



BCX
ENVIRONMENTAL
CONSULTING

Land Use Compatibility Study – Air Quality

**HM RK (450 Dufferin) Ltd. – Proposed Mixed-Use
Development – 450 Dufferin Street, Toronto**

Prepared for: HM RK (450 Dufferin) Ltd.
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M5V 1E3

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BCX File No. 1379-01.02

Date: November 2022

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1.0 INTRODUCTION

BCX Environmental Consulting (BCX) was retained by HM RK (450 Dufferin) Ltd. (the Proponent) to prepare a Land Use Compatibility Study – Air Quality in support of the Proponent’s rezoning application pertaining to the City of Toronto’s Municipal Comprehensive Review of the Proponent’s property located at 450 Dufferin Street, in the City of Toronto, Ontario (site).

1.1 Background

The Proponent is proposing to submit a rezoning application for their property located at 450 Dufferin Street, Toronto, to convert the site into mixed-use development consisting of a 15-storey residential building with commercial uses on the lower levels.

As shown in Figures 1 and 2 (Appendix A) and in the zoning map (Appendix B), the site is located immediately west of Dufferin Street and existing residential land; south of Florence Street and existing residential land, north of Alma Avenue and new residential land, and east of a GO rail line and existing in industrial/commercial lands.

As detailed in the Site Plan (Appendix A), the proposed mixed-use development will be positioned on a lot at the intersection of Dufferin Street and Alma Avenue. The Proponent proposes to construct a 15-storey mixed-use residential/commercial building.

The City of Toronto identified that a Land Use Compatibility Study – Air Quality is required to support the proponent’s rezoning application. This study will address land use compatibility from an air quality perspective.

In assessing land use compatibility as it pertains to air quality, BCX has specifically considered the Province’s Guideline D-6 per the Provincial Policy Statement under the Environmental Protection Act and Planning Act for the site, as summarized in Section 3.1.

1.2 Scope

The focus of this Land Use Compatibility Study – Air Quality is an assessment of the potential for air quality impacts, including both health impacts and nuisance impacts (i.e., dust and odour) from neighbouring industrial/commercial uses and major transportation corridors on the proposed development.

This study consists of the following tasks:

- Identification of major transportation corridors and assessment of the potential for off-property air quality impacts from major transportation corridors;
- Identification of neighbouring industrial/commercial facilities and vacant lands that could support industrial/commercial facilities, and an initial assessment of potential for off-property air quality impacts from these facilities;

- For industrial/commercial facilities identified as potentially significant from an air quality perspective, further study of these facilities using the Guideline D-6 recommended minimum separation distances and areas of potential impact to determine if additional assessment of any of these facilities, is required;
- For facilities requiring additional assessment, a qualitative analysis of the potential for, and significance of, possible air quality impacts at the proposed development. Assessment tools used will include site observations, a review of available environmental approvals related to air quality, historical meteorological data, and proposed site/building design, including mitigation measures identified from other land use compatibility studies such as noise, if available; and
- A summary of the air quality impact analysis and study conclusions; and
- If required, recommendations to minimize potential air quality impacts on the proposed development from the neighbouring industrial/commercial facilities and major transportation corridors.

The assessment, conclusions and recommendations in this report are based on the information provided by the proponent and their representatives; BCX's site visit; BCX's professional opinion; and BCX's past experience measuring, modelling, and mitigating air quality impacts from industrial/commercial facilities and major transportation corridors.

2.0 IDENTIFICATION OF NEIGHBOURING INDUSTRIAL/COMMERCIAL FACILITIES AND MAJOR TRANSPORTATION CORRIDORS AND INITIAL ASSESSMENT OF THEIR POTENTIAL FOR OFF-SITE AIR QUALITY IMPACTS

A review of industrial/commercial facilities and major transportation corridors in the vicinity (within approximately 1000 metres) of the proposed development was undertaken. A detailed roadside inspection was completed on August 27, 2020.

2.1 Neighbouring Industrial/Commercial Facilities Requiring Further Study in this Report

Based on professional judgement and experience, three existing industrial/commercial facilities were identified within the 1000 metre radius of the proposed residential development, which may have a potential for off-property air quality impacts. These facilities are presented in Table 3. It is important to note that the three existing industrial/commercial facilities are located closer to existing residential uses than the proposed development.

The locations of these facilities are presented in Figures 1 and 2 in Appendix A.

2.2 Vacant Properties Requiring Further Study in this Report

In order to identify if there could be future industrial/commercial facilities with a potential for significant off-property impacts, the review also included the identification of vacant industrial/commercial properties near the proposed development. No industrial/commercially zoned vacant lots were identified in the vicinity of the proposed development.

2.3 Major Transportation Corridors

A GO transit rail line is located approximately 150 metres to the west of the proposed development. Diesel driven locomotives can generate odours (diesel fumes) and particulate (usually as an oily residue). These emissions are typically only significant when trains are shunting. In addition to particulate from the engines, dust on and in the vicinity of the rail line can be re-entrained as the train passes over the rail line. Based on observations during BCX's site visit and a review of aerial imagery, shunting is not expected in the vicinity of the site.

Various studies^{1,2} demonstrate that the impact from tailpipe emissions, which rail line locomotive travel is similar to, in the horizontal direction reduces rapidly within the first 30 m from a road and continues to drop to background levels over the next 100 m. Studies² also show that the impact from tailpipe emissions in the vertical direction peaks at approximately 5 m above a road

¹ Radonjic et. al. *Modelling Line Sources (Roads) Using CAL3QHCR, ISCST3, AERMOD and CALPUFF.*

² Zhu et. al. *Predicting particle number concentrations near a highway based on vertical concentration profile.*

and continues to decrease with height at a rate of approximately 50% every 10 m to background levels.

The proposed development is located more than 100m from the rail line and no sensitive uses are proposed for the ground and mezzanine levels of the development. Further, there is no train shunting in the vicinity of the site. Potential air quality health and odour impacts from train emissions are, therefore, not expected to be significant.

3.0 ASSESSMENT OF FACILITIES REQUIRING FURTHER STUDY IN THIS REPORT USING GUIDELINE D-6

The potential for air quality impacts from neighbouring industrial/commercial facilities at the proposed development were further assessed, as detailed in the following sections, using Guideline D-6 as a tool.

3.1 Overview of Guideline D-6

Guideline D-6 – Compatibility Between Industrial Facilities and Sensitive Land Uses (Guideline D-6) was developed to address potential incompatibility of industrial land uses and sensitive land uses in relation to land use approvals under the Planning Act. Guideline D-6 recommends separation distances between existing industrial facilities and proposed residential developments, including a minimum separation distance, as well as a potential area of influence. The recommended minimum separation distance and potential area of influence are defined based on the Guideline D-6 classification of the industry as provided in Table 1.

Table 1: Industrial Class Definitions and Separation Distances

<p>A <i>Class I Industrial Facility</i> is defined as a place of business for a small scale, self-contained plant or building which produces/stores a product which is contained in a package and has low probability of fugitive emissions. Outputs are infrequent, and could be a point source or fugitive emissions of odour and/or dust. There are daytime operations only, with infrequent movement of products and/or heavy trucks, and no outside storage. Typically, odour and dust emissions are infrequent and not intense. Sound is not audible off the property and there is no ground-borne vibration on the plant property.</p> <ul style="list-style-type: none">• Recommended Minimum Separation Distance: 20 m• Potential Area of Influence: 70 m
<p>A <i>Class II Industrial Facility</i> is defined as a place of business for medium scale processing and manufacturing with outdoor storage of wastes or materials, and results in periodic outputs of minor annoyance. There are occasional outputs of either point source or fugitive emissions of odour and/or dust. Shift operations are permitted and there is frequent movement of products and/or heavy trucks during daytime hours. Typically, odour and dust emissions are frequent and occasionally intense. Sound is occasionally audible off the property and ground-borne vibration is possible but cannot be perceived off the property.</p> <ul style="list-style-type: none">• Recommended Minimum Separation Distance: 70 m• Potential Area of Influence: 300 m

A *Class III Industrial Facility* is a place of business for large scale manufacturing or processing, characterized by large physical size, outside storage of raw and finished productions, large production volumes, and continuous movement of products and employees during daily shift operations. It has frequent outputs of major annoyance and there is a high probability of point source and fugitive emissions of odour and/or dust. Typically, odour and dust emissions are persistent and intense. Sound is frequently audible off the property and ground-borne vibration can frequently be perceived off the property.

- **Recommended Minimum Separation Distance: 300 m**
- **Potential Area of Influence: 1000 m**

Guideline D-6 requires consideration of the potential for impacts on sensitive land uses from point source and/or fugitive emissions including noise, vibration, odour, dust and others either through normal operations, procedures, maintenance or storage activities, and/or from associated traffic/transportation. It should be noted that Guideline D-1 states that “this guideline [and the rest of the D series guidelines] does not deal with emergency situations, such as process upsets, the breakdown or malfunction of technical controls and/or spills. These are dealt with through other practices and legislation.”

Sensitive land uses are defined, for the purposes of Guideline D-6, as recreational uses (deemed by the municipality or province to be sensitive); and/or any building or associated amenity area which is not directly associated with the industrial use, where humans or the natural environment may be adversely affected by emissions generated from industrial uses (e.g. residences, senior citizen homes, schools, day care facilities, hospitals, churches and other similar institutional uses, and campgrounds).

In the event that a potential area of influence separation distance is not met, Guideline D-6 recommends that studies be conducted to investigate the feasibility of providing sufficient mitigation, if required, when sensitive land uses are proposed within the potential area of influence of existing industries/transportation corridors (and vice versa).

3.2 Industrial Classification

For the existing industrial/commercial facilities identified in Section 2 as requiring further study in this report, the appropriate Guideline D-6 industrial classifications were determined based on the potential for air quality impacts.

Table 2 summarizes the classifications and rationale for the classifications.

3.3 Estimation and Analysis of Guideline D-6 Separation Distances

3.3.1 Identification of Existing Facilities Requiring Additional Assessment in this Report

For the industrial/commercial facilities identified as requiring further study in this report, the distances from the closest property line of the industrial/commercial facilities potentially causing



adverse effects to the closest edge of the sensitive land use on the proposed development were estimated. These distances were then compared to the Guideline D-6 recommended minimum separation distances and potential areas of influence.

As presented in Table 3, all existing facilities meet the minimum separation distance.

Table 2: Guideline D-6 Industrial Classification for the Facilities Requiring Further Study in this Report

Site Address	Company Name	Business Type	Potential Air Contaminants	Rationale for Guideline D-6 Classification and Corresponding Guideline D-6 Classification	Overall Guideline D-6 Classification
50 Alma Avenue	Riverview Produce Inc.	Warehouse	<ul style="list-style-type: none"> Comfort Heating (combustion gases) Fugitive Dust 	<ul style="list-style-type: none"> Self-contained building [Class I] Small scale operation [Class I] Infrequent movement of products and/or heavy trucks, and no outside storage [Class I] Low probability of fugitive emissions [Class I] 	I
50 Alma Avenue	New Choice Excavating & All Type Disposal	Contractors Storage Yard and Bin Dealer	<ul style="list-style-type: none"> Fugitive Dust 	<ul style="list-style-type: none"> Small scale operation [Class I] Infrequent movement of products and/or heavy trucks, outdoor storage of aggregate materials, bins, and metal [Class I/II] Periodic outputs of minor annoyance [Class I/II] 	I/II
50 Alma Avenue	Blue Box Recycling Inc.	Truck Parking	<ul style="list-style-type: none"> Fugitive Dust 	<ul style="list-style-type: none"> Small scale operation [Class I] Infrequent movement of products and/or heavy trucks [Class I] Low probability of fugitive emissions [Class I] 	I



Table 3: Analysis to Determine which Facilities Require Additional Assessment in this Report

Site Address	Company Name	Business Type	Guideline D-6 Classification	Recommended Minimum Separation Distance and Potential Area of Influence	Estimated Separation Distance (m)	Meets Guideline D-6 Recommended Separation Distances	Additional Assessment Required
50 Alma Avenue	Riverview Produce Inc.	Warehouse	I	MS: 20 m PAOI: 70 m	40	MS: Y PAOI: N	Yes
50 Alma Avenue	New Choice Excavating & All Type Disposal	Contractors Storage Yard and Bin Dealer	I/II	MS: 20/70 m PAOI: 70/300 m	90	MS: Y PAOI: Y/N	Yes
50 Alma Avenue	Blue Box Recycling Inc.	Truck Parking	I	MS: 20 m PAOI: 70 m	120	MS: Y PAOI: Y	No

MS = Minimum Separation; PAOI = Potential Area of Influence



4.0 ADDITIONAL ASSESSMENT OF POTENTIAL AIR QUALITY IMPACTS FROM EXISTING INDUSTRIES

There are two types of air quality impacts: health and nuisance. Where health based contaminants are expected to be released in non-trivial amounts, the potential for health impacts can be assessed by determining compliance with the Ministry of the Environment, Conservation and Parks' (Ministry's) Regulation 419/05 or 1/17 (i.e. the regulations that govern air emissions in Ontario). The potential for nuisance impacts (i.e. fugitive dust and odours) can be assessed using several tools, including: Ministry environmental permit conditions related to fugitive emissions; site observations; relative locations of sensitive receptors with respect to predominant wind directions; and proposed building design, including mitigation measures identified from other land use compatibility studies, such as noise, if available.

4.1 Potential Health Impacts

4.1.1 Overview of Air Approvals and Ontario Regulations 419/05 and 1/17

The following is a brief review of the applicable legislative framework for air approvals in Ontario as it pertains to assessing the potential for health impacts in this study.

Ontario Regulation 419/05: Air Pollution – Local Air Quality and Ontario Regulation 1/17: Activities Requiring Assessment of Air Emissions made under the *Environmental Protection Act* (EPA) are the regulations that are intended to protect communities against adverse effects from local sources of air emissions. The Regulations place limits on the concentration of contaminants in the natural environment that are caused by emissions from a facility. The concentrations in the natural environment are calculated at a location referred to as a “point-of-impingement” (POI). The regulations require that where a facility discharges a contaminant into the air from one or more sources, the concentration at any POI resulting from that combined discharge must be less than the Ministry's air quality standards.

Demonstration of compliance with the regulations begin with the development of an Emission Summary and Dispersion Modelling (ESDM) report that includes a summary of total property air emissions. These emissions are then converted to POI concentrations using Ministry approved mathematical air dispersion models.

Facilities that have been granted an Environmental Compliance Approval (ECA) or Environmental Activity Sector Registry (EASR) have demonstrated compliance with the POI limits. Impacts as a result of air emissions are therefore not expected from facilities that have ECAs/Air Emissions EASRs.

4.1.2 Assessment of Potential Health Impacts from the Existing Facility Requiring Additional Assessment

Riverview Products Inc.

Riverview Products Inc. is a produce warehouse and is not required to have an ECA or EASR. No significant point source air emissions are expected from this facility. As such, no health-based air quality impacts are expected on the proposed development.

New Choice Excavating & All Type Disposal

New Choice Excavating & All Type Disposal (New Choice) is a contactors yard storing trucks, equipment for landscaping, and waste bins for rent. New Choice Excavating & All Choice Disposal (New Choice) has an ECA for the operation of non-hazardous waste vehicles. The ECA identifies 50 Alma Avenue as their truck storage yard, and specifically prohibits receiving, storing, or transferring waste at the truck storage yard. No significant point source air emissions are expected from this facility. As such, no health-based air quality impacts are expected on the proposed development.

4.2 Potential Nuisance Impacts

4.2.1 Overview of How the Ministry Addresses Nuisance Impacts

Fugitive dust and odours are considered to be nuisance impacts by the Ministry. In some cases ECAs and Air Emissions EASRs recognize and require mitigation of nuisance effects. Impacts are managed at the closest air sensitive receptor³. Regardless of these tools, facilities are required to meet Section 14 of the *Environmental Protection Act* which prohibits a person from discharging a contaminant (including odour and dust) into the natural environment if the discharge causes or may cause an adverse effect.

Adverse effect means one or more of:

- a) Impairment of the quality of the natural environment for any use that can be made of it;
- b) Injury or damage to property or to plant or animal life;
- c) Harm or material discomfort to any person;
- d) An adverse effect on the health of any person;
- e) Impairment of the safety of any person;
- f) Rendering any property or plant or animal life unfit for human use;
- g) Loss of enjoyment of normal use of property; or
- h) Interference with the normal conduct of business.

³ These sensitive receptors would include residences, hospitals, hotels, motels, schools, and places of worship. The Ministry may expand this list to include other locations where human receptors frequent such as parks, commercial plazas and restaurants (taking into account time and duration of use) when addressing potential odour impacts.

Fugitive Dust

Fugitive dust is typically defined as dust generated from on-site traffic movement, wind erosion of roads and open stockpiles, and outside material handling operations (e.g. loading and unloading).

If the Ministry has concerns regarding fugitive dust from a facility they typically require, as a condition of the facility's ECA or EASR, the development and implementation of a best management practices procedure/plan. When implemented, these procedures/plans are expected to control and limit the generation of fugitive emissions from operations.

Nuisance Odours

If a facility requires an ECA and the Ministry has concerns regarding odour from a facility, the Ministry may: a) impose an odour limit (typically, but not invariably, 1 odour unit (ou)) in the facility's ECA which requires the facility to perform source testing and air dispersion modelling to demonstrate compliance; and/or b) develop and implement a best management practices plan for the control of fugitive odours. If a facility requires an EASR, depending on the facility's operations, the facility may be required to comply with equipment and control specifications, material usage limitations, and separation distances, as well as the development a best management practices plan for odour.

Odour mitigation/management is determined by the distance to the closest air sensitive receptor.

4.2.2 Assessment of Potential Nuisance Impacts from Existing Facilities Which Required Additional Assessment

As identified in the introduction to Section 4.0, the potential for fugitive dust and nuisance odour impacts at the proposed development from the neighbouring industries can be qualitatively assessed by considering Ministry environmental approval requirements/conditions related to fugitive emissions; site observations; relative location of sensitive receptors with respect to predominant wind directions; and proposed site/building design, including mitigation measures identified from other land use compatibility studies, such as noise, if available.

For the purpose of this study, representative wind climate data for the locale was obtained from the Toronto City Centre meteorological station for 2016-2020. Seasonal wind roses are presented in Appendix C. The wind roses show that the dominant wind direction in the spring is from the northeast. During the winter, the wind is predominantly from the west and southwest. During the summer and fall the dominant wind direction is from both the southwest and northeast quadrants.

Fugitive Dust

Riverview Produce Inc. (Riverview)

Based on a roadside inspection and review of aerial imagery, there is no outdoor storage of material with the potential to generate fugitive dust on Riverview's property. Riverview's property is partially paved, including the site entrance. There is a potential for generation of fugitive dust from truck traffic on unpaved sections of Riverview's property.

No fugitive dust was observed from Riverview's operations during the roadside inspection. Some dust loading was observed on Alma Avenue leading to Riverview's and New Choice's properties (shared entrance). BCX did not observe significant truck traffic from Riverview's operations. However, construction operations along Dufferin Street could be contributing to the dust loading on Alma Avenue.

Riverview's site is completely enclosed by fencing.

Fugitive dust impacts on the proposed development from Riverview's operations are, therefore, not expected to be significant.

New Choice Excavating & All Type Disposal (New Choice)

Based on a roadside inspection and review of aerial imagery, there is outdoor storage of aggregate materials on the southern most portion of New Choice's property. New Choice's site is partially paved.

No fugitive dust was observed from New Choice's operations during the roadside inspection. Some dust loading was observed on Alma Avenue leading to Riverview's and New Choice's properties. Dust loading is visible from aerial imagery on New Choice's property. BCX did not observe significant truck traffic from New Choice's operations. However, construction operations along Dufferin Street could be contributing to the dust loading on Alma Avenue.

The area of the site containing outside storage is located over 90 metres away from the proposed mixed-use development. Further, the stockpiles appear to be small in size, and the entire stockpile area appears to be enclosed by a fence.

The proposed mixed-use development is shielded from the stockpile area by fencing as well as parked tractor trailers. The above shielding will act as an effective barrier between the proposed mixed-use development and the outdoor storage area of New Choice's property.

Fugitive dust impacts on the proposed development from New Choice's operations are, therefore, not expected to be significant.

Odour

Based on BCX's understanding of their operations, no odourous emissions are expected from Riverview's, or New Choice's operations.

Odour impacts on the proposed development from these operations are, therefore, not expected at the proposed development.

5.0 CONCLUSIONS

All existing neighbouring industrial/commercial facilities meet the minimum Guideline D-6 separation distance. Riverview Produce Inc. (Riverview), and New Choice Excavating & All Type Disposal (New Choice) are within the potential area of influence.

With respect to potential health impacts, air quality related health impacts are not expected at the proposed development from any of the nearby operations mentioned above.

With respect to nuisance dust, New Choice has the potential to generate fugitive dust. However, due to the separation distance, small scale of the outdoor aggregate stockpiles, the location of the facility relative to the proposed development with respect to predominant wind directions, and physical barriers such as parked tractor trailers and fences, fugitive dust impacts are not expected at the proposed mixed-use development.

With respect to the GO rail line, significant air quality health and odour impacts are not expected to be significant at the proposed development.

6.0 RECOMMENDATIONS

Although no significant air quality impacts are expected at the proposed development, there is a potential for occasional, minor fugitive dust impacts.

BCX therefore recommends the following:

- If possible, the HVAC system should be located on the roof of the building. In the event that this is not possible, the HVAC system intake should not be located at ground level on the west or south side of the building.
- Central air conditioning be provided for all units in the building.
- Where feasible, the design should minimize overlook from west-facing windows and balconies to the industrial uses on the south and west sides of the proposed development.
- A warning clause should be included on specific property agreements and offers of purchase and sale for all of the dwelling units to the effect:

“Purchasers are advised that this property is in proximity to an existing industrial/commercial facility which may, at times, generate nuisance dust.”

7.0 LIMITATIONS

The assessment, conclusions and recommendations in this report are based on the information provided by the proponent and their representatives; BCX's site visit; BCX's professional opinion; and BCX's past experience measuring, modelling and mitigating air quality impacts from industrial/commercial facilities.

BCX Environmental accepts no responsibility for any deficiencies, misstatements, or inaccuracies contained in this report as a result of omissions, or misrepresentations by the proponent, its subsidiaries or its representatives.

This report was prepared for the exclusive use of HM RK (450 Dufferin) Ltd. BCX Environmental accepts no liability for claims arising from the use of this report, or from actions taken or decisions made as a result of this report, by parties other than HM RK (450 Dufferin) Ltd.

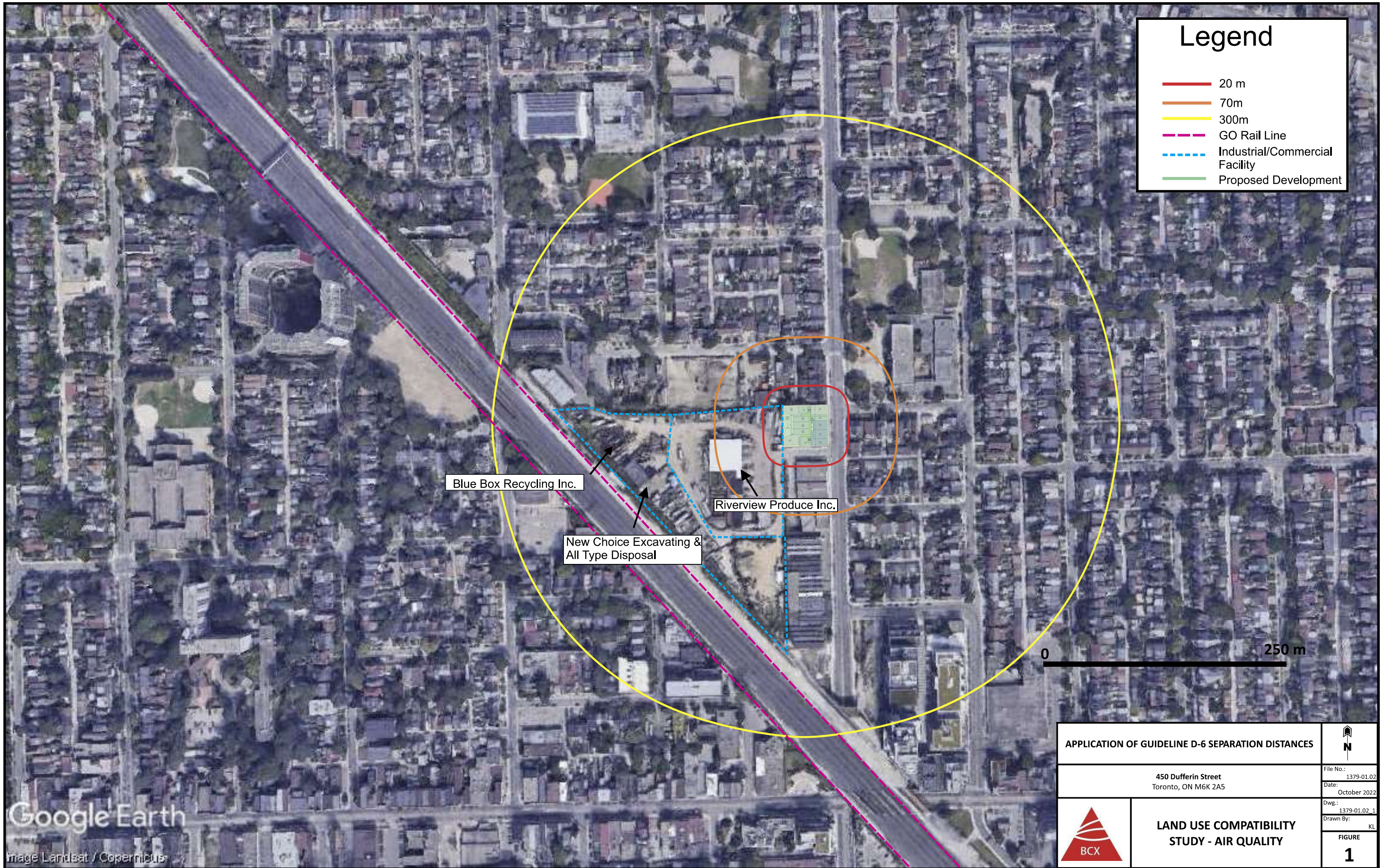
Appendix A

Figures



Legend

- 20 m
- 70m
- 300m
- - - GO Rail Line
- - - Industrial/Commercial Facility
- Proposed Development



Blue Box Recycling Inc.

New Choice Excavating & All Type Disposal





Riverview Produce Inc.

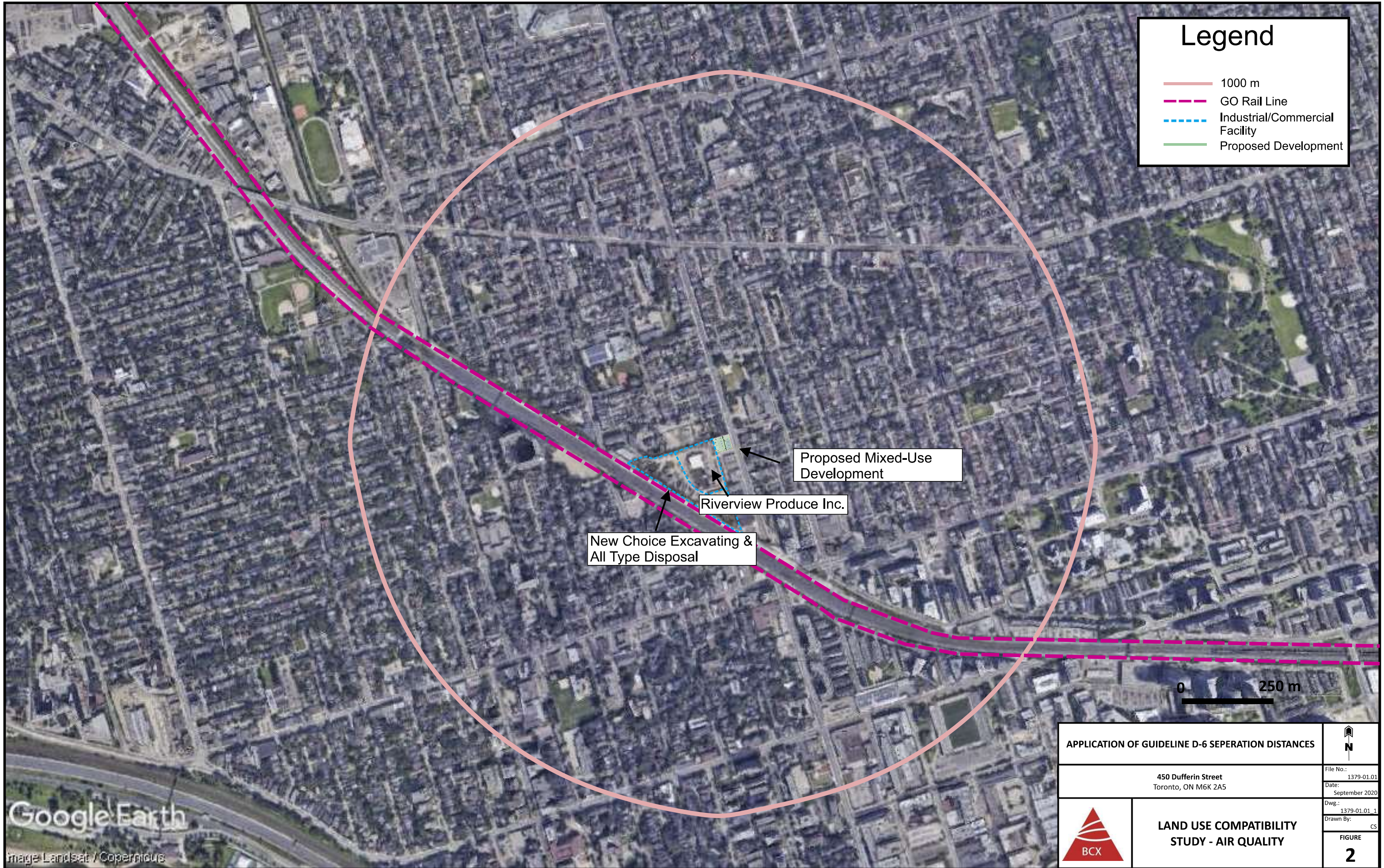
0 250 m

Google Earth
Image Landsat / Copernicus



APPLICATION OF GUIDELINE D-6 SEPARATION DISTANCES		 N	
450 Dufferin Street Toronto, ON M6K 2A5		File No.: 1379-01.02	Date: October 2022
	LAND USE COMPATIBILITY STUDY - AIR QUALITY	Dwg.: 1379-01.02_1	Drawn By: KL
		FIGURE 1	

Legend

-  1000 m
-  GO Rail Line
-  Industrial/Commercial Facility
-  Proposed Development



Google Earth
Image Landsat / Copernicus

APPLICATION OF GUIDELINE D-6 SEPERATION DISTANCES		 N	
450 Dufferin Street Toronto, ON M6K 2A5		File No.: 1379-01.01	Date: September 2020
	LAND USE COMPATIBILITY STUDY - AIR QUALITY	Dwg.: 1379-01.01_1	Drawn By: CS
		FIGURE 2	

HT: +48.600 m
+142.700 TOS
14 STOREYS

ROOF TERRACE OVER LEVEL 14

9500

HT: +57.600 m
+151.700 TOS
15 STOREYS

ROOF OVER MPH

15000

OPEN TO
MECH
BELOW

31180

7400
SETBACK

2500

1500
SETBACK

SIAMESE CONNECTION

41.73 (CAL. FROM P2.S)
COMMERCIAL ENTRY

EXISTING GAS
METER AND GAS
VALVE

37.16 (MEAS)
37.18 (D)
COMMERCIAL ENTRY

COMMERCIAL ENTRY

COMMERCIAL ENTRY

STEP
0.63N
0.91E
EX.CB

EXTENT OF
GROUND FLOOR
BELOW

CONC. GUTTER

N15°28'55"W

COMMERCIAL ENTRY

EX.CB

93.70
93.57 (B)
93.58

93.75
93.63 (B)
93.64

93.81
93.70 (B)

93.71

93.85
93.74 (B)
93.74

93.79

93.68
93.59
93.63

93.79
93.69

93.70
93.57 (B)
93.58

93.71
93.57 (B)
93.58

93.89

93.88
93.84

93.79

93.88
93.84

93.88
93.84

93.93
93.90

93.93
93.90

93.93
93.90

DRIVEWAY

93.90
94.14
94.57(DS)

93.84
93.78

93.68
93.59
93.63

93.70
93.57 (B)
93.58

93.71
93.57 (B)
93.58

93.70
93.57 (B)
93.58

93.71
93.57 (B)
93.58

93.89

93.88
93.84

93.79

93.88
93.84

93.88
93.84

93.93
93.90

93.93
93.90

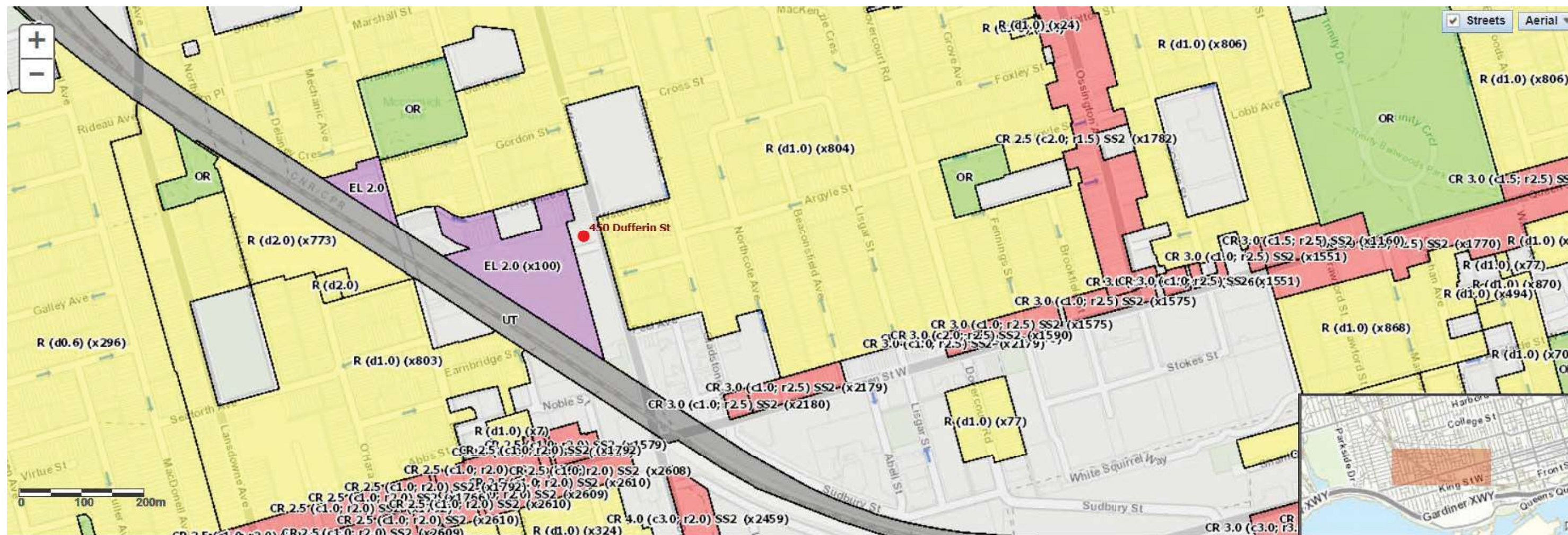
93.93
93.90

93.79

Appendix B

Zoning Map





Appendix C

Wind Roses – Toronto City Centre 2016-2020

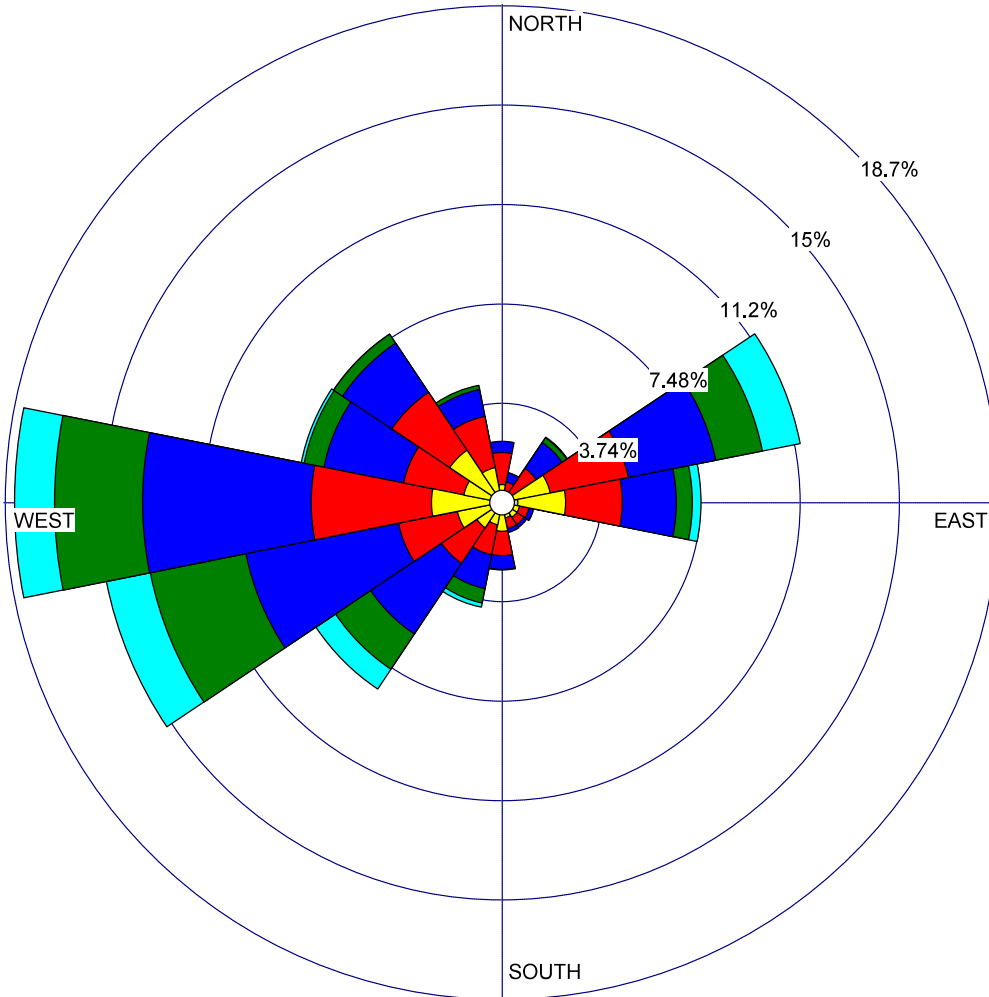


WIND ROSE PLOT:

Toronto City Centre Meteorological Station 2016-2020 - Winter

DISPLAY:

Wind Speed
Direction (blowing from)



WIND SPEED
(m/s)

- >= 11.10
 - 8.80 - 11.10
 - 5.70 - 8.80
 - 3.60 - 5.70
 - 2.10 - 3.60
 - 0.50 - 2.10
- Calms: 0.00%

COMMENTS:

DATA PERIOD:

Start Date: 2015-12-01 - 00:00
End Date: 2020-02-29 - 23:00

COMPANY NAME:

CALM WINDS:

0.00%

TOTAL COUNT:

10520 hrs.

AVG. WIND SPEED:

6.01 m/s

DATE:

2020-09-25

PROJECT NO.:

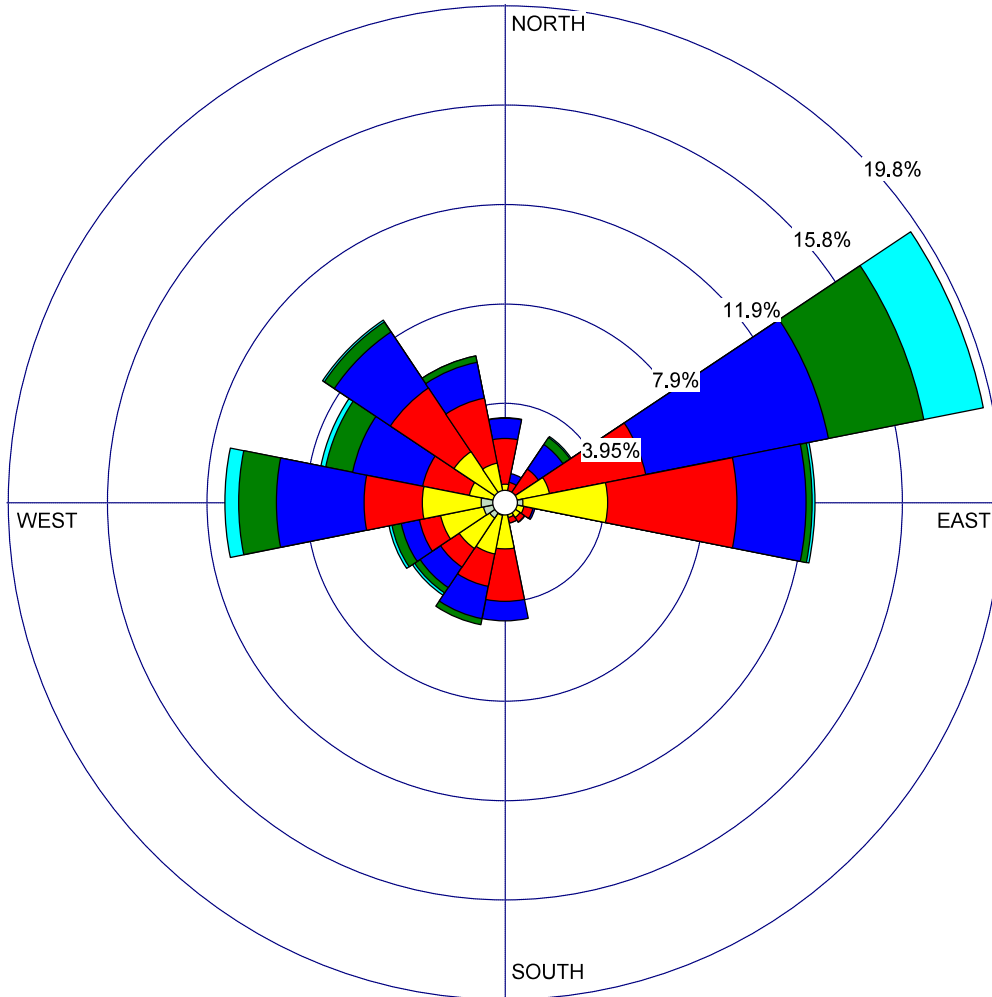
1379-01.01

WIND ROSE PLOT:

Toronto City Centre Meteorological Station 2016-2020 - Spring

DISPLAY:

**Wind Speed
Direction (blowing from)**



**WIND SPEED
(m/s)**

- >= 11.10
 - 8.80 - 11.10
 - 5.70 - 8.80
 - 3.60 - 5.70
 - 2.10 - 3.60
 - 0.50 - 2.10
- Calms: 0.00%

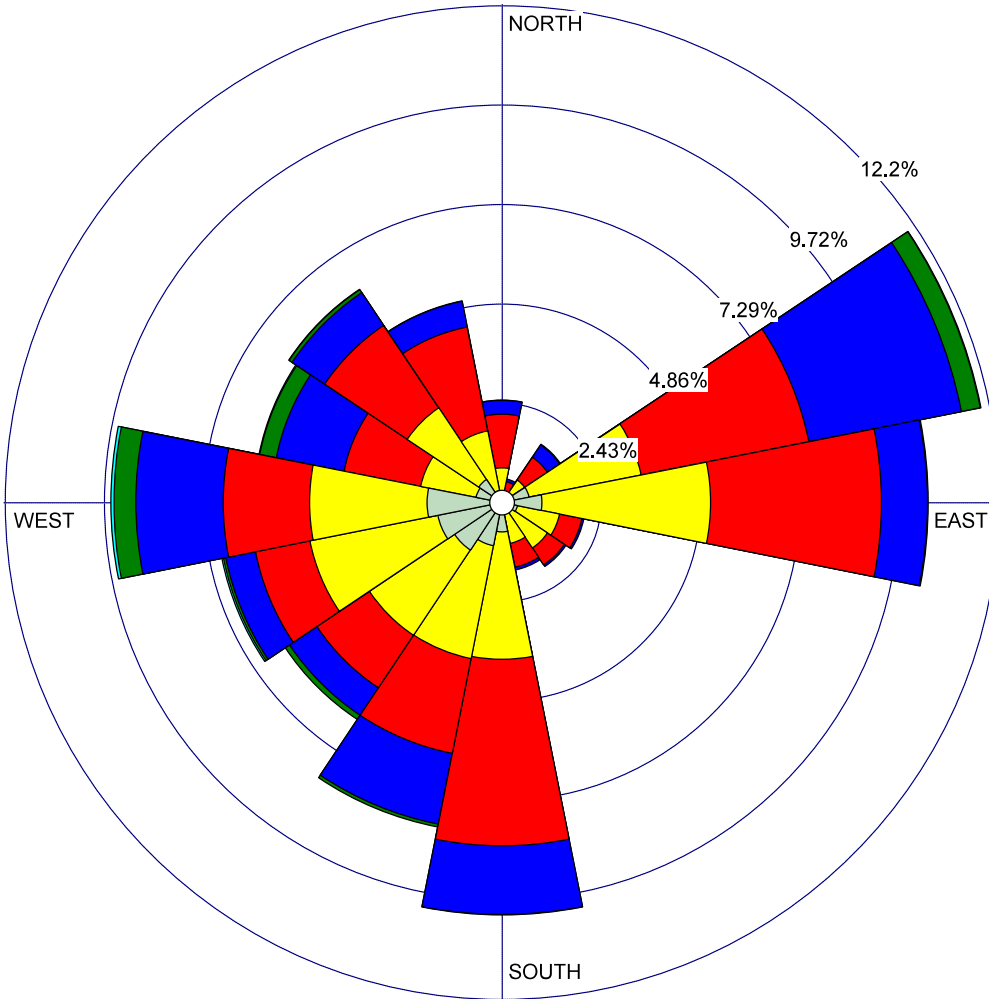
COMMENTS:	DATA PERIOD: Start Date: 2016-03-01 - 00:00 End Date: 2020-05-31 - 23:00	COMPANY NAME:	
	CALM WINDS: 0.00%	TOTAL COUNT: 10411 hrs.	
	AVG. WIND SPEED: 5.27 m/s	DATE: 2020-09-25	PROJECT NO.: 1379-01.01

WIND ROSE PLOT:

Toronto City Centre Meteorological Station 2016-2020 - Summer

DISPLAY:

**Wind Speed
Direction (blowing from)**



**WIND SPEED
(m/s)**

- >= 11.10
 - 8.80 - 11.10
 - 5.70 - 8.80
 - 3.60 - 5.70
 - 2.10 - 3.60
 - 0.50 - 2.10
- Calms: 0.00%

COMMENTS:

DATA PERIOD:

**Start Date: 2015-08-01 - 00:00
End Date: 2020-07-31 - 23:00**

COMPANY NAME:

CALM WINDS:

0.00%

TOTAL COUNT:

9396 hrs.

AVG. WIND SPEED:

3.88 m/s

DATE:

2020-09-25

PROJECT NO.:

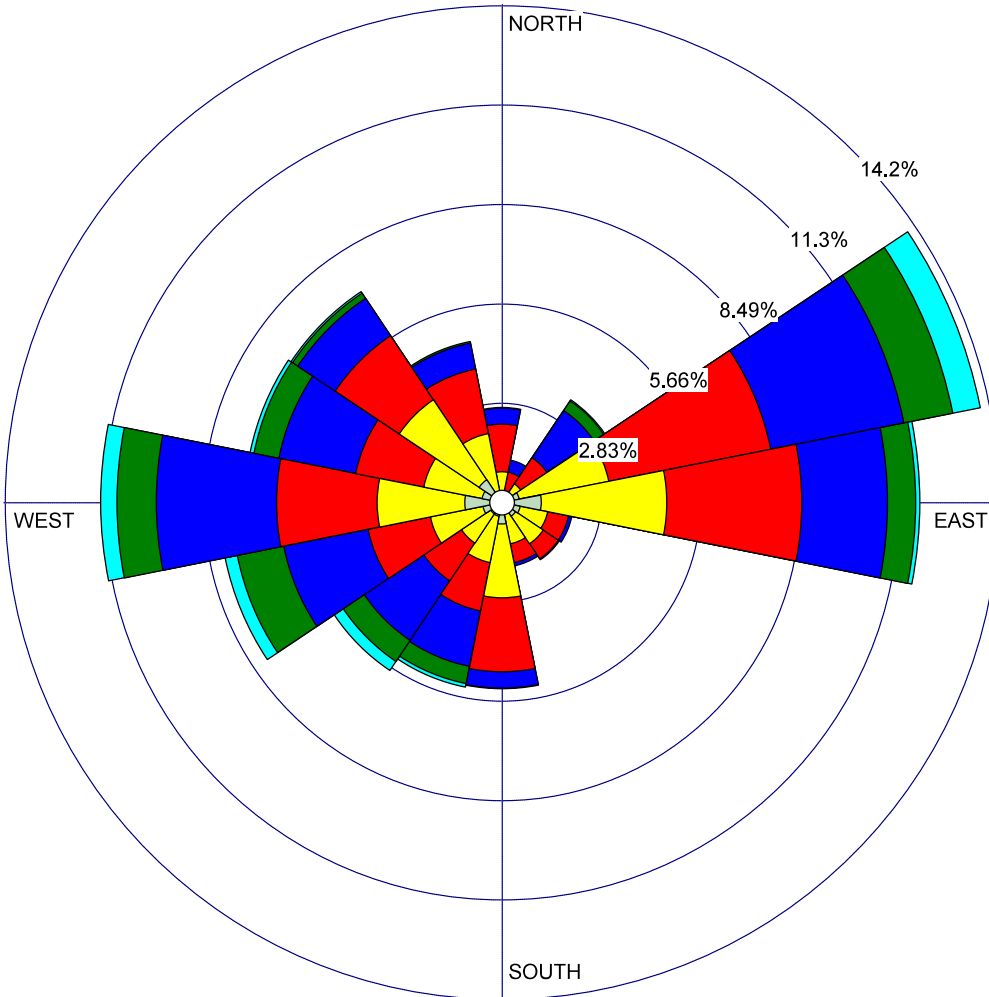
1379-01.01

WIND ROSE PLOT:

Toronto City Centre Meteorological Station 2016-2020 - Fall

DISPLAY:

**Wind Speed
Direction (blowing from)**



WIND SPEED
(m/s)

- >= 11.10
- 8.80 - 11.10
- 5.70 - 8.80
- 3.60 - 5.70
- 2.10 - 3.60
- 0.50 - 2.10

Calms: 0.00%

COMMENTS:

DATA PERIOD:

**Start Date: 2015-09-01 - 00:00
End Date: 2019-11-30 - 23:00**

COMPANY NAME:

CALM WINDS:

0.00%

TOTAL COUNT:

10264 hrs.

AVG. WIND SPEED:

4.83 m/s

DATE:

2020-09-25

PROJECT NO.:

1379-01.01