Other than by the Client and as set out herein, copying or distribution of this report or use of or reliance on the information contained herein, in whole or in part, is not permitted unless payment for the work has been made in full and express written permission has been obtained from SLR.

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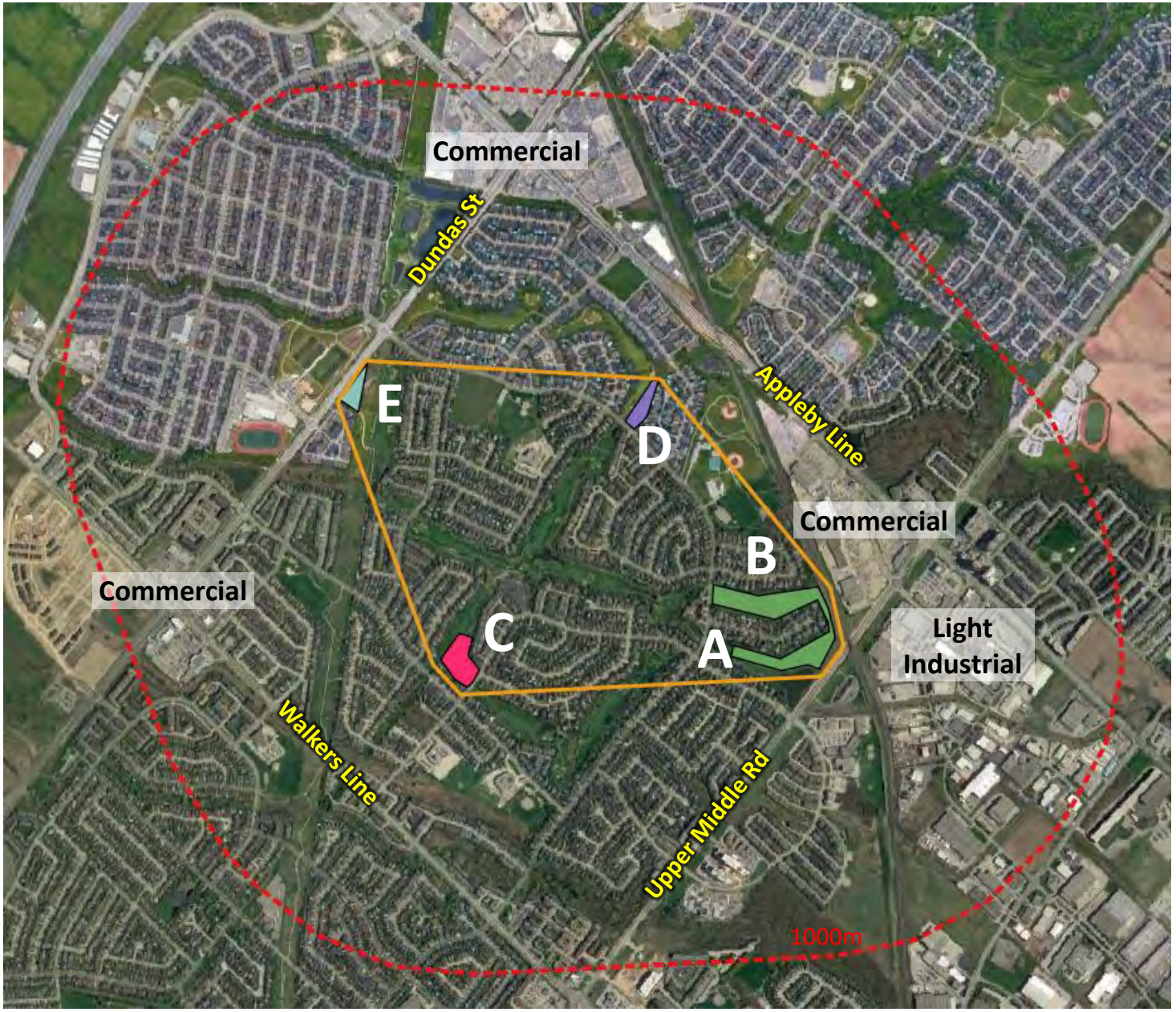
Opinions and recommendations contained in this report are based on conditions that existed at the time the services were performed and are intended only for the client, purposes, locations, time frames and project parameters as outlined in the Scope or Work and agreement between SLR and the Client. The data reported, findings, observations and conclusions expressed are limited by the Scope of Work. SLR is not responsible for the impacts of any changes in environmental standards, practices, or regulations subsequent to performance of services. SLR does not warranty the accuracy of information provided by third party sources.

FIGURES



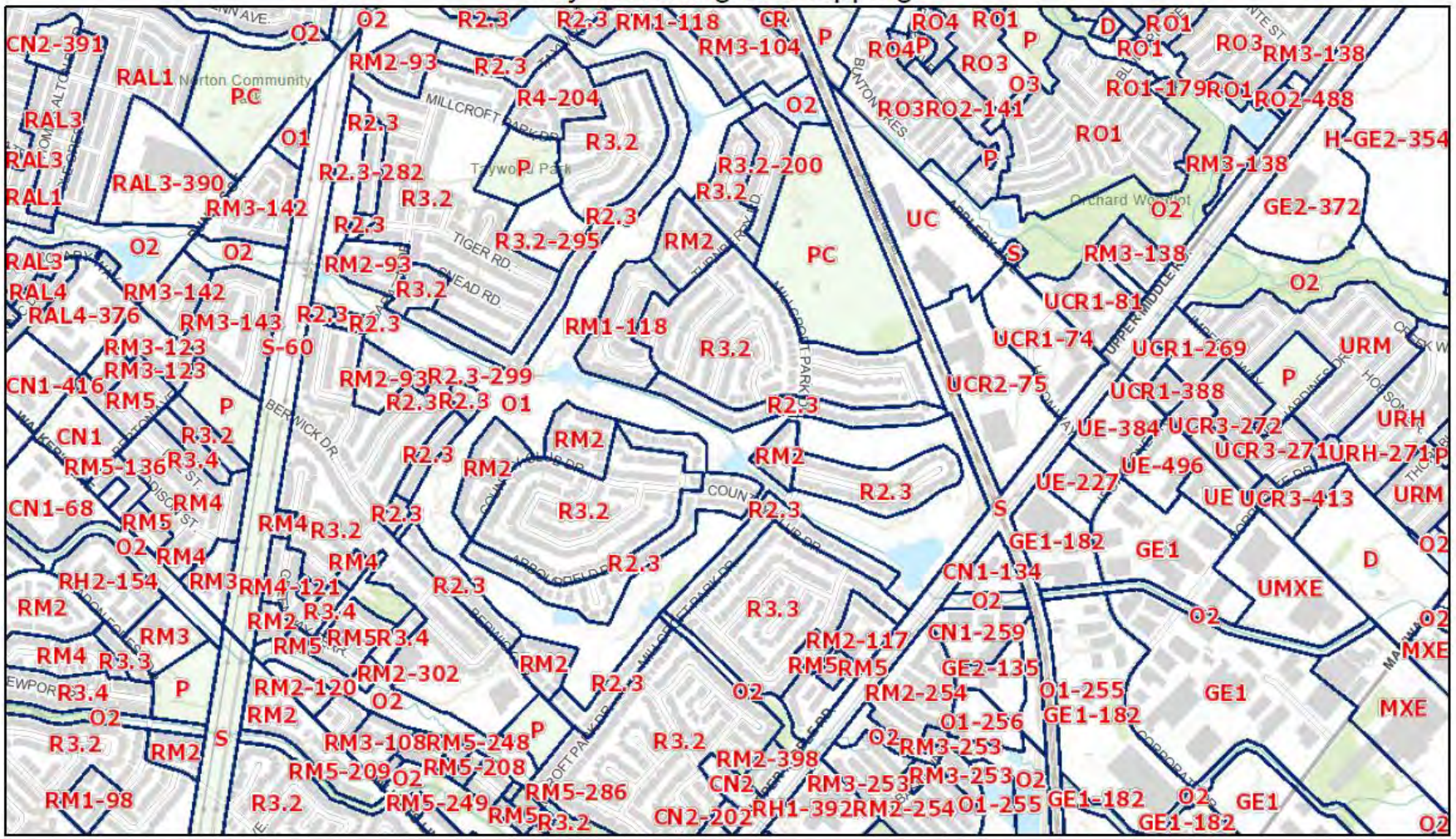
Aerial Photography from Google Earth

MILLCROFT GREENS CORPORATION	True North	Scale: 1:14,815	METRES	SLR global environmental solutions
MILLCROFT GREENS DEVELOPMENT - BURLINGTON, ONTARIO		Date: April 21, 2020 Rev 0.0	Figure No. 1	
SITE AND CONTEXT PLAN		Project No. 241.20082.000		



MILLCROFT GREENS CORPORATION	True North	Scale: 1:21,050	METRES	SLR global environmental solutions
MILLCROFT GREENS DEVELOPMENT - BURLINGTON, ONTARIO		Date: April 21, 2020 Rev 0.0	Figure No. **2**	
SURROUNDING LAND USES		Project No. 241.20082.000		

City of Burlington Mapping



4/21/2020, 4:26:15 PM

City Outline

Designated area for lot coverage

Zoning Bylaw

Shoreacres

Roseland

Indian Point

NEC Development Control

1:18,056

0 0.1 0.2 0.4 mi

0 0.17 0.35 0.7 km

Sources: NRCan, Esri Canada, and Canadian Community Maps contributors., City of Burlington

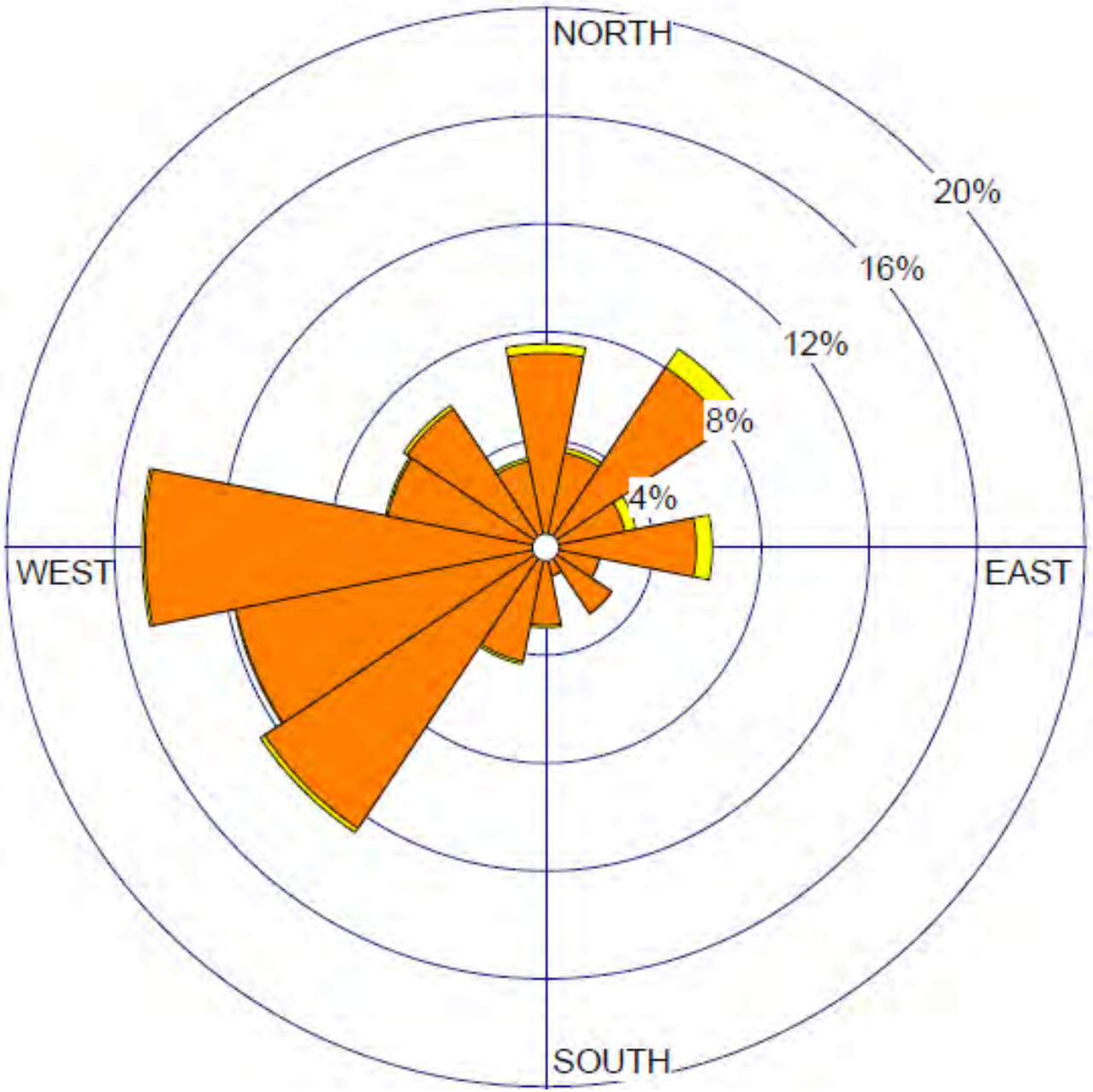
MILLCROFT GREENS CORPORATION	True North			
MILLCROFT GREENS DEVELOPMENT - BURLINGTON, ONTARIO		Date: April 21, 2020	Rev 0.0	Figure No. **3**
AREA ZONING MAP		Project No. 241.20082.000		

SLR global environmental solutions



1. Shipway Stairs
2. Complete Coating Protection Inc
3. Pense Truck Rental
4. Lafrentz Road Services
5. Clean Harbors
6. ELG Canada Inc.
7. Walker Emulsions
8. Metrican Stamping
9. Ecodyne Limited
10. Obrien Lifting Solutions
11. Crystal Cap Cleaners Inc.
12. Burlington Auto Works
13. Vanchem Performance Chemicals
14. Pollard Enterprises Ltd.
15. 1770 Appleby Line – Vacant
16. Canadian Portable Structures
17. Shop-Vac Canada Limited
18. Magnum Steel & Tube
19. Jones Tool & Machine Co
20. ABS Machining
21. Comtek Advanced Structures
22. Crown Relocations – Toronto
23. Great Lakes Combustion
24. Desi's Aluminum
25. Arzon Limited

MILLCROFT GREENS CORPORATION	True North	Scale: 1:8,000	METRES	SLR global environmental solutions
MILLCROFT GREENS DEVELOPMENT - BURLINGTON, ONTARIO		Date: April 21, 2020 Rev 0.0	Figure No. **4**	
GUIDELINE D-6 SEPARATION DISTANCES		Project No. 241.20082.000		



WIND SPEED
(m/s)

>= 8.33

0.10 - 8.33

Calms: 1.76%

True North

MILLCROFT GREENS CORPORATION

MILLCROFT GREENS DEVELOPMENT - BURLINGTON, ONTARIO

WIND FREQUENCY DISTRIBUTION DIAGRAM (WIND ROSE) BURLINGTON PIERS (1991-2015)

Scale: n/a		METRES
Date: April 21, 2020	Rev 0.0	Figure No. **5**
Project No. 241.20082.00000		

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APPENDIX A
Context Plan



- All Units In Metric Unless Otherwise Noted.
- Base Information Obtained From Various Sources And Is Approximate.
- Schedule / Plan Information Is Conceptual And Requires Verification by Appropriate Agency.
- Aerial Photo: Google Earth, Approx. Spring 2015

GERRARD DESIGN

Millcroft Greens Corporation | Burlington, Ontario

PRELIMINARY DEVELOPMENT CONCEPT

PROJECT 1516
DATE SEP 30, 2020
SCALE NTS