

# **City of Toronto**

Keele Finch Plus Study Existing Environmental Conditions Report

> FINAL September 2016



# FINCH KEELE PLUS STUDY

# **EXISTING ENVIRONMENTAL CONDITIONS REPORT**

Toronto, Ontario

FINAL

Prepared for the City of Toronto

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# **Executive summary**

The City of Toronto (the City) is undertaking a Council directed Planning Study for the area surrounding the intersection of Keele Street and Finch Avenue West (known as Keele Finch Plus), with the objective to identify potential feasible future land uses. Due to the future subway extension and integrated light rail transit (LRT) station, the intersection of Keele Street and Finch Avenue West has been identified as a "mobility hub" (in Metrolinx' Big Move) and "major transit station area" (in the Province's Growth Plan for the Greater Golden Horseshoe), with potential for increased residential and employment densities. The City would like to gain an understanding of the environmental factors and reasonable separation distances from existing or future industrial uses in proximity to the Keele Street and Finch Avenue West intersection. This will assist City Planning in determining where future residential and non-residential developments are reasonable and support the employment zones/uses.

This report is intended to provide the City with a better understanding of the environmental factors and potential constraints from existing and future industrial uses within close proximity to the Study Area. A 500 m primary area of influence and a secondary 800 m area of interest from the intersection of Keele Street and Finch Avenue West were established.

Guideline D-6 - Compatibility between industrial facilities and sensitive land uses, was utilized as part of this study, which provides a framework with the objective to prevent or minimize the encroachment of sensitive land uses upon industrial land use and vice versa. Depending on the potential and actual impacts on new sensitive land uses, different types of evaluation, assessment, and mitigation measures are possible. In accordance with Guideline D-6 - Compatibility between industrial facilities and sensitive land uses, industrial uses and facilities are categorized into Class I, II and III industrial uses, based on the objectionable nature of their emissions, physical scale, production volumes and intensity, and scheduling of operations. Class I is the least impactful to sensitive uses, whereas Class III is the most impactful. The Study Area encompasses five Class III industrial uses, three Class II industrial uses and one Class I industrial use. As directed by Guideline D-6 areas of potential influence and recommended minimum separation distances for Class I, II and III industrial uses are determined based on case studies and experience. The recommended areas of influence for Class I, II and III industrial uses within the Study Area are 70 metres, 300 metres and 1000 metres, respectively. The recommended minimum separation distances from Class I, II and III industrial uses are 20 metres, 70 metres and 300 metres, respectively.

A site visit of the Keele Street and Finch Avenue West Study Area was conducted on April 12, 2016. During the site visit it was determined that the Keele Street and Finch Avenue West Study Area has an industrialized feel, based on observations of significant truck and transport activities and the number of industrial and bulk oil/tank farm facilities located within the Study Area. No significant presence of intrusive odours or significant air quality observations was observed.

A review of all historic and current environmental compliance approvals/certificate of approvals (ECAs/CoAs) was conducted for all Class I, II and III industrial uses located within the Study Area. The information obtained from the ECAs/CoAs in concurrence with a thorough desktop review of the Study Area was used to aid in determining the appropriate Class of industrial use for each industrial facility located within the Study Area, in accordance with *Guideline D-6 – Compatibility between industrial facilities and sensitive land uses*.



In addition to a thorough review of all ECAs/CoAs, a comprehensive zoning analysis was conducted for the Study Area, which considered both the former North York Zoning By-law 7625 and City of Toronto Zoning By-law 569-2013, which was used to determine existing and permitted land uses within the Study Area. It is important to understand existing as-of-right uses within the Study Area in order to evaluate the potential for the future development of sensitive land uses in congruence with existing as-of-right uses as well as Class I, II and III industrial uses.

A representative sample of traffic counts of intersections in the Study Area along the Keele Street and Finch Avenue West corridors was analyzed to determine the approximate volume and potential environmental impact of freight activity within the Study area with respect to other transportation modes. Criteria for air contaminants most relevant to transportation are carbon monoxide, nitrogen oxides (NO<sub>x</sub>), volatile organic compounds (VOCs), particulate matter and ozone. However, further study is required to determine (with a high degree of accuracy) potential site-specific impacts and mitigation measures based on the site's outputs of fugitive emissions, ambient noise and other potential environmental impacts associated with freight activity within the Keele Street and Finch Avenue West Study Area.

General mitigation measures have also been established based on conducted desktop investigations and review of the ECAs/CoAs of Class I, II and III uses. Mitigation measures for air emissions are nearly always at the source, and would require cooperation from industrial facilities. Some approaches are relatively simple, including taller stacks to aid dispersion. Other mitigation measures may be more extensive, including pollution control equipment or process adjustments. However, some decisions can be made by developers, including site layout and location of building ventilation intakes and windows. As with air emissions, odour mitigation tends to be done at the source, and uses similar techniques. However, developers can make decisions such as locations of air intakes and positioning of buildings on a site that could influence the impact of odour at the site. Mitigation of noise can be done at the source or at the receiver. Receiver controls could include additional soundproofing or inoperable windows. Source controls could include barrier walls, silencers, or equipment replacement, but this requires cooperation from industrial facilities. Mitigation measures for dust emissions, resulting from truck traffic and facility storage piles typically focus on controls at the source, by treating road surfaces and storage piles. Particulate matter emissions are regulated as part of O. Reg. 419/05, and compliance is assessed at the property line and beyond. Thus, as with air emissions, individual facilities are likely to be compliant and cumulative effects (particularly with respect to combustion and fugitive emissions from truck traffic) would need to be evaluated if significant dust impacts are expected.

This Study identifies areas of influence for Class I, II, III industrial uses and minimum separation distance. In doing so, this study serves as a benchmark to identify site specific and land use specific mitigation measures that may be required by future developments within the area of influence. Some common mitigation measures have been described that site developers could implement to reduce typical effects as well as the potential for existing industrial site operators (should they choose to). The cumulative impact of many nearby industries was not evaluated in this study.

Depending on the potential and actual impacts on new sensitive land uses, different types of evaluation, assessment, and mitigation measures are possible. In general, land uses within the area of influence of industrial facilities should be evaluated for noise and odour impact, as these tend to generate most complaints, with consideration given to dustfall and other air emissions. The City should consider requiring potential developments to include studies around air emissions, odour, dust and noise to review the existing industrial development from a cumulative impact perspective.



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# 1. Project Understanding

## 1.1 Background Information

## 1.1.1 Keele Street & Finch Avenue West

The City of Toronto (the City) is currently undertaking a Council directed Planning Study for the area surrounding the intersection of Keele Street and Finch Avenue West (called Keele Finch Plus), with the objective to identify potentially feasible future land uses. Due to the future subway extension and integrated light rail transit (LRT) station, the intersection of Keele Street and Finch Avenue West has been identified as a "mobility hub" (in Metrolinx' Big Move) and "major transit station area" (in the Province's Growth Plan for the Greater Golden Horseshoe), with potential for increased residential and employment densities. The City would like to gain an understanding of the environmental factors and reasonable separation distances from existing or future industrial uses in proximity to the Keele Street and Finch Avenue West intersection. This will assist City Planning in determining where future residential and non-residential development are reasonable and support the employment zones/uses.

The Study Area may be characterized as an east-west 'split', roughly dividing land uses based on Keele Street. Land uses to the west of Keele Street are predominantly residential and currently zoned in accordance with the City of Toronto Zoning By-law 569-2013 and former North York General Zoning By-law 7625. Land uses to the west of Keele Street are predominantly commercial/ industrial uses, also zoned in accordance with the City of Toronto Zoning By-law 569-2013 and former North York General Zoning By-law 7625. This study emphasizes the areas east of Keele Street, as they are currently zoned for Employment Heavy Industrial (EH) uses under City of Toronto Zoning By-law 569-2013, and contain a number of industrial uses that have significant influence in determining potentially feasible future land uses within the Study Area<sup>1</sup>. Three (3) tank farm facilities are located within the Study Area, north of Finch Avenue West and east of Keele Street. The operations of these tank farms and other industrial uses in proximity to this intersection, present significant restrictions to future development and land uses that the City might consider for the intensification of residential and employment densities typically supportive of a mobility hub. The identification of environmental factors and constraints associated with these industrial uses early in the planning process will assist in determining potentially feasible land uses for consideration.

## 1.1.2 Ministry of the Environment and Climate Change Guideline D-6

Guideline D-6 – Compatibility between industrial facilities and sensitive land uses, provides a framework with the objective to prevent or minimize the encroachment of sensitive land uses upon industrial land use and vice versa<sup>2</sup>. Sensitive land uses include residential and recreational uses and any building or associated amenity not directly associated with an industrial use, where humans or the natural environment may be adversely affected due to

<sup>&</sup>lt;sup>1</sup> City of Toronto. Zoning By-law 569-2013. Accessed on April 19, 2016. Obtained from: <u>http://www1.toronto.ca/wps/portal/contentonly?vgnextoid=2a8a036318061410VgnVCM10000071d60f</u> <u>89RCRD</u>

<sup>&</sup>lt;sup>2-5</sup> Ontario Ministry of Environment. July 1995. Guideline D-6 Compatibility between industrial facilities and sensitive land uses.



industrial operations<sup>3</sup>. Examples of sensitive land uses include; residences, senior citizen homes, schools, daycare facilities, hospitals, churches and other institutional uses<sup>4</sup>. Industrial uses and facilities are categorized into the following three (3) classes in accordance with the objectionable nature of their emissions, physical scale, production volumes and intensity, and scheduling of operations<sup>5</sup>:

### Class I Industrial Facility:

- small scale place of business
- self-contained plant or building that produces/stores a product, which is contained in a package and has low probability of fugitive emissions
  - outputs are infrequent, point source or fugitive emissions for any of the following:
    - o noise,
    - o odour,
    - o dust,
    - o vibration
- Daytime operations only, with infrequent movement of products and/or heavy trucks. No
  outside storage.

### Class II Industrial Facility:

- medium scale processing with outdoor storage of wastes or materials
- periodic outputs of minor annoyance.
- occasional outputs of either point source or fugitive emissions for any of the following:
  - o noise,
  - $\circ \quad \text{odour,} \quad$
  - o dust
  - o vibration.
- Low probability of fugitive emissions.
- Frequent movement of products and/or heavy trucks during daytime hours.
- Frequent operations are permitted.

#### Class III Industrial Facility:

- large scale manufacturing or processing
- characterized by: large physical size, outside storage of raw and finished products, large production volumes and continuous movement of products and employees during daily shift operations.
- Frequent outputs of major annoyance and high probability of fugitive emissions.

## 1.2 Intent of Report

This report is intended to provide the City with a better understanding of the environmental factors and potential constraints from existing industrial uses within close proximity to the Study Area, based on the completion of the following activities and analysis:



- 1. Identify all Industrial Uses within the Study Area, based on primary and secondary data collection, and available information provided by the City;
- Analyze the terms and conditions of each Industrial Use based on all accessible and publically available information attained through respective Environmental Compliance Approvals (ECAs);
- Identify environmental risk factors and other areas of environmental concern within or in proximity to the Study Area through the analysis of available traffic data for adjacent arterials, and other environmental assessment (EA) documentation including the Metrolinx/TTC Finch West LRT EA;
- Establish existing conditions and identify potential areas of influence within the Study Area utilizing the Ministry of the Environment and Climate Change (MOECC) Guideline D-6 – Compatibility between industrial facilities and sensitive land uses;
- 5. Identify all potentially sensitive land uses within the Study Area through an initial land use analysis desktop study; and
- 6. Develop a generalized list of potential mitigation measures to be considered for future studies, and determine appropriate setback distances considering each Industrial Class present within the Study Area.

## 1.3 Scope and Limitations

The Study Area for this assignment was recommended by the City and confirmed by GHD. A 500m primary area of influence and a secondary 800m area of interest from the intersection of Keele Street and Finch Avenue West was established. Where necessary, GHD has considered and analyzed parcels of interest exceeding this Study Area, in order to ensure accuracy and to provide the City of Toronto with a thorough and comprehensive report.

As previously discussed with City of Toronto staff, this report is intended to provide general mitigation measures based on compatible land uses within the Study Area, which are to be evaluated through further study. A generalized approach has been undertaken to develop an inventory of potential mitigation measures for further consideration.

# 2. Methodology

The use of both primary and secondary data collection has proven beneficial to this study, resulting in the collection of reliable data as well as detailed and accurate analysis conducted. Utilizing the MOECC Guideline D-6 – *Compatibility between industrial facilities and sensitive land use*, as well as our primary and secondary data collection and analysis, we are able to determine appropriate minimum distance setbacks and mitigation measures for each industrial use identified.

# 2.1 Primary Data Collection and Analysis

A site visit was conducted on April 12, 2016, representing the majority of the primary data collected required for the completion of this study during this time. Key observations were made regarding residential, commercial, industrial uses and their respective operations, through the use of:

• Site Visit – Raw Analysis



Site Photos and Observations

An inventory of site photos, taken on April 12, 2016, between 10:30 a.m. – 1:30 p.m., is provided in **Appendix A**. An emphasis in observations were placed on the surrounding areas directly adjacent to the three (3) tank farm facilities located within the Study Area, as well as any potentially sensitive land uses within the Study Area. Areas of emphasis are as follows:

- Finch Avenue West, East of Keele Street;
- Hydro Corridor, West of Keele Street;
- Hydro Corridor and Recreational Trail, East of Keele Street;
- Tangiers Road, North of Finch Avenue West.

The following notable observations were witnessed on April 12, 2016, between 10:30 a.m. – 1:30 p.m. within the Study Area of Keele Street and Finch Avenue West:

- Significant traffic volume was observed both eastbound and westbound along Finch Avenue West consisting of personal automobiles, public transit vehicles (bus), transport truck vehicles (semi-trailers) and tank trucks (oil tankers).
- Significant tank truck volume and activity East of Keele Street Tank trucks accessing tank farm facilities via Finch Avenue West and Tangiers Road.
- TTC Construction from Keele Street and Finch Avenue West intersection to Keele Street and Murray Ross Parkway impeding traffic in all directions.
- A high-pressure oil pipeline (Enbridge and TransNorthern) was located within the hydro corridor and runs parallel with the hydro corridor through the Study Area.
- A woodlot was located North of Finch Avenue West and West of Keele Street, southerly adjacent to York University campus.
- Portions of the hydro corridor within the Study Area contain three (3) separate secondary land uses. A bus rapidway (York University Busway) runs parallel with the hydro corridor from Dufferin Street to Keele Street. Also parallel with the hydro corridor is a recreational trail (Finch Hydro Corridor Recreational Trail), which runs roughly from Dufferin Street to Norfinch Drive. A large-scale community garden is also located within the hydro corridor, West of Keele Street between Four Winds Drive and Murray Ross Parkway.
- No significant presence of intrusive odours or significant air quality observations.
- Weather conditions overcast/cloudy, 5-8 degrees Celsius.

## 2.2 Secondary Data Collection and Analysis

The following secondary data documents and reports have been considered and support the remainder of the site inventory and analysis of this report.

- Environmental Compliance Approvals (ECA)
- Metrolinx/TTC Finch West LRT Environmental Assessment
- Traffic data provided by the City
- Recent and on-going development applications



## 2.2.1 Environmental Compliance Approvals (ECAs)

ECAs have been obtained from the Approvals Branch of the MOECC for Air, Noise, and Industrial Waste. A total of nine (9) industrial uses and facilities have been identified within the Study Area that require ECAs. Nine (9) facilities require ECAs for Air; two (2) of the nine (9) facilities also require ECAs for Industrial Sewage Works. Two (2) additional non-industrial use ECAs for Municipal and Private Sewage Works have also been identified within the Study Area. The ECA's for industrial facilities outline specific conditions to be met for the operations of each facility. These conditions aid in developing an appropriate inventory of potential mitigation measures to be considered.

## 2.2.2 Metrolinx/TTC Finch West LRT Environmental Assessment (EA)

The Finch West LRT EA provides a detailed analysis of the existing and future environmental conditions along the Finch Ave West corridor. Disciplinary analysis for natural environment and land use have been conducted through this EA for areas along the Finch Avenue West corridor, including the Study Area. A detailed review of the conducted analysis of existing and future conditions for natural environment and land use will be developed, and will further aid in the identification of permissible land uses and respective mitigation measures within the Study Area. The Finch West LRT EA also identifies properties and areas along the Finch Avenue West corridor that may pose a specific level of environmental risk. A list of these properties and areas that fall within proximity to the Finch and Keele intersection have been summarized in accordance to their respective environmental risk levels in Section 3.4 of this report.

## 2.2.3 Traffic Data

An analysis of all available transportation and traffic data was conducted to determine any additional potential limitations to development as a result of fugitive emissions from transport activity and operations within the Study Area. The analysis of traffic data will also aid in determining potential land use feasibility from the perspectives of excessive noise, air quality and odour, and increased traffic concerns. Further details on traffic data are included in **Section 5** of this report.

## 2.2.4 Recent Development Application Activity

GHD understands that the following development applications are either recent and/or on going within the surrounding Study Area<sup>6</sup>:

#### 3711 Keele Street

Conversion from existing industrial building with a maximum of 5000 square metres for retail uses to permit total Gross Floor Area (GFA) of 7322 m<sup>2</sup> for retail uses. Application reference: 13 262978 NNY 08 OZ, 13 262968 NNY 08 SA.

#### 3965 Keele Street

Site plan application for Finch West Subway Station Commuter Parking and Passenger Pick Up/ Drop-Off (PPUDO Facility component, as part of the Toronto-York Spadina Subway Extension (TYSSE) project. Application reference: 15 176485 NNY 08 SA.

#### 3965 Keele Street

<sup>&</sup>lt;sup>6</sup> City of Toronto. Development projects. Accessed on April 19, 2016. Obtained from: http://app.toronto.ca/DevelopmentApplications/mapSearchSetup.do?action=init



Proposal for the Finch West Subway Station (8,898m2) of the Toronto-York Spadina Subway Extension. The station includes a main pedestrian entrance on the west side of Keele Street (3950 Keele Street), a bus terminal/power substation facility on the east side of Keele Street (3965 Keele Street), the station box (concourse and platform) below the Keele Street right-of-way, vent shafts in a new lot to be created at 3939 Keele Street, vent shafts within a centre median in the Keele Street right-of-way, Fire Fighter's Access hatches and a new bus-only public street north of the street (known as the Four Winds Drive extension). Application reference: 11 180764 NNY 08 SA.

### 45 The Pond Road

31 m<sup>2</sup> TTC Emergency Exit Building #4 for the Toronto-York Spadina Subway Extension

#### 35 Tangiers Road

Construction of an eight-storey office building with retail at ground level. Application referenc: 12 273550 NNY 08 OZ, 12 273567 NNY 08 SA.

#### 102-134 Hucknall Road

The proposed development consists of a four storey residential mixed use building with street related retail at grade. The proposed building will consist of stacked residential units over three floors above a total of 994 m<sup>2</sup> of commercial space on the ground floor. The commercial space can be divided into approximately eight retail units fronting onto Sentinal Road. The second, third and fourth floors of the building will accommodate a total of 3133 m<sup>2</sup> residential GFA, and will consist of 29 dwelling units.

#### 470 Sentinel Road

Site plan application for Master Site Plan approval for eight residential buildings, recreation centre and day care centre. The existing four apartment buildings will be maintained. The site plan approval will secure the master site plan, landscape concept plans and pedestrian circulation plan. Each development phase will require detailed site plan approval. This is part of the rezoning application File No. 06 157157 OZ and Draft Plan of Subdivision application File No. 08 180545 SB.

#### York University Secondary Plan

The City of Toronto coordinated with York University to complete an update of the Secondary Plan. The purpose of the Secondary Plan update was to:

- affirm the long term vision for the York University Secondary Plan;
- recognize major planned transit initiatives; and,
- guide future development and land use decisions for the Secondary Plan area.

Since many of the principles and guidelines in the current Secondary Plan remain relevant and applicable, the primary focus of this initiative will be on changes to the structure of the plan to reflect planned transit improvements and to update the planning framework for lands near future subway corridors<sup>7</sup>.

<sup>&</sup>lt;sup>7</sup> City of Toronto. York University secondary plan. Accessed on April 19, 2016. Obtained from: <u>http://www1.toronto.ca/wps/portal/contentonly?vgnextoid=3388be4436161410VgnVCM10000071d60f</u> <u>89RCRD&vgnextchannel=490452cc66061410VgnVCM10000071d60f89RCRD</u>



## York University Southwest Precinct Plan

The Plan includes design concepts and development guidelines for the implementation of public infrastructure (streets, parks and open spaces and potential community services), as well as appropriate land uses and built form of new infill development in the Southwest Precinct<sup>8</sup>.

# 3. Existing Conditions

## 3.1 Industrial Uses Summary

**Table 1** lists the industrial uses and properties with registered Environmental Compliance

 Approvals (ECA) / Certificate of Approvals (CoAs) and monitoring conditions within the 800m

 study radius of Keele Street and Finch Avenue West:

Property Owner(s)	Site Location(s)	ECA Type(s)	D 6 Industrial Class
Imperial Oil Limited	1150 Finch Avenue West Toronto, ON M3J 2E4	Air Industrial Sewage Works	Class III Industrial Use
Suncor Energy Products	1138 Finch Avenue West North York, ON M3J 2E2	Air	Class III Industrial Use
Shell Canada Limited	3975 & 3985 Keele Street Toronto, ON M3J 1P1	Air Industrial Sewage Works	Class III Industrial Use
Vitafoam Products Canada Limited	150 Toro Road Toronto, ON M3J 2A9	Air	Class III Industrial Use
Apollo Health and Beauty Care Corporation	1 Apollo Place Toronto, ON M3J 0H2	Air	Class III Industrial Use
Ram and Iron Metal Inc.	60 Ashwarren Road Toronto, ON M3J 1Z5	Air	Class II Industrial Use
Cappola Food Inc.	Part of Lot 19, Conc. 3, 25- 27 Lepage Court Toronto, ON M3J 3M3	Air	Class II Industrial Use

#### Table 1: Existing Industrial Uses Summary

<sup>&</sup>lt;sup>8</sup> City of Toronto. York University southwest precinct plan. Accessed on April 19, 2016. Obtained from:<u>http://www1.toronto.ca/wps/portal/contentonly?vgnextoid=780e8de0c08f6410VgnVCM10000071</u> <u>d60f89RCRD&vgnextchannel=490452cc66061410VgnVCM10000071d60f89RCRD</u>



Vision Autobody Repair & Repaint Inc.	51 Toro Road, Unit 2 Toronto, ON M3J 2A4	Air	Class II Industrial Use
Stim Canada Inc.	85 Toro Road Toronto, ON M3J 2A4	Air	Class I Industrial Use
ECAs for Municipal I	nfrastructure (Non Industrial	Use)	
Toronto Transit Commission	Murray Ross Parkway, Columbia Gate Toronto, ON	Municipal and Private Sewage Works	Not Applicable
Toronto Transit Commission	Keele Street (for Murray Ross Parkway and Tangiers Road Extensions)	Municipal and Private Sewage Works	Not Applicable
City of Toronto	Conamore Crescent, Sentinel Road, Killamarsh Drive, Madron Crescent, Derrydown Road, Catford Road, Council Crescent, Keele Street, Toro Road, Tangiers Road, Paulvale Court, Romfield Drive, and Villata Gardens City of Toronto	Municipal and Private Sewage Works	Not Applicable

#### **Imperial Oil Limited**

Imperial Oil Limited, located at 1150 Finch Avenue West, is a petroleum products storage and distribution terminal, consisting of the following processes and support units:

- Underground and above ground storage tanks:
- One (1) rail loading rack, equipped with six (6) arms for the loading of distillates;
- One (1) loading rack, equipped with seven (7) arms for the loading of lube oil;
- One (1) loading rack, equipped with one (1) arm for the loading of commingle; and
- One (1) area for the main loading racks, equipped with twenty-two (22) arms, equipped with a vapour unit, used for the loading of distillate, gasoline, jet or kerosene

#### **Suncor Energy Products**

Suncor Energy Products, located at 1138 Finch Avenue West, is a petroleum products storage and distribution terminal involving the transportation of fuels, petrochemicals and heating oils, consisting of:



- Storage tanks;
- Loading racks;
- A vapour recovery unit;

Including the equipment and any other ancillary and support processes and activities, operating at an annual facility production limit of 5.8 million m<sup>3</sup> of petroleum products.

### **Shell Canada Limited**

Shell Canada Limited, located at 3975 and 3985 Keele Street, is a petroleum distribution facility, consisting of the following processes and support units:

- Fixed roof and internal floating roof storage tanks containing various petroleum products,
- Loading stations equipped with a vapour recovery unit,

Including the equipment and any other ancillary and support activities, operating at a facility production limit of a storage capacity of up to 152 million litres of petroleum products and a maximum annual throughput of 8000 million litres.

## Vitafoam Products Canada Limited

Vitafoam Products Canada Ltd., located at 150 Toro Road, is a polyurethane foam products manufacturing facility, consisting of the following processes and support units:

- Foam plant;
- Rebond plant;
- Fabrication;
- One (1) activated carbon absorber used to control emissions from the foam plant and cut off saw with the stack designated as EF-2C;
- One (1) activated carbon absorber used to control emissions from the foam curing tables with the stack designated as EF-3E;

Includes all equipment and any other ancillary and support processes and activities, operating at a facility production limit of up to 20 million kilograms of polyurethane foam products per year, discharging to the air.

Original Certificates of Approval (CoA), (now known as Environmental Compliance Approvals) includes, approval of nineteen (19) exhaust systems exhausting into the atmosphere.

#### Apollo Health and Beauty Care Corporation (Apollo Health Corp.)

Apollo Health Corp., located at 1 Apollo Place, is a health and beauty products manufacturing facility, consisting of the following processes and support units:

- Storage;
- Weighting;
- Compounding;
- Packaging;



- Cooling;
- One (1) natural gas fired process boiler rated at 15.4 million kilojoules per hour;

Including the equipment and any other ancillary and support processes and activities, operating at a facility production limit of up to 148,000 tonnes of health and beauty products per year.

### Ram & Iron Metal Inc.

Ram Iron & Metal Inc., located at 60 Ashwarren Road, is a metal recycling facility, consisting of the following processes and support units:

- Metal receiving;
- Metal sorting;
- Metal handling;
- Oxy-fuel metal cutting and torching;
- Metal shipping;

Including the equipment and any other ancillary and support processes and activities, operating at a facility production limit of up to:

- 2000 tonnes of metal recycled per day;
- Oxy-fuel metal cutting and torching operations of one (1) tonne per hour of steel with paint residue and four (4) tonnes per hour of unpainted steel.

#### Cappola Food Inc.

Cappola Food Inc., located at 25 Lepage Court, is a meat processing facility, consisting of the following equipment applied for approval under Section 9 of the Environmental Protection Act:

- One (1) natural gas fired boiler having a maximum heat input of 2,125,270 kilojoules per hour venting flue gases through a stack having an exit diameter of 0.24 metre extending 1.55 metre above the roof and 7.05 metres above grade;
- One (1) natural gas fired boiler having a maximum heat input of 2,125,270 kilojoules per hour venting flue gases through a stack having an exit diameter of 0.24 metre extending 1.55 metre above the roof and 7.05 metres above grade;
- One (1) natural gas fired boiler having a maximum heat input of 1,259,770 kilojoules per hour venting flue gases through a stack having an exit diameter of 0.3 metre extending 1.62 metre above the roof and 7.12 metres above grade;
- One (1) natural gas fired high pressure wash water heater having a maximum heat input of 416,410 kilojoules per hour venting flue gases through a stack having an exit diameter of 0.24 metre extending 1.52 metre above the roof and 7.02 metres above grade;
- One (1) natural gas fired hot water heater having a maximum heat input of 284,640 kilojoules per hour venting flue gases through a stack having an exit diameter of 0.2 metre extending 1.58 metre above the roof and 7.08 metres above grade;
- One (1) mortadella oven, heated by steam from the boiler in a closed loop, exhausting through a stack having a rectangular exit of 1.15 metre by 0.5 metre extending 1.65 metre above the roof and 7.15 metres above grade;
- One (1) ham oven, heated by steam from the boiler in a closed loop, exhausting through a stack having an exit diameter of 0.2 metre extending 0.85 metre above the roof and 6.35 metres above grade;



- One (1) exhaust system serving aging room exhausting through a stack having a square exit of 0.5 metre by 0.5 metre, extending 5.5 metres above grade;
- One (1) cooling tower processing 2525 litres per minute of water and equipped with a cooling fan having a volumetric flow rate of 25.2 cubic metres per second,
- One (1) exhaust serving shrink tunnel exhausting through a stack having an exit diameter of 0.5 metre extending 0.7 metre above the roof and 6.2 metres above grade;
- One (1) exhaust serving wash up/ tempering room exhausting through a stack having a square exit of 0.5 metre by 0.5 metre extending 0.3 metre above the roof and 5.8 metres above grade;
- One (1) drying room exhausting through stacks; and
- One (1) fermentation room exhausting through stacks.

## Vision Autobody Repair & Repaint Inc.

Vision Autobody Repair & Repaint Inc., located at 51 Toro Road, Unit 2, consists of the following processes and support units:

• One (1) paint spray booth for the application of solvent based coatings at a maximum rate of 2 litres per hour, equipped with 4.9 m<sup>2</sup> of dry type paint arrestor filters, exhausting into the atmosphere at a volumetric flow rate of 4.6 m<sup>3</sup> per second, through a stack, having an exit diameter of 0.61 metre, extending 1.8 metres above the roof and 6.4 metres above grade.

### Stim Canada Inc.

Stim Canada Inc., located at 85 Toro Road, is an electronic manufacturing service facility, consisting of the following processes and support units:

- One (1) exhaust system, serving emissions from a soldering machine, discharging to the atmosphere at a maximum volumetric flow rate of 0.20 m<sup>3</sup> per second through a stack, identified as source #1, having an exit diameter of 0.46 metre, at a height of 1.00 metre above the roof and 5.60 metres above grade;
- One (1) exhaust system, serving emissions from a soldering machine, discharging to the atmosphere at a maximum volumetric flow rate of 0.20 m<sup>3</sup> per second through a stack, identified as source #2, having an exit diameter of 0.61 metre, at a height of 1.00 metre above the roof and 5.60 metres above grade.

# 3.2 By-law No. 72

One particular note about the industrial uses in the area with respect to existing and future transportation infrastructure relates to City of Toronto By-law No. 72. This By-law was enacted by the former Municipality of Metropolitan Toronto in 1954, and regulates the transportation of inflammable liquids on former Metropolitan roads over subways. By-law No. 72, as amended, would prohibit tank trucks (oil tankers) from continuing use of the intersection at Keele Street and Finch Avenue West to the three (3) tank farm facilities located within the Study Area, since they would pass over the proposed underground LRT station at this intersection. This By-Law, as enacted, would cause the City to design the LRT station atgrade in order for these tanker trucks to continue to use the Keele/Finch intersection, which would result in a higher risk to the transit passengers using this station.



With this in mind, City Council recommended and adopted the following action to address this issue:

 City Council amend former Municipality of Metropolitan Toronto By-law No. 72 to provide an exemption to the general prohibition such that the transportation of inflammable liquids would be permitted along or upon Finch Avenue West from Tangiers Road to Romfield Lane over the proposed LRT station<sup>9</sup>.

# 3.3 Compatibility Zones

**Table 2** describes the compatibility rating for the Class I, II and III Industrial Uses with respect to the integration of sensitive land uses<sup>10</sup>. It should be noted that this is presented for context purposes and from a high-level perspective. This does not include site-specific conditions or potential mitigation measures.

Facility/Class	Compatibility Rating with Sensitive Land Uses	Justification
Class I Industrial Use	Not Recommended, but can be accommodated through appropriate mitigation measures	Integration of sensitive land uses and Class I Industrial uses are not recommended within respective Influence Areas, but may be possible depending on the nature of the industry/ operation and the effectiveness of appropriately implemented mitigation measures.
Class II Industrial Use	Poor, increased setbacks and mitigation measures typically required	Compatibility of Class II Industrial Uses and sensitive land uses within respective Influence Areas are generally considered poor, based on the following potential factors: Occasional noise, Frequent dust, Frequent and/or intense odour.
Class III Industrial Use	Generally incompatible, greater setbacks and a greater number of mitigation measures required	Compatibility of Class III Industrial Uses and sensitive land uses within respective Influence Areas are generally considered incompatible, based on the following potential factors: Frequent noise, Ground borne vibration,

## Table 2: Industrial Use Compatibility with Sensitive Land Uses

 <sup>&</sup>lt;sup>9</sup> City of Toronto. May 31, 2010. Staff Report – Transportation of Inflammable liquids over subways. (Adopted August 25, 2010) <u>http://app.toronto.ca/tmmis/viewAgendaltemHistory.do?item=2010.PW34.8</u>
 <sup>10</sup> Ministry of Environment and Climate Change. D-1-1 Land use compatibility: procedure for implementation. Accessed on April 19, 2016. Obtained from: <u>https://www.ontario.ca/page/d-1-1-land-use-compatibility-procedure-implementation</u>



- Intense & persistent dust,
- Frequent and/or intense odour.

# 3.4 Finch Corridor Sites with Potential to Contribute to Environmental Contamination

**Table 3** identifies properties within the Study Area, along the Finch Avenue West corridor, which represent areas of high, moderate and low risk of potential to contribute to environmental contamination in accordance to Appendix J of the Finch West LRT EA<sup>11</sup>.

Property Address	Environmental Risk Level	Rationale
1138 Finch Ave W.	High	Bulk fuel handling and storage facilities, primary business
		Spill events >100L
1150 Finch Ave W.	High	>15 years use and storage of new and used hydrocarbon products and non-chlorinated solvents.
		Bulk fuel handling and storage facilities, primary business.
		Spill events >100L
1270 Finch Ave W.	High	Storage and use of new and used chlorinated solvents (non-laboratory use)
1290 Finch Ave W.	High	Storage and use of new and used chlorinated solvents (non-laboratory use)
1295 Finch Ave W.	High	Storage and use of new and used chlorinated solvents (non-laboratory use)
1300 Finch Ave W.	High	Storage and use of new and used chlorinated solvents (non-laboratory use)
1315 Finch Ave W.	High	PCB storage site, reported PCB spills
25 Tangiers Rd.	High	>15 years of liquid industrial and hazardous waste generation (e.g. oils and lubricants, photo processing chemicals, non-chlorinated solvents)
35 Tangiers Rd.	High	Bulk fuel handling and storage facilities.
1183 Finch Ave W.	Moderate	Mixing, bulking, and application of pesticides.
1280 Finch Ave W.	Moderate	10-15 years of liquid industrial and hazardous waste generation (e.g. oils and lubricants, photo processing

### **Table 3: Finch Corridor Environmental Risk Factors**

<sup>&</sup>lt;sup>11</sup> Toronto Transit Commission/City of Toronto (TransitCity). March 2010. Etobicoke-Finch West Light Rail Transit Project Assessment Environmental Project Report – Appendix J.



		chemicals, non-chlorinated solvents)
1181 Finch Ave W.	Moderate	Mixing, bulking, and application of pesticides. Automobile wrecking and recycling facilities.
1177 Finch Ave W.	Low	<10 years of liquid industrial and hazardous waste generation (e.g. oils and lubricants, photo processing chemicals, non-chlorinated solvents) Storage and handling of pesticides (vendors only)
1221 Finch Ave W.	Low	<10 years use and storage of new and used hydrocarbon products and non-chlorinated solvents.
3925 Keele Street	Low	Propane handling and storage facilities.
Alexdron Rd/Finch Ave	Low	One-time spill events <50L (to paved areas or storm sewers)
Keele Street & Finch Ave.	Low	One-time spill events <50L (to paved areas or storm sewers)

# 4. Areas of Influence and Minimum Separation Distances for Industrial Uses

# 4.1 Potential Influence Areas for Industrial Uses

In accordance with Guideline D-6, appropriate areas of influence for industrial uses are determined through case studies and experience. The following tables represent general influence areas for industrial uses and list the potential influence area for each identified industrial use based on the respective D-6 Industrial Class<sup>12</sup>.

Tak	ble	<b>4</b> :	<b>Existing</b>	<b>Areas</b>	of	Influence
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Industrial Use (Existing)	D 6 Industrial Class	Area of Potential Influence (from property line)
Imperial Oil Limited	Class III Industrial Uses	1000 metres
Suncor Energy Products	Class III Industrial Uses	1000 metres
Shell Canada Limited	Class III Industrial Uses	1000 metres
Vitafoam Products Canada Limited	Class III Industrial Uses	1000 metres

<sup>&</sup>lt;sup>12</sup> Ontario Ministry of Environment. July 1995. Guideline D-6 Compatibility between industrial facilities and sensitive land uses.



Apollo Health Corporation	Class III Industrial Uses	1000 metres
Ram and Iron Metal Inc.	Class II Industrial Uses	300 metres
Cappola Food Inc.	Class II Industrial Uses	300 metres
Vision Autobody Repair & Repaint Inc.	Class II Industrial Uses	300 metres
Stim Canada Inc.	Class I Industrial Uses	70 metres

These areas of potential influence are general guidance for land that is zoned for industrial uses that fall in the respective classes. Because the guideline assumes the future land use is unknown at the time of planning, the area of potential influence must be conservative to allow for facilities that have significant air, odour, dust, noise, or other nuisance impacts. In this case, the actual land use is known, and a more nuanced approach can be used to identify the influence area.

Facilities with air emissions approved under an ECA have to meet the standards in Ontario Regulation 419/05 (O. Reg. 419/05), which set limits on permitted ground-level concentrations of pollutants emitted from the facility. The compliance assessment is most commonly performed using the highest modelled off-site concentration, which evaluates the impact of the facility anywhere off-property and on the property line. This method of assessment ensures that any one facility does not exceed air emissions standards on its own. However, this method does not consider the cumulative effect of emissions from several different facilities with common contaminants, which may result in perceived nuisance. The influence area of the subject facilities, from an air emissions perspective, will certainly be smaller than the conservative area of potential influence in the guideline.

Odour emissions are also assessed under O. Reg. 419/05, but the perception of odour is more difficult to evaluate. The normal standard is one odour unit (1 OU), which is a concentration of odour that can be detected by 50% of the population. Based on this definition, it is apparent that a single facility can comply with the standard while still emitting an odour that is perceived by a significant portion of the population. Although the influence area of the subject facilities is likely to be smaller than the area of potential influence, odour is one of the most common sources of complaints when residential areas are close to industry.

Noise emissions are approved under the ECA process and need to meet the requirements in guideline NPC-300 (or predecessors for historical approvals). As with air emissions, the compliance assessment only considers a single facility's emissions, and does not account for cumulative impacts from several facilities. Additionally, noise emissions are typically assessed only at sensitive receptors, rather than all locations off-site. This can be a challenge for new development that was not previously perceived as a sensitive receptor and is now exposed to higher levels of noise. Guideline NPC-300 permits a municipality to designate an area as Class 4, which allows for higher noise limits at sensitive receptors near existing stationary noise sources. As with odour emissions, noise tends to be a common source of complaints, but can be easier to evaluate quantitatively.

Dust emissions typically occur when there is vehicle travel over unpaved roads or parking lots, as well as fugitive emissions from material storage piles. The industrial operations near the Study Area are unlikely to produce emissions of dust.



# 4.2 Minimum Separation Distances from Industrial Uses

The following tables list the recommended minimum separation distances for sensitive land uses and industrial land uses, identified in Guideline D-6, in accordance with the respective D-6 Industrial Class<sup>13</sup>.

Industrial Use	D 6 Industrial Class	Minimum Separation (from property line)
Imperial Oil Limited	Class III Industrial Uses	300 metres
Suncor Energy Products	Class III Industrial Uses	300 metres
Shell Canada Limited	Class III Industrial Uses	300 metres
Vitafoam Products Canada Limited	Class III Industrial Uses	300 metres
Apollo Health Corporation	Class III Industrial Uses	300 metres
Ram and Iron Metal Inc.	Class II Industrial Uses	70 metres
Cappola Food Inc.	Class II Industrial Uses	70 metres
Vision Autobody Repair & Repaint Inc.	Class II Industrial Uses	70 metres
Stim Canada Inc.	Class I Industrial Uses	20 metres

## Table 5: Existing Minimum Separation Distances Recommended in the D-6 Guidelines

As with the potential areas of influence, these minimum distances are general guidelines for unspecified industrial uses. Since the specific uses near the Study Area are known, considering the actual impacts of the facilities allows actual areas of influence to be evaluated more precisely. Further study would be required to identify the extent of the impacts respective to each identified industrial use within the Study Area.

5.

# 5. Traffic Data Analysis in Study Area and Environmental Influence

Due to operations of the Class III Industrial Uses within the Study Area, the area experiences significant and frequent freight activity that may contribute to the local air quality, elevated levels of fugitive emissions, and an increase in ambient noise production. Further, given the nature of the businesses/ operations within the Study Area (see Table 3), the City should also be aware that transportation of potentially hazardous goods and by-products to and from some of the existing operations will occur.

<sup>&</sup>lt;sup>13</sup> Ontario Ministry of Environment. July 1995. Guideline D-6 Compatibility between industrial facilities and sensitive land uses.



Utilizing a representative sample of traffic counts of intersections in the Study Area along the Keele Street and Finch Avenue West corridors, the amount of freight activity within the Study Area with respect to other transportation modes may be determined.

**Sections 5.1 to 5.5** highlight the percent distribution of modal transport use and frequency based on AM and PM Peak Hours for the following intersections within the 500 m Study Area, which are also consistent with the freight transport route for the three tank farm facilities located within the Study Area:

- Keele Street at Finch Avenue West
- Finch Avenue West at Alexdon Road
- Finch Avenue West at Tangiers Road
- Keele Street at Murray Ross Parkway
- Keele Street at Toro Road

Utilizing the Ministry of Transportation's *"Environmental Guide for Noise"* and *"Environmental Guide for Assessing and mitigating the Air Quality Impacts and Greenhouse Gas Emissions of Provincial Transportation Projects"*, a criterion of potential air contaminants, prediction of emissions, and ambient noise associated with freight activity and other transport modes may be determined. Criteria for air contaminants most relevant to transportation are carbon monoxide, nitrogen oxides (NO<sub>x</sub>), volatile organic compounds (VOCs), particulate matter, and ozone<sup>14</sup>. The MOECC measures ambient air quality in relation to the concentration of the following six common pollutants in outdoor air, measuring human health effects of air pollution:

- Carbon Monoxide (CO)
- Ozone
- Total Reduced Sulphur Compounds (TRS)
- Particulate Matter (PM<sub>2.5</sub>)
- Sulphur Dioxide (SO<sub>2</sub>)
- Nitrogen Dioxide (NO<sub>2</sub>)<sup>15</sup>

The MOECC converts measured pollutant concentrations into air quality indices (AQIs) and employs the relations in the following **Table 6**:

#### Table 6: Air Quality Index and Pollutant Concentrations

AQI CO (ppm) Oz Category (p	Dzone TRS (ppb) opb)	ΡΜ <sub>2.5</sub> (μg/m3)	SO <sub>2</sub> (ppb)	NO <sub>2</sub> (ppb)
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<sup>&</sup>lt;sup>14</sup> Ministry of Transportation. June 2012. Environmental guide for assessing and mitigating the air quality impacts and greenhouse gas emissions of provincial transportation projects. Accessed on July 7, 2016.

<sup>7, 2016.</sup> <sup>15</sup> Ministry of Transportation. June 2012. Environmental guide for assessing and mitigating the air quality impacts and greenhouse gas emissions of provincial transportation projects. Accessed on July 7, 2016.



Very Good	0-12	0-23	0-5	0-11	0-164	0-104
Good	13-22	24-50	6-10	12-22	165-250	10-204
Moderate	23-30	51-80	11-27	23-45	251-340	205-254
Poor	31-49	81-149	28-999	46-90	341-1999	255-524
Very Poor	>49	>149	>999	>90	>1999	>524

Further study is required to determine (with a high degree of accuracy) potential site-specific impacts and mitigation measures based on a site's outputs of fugitive emissions, ambient noise and other potential environmental impacts associated with freight activity within the Keele Street and Finch Avenue West Study Area. Based on future studies conducted it will be possible to determine the isolated impacts of ambient air quality and noise due to transport and freight activities. This will be based on the distribution for each modal transport activity identified in the following **Sections 5.1 to 5.5**, while utilizing the 'prediction of emissions methodology' within the MTO's "*Environmental Guide for Assessing and mitigating the Air Quality Impacts and Greenhouse Gas Emissions of Provincial Transportation Projects*".

In addition to assessing potential ambient air quality and noise from traffic and freight transport operations, the following analysis of traffic count information at the aforementioned intersections may be used to determine and recommend appropriate locations for potential development and intensification within the Study Area. However, this is based solely on traffic volumes and not considering minimum separation distances or areas of influence regarding sensitive land uses in proximity to Class I, II and III Industrial Uses.

The following analysis in **Sections 5.1 to 5.5** is focused specifically toward industrial land use operations by truck transport activities.

## 5.1 Keele Street at Finch Avenue West

Based on a total 8 Hour Vehicle Volume of 14,038, observed on February 27, 2016 at the intersection of Keele Street and Finch Avenue West, the most frequent freight transport occurs during the AM Peak hours in both eastbound and westbound directions. However, due to limitations and restrictive access at the intersection of Keele Street and Finch Avenue West given current construction activities related to the development of Finch West subway station, these traffic counts may not accurately reflect capacity standards or average traffic volumes at this location.

#### Percent Distribution:

#### Northbound

AM Peak: Car – 99.2%; Truck – 0.8%; Bus – 0%

PM Peak: Car - 100%; Truck - 0%; Bus - 0%

Due to construction works at the intersection of Keele Street at Finch Avenue West, traffic counts conducted at this time indicate no bus activity. Bus routes were re-routed due to construction at the time the traffic count was conducted.



#### Eastbound

AM Peak: Car – 92.7%; Truck – 4.9%; Bus – 2.4%

PM Peak: Car - 95.4%; Truck - 1.9%; Bus - 2.7%

#### Southbound

AM Peak: Car - 96.4%; Truck - 1.3%; Bus - 2.3%

PM Peak: Car - 97.9%; Truck - 0.3%; Bus - 1.8%

#### Westbound

AM Peak: Car - 92.8%; Truck - 4.4%; Bus - 2.8%

PM Peak: Car - 95.3%; Truck - 2.2%; Bus - 2.5%

For a detailed breakdown of traffic count information and analysis at the intersection of Keele Street at Finch Avenue West, refer to *Appendix C-1*.

## 5.2 Finch Avenue West at Tangiers Road

Based on a total 8 Hour Vehicle Volume of 16,447, observed on February 23, 2016 at the intersection of Finch Avenue West and Tangiers Road, the most frequent freight transport occurs during northbound and eastbound AM peak hours.

#### Percent Distribution:

#### Northbound

AM Peak: Car – 85.1%; Truck – 9.4%; Bus – 5.5%

PM Peak: Car – 92.5%; Truck – 3.5%; Bus – 4.0%

Due to construction works at the intersection of Finch Avenue West at Tangiers Road, traffic counts conducted at this time indicate no bus activity. Bus routes were re-routed due to construction at the time the traffic count was conducted.

#### Eastbound

AM Peak: Car - 90.7%; Truck - 6.5%; Bus - 2.8%

PM Peak: Car - 93.1%; Truck - 4.5%; Bus - 2.4%

#### Southbound

AM Peak: Car – 92.6%; Truck – 5.5%; Bus – 1.9%

PM Peak: Car - 95.8%; Truck - 3.7%; Bus - 0.5%

#### Westbound

AM Peak: Car - 92.7%; Truck - 4.9%; Bus - 2.4%

PM Peak: Car – 94.6%; Truck – 3.3%; Bus – 2.1%

For a detailed breakdown of traffic count information and analysis at the intersection of Finch Avenue West at Tangiers Road, refer to *Appendix C-3*.



## 5.3 Keele Street at Murray Ross Parkway

Based on a total 8 Hour Vehicle Volume of 19,549, observed on March 23, 2010 at the intersection of Keele Street and Murray Ross Parkway, the most frequent freight transport occurs during westbound AM and PM peak hours.

#### Percent Distribution:

#### Northbound

AM Peak: Car – 93.3%; Truck – 4.2%; Bus – 2.5%

PM Peak: Car - 95.1%; Truck - 2.6%; Bus - 2.3%

#### Eastbound

AM Peak: Car - 85.8%; Truck - 0%; Bus - 14.2%

PM Peak: Car – 81.4%; Truck – 0%; Bus – 18.6%

#### Southbound

AM Peak: Car - 94.4%; Truck - 3.8%; Bus - 1.8%

PM Peak: Car - 96.3%; Truck - 2.6%; Bus - 1.1%

#### Westbound

AM Peak: Car – 6.8%; Truck – 31.6%; Bus – 61.4%

PM Peak: Car - 27.1%; Truck - 29.7%; Bus - 43.2%

For a detailed breakdown of traffic count information and analysis at the intersection of Keele Street at Murray Ross Parkway, refer to *Appendix C-4.* 

#### 5.4 Keele Street at Toro Road

Based on a total 8 Hour Vehicle Volume of 11,983, observed on February 23, 2016 at the intersection of Keele Street and Toro Road, the most frequent freight transport occurs during southbound and westbound AM peak hours.

#### Percent Distribution:

#### Northbound

AM Peak: Car - 94.6%; Truck - 3.2%; Bus - 2.2%

PM Peak: Car – 96.0%; Truck – 2.0%; Bus – 2.0%

#### Eastbound

AM Peak: Car - N/A; Truck - N/A; Bus - N/A

PM Peak: Car – N/A; Truck – N/A; Bus – N/A

#### Southbound

AM Peak: Car – 91.6%; Truck – 5.3%; Bus – 3.1%

PM Peak: Car - 96.4%; Truck - 1.5%; Bus - 2.1%



### Westbound

AM Peak: Car - 91.8%; Truck - 7.7%; Bus - 0.5%

PM Peak: Car - 98.5%; Truck - 1.5%; Bus - 0%

For a detailed breakdown of traffic count information and analysis at the intersection of Keele Street at Toro Road, refer to *Appendix C-5*.

For a detailed breakdown of additional traffic count information provided by the City and an analysis conducted by GHD within the Study Area, refer to *Appendix C-6 to C-9*.

# 6.

# Potential Mitigation Measures

## 6.1 Mitigation Measures by Proximity and Type

Depending on the potential and actual impacts on new sensitive land uses, different types of evaluation, assessment, and mitigation measures are possible. In general, new land uses within the area of influence of industrial facilities should be evaluated for noise and odour impact, as these tend to generate the most complaints, with consideration given to dustfall and other air emissions. Feasibility of permitted uses in relation to Class III industrial facilities should also be evaluated based on operational factors of industrial facilities contributing to fugitive emissions, including plant emissions, hours of operation, technology used and traffic movement. Combustion and fugitive emissions from sources including truck traffic resulting from industrial operations are difficult to quantify, but the D-6 Guideline does call for inclusion of truck movements/ traffic. Additional truck traffic mitigation measures may be developed through the evaluation of traffic movements within the Study Area. To evaluate potential impacts, several approaches are available, depending on the type of impact.

## 6.1.1 Air Emissions

Air emissions are typically evaluated at all off-site receptors for each facility. Emission Summary and Dispersion Modelling report summaries are publicly available and can be obtained from the various facilities near the Study Area. These report summaries contain the modelled maximum ground-level concentration for each significant contaminant emitted by the facility. These concentrations can then be evaluated for potential cumulative effect from different facilities with common contaminants. Combustion and fugitive emissions from sources including truck traffic resulting from industrial operations are difficult to quantify. Therefore, general mitigation measures concerning truck traffic activity may stem from analysing hours of industrial operations in relation to peak traffic hours. Additional truck traffic mitigation measures may be developed through the evaluation of traffic movements within the Study Area.

Further study can be performed using more detailed air dispersion modelling that considers emissions from all the facilities in the area, but gathering the required inputs for the model typically requires industrial cooperation and can be difficult. Another option for more detailed analysis is air sampling, but this is limited in its ability to capture maximum ground-level concentrations as it captures only a small portion of the meteorological conditions that would occur at the site, and sampling campaigns are expensive. Most commonly, air emission complaints are the result of odour rather than other causes.

Mitigation measures for air emissions are nearly always at the source, and would require cooperation from industrial facilities. Some approaches are relatively simple, including taller stacks to aid dispersion. Other mitigation measures may be more extensive, including pollution



control equipment or process adjustments. However, some decisions can be made by developers, including site layout and location of building ventilation intakes and windows.

### 6.1.2 Odour Emissions

Although odour emissions are typically assessed in a fashion similar to air emissions, the use of averaging periods as part of air dispersion modelling can lead to situations where a facility is in compliance with the regulations but odour is still observed in the surrounding area. Additionally, the frequency and intensity of odour impacts is often modelled using a sensitive-receptor approach, and would not necessarily evaluate impacts at new locations.

As with air emissions, it is possible that cumulative impacts of odour from multiple facilities could be a significant factor that is not captured in the individual facility Emission Summary and Dispersion Modelling report summaries. One approach is to prepare an aggregated odour dispersion model. However, gathering the required inputs for such a model is difficult and requires cooperation from the industrial facilities. Another option that evaluates actual odour impact is a community odour survey performed for some time in the Study Area. Though this suffers from similar limitations as selective air sampling, a community odour survey can be more exhaustive and does not require laboratory analysis unless detailed quantitative results are desired; it is certainly useful as a screening tool.

As with air emissions, odour mitigation tends to be done at the source, and uses similar techniques. However, developers can make decisions such as locations of air intakes and positioning of buildings on a site that could affect the impact of odour at the site.

### 6.1.3 Noise Emissions

Noise emissions are typically evaluated only at sensitive receptors. Although the Ministry of the Environment and Climate Change (MOECC) has recently required noise assessments to consider vacant lands where sensitive uses may later take place as sensitive receptors, this guidance has not been applied consistently in the past. Thus, although facilities may show compliance with current or historical noise standards as part of their Environmental Compliance Approvals, this does not guarantee compliance at future sensitive receptors, especially if the receptor is a new type of land use.

Additionally, as with air emissions, cumulative effects of noise emissions from multiple facilities are not assessed as part of the regulatory compliance process. However, assessing noise impact at a particular sensitive location is an easier task than assessing air emissions.

Noise impacts may be measured at the receptor reliably through a long-term monitoring study, which requires relatively little effort and is able to evaluate the cumulative impact from multiple industrial facilities. This type of study can demonstrate that noise levels at the location are suitable for a particular sensitive land use.

Mitigation of noise can be done at the source or at the receiver. Receiver controls could include additional soundproofing or inoperable windows. Source controls could include barrier walls, silencers, or equipment replacement, but this requires cooperation from industrial facilities.

#### 6.1.4 Dust Emissions

Since the facilities near the subject area do not have unpaved roads or uncovered material storage piles, it is unlikely that dust emissions will be a significant concern for any future development. However, dustfall at a potential new receptor can be measured using long-term monitoring equipment if necessary.



Mitigation measures for dust emissions, resulting from truck traffic and facility storage piles typically focus on controls at the source, by treating road surfaces and storage piles. Particulate matter emissions are regulated as part of O. Reg. 419/05, and compliance is assessed at the property line and beyond. Thus, as with air emissions, individual facilities are likely to be compliant, and cumulative effects (particularly with respect to combustion and fugitive emissions from truck traffic) would need to be evaluated if significant dust impacts are expected.

## 6.2 Restrictions on Location for Sensitive Uses

It is most likely that odour and noise are the primary drivers of concern since there are no significant sources of dustfall, and air emissions are likely in compliance with O. Reg. 419/05 already. Thus, restrictions on location for sensitive uses should be guided by municipal planning policies and permissions, and informed by Provincial Guidelines (including D-6), potential odour impacts from industrial facilities (likely hydrocarbon odours from petroleum storage tanks and chemical odours from other Class III sources), as well as prevailing noise levels in the area. Traffic operations in the Study Area resulting from industrial operations pose as a contributing factor to dust, air and noise emissions, Proposed sensitive land uses should be planned accordingly based on freight operations and traffic movements (frequency and distribution related to industrial operations) within the study area.

The guideline value for odour is one odour unit (a concentration of odour detectable by 50% of the population), and a community odour survey can help establish areas where this threshold is likely to be exceeded.

Similarly, for noise, the permitted noise levels are 45 dBA at night (or 55 dBA at the windowpane of a noise-sensitive space if the city designates the area as Class 4, i.e. allows for higher noise limits at sensitive receptors near existing stationary noise sources) and 50 dBA during the day (or 60 dBA if designated as Class 4). Long-term ambient noise monitoring can determine whether these requirements are met for any particular location.

# 7. Next Steps

This study does not consider the previously identified mitigation measures to serve as literal or adequate feasibility measures for the future consideration of sensitive uses to be permitted within the identified areas of influence. This study serves as a benchmark to identify site specific and land use specific mitigation measures that will need to be identified through further investigations. Some common mitigation measures have been described that site developers could implement to reduce typical effects as well as the potential for existing industrial site operators (should they choose to). The City should consider requiring potential development to include studies around air emissions, odour, dust and noise to review the existing industrial development from a cumulative impact perspective. Further, developers potentially operating within the Study Area in order to create adequate setback distances from industrial sources should adhere to mitigation measures and Best Management Practices as described in **Section 6.** Future studies should focus on potential cumulative impacts based on existing industrial uses and current as of right zoning. This would include what is on the ground today as well as what is approvable or a proposed use that is "reasonably foreseeable" given the as of right zoning.



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