

NORTH DRAFT PLAN

MISSISSAUGA, ONTARIO

D-6 LAND USE COMPATIBILITY ASSESSMENT

RWDI # 2101001

January 12, 2021

SUBMITTED TO

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1 INTRODUCTION

Derry Britannia Developments Limited (the “Proponent”) retained RWDI AIR Inc. (RWDI) to undertake an assessment of land use compatibility with respect to part of proposed planned subdivision project designated as the North Draft Plan, located at 6432 Ninth Line in Mississauga, Ontario (“subject lands”). **Figure 1** shows the subject lands outlined and **Figure 2** shows a preliminary concept plan for the site layout. The proposed development consists of residential housing units. The subject lands are on two adjacent properties currently zoned as Development (“D”) and the Proponent has applied for a zoning by-law amendment to develop these lands.

The scope of this study was to assess the potential for impact from adjacent and nearby properties that may be a source of pollutants, dust, odour, noise and/or vibration on the proposed development. To investigate this potential, the following tasks were undertaken:

- Site visit to identify types and nature of existing land uses in the area;
- Review of the Preliminary Concept Plan for the subject land;
- Review of zoning by-law information;
- Review of Guideline D-6 from the Ministry of the Environment, Conservation and Parks (MECP);
- Review of MECP’s Environmental Compliance Approvals (ECA) for existing industries within 1000 m of the subject lands;
- Review of Environment and Climate Change Canada’s (ECCC) National Pollutant Release Inventory (NPRI) data for industries within 1000 m of the subject lands;
- Review of meteorological data; and,
- Interpretation of the above information based on our experience with air quality, dust, odour, noise and vibration effects.

The study investigated the compatibility of the proposed development with existing industrial land uses up to 1000 m from the subject lands.

2 INDUSTRIAL AIR EMISSIONS AND NOISE

2.1 Applicable Guidelines

The guidelines that relate to assessing the potential for adverse air quality and noise impacts from industry are as follows:

- Ontario Environmental Protection Act (EPA) and Ontario Regulation 419/05;
- Environmental Noise Guideline – Stationary and Transportation Sources – Approval and Planning (NPC-300), (MECP, 2013); and,
- D-6 Compatibility between Industrial Facilities (MECP, 1995).

The applicability of each of these guidelines is discussed below.



2.2 Ontario Environmental Protection Act and Regulation 419/05

Industrial air and noise emissions in Ontario are governed by the Environmental Protection Act (EPA) and its regulations. **Table 1** summarizes key sections of the EPA and the relevant MECP regulations.

Table 1: Summary of Ontario Regulations

Ontario Statute	Section	Summary
EPA	9	Prohibits the use, operation, construction, alteration, expansion or replacement of anything that may discharge a contaminant into the atmosphere, unless in accordance with an Environmental Compliance Approval (ECA), issued by MECP. There are exceptions to this requirement for certain minor types of emission sources.
Reg. 419/05	Various Sections	Sets out requirements for air quality modelling and reporting that must be completed when applying for an ECA.
EPA	14	Prohibits anyone from discharging a contaminant (including noise and odour) into the environment if it causes or may cause an adverse effect. Adverse effect: impairment of the quality of the natural environment for any use; injury or damage to property or to plant or animal life; harm or material discomfort to any person; an adverse effect on the health of any person; rendering any property or plant or animal life unfit for human use; loss of enjoyment of normal use of property; and/or interference with the normal conduct of business.
419/05	45	Prohibits anyone from causing or permitting the emission of any air contaminant to a degree that may cause discomfort to persons, loss of enjoyment of normal use of property, interference with normal conduct of business or damage to property.
419/05	46	Prohibits anyone from causing or permitting visible emissions if they obstruct the passage of light by more than 20% for at least 6 minutes.
419/05	Schedules 2 and 3	Sets out standards for air contaminant concentrations.
419/05	19 and 20	Prohibits anyone from causing or permitting the standards to be exceeded at points of impingement.

2.3 Environmental Noise Guideline NPC-300

The MECP's Environmental Noise Guideline Noise Pollution Control Documentation 300 (NPC-300), Stationary and Transportation Sources – Approval and Planning (MECP, 2013) sets out requirements for noise and vibration modelling, monitoring, and reporting that must be completed when applying for an ECA. The guideline also supports land use applications made under the Planning Act. Guidance from NPC-300 was used to assess environmental sound from industrial sources. NPC-300 also specifies that industry and road traffic noise are to be assessed separately.

NPC-300 noise criteria applicable to an industry vary depending on the character of ambient noise in the surrounding area. Class 1 is an urban area with an acoustic environment that is continuously dominated by the sounds of human activity, as would be found in a major urban centre. Class 2 areas are suburban or semi-rural areas where sounds of human activity drop off earlier in the evening. Class 3 areas are rural where the acoustic environment is dominated by natural sounds. The acoustic environment surrounding the study area would be classified as a Class 1 area.



Industrial sources are required to meet daytime, evening and nighttime 1-hour L_{EQ} sound level limits as summarized in **Table 2**.

Table 2 provides both outdoor point of reception criteria and plane of the window criteria at the receptor. Outdoor points of reception are assessed when associated with dwellings or noise sensitive zoned lots. For dwellings, the outdoor point of reception is on the land use within 30 m of a façade of the building, at a height of 1.5 m above ground, in backyards, front yards, terraces or patios. Points of reception at the façade of a building include windows or openings in the façade leading to noise sensitive spaces such as bedrooms, living rooms, eat in kitchens, classrooms, therapy or treatment rooms, and assembly spaces for worship.

Table 2: NPC-300 Limits for Industrial Sources

Time of Day	Time Period	Exclusion Limit for Outdoor Points of Reception	Exclusion Limit for Plane of Window of Noise Sensitive Spaces
		Class 1, L_{EQ-1hr}	Class 1, L_{EQ-1hr}
Daytime	07:00-19:00h	50 dBA	50 dBA
Evening	19:00-23:00h	50 dBA	50 dBA
Nighttime	23:00-7:00h	-	45 dBA

Another important piece of legislation is the Ontario Environmental Bill of Rights (EBR). Section 22 of the EBR requires the MECP to give public notice of certain classes of proposals, including a proposal to issue an ECA. Section 38 of the EBR grants any resident of Ontario the right to seek leave to appeal an MECP decision to issue and ECA.

2.4 D-Series Guidelines

In addition to the regulations cited in the preceding sections, land use considerations are another means to reduce the risk of adverse air quality and noise effects from industrial facilities. For example, this can be achieved by creating a land use buffer between industry and a sensitive land use, such as residences, schools, seniors' facilities, daycares, hospitals, churches and campgrounds. The MECP has a guideline (D-6: Compatibility between Industrial Facilities) to assist planners in establishing adequate buffers.

The D-series guidelines, and specifically Guideline D-6, are intended to minimize encroachment of sensitive land uses on industrial facilities and vice versa. It addresses potential incompatibilities due to emissions such as noise, odour and dust. Guideline D-6 provides a classification scheme for industries, based their potential for fugitive emissions that could cause adverse effects. For each class, the guideline provides an estimate of potential influence area and a recommended minimum separation distance between each class of industry and sensitive land uses (see **Table 3**).



Table 3: Summary of Guideline D-6

Industry Class	Definition	Potential Influence Area	Recommended Minimum Separation Distance (property line to property line)
I	Small scale, self-contained, daytime only, infrequent heavy vehicle movements, no outside storage.	70 m	20 m
II	Medium scale, outdoor storage of wastes or materials, shift operations and frequent heavy equipment movement during the daytime.	300 m	70 m
III	Large scale, outdoor storage of raw and finished products, large production volume, continuous movement of products and employees during daily shift operations.	1000 m	300 m

Guideline D-6 provides criteria for classifying industrial land uses, based on their outputs, scale of operations, processes, schedule and intensity of operations. **Table 4** provides the classification criteria.

Table 4: Guideline D-6 Industrial Categorization Criteria

Criteria	Class I	Class II	Class III
Outputs	<ul style="list-style-type: none"> • Sound not audible off property • Infrequent dust and/ or odour emissions and not intense 	<ul style="list-style-type: none"> • Sound occasionally audible off property • Frequent dust and/ or odour emissions and occasionally intense 	<ul style="list-style-type: none"> • Sound frequently audible off property • Persistent and intense dust and/ or odour emissions
Scale	<ul style="list-style-type: none"> • No outside storage • Small scale plant or scale is irrelevant in relation to all other criteria 	<ul style="list-style-type: none"> • Outside storage permitted • Medium level of production 	<ul style="list-style-type: none"> • Outside storage of raw and finished products • Large production levels
Process	<ul style="list-style-type: none"> • Self-contained plant or building which produces / stores a packaged product • Low probability of fugitive emissions 	<ul style="list-style-type: none"> • Open process • Periodic outputs of minor annoyance • Low probability of fugitive emissions 	<ul style="list-style-type: none"> • Open process • Frequent outputs of major annoyances • High probability of fugitive emissions
Operation / Intensity	<ul style="list-style-type: none"> • Daytime operations only • Infrequent movement of products and/or heavy trucks 	<ul style="list-style-type: none"> • Shift operations permitted • Frequent movements of products and/or heavy trucks with the majority of movements during daytime hours 	<ul style="list-style-type: none"> • Continuous movement of products and employees • Daily shift operations permitted



Often an industry will fall between two classes and judgment is required to apply the most appropriate classification given the balance of the criteria. Guideline D-6 states that no incompatible development should occur within the recommended minimum separation distance as noted in **Table 3**. Section 4.10 of D-6 however identifies exceptional circumstances with respect to redevelopment, infill and mixed-use areas. In these cases, the guideline suggests that separation distances less than the recommended minimum values may be acceptable if a justifying impact assessment is provided.

3 INDUSTRIAL LAND USES

3.1 Potential for Incompatibility

A search for existing MECP EASRs and ECAs, along with ECCC NPRI information for industries within 1000 m of the subject lands was completed in combination with a preliminary review of industries during a visit to the area. This helped identify any industries that may have a potential to impact air quality and/or noise at the subject lands. Using the gathered information, industries were classified based on their potential to influence the proposed development, as per the D-6 classifications (Class I, II or III). A site visit was completed on November 19, 2020 to verify the existing industrial areas within the 1000 m zone around the proposed development. The identified industries are shown in **Figure 3** as well as detailed in **Appendix B**.

The lands immediately surrounding the proposed development are predominantly zoned for residential land use. The land zoning within 1000 m of the subject lands is shown in **Appendix A**. Areas to the north and east of the subject lands are residential consisting of detached dwellings (R1-R16 zoning designation), townhouses (RM4-RM6 zoning designation) and semi-detached dwellings (zoned RM1-3). Some lands designated as open space (OS), natural features (G1), and natural hazard (G2) areas exist in between the residential zones. There are two commercial areas: one located at Derry Road and Lisgar Avenue that is zoned convenience commercial and motor vehicle commercial (C1 and C5 respectively) and one located at Ninth Line and Doug Leavens Boulevard that is zone as convenience commercial (C1). Southwest of Ninth Line the land uses surrounding the subject lands are zone parkway belt (PB 1) and development (D). The lands west of Highway 407 belong to the City of Milton. These lands are zoned predominantly for agricultural use ("A1") but have some greenland ("GA and "GB") and open space ("OS") areas as well.

Two facilities of interest were identified in the study area that have been categorized as Class I, based on their anticipated operations and the scheme identified in **Table 4**. The summary can be found in in **Appendix B**. These facilities are described in the sections below.

3.1.1 Class I

As seen in **Figure 3**, there are two (2) Class I industrial facilities located within the study area: the Enbridge Consumers Gas/Union Gas Parkway East facility located at 6626 - 6710 Ninth Line, and the Enbridge Consumers Gas/Union Gas Parkway West facility located at 6535-6683 Eighth Line. The Parkway East facility property boundary is within the D-6 class I minimum separation distance of 20 m but the nearest source of disturbance at the facility is approximately 75 m away from the proposed development and is outside of the Class I potential influence area of 70m. This facility reports nitrogen oxide (NOx) emissions to the NPRI. From an air quality perspective, this facility is not expected to impact the proposed development. It is well contained and has no outdoor storage of materials that could result in fugitive dust emissions. The facility has a current MECP ECA that permits the operation of point sources discharging natural gas combustion emissions (primarily nitrogen oxides or NOx). These emissions are not typically sources of odour and are required to comply with the MECP benchmarks at the facility's property line and beyond.

A site visit to the study area indicated that sounds from the facility were not audible over vehicle traffic along Ninth Line. However, an environmental noise study has been commissioned by the Proponent which will include any applicable mitigation measures to ensure that the NPC-300 sound level limits will be met at sensitive receptors at the proposed development.

The Parkway West facility on Eighth Line is located approximately 400 m southwest of the subject lands and well beyond the Class 1 potential influence area of 70 m. The facility is close to Highway 407 which intervenes between it and the subject lands. A review of wind data from Lester B. Pearson International Airport in Mississauga (**Figure 4**) indicates that wind blowing from the facility towards the subject lands (southwest) are infrequent, occurring less than 7% of the time. The facility reports NOx emissions to the NPRI. MECP ECA records were not available for this facility on the MECP's Access Environment website but given that the facility is similar in operation to the Parkway East facility, it is likely that NOx is the significant chemical emitted from its emissions sources. The facility is not expected to cause air quality impacts at the subject lands since it is self contained and does not appear to have outdoor storage of materials that can contribute to fugitive emissions of dust or odour. Any emissions generated at the facility are exhausted from low lying point sources and as such these emissions will likely impact areas closer to the property line; impacting existing residences north west of the facility, located on Derry Road, that are in much closer proximity than the subject lands which are further afield. Noise emissions from the facility were not audible at the proposed development at the time of the site visit. Noise from the facility is not anticipated to impact the subject lands since the facility is closer to existing residences to the north west than the subject lands located 400 m to the north. Additionally, Highway 407 is situated between the facility and subject lands, resulting in elevated sound level limits at the proposed development. It is anticipated that noise from the facility would meet NPC-300 sound level limits.

3.1.2 Class II and Class III

There are no Class II or Class III facilities within the study area.



4 CONCLUSIONS

RWDI completed a D-6 land use compatibility assessment for the proposed planned subdivision project designated as the North Draft Plan, located at 6432 Ninth Line in Mississauga, Ontario. A site visit to the area and a review of the City of Mississauga zoning information, MECP ECA records, and ECCC NPRI reports were conducted as part of this assessment. The land uses within 1000 m of the subject lands are predominantly residential, with the remainder being commercial, open space, natural areas, parkway belt lands and lands zoned as "D" (Development).

Two (2) Class I Industrial facilities were identified within the 1000 m study area: The Enbridge Consumers Gas/Union Gas Parkway East facility on Ninth Line and the Enbridge Consumers Gas/Union Gas Parkway West Facility. The Parkway east facility property is within the D-6 class I minimum separation distance of 20 m but the nearest source of disturbance at the facility is outside of the Class I potential influence area of 70m. The Parkway West facility has similar operations as the Parkway East facility and is well beyond the D-6 Class 1 potential influence area of 70 m. Based on the preliminary air quality review for these facilities it was determined that they are not expected to impact air quality at the proposed development as the facilities are well contained with minimal processing and minimal potential for impacts of fugitive dust or odours. The Parkway east facility has a current ECA that requires emissions compliance at its property line and beyond. The Parkway West facility has similar operations as the Parkway East facility and air quality impacts from this facility are expected to impact nearby existing residences than the subject lands which are further away.

From a noise perspective, both of the above-mentioned facilities are expected to meet the NPC-300 sound level limits at the subject lands. An environmental noise study for the Parkway East facility has been commissioned by the Proponent which will include any applicable mitigation measures to ensure that the NPC-300 sound level limits will be met at sensitive receptors at the proposed development. The Parkway West facility is located in closer proximity to existing residences than the subject lands and noise impacts are expected to be higher at these residences than the subject lands. Additionally, elevated sound level limits are expected at the subject lands from vehicle traffic on Highway 407 which is located in between the subject lands and the Parkway West facility.

Based on RWDI's review of existing industrial facilities in the study area, the proposed development at the subject lands are considered compatible with existing industry. An environmental noise study has been commissioned by the Proponent which will include any applicable mitigation measures to ensure that the NPC-300 sound level limits will be met at sensitive receptors at the proposed development.

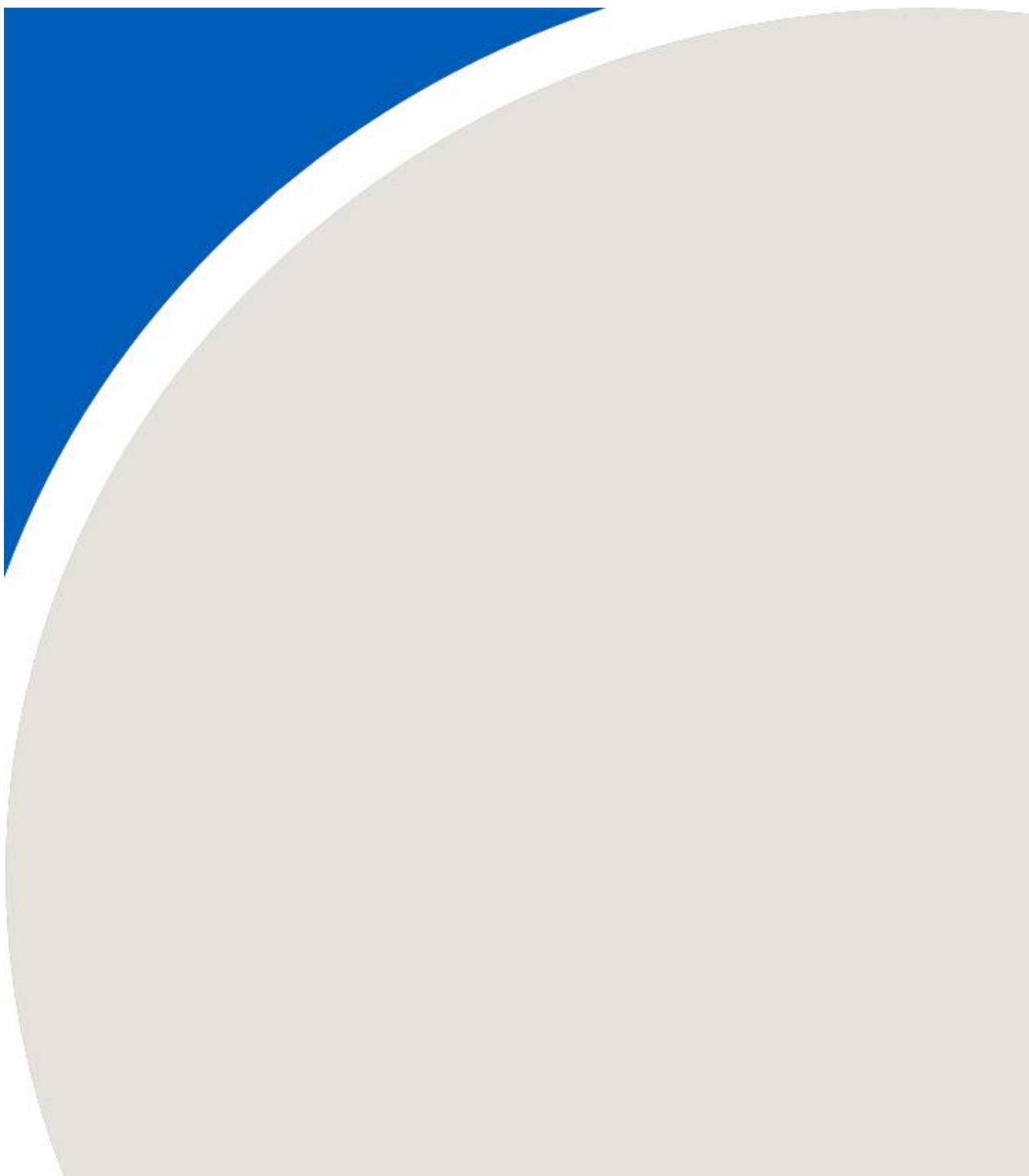


5 REFERENCES

Ministry of the Environment, Parks and Climate Change (MECP), previously Ontario Ministry of the Environment (MOE), July 1995, Guideline D-6, *Compatibility Between Industrial Facilities and Sensitive Land Uses*.

Ministry of the Environment, Parks and Climate Change (MECP), Ontario Ministry of the Environment (MOE), August 2013, Publication NPC-300, *Environmental Noise Guideline Stationary and Transportation Sources – Approval and Planning*.

FIGURES





Map Document: C:\Users\LJN\OneDrive - ROWAN WILLIAMS DAVIES & IRWIN INC\Desktop\GIS\North Draft Plan\2101001_NorthDraftPlan_NinthLine.aprx

Site Layout - North Draft Plan
21T-M19003 W10 Parts of Lots 6, 7, 8 & 9 Concession 9
West of Ninth Line Between Derry Road and Britannia Road

Map Projection: NAD 1983 UTM Zone 17N
 Ontario D-6 Compatibility and Mitigation - Mississauga, ON

True North

 Project #: 2101001

Drawn by: LJN	Figure: 1
Approx. Scale: 1:6,000	
Date Revised: Nov 19, 2020	



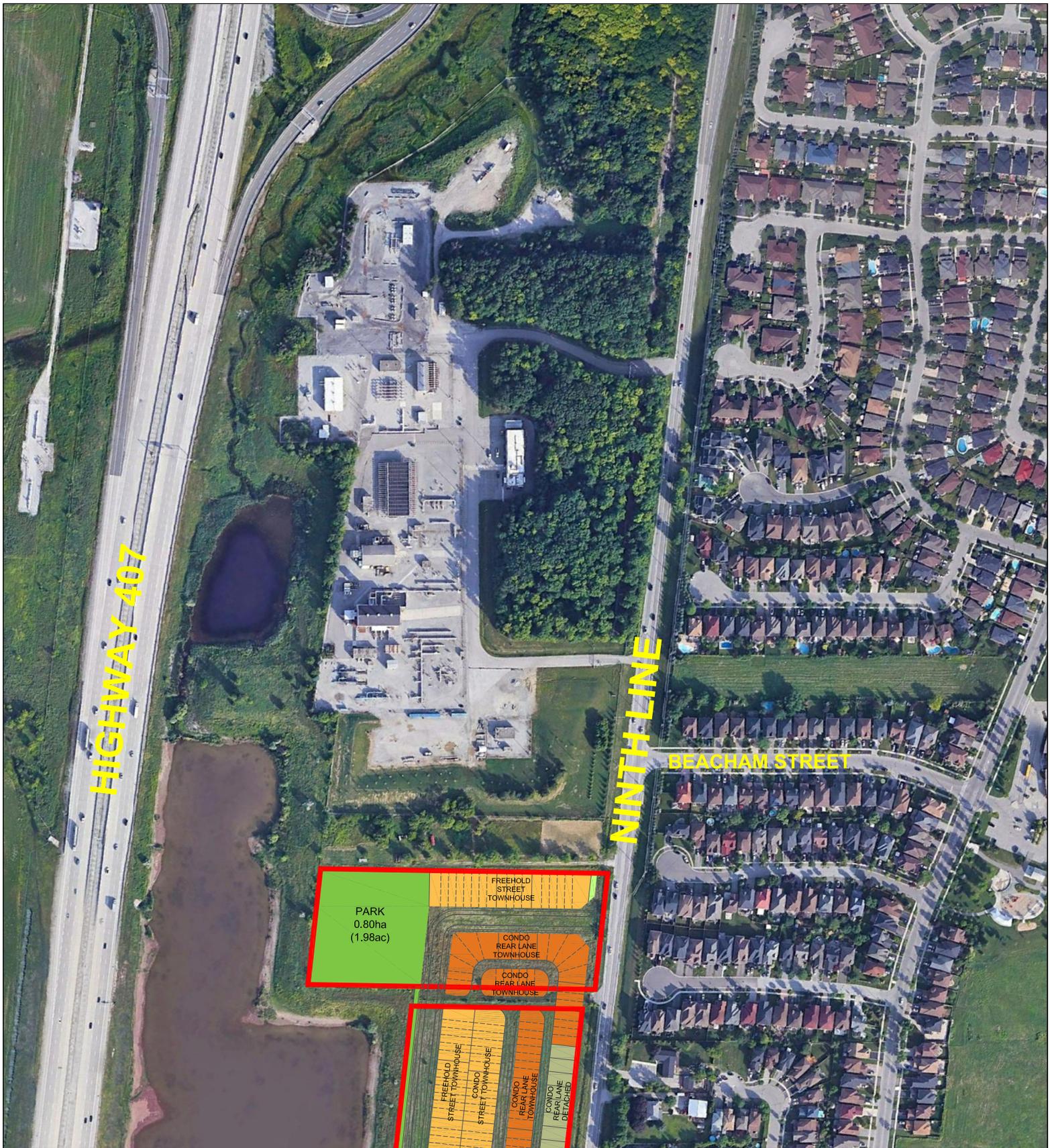


FIGURE 2

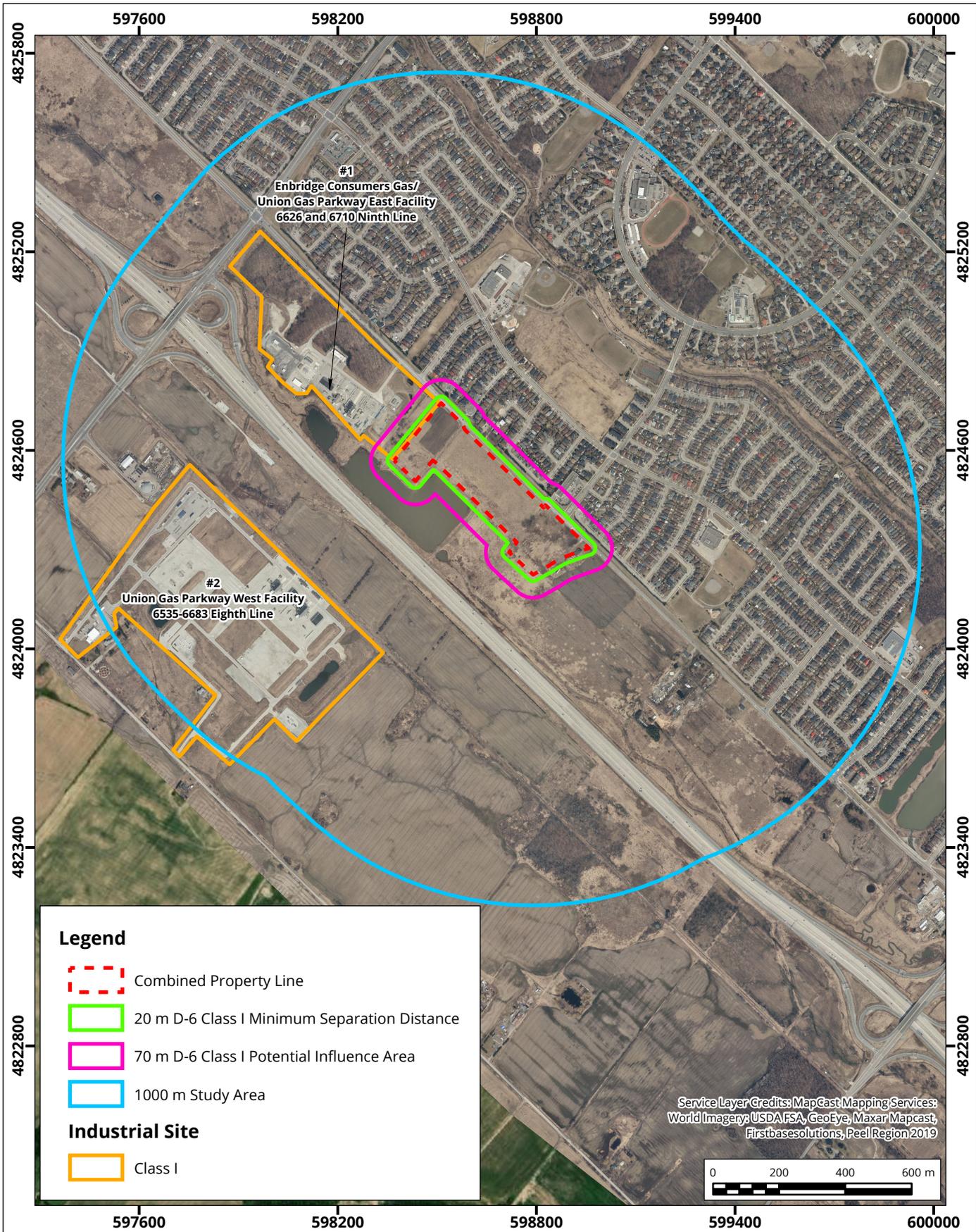
AERIAL CONTEXT PLAN

CITY OF MISSISSAUGA,
REGIONAL MUNICIPALITY OF PEEL

 Subject Property



Scale 1:4000
November 23, 2021



Subject Land and Facilities of Interest

Site Layout – North Draft Plan, 21T-M19003 W10 Parts of Lots 6, 7, 8 & 9
 Concession 9 West of Ninth Line Between Derry Road and Britannia Road

Map Projection: NAD 1983 UTM Zone 17N

Ontario D-6 Compatibility and Mitigation - Mississauga, ON



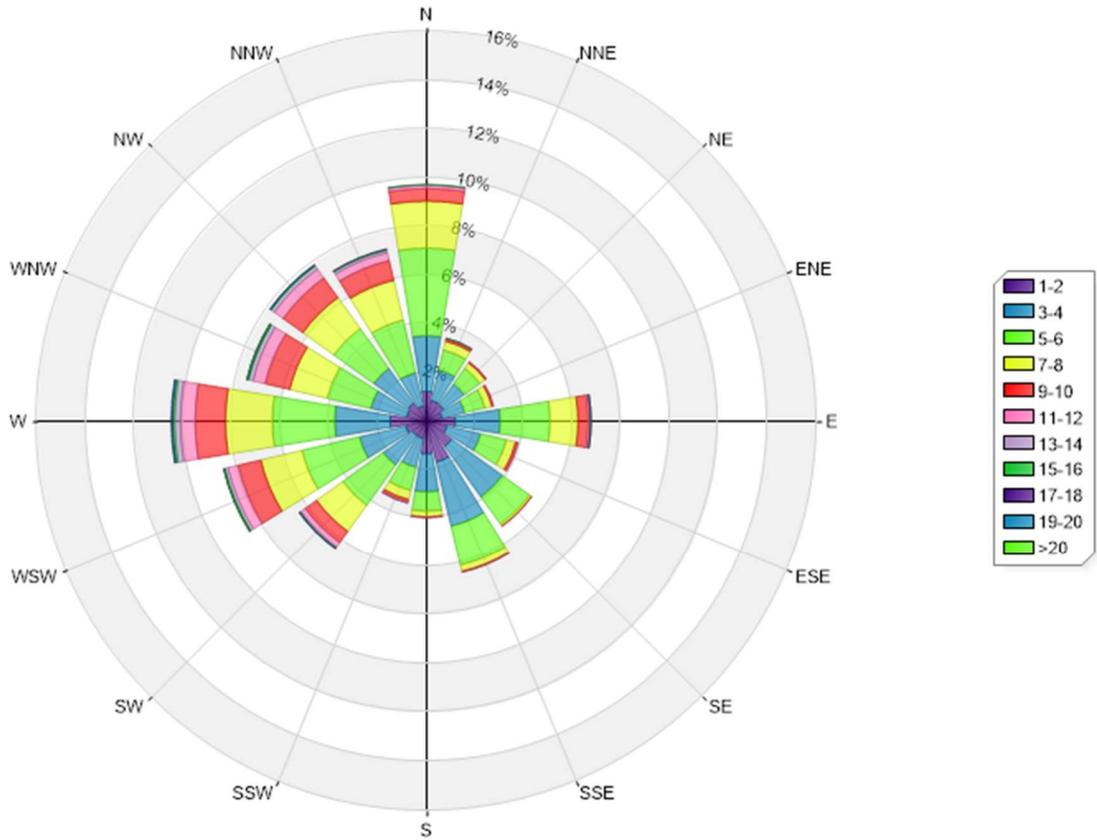
Project #: 2101001

Drawn by: LJN	Figure: 3
Approx. Scale: 1:16,000	
Date Revised: Nov 27, 2020	



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**Directional Distribution (%) of Winds in m/s (Blowing From)
Toronto Pearson International Airport, (2000-2020)**



Directional Distribution of Winds Blowing From Toronto Pearson International Airport (2000-2020)

North Draft Plan, Derry Britannia Developments Limited
Mississauga, Ontario

Project #2101001

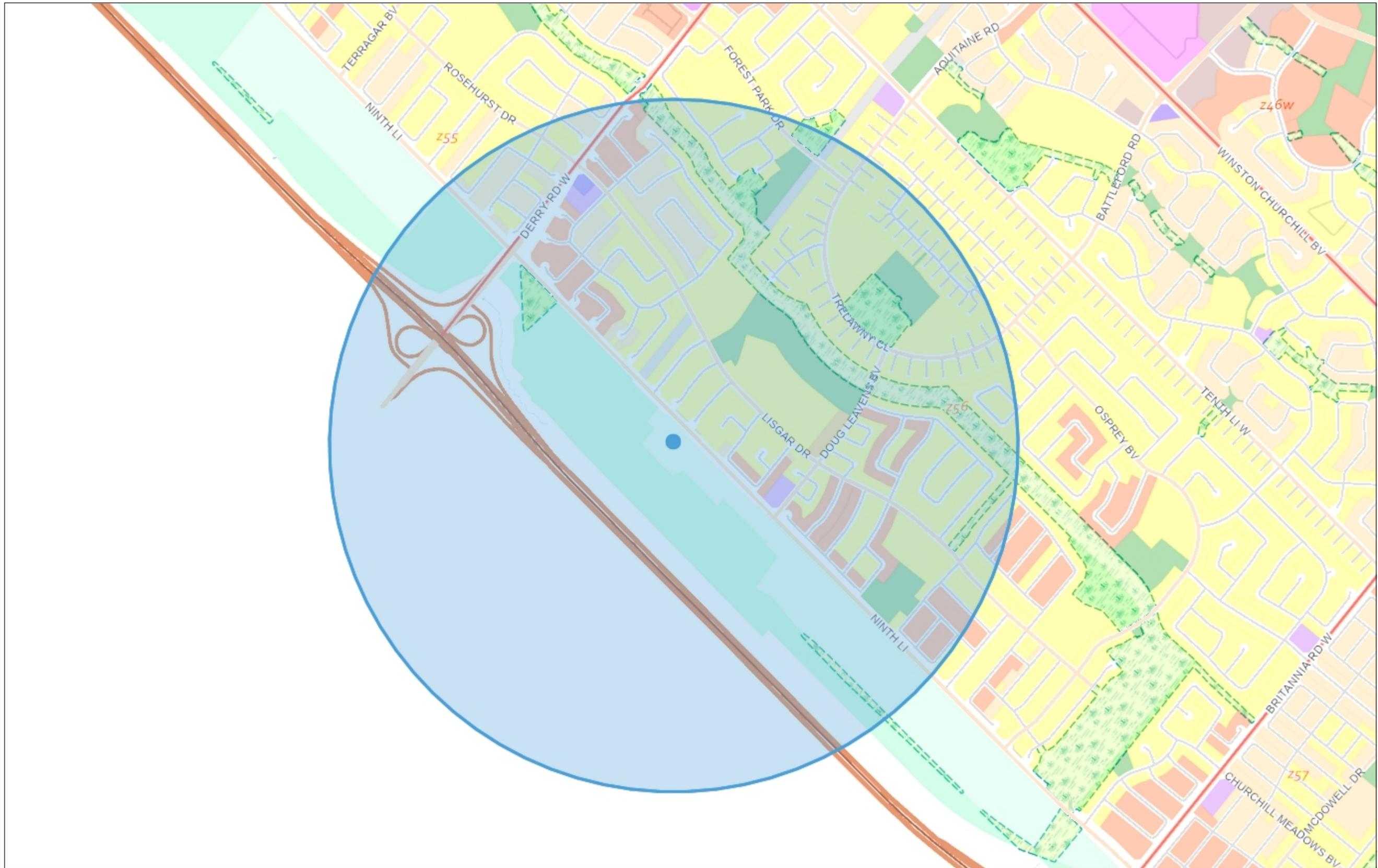
Figure: 4

Date: 11 20, 2020



APPENDIX A





Legend

Zoning Shapes

- A Agricultural (By-law 5500)
- AP Lester B. Pearson International
- B Buffer, Berm, Fence
- C1 Convenience Commercial
- C2 Neighbourhood Commercial
- C3 General Commercial
- C4 Mainstreet Commercial
- C5 Motor Vehicle Commercial
- CC1 Core Commercial
- CC2, CC4 Mixed Use
- CC3 Mixed Use - Transition Area
- CCO Office
- CCOS Open Space
- D Existing Use
- E1 Employment in Nodes
- E2 Employment
- E3 Industrial
- G1 Natural Hazards
- G2 Natural Features
- I Hospital and University / College
- O Office
- OS1 Community Park
- OS2 City Park
- OS3 Cemetery
- PB1, PB2 Parkway Belt
- R1 - R16 Detached Dwellings
- RA1 - RA5 Apartment, Long-Term Buildings
- RM1 - RM3 Semi-Detached
- RM4 - RM6 Townhouse
- RM7 Detached, Semi-Detached, D
- RM8 - RM12 Back to Back, Stacke
- U Utility

— Municipal Boundary Line

□ ZArea

RoadShield

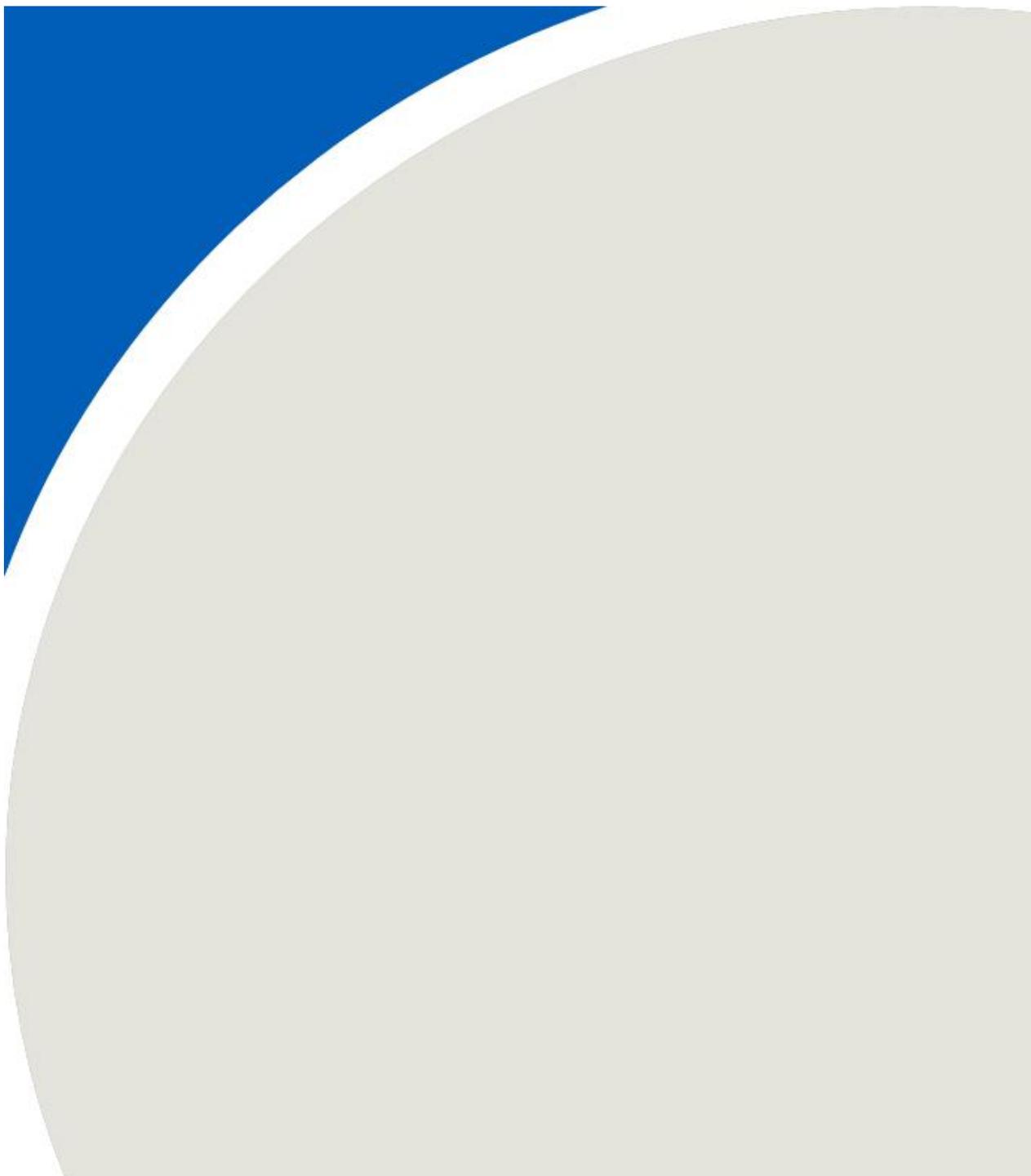
Peel Streets

- Arterial
- Collector

1: 18,056



APPENDIX B



North Draft Plan, Derry Britannia Developments Ltd.

RWDI #: 2101001

21T-M19003 W10 Parts of Lots 6, 7, 8 & 9 Concession 9 West of Ninth Line Between Derry Road and Britannia Road

Table B-1 List of Industries and Sites of Interest in Study Area

Map Number	BUSINESS_N	ADDRESS	APPROVAL_N	APPROVAL DATE	APPROVAL TYPE	STATUS	Facility/Process Description	NOISE/VIB/AAR Requirements in ECA	Comment on ECA Conditions	Tall Stack in ECA Approval	NPRI	D-6 Class	Class Comments
1	Enbridge Consumers Gas/Union Gas Parkway East Facility	6710 Ninth Line, Mississauga	4437-4EN5FV	5/15/2000	ECA-AIR	Approved	Natural gas distribution facility with gas fired boilers and emergency generators.	n/a	n/a	n/a	Yes; Reports NOx	I	Site is well contained and only has point sources. No evidence of outdoor storage and truck traffic in yard thus no potential for fugitive dust emissions. Emission sources at the site are point sources emitting natural gas combustion by-products (NOx) which are not associated with odour. Noise emissions from the facility were not audible over vehicle traffic on Ninth Line.
		6626 Ninth Line, Mississauga	8948-7ENJ8T	9/21/2008	ECA-AIR (Revoked)	Approved	Natural gas distribution facility with gas fired turbine compressors, gas fired boilers, gas fired emergency generators and process and comfort heating equipment.	Noise report completed in 2007.	Has conditions for in-stack limits for NOx (ECA Schedule A). Noise control measures are outlined in ECA Schedule C.	n/a	Yes; Reports NOx		
2	Union Gas Parkway West Facility	6535-6683 Eighth Line, Milton, ON L9T 7J8	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Yes; Reports NOx	I	Site is similar to above site.