

## LAKEVIEW VILLAGE

MISSISSAUGA, ON

AIR QUALITY & NOISE LAND-USE FEASIBILITY ASSESSMENT

RWDI # 1804164

January 31, 2019

### SUBMITTED TO

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## VERSION HISTORY

| Index | Date          | Pages | Author      |
|-------|---------------|-------|-------------|
| 2     | Jan. 31, 2019 | All   | Mike Lepage |
| 1     | Oct. 4, 2018  | All   | Ben Coulson |

## REPORT SIGNATURES

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# 1 INTRODUCTION

Lakeview Community Partners Limited retained RWDI to complete a land use compatibility study for the proposed Lakeview Village development in Mississauga, Ontario. The study consisted of a review of the surrounding land uses and their potential for creating air quality and noise adverse impacts on the proposed development. A summary of the overall recommendations from the study are presented in Section 4.

## 1.1 Overview of Development and Surrounding Land Uses

The draft plans for the proposed Lakeview Village development are shown in Appendix A. The lands are adjacent to Lake Ontario, with Lakeshore Road to the north, East Avenue and the Lakeview Water Treatment Plant (WTP) to the west, and the G. E. Booth (Lakeview) Wastewater Treatment Plant (WWTP) to the east.

The current City of Mississauga zoning map for the area is shown in Appendix B. The subject lands are currently zoned as "U1 = Utility". The area on the south side of Lakeshore Road and on either side of Rangeview Road currently consists predominantly of small and medium size industries with an "E2-21 = Employment" zoning. The area north of Lakeshore Road consists of commercial and residential uses.

The proposed Lakeview Village development is located the south of the existing industries along Rangeview Road (i.e., the area identified as "Rangeview Estates" along Lakeshore Road East). The Rangeview Estates region is not part of the current development plan. The proposed development connects to Lakeshore Road East via a corridor east of Hydro Road that is known as "Lakeshore Gateway".

The proposed development consists predominantly of medium density residential areas and includes mixed use, green space, business employment and institutional areas. The employment and institutional areas are along the east side of the site, known as the "Serson Innovation Corridor", providing a buffer on the order of 100m between the G. E. Booth wastewater plant and proposed residential areas. The height of the buildings in this corridor is not confirmed. The current master plan concept allows for a number of high rise residential towers, with the tallest being 48 floors (i.e., located in the southwest corner of the development). The buildings nearest the WWTP are on the order of 7-10 storeys in height, while the taller towers tend to be located to the middle, west, and south of the site.

# 2 LAND USE COMPATIBILITY

In the Province of Ontario, the principal instrument for regulating air contaminants (including noise) is the Environmental Protection Act (EPA). It prohibits anyone from discharging air contaminants in amounts that exceed levels set out in the regulations, or that cause an adverse effect. It also requires facilities and/or activities that discharge air contaminants to have an Environmental Compliance Approval (ECA) or a registration in the Environmental Activity and Sector Registry (EASR), depending on the type of facility or activity. To obtain an ECA or EASR registration, a facility must demonstrate through computer modelling that it will comply with the regulated air quality levels and noise guidelines.



As an additional tool for managing noise and air quality, The Ontario Ministry of Environment, Conservation and Parks (MECP) has guidelines on land use compatibility. The guidelines adopt the principal of buffering between incompatible land uses, as a supplement the requirements of the EPA and its regulations and are normally employed as part of the land-use planning process for new developments. Guideline D-6 deals with compatibility between Industrial Facilities and sensitive land uses, and Guideline D-2 deals with compatibility between wastewater treatment plants and sensitive land uses.

Guideline D-6 provides the following information:

- Potential influence areas for three different classes of industry (I, II and III) which can be used in the absence of site-specific information from technical studies;
- Recommended minimum separation distances for the three classes of industry, within which incompatible development should not occur.

The potential influence areas and minimum separation distances are set out in the following table.

**Table 1: Recommended Industry Influence Areas and Separation Distances (Guideline D-6)**

| <b>Class of Industry</b>   | <b>Potential Influence Area</b> | <b>Recommended Minimum Separation Distance</b> |
|--|---------------------------------|--|
| <b>I<br/>(small scale, self-contained, daytime only)</b>   | 70m                             | 20m  |
| <b>II<br/>(medium scale, outdoor storage of materials, shift operations, frequent daytime movement of products)</b>          | 300m                            | 70m  |
| <b>III<br/>(large scale, outdoor storage of raw material and products, continual movement of products during all shifts)</b> | 1000m                           | 300m   |

The distances normally are measured between the closest lot lines of the industrial use and the sensitive use(s). If the industrial use has a setback where site-specific zoning or site plan control precludes the use of the setback for any activities that could create an adverse effect, then the setback may be included in the measured distance.

Guideline D-6 recognizes that it may not be possible to achieve the recommended minimum separation distances in places where infilling, urban development or a transition to mixed use is taking place. It considers these situations acceptable, subject to a justifying impact assessment.

Guideline D-2 provides recommended separation distances for three categories of wastewater treatment plants, as summarized in the following table.



**Table 2: Recommended Wastewater Treatment Plant Setback Distances (Guideline D-2)**

| Size of Wastewater Treatment Plant       | Recommended Separation Distance  |
|--|--|
| Less than 500 cubic metres per day       | 100m   |
| 500 to 25,000 cubic metres per day       | 150m   |
| Greater than 25,000 cubic metres per day | Dependent on the type of noise sources and noise/odour controls being applied. |

In cases where odour nuisance is minimal, sporadic and infrequent, despite the application of all reasonable and practical on-site mitigation measures, Guideline D-2 indicates that warnings in offers of purchase and sale for potentially affected building lots may be used to advise prospective buyers of the presence of a wastewater treatment plant and the possible presence of odours.

### 3 LAND USE ASSESSMENT

The following tasks were undertaken to assess land use compatibility in terms of air quality and noise:

- Review of Environmental Compliance Approvals for existing industries in the surrounding area (summarized in Appendix C);
- Site visit (summarized in Appendix D);
- Review of air quality and odour reports for the G. E. Booth (Lakeview) Wastewater Treatment Plant, provided by Peel Region (summarized in Appendix E);
- Review (summarized in Appendix F) of the following documents:
  - Ontario Power Generation (OPG) Land Use Compatibility Study. ORTECH Report No. 91589, dated October 6, 2016 (including noise assessment by HGC);
  - Peer review completed by Golder Associates, Golder Report No. 1541581, dated April 25, 2017; and
  - ORTECH response to peer review (including HGC for noise), dated June 30, 2017.
- Review of wind climate information for the study area (Appendix G).

#### 3.1 Air Quality

The following potential land use compatibility issues were identified with respect to air quality:

- Plaster Form Inc. (1180 Lakeshore Road East);
- Long Branch Foundry (1062 Rangeview Road);
- Filamat composites Inc. (880 Rangeview Road); and
- G. E. Booth Wastewater Treatment Facility.

### **3.1.1 Plaster Form Inc.**

Plaster Form Inc. is on the south side of Lakeshore Road, where it intersects Haig Boulevard. The facility has several spray booths, with exhaust stacks along the southern edge of the roof. According to Guideline D-6, Plaster Form would be classified as a Class II industry, which would recommend a minimum separation distance of 70m. However, the spray booths are a source of odours, which were detected in Plaster Form's parking lot during the site visit, approximately 100m from the nearest stack. Currently, the stacks are 175m away from the nearest residences. The draft masterplan concept for Lakeview Village (September, 2018 – see Appendix A) calls for residential and mixed uses closer to the stacks than 175m, including a 15-storey tower in the Lakeshore Gateway portion of the development.

If Plaster Form is likely to remain in operation after development proceeds in the Lakeshore Gateway area, then it would be desirable to obtain more information about the zone of influence of odours from Plaster Form, for both ground-level and elevated points of reception. It would also be desirable to determine whether the introduction of new elevated points of reception would affect the ability of the exhaust stacks to achieve compliance with air quality standards. The Lakeshore Gateway component of the proposed development (Block 6 in the September 13, 2018 Development Phasing Concept Plan) could be subject to a holding provision, until either (a) Plaster Form ceases to operate at its current location, or (b) the following tasks are completed:

- A community odour survey designed to assess the zone of influence of odours from Plaster Form Inc.;
- Discussions with Plaster Form Inc., to gain access to their Emission Summary and Dispersion Model (ESDM) report and historical odour complaint records, if any;
- Request for information from MECP, through the FOI, if discussions with Plaster Form are unsuccessful;
- Update the dispersion modelling for Plaster Form to assess impacts at elevated points of reception;
- Should these analyses indicate a potential for undesirable air quality impacts in the Lakeshore Gateway area, then at-source mitigation measures could be considered, such carbon filters on the exhaust systems.

### **3.1.2 Long Branch Foundry**

This facility is on the south side of Rangeview Road, a short distance west of Hydro Road. The facility has exhaust stacks associated with aluminum melting furnaces, and a dust collector for its abrasive blasting area. ORTECH classified the foundry as a Class II facility under Guideline D-6 and recommended a separation distance of 70m from sensitive land uses. Based on our site visit and review of the facility's ECA, we concur with ORTECH that 70m should be an adequate buffer. It is recommended that residential development within 70m of Long Branch Foundry be deferred until the foundry no longer operates at that location.

### **3.1.3 Filamet Composites Inc.**

Filamat is located on the south side of Rangeview Road, between East Avenue and Lakefront Promenade. It lies to the west of the Lakeview Village site and would be classified as a Class II industry per Guideline D-6. The closest point on the property line is approximately 85m away from the Lakeview Village lands which would meet the recommended minimum separation distance of 70m for a Class II industry. Currently, the site is well over 200m



away the nearest residences. A weak odour was detected during the site visit, on the sidewalk in front of the site. The facility has three relatively large stacks associated with resin spray booths.

Based on the scale of the operation, the 85m separation distance from the Lakeview Village lands is considered adequate to address potential odours at ground-level points of reception. A question arises as to whether the introduction of elevated points of reception in Lakeview Village will compromise the ability of the exhaust stacks to achieve compliance with air quality regulations. This pertains to the portion of Block 1A of the September 13, 2018 Development Phasing Concept that lies north of Street A, which is currently planned to be the nearest highrise component of the development. It will be on the order of 300m from the stacks at Filamat, which is likely to be a sufficient separation distance. However, the adequacy of the separation distance should be confirmed by dispersion modelling. Development in Block 1A could be subject to a holding provision until the following tasks are undertaken:

- Discussions with Filamat Inc., to gain access to their Emission Summary and Dispersion Model (ESDM) report and historical odour complaint records, if any;
- Request for information from MECP, through the FOI, if discussions with Filamat are unsuccessful;
- Update the dispersion modelling for Filamat to assess impacts at elevated points of reception;
- Should this analysis indicate a potential for undesirable air quality impacts at elevated points of reception, then at-source mitigation measures could be considered, such as carbon filters on the exhaust systems.

### **3.1.4 G.E. Booth (Lakeview) Wastewater Plant**

The current draft masterplan for Lakeview Village calls for multi-storey residential development east of the Hydro Road alignment, with the nearest residences being on the order of 120m from the boundary of the wastewater treatment plant. This is significantly closer to the wastewater plant than any existing residential areas, the nearest of which is over 400m away. This wastewater plant handles on the order of 448,000 cubic metres per day of wastewater, which would put it in the largest class per Guideline D-2, suggesting minimum separation distances more than 150m should be considered (subject to site-specific studies).

During a visit to G. E. Booth by RWDI staff, significant on-site odours were observed at various locations near open primary clarifiers and aeration tanks. Field odour surveys conducted by Peel Region and by ORTECH indicate that weak sewage odours are moderately frequent at Hydro Road and moderate to strong odours occur there from time to time.

Currently, the wastewater plant receives an average of 7 odour complaints per year. The potential for complaints will be greater in residential components of the Lakeview Village development that lie east of the Hydro Road alignment (Blocks 3C2, 5A through C, and 6 in the September 13, 2018 Development Phasing Concept).

In addition to foregoing odour issue, the introduction of high rise residential uses in Lakeview Village raises the question of whether or not elevated points of reception would affect the ability of the sludge incinerator stack to comply with air quality standards. The highrise component in Block 3A of the September 13, 2018 Development Phasing Concept is of particular concern, due to its potential height. This concern needs to be investigated further.

Development in Blocks 3C2, 5A through C, 6, and 3A could be subject to a holding provision until the following is undertaken with respect to the G. E. Booth Waste water Treatment Facility:

- Various measures may be feasible on the proposed residential buildings to address the odours (e.g., carbon filters on building ventilation systems, automatic sliding doors on balconies, warnings on sales and lease agreements). For this approach, further study would be warranted, to delineate the zone of influence within which mitigation measures should be considered. The further study could consist of a computer simulation of sewage odour dispersion. This requires information on the magnitude of odours being emitted from the open primary clarifiers and aeration cells at the wastewater plant. Since such data are not currently available for the G. E. Booth facility, surrogate data from other wastewater plants could be used.
- Alternatively, mitigation of odours at the source could be considered, such as partial or complete covering of open primary clarifiers and possibly also some of the aeration cells, and implementation of odour filtration systems for the covered areas.
- Dispersion modelling of emissions from the sludge incinerator stack needs to be updated to assess impacts at future elevated points of reception at Lakeview Village. This would identify any areas where high rise residential development should be limited in height

## **3.2 Noise**

The following potential land use compatibility issues were identified with respect to noise:

- Plaster Form Inc. (1180 Lakeshore Road East);
- Long Branch Foundry (1062 Rangeview Road); and
- G. E. Booth Wastewater Treatment Facility.

In addition, road traffic on Lakeshore Road East is a noise source that must be considered as part of the land-use planning process.

The Lakeview water treatment plant to the west of the proposed development was also identified as a potential noise source by HGC in the Oct. 2016 ORTECH land use compatibility report; however, this facility is not anticipated to be an important noise source. This conclusion is based on the HGC assessment which notes that the primary sources of concern from this facility were the emergency generators, yet noise contributions from these sources are expected to remain below applicable guideline levels at the western side of the proposed Lakeview Village development.

### **3.2.1 Plaster Form Inc.**

The Plaster Form facility is described above in Section 3.1.1. During the site visit, noise emanating from the direction of Plaster Form was audible near the intersection of Rangeview Road and Hydro Road. This noise had low frequency tonal characteristics that would be associated with a ventilation fan such as those serving the stacks at the south edge of the building. Based on the proposed development plan, points of reception at proposed buildings on the east side of the Hydro Road alignment are expected to experience elevated noise levels from this source.



If Plaster Form is likely to remain in operation after development proceeds in the Lakeshore Gateway area (Block 6 and also Block 5A of the September 13, 2018 Development Phasing Concept), then it would be desirable to obtain more information about the zone of influence of noise from Plaster Form, for both ground-level and elevated points of reception. It would also be desirable to determine whether the introduction of these new points of reception would affect the ability of the facility to maintain compliance with noise guideline limits. The Lakeshore Gateway component of the proposed development (Block 6 in the September 13, 2018 Development Phasing Concept Plan) and Block 5A could be subject to a holding provision, until either (a) Plaster Form ceases to operate at its current location, or (b) the following tasks are completed:

- A community noise survey designed to assess the zone of influence of sound from Plaster Form Inc.;
- Discussions with Plaster Form Inc., to gain access to their Acoustic Assessment Report (AAR);
- Request for information from MECP, through the FOI, if discussions with Plaster Form are unsuccessful;
- Should these analyses indicate a potential for undesirable noise impacts in the Lakeshore Gateway area, then at-source mitigation measures could be considered, such as silencers on the exhaust systems.

### **3.2.2 Long Branch Foundry**

The Long Branch Foundry is described above in Section 3.1.2. During the site visit, the roll-up doors at this facility were open and occasional sounds associated with metal working were found to be emanating from it. A dust collector was also noted on the east side of the facility, although it was not audible at the time. Similar to the air quality assessment above, a Class II designation under Guideline D-6 would be appropriate for this facility. It is recommended that residential development within 70m of Long Branch Foundry be deferred until the foundry no longer operates at that location.

### **3.2.3 G.E. Booth (Lakeview) Wastewater Plant**

The wastewater treatment plant is described above in Section 3.1.4. During the site visit, the wastewater plant noise sources were not audible at locations offsite largely due to construction (i.e., at the WWTP) and demolition activity (i.e., at the Lakeview Village site) in the area. However, the HGC assessment of this facility contained in the Oct. 2016 ORTECH report appears to remain relevant to the current development plans based on our review and site visit. That assessment predicted levels on the order of 45-50 dBA from the WWTP on the eastern portion of the Lakeview Village site; these levels would be consistent with observations during the site visit wherein construction activity was masking the facility noise.

The HGC assessment anticipated that building massing within the Serson Innovation Corridor would effectively screen lower level (i.e., 1-2 storey) residential points of reception within the proposed development. However, at elevated points of reception on the east side of the site, the WWTP sources were expected to produce some sound levels in excess of the minimum noise guideline limit (i.e., 45 dBA) at heights of at least 24m and higher. The same assessment indicated that sound from road traffic on Lakeshore Road East would not penetrate sufficiently in to the development to raise the guideline limit above the minimum (i.e., only 40 dBA was predicted from road traffic in that vicinity). Furthermore, the WWTP is currently re-constructing its plant 1 facilities that are located on the west side of the facility, closest to the proposed development. As a result, proposed residential buildings bordering the

Serson Innovation Corridor on the east side of the site may be affected by noise from the WWTP under the current development plan.

Development in Blocks 3C2, 5A through C, 6, and 3A could be subject to a holding provision until the following is undertaken:

- Discussions with the G.E. Booth (Lakeview) Wasterwater Plant, in an effort to gain access to their Acoustic Assessment Report (AAR) in order to validate the HGC assessment and create a model to assess impacts on the proposed development;
- Request for information from MECP, through the FOI, if discussions with G.E. Booth are unsuccessful;
- Should these analyses indicate a potential for undesirable noise impacts at buildings on the east side of the site, then at-source mitigation measures could be considered, such as silencers on exhaust systems, or receptor-based building design configurations could be considered that would effectively screen sensitive points of reception from the sources of concern.

### **3.2.4 Lakeshore Road East**

Road traffic noise from Lakeshore Road East was notable in the vicinity of the Lakeshore Gateway portion of the proposed development during the site visit. That observation is consistent with the modelling results produced by HGC in the Oct. 2016 ORTECH report. Those modelling results indicate that elevated sound levels above the applicable guideline limits are anticipated at residential buildings fronting on to Lakeshore Road East.

In particular, residential buildings in the Lakeshore Gateway area (or future proposed residential buildings in the Rangeview Estates area, which are not part of current development plan) would be susceptible to elevated sound levels that may require mitigation through alterations to the building envelope (i.e., upgraded façades or windows), or strategic positioning of outdoor living areas, to avoid noise impacts.

Based on these results, the following further tasks area recommended:

- Assess the traffic noise levels at points of reception on relevant building façades and outdoor living areas in the current development plan based on updated traffic volumes for Lakeshore Road East;
- If elevated noise levels are predicted, assess mitigation or design options that can ensure guideline limits are met for traffic noise. Such measures may include:
  - Relocation of outdoor living areas or shielding them using perimeter noise barriers;
  - Alteration of the building design to shield sensitive areas, such as the location of windows and balconies, or the inclusion of vertical wall elements that provide barrier screening;
  - Consideration of upgraded façade or window construction.



## 4 COMPATIBILITY AMONG PROPOSED USES

The proposed Lakeview Village development may, itself, include components that have the potential to cause adverse air quality or noise effects on adjacent components of the development. With respect to air quality, such components may include a sanitary pumping station, a district energy plant and a waste collection/transfer facility. With respect to noise, it may also include various other potential noise-generating uses in Serson Innovation Corridor and elsewhere in the development area. Potential issues associated with any of these facilities can largely be addressed by incorporating appropriate mitigation measures during design of these facilities, but in some cases (e.g., a pumping station and a waste collection facility) a land use buffer between the facility and residential uses may also be appropriate. The size of the buffer would depend on the scale of the operation. This would need to be assessed once more details of the proposed facilities are known.

## 5 CONCLUSIONS AND RECOMMENDATIONS

The preliminary indications are that the development can be considered feasible; however, mitigation measures may be needed to help ensure that the proposed residential uses in Lakeview Village remain compatible with nearby industrial uses and the wastewater plant.

As a result, further study is recommended to address several of the more notable sources. In each case, the specific site phasing, building design, and vertical building heights may influence the conclusions. As discussed further in Sections 3.1 and 3.2 of this report, holding provisions could be put in place for relevant parts of the proposed development until further studies are completed.

For air quality, additional tasks are recommended to assess the following in more detail:

- Plaster Form Inc.;
- Filamet Composites Inc.; and
- G.E. Booth (Lakeview) Wastewater Plant.

For noise, further detailed study is recommended for the following (see Section 3.2 for further discussion):

- Plaster Form Inc.;
- G.E. Booth (Lakeview) Wastewater Plant; and
- Traffic noise from Lakeshore Road East.

For Long Branch Foundry, both the air quality and noise review recommended that development within 70m of this facility be deferred until it no longer operates at this location.

The specific recommendations for each industry are outlined in Sections 3.1 and 3.2 of this report. In addition to the air and noise emission sources mentioned above, the proposed development, itself, may have some proposed sources of emission that have a potential to impact proposed nearby residential uses (e.g., a sanitary pumping station, a waste collection and transfer facility, etc.). Impacts from these facilities can be addressed largely by incorporating mitigation measures during design. In some cases, land use buffers may also need to be considered once more information is available on the proposed facilities.



## 6 REFERENCES

1. Ontario Ministry of Environment, Conservation and Parks. August 1996. Guideline D-2. *Compatibility between Sewage Treatment and Sensitive Land Use.*
2. Ontario Ministry of Environment, Conservation and Parks. July 1995. Guideline D-6. *Compatibility between Industrial Facilities and Sensitive Land Uses.*
3. ORTECH. October 6, 2016. ORTECH Report No. 91589. *Ontario Power Generation (OPG) Land Use Compatibility Study.*
4. Golder Associates. April 25, 2017. Golder Report No. 1541581. *Peer Review of the OPG Land Use Compatibility Study – Inspiration Lakeview Study Area.*
5. ORTECH. June 30, 2017. Letter. *Re: Project #91589 – Lakeview – City's Peer Review of the ORTECH Noise and Odour Study.*



# APPENDIX A



|  | Development Lands |                 |               | Conveyed Lands  |                |               | Total LCPL Property |                 |               |
|--|-------------------|-----------------|---------------|-----------------|----------------|---------------|---------------------|-----------------|---------------|
| Total Site Area                          | 44.05 ha          | 108.8 ac        | 100.0%        | 27.24 ha        | 67.3 ac        | 100.0%        | 71.27 ha            | 176.1 ac        | 100.0%        |
| Greenlands                               | 1.94 ha           | 4.79 ac         | 4.4%          | 6.70 ha         | 16.56 ac       | 24.6%         | 8.64 ha             | 21.35 ac        | 12.1%         |
| Water (Lake Ontario/Inlets)              | 0.00 ha           | 0.00 ac         | 0.0%          | 7.17 ha         | 17.72 ac       | 26.3%         | 7.17 ha             | 17.72 ac        | 10.1%         |
| Residential Medium Density               | 19.61 ha          | 48.46 ac        | 44.5%         | 0.00 ha         | 0.00 ac        | 0.0%          | 19.61 ha            | 48.46 ac        | 27.5%         |
| Mixed Use                                | 4.73 ha           | 11.69 ac        | 10.7%         | 0.00 ha         | 0.00 ac        | 0.0%          | 4.73 ha             | 11.69 ac        | 6.6%          |
| Business Employment                      | 3.07 ha           | 7.59 ac         | 7.0%          | 0.00 ha         | 0.00 ac        | 0.0%          | 3.07 ha             | 7.59 ac         | 4.3%          |
| Institutional                            | 0.00 ha           | 0.00 ac         | 0.0%          | 3.85 ha         | 9.52 ac        | 13.4%         | 3.85 ha             | 9.52 ac         | 5.1%          |
| Mixed Use Cultural Hub                   | 0.00 ha           | 0.00 ac         | 0.0%          | 1.15 ha         | 2.84 ac        | 4.2%          | 1.15 ha             | 2.84 ac         | 1.6%          |
| Public Open Space (incl. water features) | 5.25 ha           | 12.97 ac        | 11.9%         | 7.04 ha         | 17.40 ac       | 25.8%         | 12.29 ha            | 30.37 ac        | 17.2%         |
| Right of Way                             | 9.43 ha           | 23.3 ac         | 21.4%         | 1.53 ha         | 3.8 ac         | 5.6%          | 10.96 ha            | 27.1 ac         | 15.4%         |
| <b>TOTAL</b>                             | <b>44.05 ha</b>   | <b>108.8 ac</b> | <b>100.0%</b> | <b>27.24 ha</b> | <b>67.3 ac</b> | <b>100.0%</b> | <b>71.27 ha</b>     | <b>176.1 ac</b> | <b>100.0%</b> |

**DRAFT** Conveyed Lands

• All Units in Metric Unless Otherwise Noted and Areas are Approximate.  
• Aerial Photo: Google Earth, Approx. Fall 2018

LAKEVIEW VILLAGE | Mississauga, Ontario  
**LAND USE PLAN**

SEPT 13, 2018  
PROJECT 1734  
SCALE 1:5000

**SK-56**

**AIR QUALITY & NOISE LAND-USE FEASIBILITY ASSESSMENT  
LAKEVIEW VILLAGE**

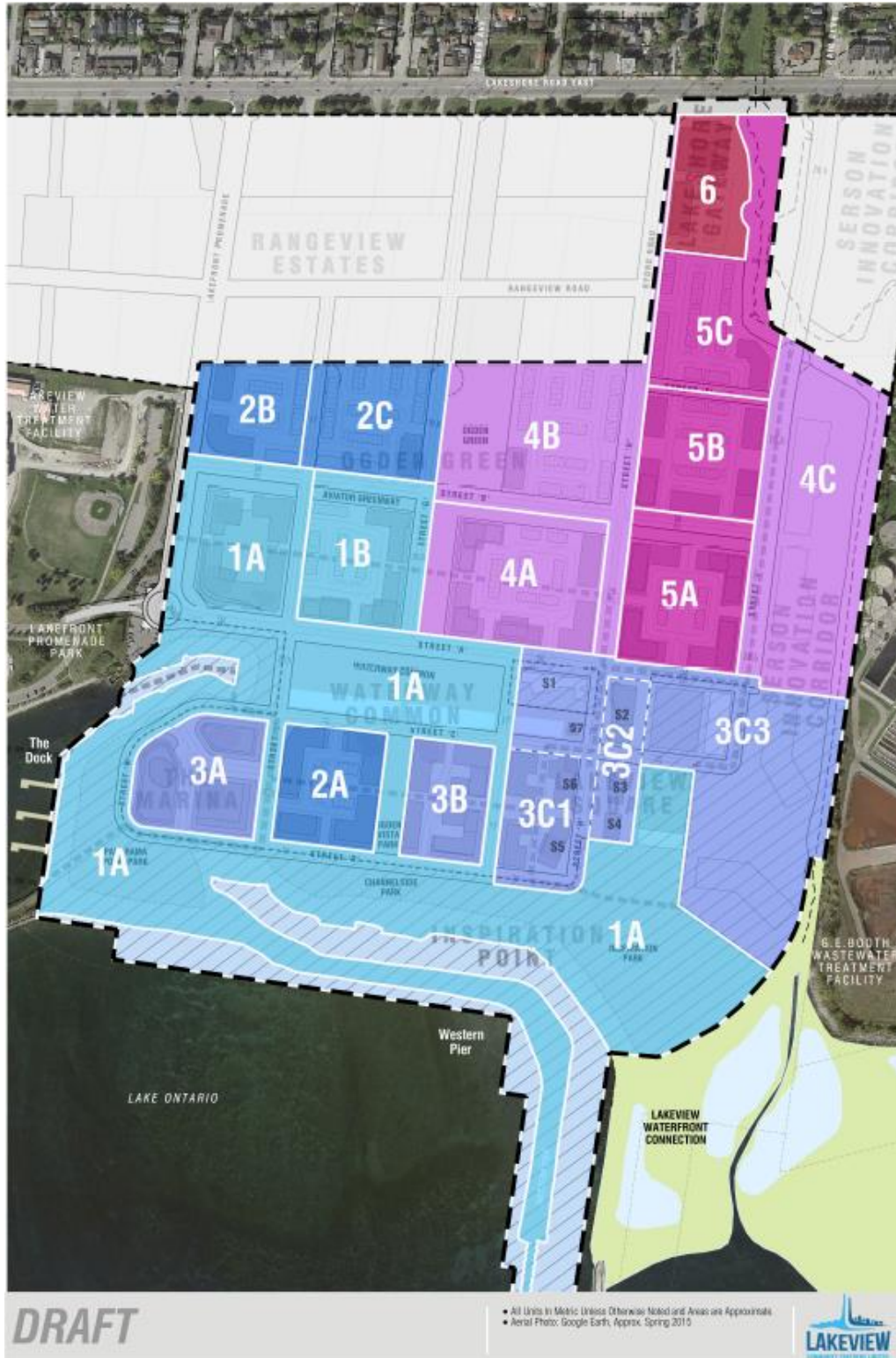
**RWDI#1804164  
January 31, 2019**





**AIR QUALITY & NOISE LAND-USE FEASIBILITY ASSESSMENT  
LAKEVIEW VILLAGE**

**RWDI#1804164  
January 31, 2019**

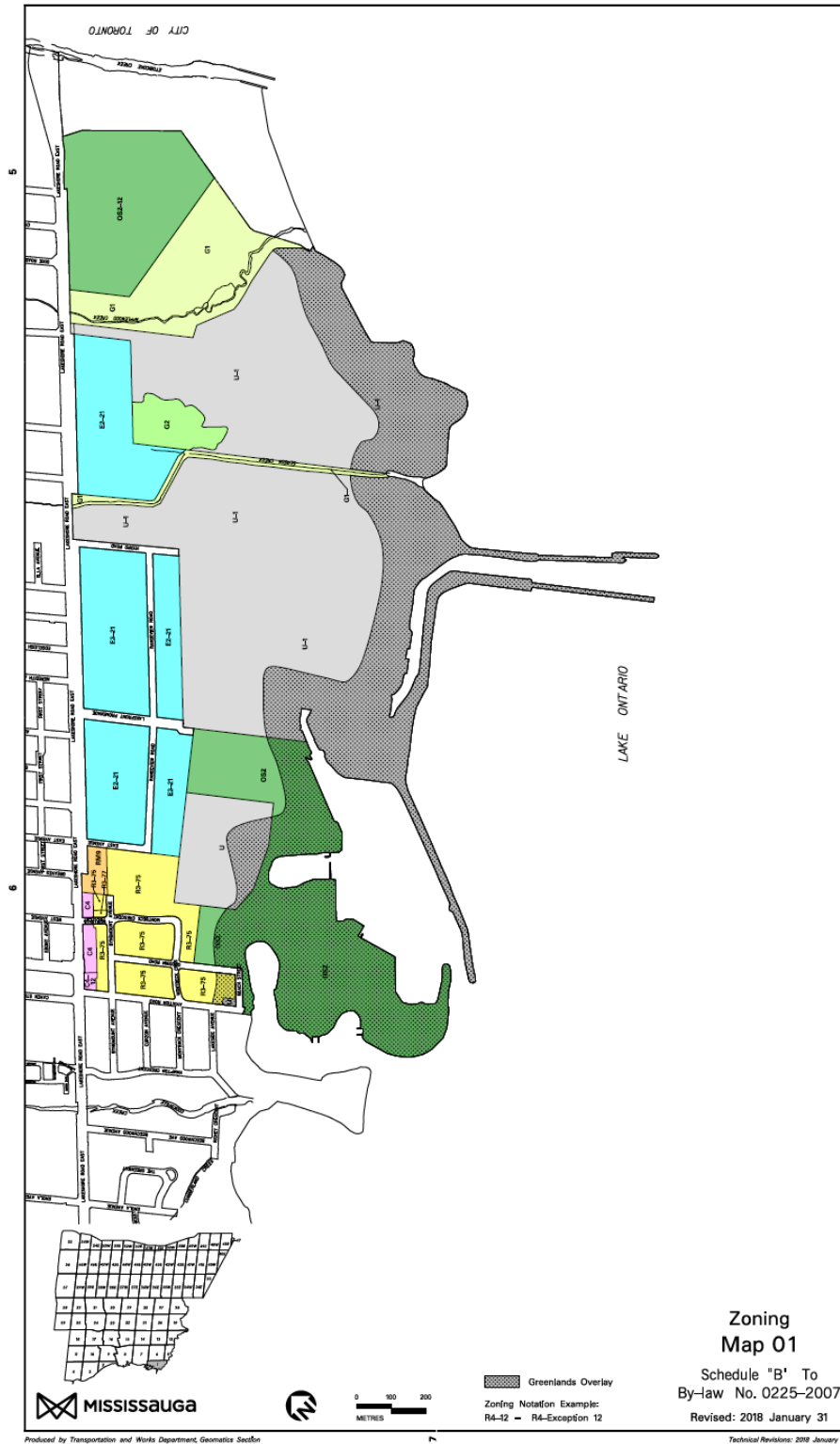


LAKEVIEW VILLAGE | Mississauga, Ontario  
**DEVELOPMENT PHASING CONCEPT**

SEPT 13, 2018  
PROJECT 1734  
SCALE 1:4000

**SK-56**

# APPENDIX B





| <b>ZONING BY-LAW 0225-2007</b> |                         |  |
|--------------------------------|-------------------------|--|
| <b>ZONING CATEGORIES</b>       | <b>ZONES</b>            | <b>ZONING DESCRIPTIONS</b>                         |
| Residential                    | R1 – R16                | Detached Dwellings                                 |
|                                | RM1, RM2, RM3           | Semi-Detached Dwellings                            |
|                                | RM7                     | Detached, Semi-Detached, Duplex, Triplex Dwellings |
|                                | RM4, RM5, RM6           | Townhouse Dwellings                                |
|                                | RM8, RM9                | Horizontal Multiple Dwellings                      |
|                                | RA1, RA2, RA3, RA4, RA5 | Apartment, Long Term Care, Retirement Dwellings    |
| Office                         | O                       | Office   |
| Commercial                     | C1                      | Convenience Commercial                             |
|                                | C2                      | Neighbourhood Commercial                           |
|                                | C3                      | General Commercial                                 |
|                                | C4                      | Mainstreet Commercial                              |
|                                | C5                      | Motor Vehicle Commercial                           |
| City Centre                    | CC1                     | Retail Core Commercial                             |
|                                | CC2                     | Mixed Use  |
|                                | CC3                     | Mixed Use – Transition Area                        |
|                                | CC4                     | Mixed Use /Mixed Use – Transition Area             |
|                                | CC05                    | City Centre Open Space                             |
| Employment                     | E1                      | Business Employment in Nodes                       |
|                                | E2                      | Business Employment                                |
|                                | E3                      | Industrial   |
| Open Space                     | OS1                     | Community Park                                     |
|                                | OS2                     | City Park  |
|                                | OS3                     | Cemetery   |
| Greenlands                     | G1                      | Natural Hazards                                    |
|                                | G2                      | Natural Features                                   |
|                                |                         | Greenlands Overlay                                 |

|               |          |   |
|---------------|----------|---|
| Parkway Belt  | PB1, PB2 | Parkway Belt                            |
| Utility       | U        | Utility                                 |
| Institutional | I        | Hospital and University /College        |
| Development   | D        | Existing Use                            |
| Buffer        | B        | Buffer /Berm /Fence                     |
| Airport       | AP       | Lester B. Pearson International Airport |

| <b>ZONING BY-LAW 5500</b> |              |                            |
|---------------------------|--------------|----------------------------|
|                           | <b>ZONES</b> | <b>ZONING DESCRIPTIONS</b> |
| Residential               | RR           | Detached Dwellings         |
| Agricultural              | A            | Agricultural               |
| Greenbelt                 | G            | Park, Conservation         |

| <b>MILTON ZONING BY-LAW 144-2003</b> |              |                            |
|--------------------------------------|--------------|----------------------------|
|                                      | <b>ZONES</b> | <b>ZONING DESCRIPTIONS</b> |
| Rural                                | A1           | Agricultural               |
| Greenlands                           | GA           | Greenlands 'A'             |



2016 October 31

Produced by Transportation and Works Department, Geomatics Section

Technical Revisions: 2016 October 31

## APPENDIX C

### 1. Long Branch Foundry

The ECA was issued in 2004. The facility consists of a small foundry, with the capacity to process 150 kg per hour of aluminum or brass ingots (see Figure C1). The facility's permitted air emission sources are identified in Table A1.



**Figure C1:** Long Branch Foundry (1062 Rangeview Road)

**Table C1:** Long Branch Foundry, Permitted Emission Sources

| Emission Source  | Discharge Height Above Grade (m) | Exhaust Flow Rate (m <sup>3</sup> /s) |
|--|----------------------------------|---------------------------------------|
| <b>Gas-fired aluminum melting furnace exhaust</b>        | 9.1 (1.7m above roof)            | 4.8                                   |
| <b>Exhaust for 3 gas-fired aluminum melting furnaces</b> | 1.5                              | 7.6                                   |
| <b>Abrasive blasting dust collector</b>                  | 3.6                              | 1.2                                   |
| <b>Gas-fired heater</b>                                  | 9.4 (2m above roof)              | 0.21                                  |



The air contaminants of concern associated with these sources are airborne particulate matter (PM) and normal products of natural gas combustion, of which oxides of nitrogen are the principal concerns. As the ECA was issued in 2004, which precedes the current provincial regulation on local air quality (O. Reg. 419/05), it is unknown whether this facility is compliant with the current regulations.

**2. Ingersoll-Rand Canada Inc.**

The ECA was issued in 2007, after the advent of the current provincial air quality regulations. The facility is a key-cutting and lock assembly facility (see Figure C2). Table C2 identifies the permitted air emission sources. The air contaminants discharged by this facility could include particulate matter, metals and products of natural gas combustion.



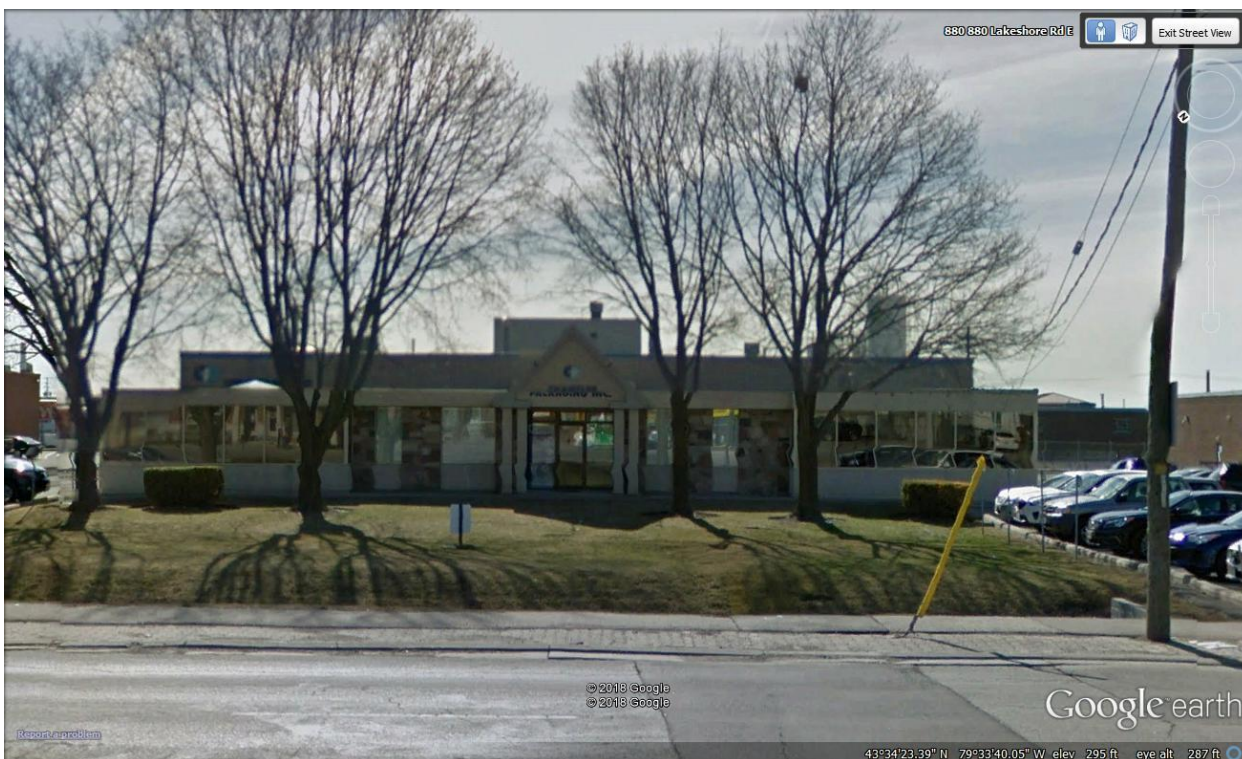
**Figure C2:** Ingersoll-Rand Canada Inc. (1076 Lakeshore Road East)

**Table C2:** Ingersoll-Rand, Permitted Emission Sources

| <b>Emission Source</b>                             | <b>Discharge Height Above Grade (m)</b> | <b>Exhaust Diameter (m)</b> |
|--|---|-----------------------------|
| <b>EXH1 and EXH2, serving the key machine room</b> | 6.1                                     | 0.3                         |
| <b>7 gas-fired HVAC units</b>                      | n/a                                     | n/a                         |
| <b>Lock assembly operation and air compressor</b>  | n/a                                     | n/a                         |
| <b>Maintenance welding</b>                         | n/a                                     | n/a                         |

### 3. Chantler Packaging Inc.

The ECA was issued in 2007. The facility is a plastic bag manufacturing and printing (see Figure C3). The facility production limit is 1,300,000 kg of plastic bags per year. The ECA provides no information on the emission sources at the site, but several exhaust stacks on the roof are visible from the street. Given the nature of the manufacturing at this site, it is considered to be a potential source of odours.



**Figure C3:** Chantler Packaging Inc. (880 Lakeshore Road East)

### 4. Filamat Composites Inc.

Filamat manufactures fiberglass reinforced plastic products and custom-engineered solutions for storm water, municipal water, wastewater and other applications (see Figure C4). The ECA was issued in 2015. Table A3 lists the permitted emission sources. Given the nature and size of the emission sources at the site, this facility is potentially a significant source of odours. Other potential air contaminants include particulate matter and products of natural gas combustion.





**Figure C4:** Filamat Composites Inc. (880 Rangeview Road)

**Table C3:** Filamat Composites Inc., Permitted Emission Sources

| Emission Source   | Discharge Height Above Grade (m) | Exhaust Flow Rate (m <sup>3</sup> /s) | Exit Diameter (m) |
|---|----------------------------------|---------------------------------------|-------------------|
| Resin spray booth exhaust                                     | 14.4 (8.8m above roof)           | 18.3                                  | 1.2               |
| Winding/cutting/separating area and resin spray booth exhaust | 16 (9.5m above roof)             | 8.4                                   | 0.8               |
| Winding/cutting/separating area and resin spray booth exhaust | 14.4 (7.9m above roof)           | 12.7                                  | 1.1               |
| Chemical storage room exhaust                                 | 7.2 (0.7m above roof)            | 0.7                                   | 0.8               |
| Acetone storage shed exhaust                                  | 0.6                              | 0.16                                  | 0.25 x 0.25       |
| Fugitive emissions, including parts cleaning                  | n/a                              | n/a                                   | n/a               |
| Gas-fired heaters   | n/a                              | n/a                                   | n/a               |

**5. IlSCO of Canada Inc.**

IlSCO is a manufacturer of electrical connectors (see Figure C5). The latest version of ECA was issued in 2014. Table A4 lists the permitted emission sources. The primary air contaminant is likely to be particulate matter.



**Figure A5:** IlSCO of Canada Inc. (1050 Lakeshore Road East)

**Table A4:** IlSCO of Canada Inc., Permitted Emission Sources

| <b>Emission Source</b>                        | <b>Discharge Height Above Grade (m)</b> | <b>Exhaust Flow Rate (m<sup>3</sup>/s)</b> | <b>Exit Diameter (m)</b> |
|---|---|--|--------------------------|
| <b>Aluminum chip recycling system exhaust</b> | 2                                       | n/a  | 0.2                      |
| <b>Cooling tower</b>                          | 11.2 (3.6m above roof)                  | 10.25                                      | 2.1 x 1.9                |
| <b>DUSTKOP dust collector</b>                 | 0.6                                     | 0.3  | 0.3                      |

**6. C/S Construction Specialties Company**

C/S Construction Specialties manufactures architectural products (see Figure C6). The ECA was issued in 2011. The permitted emission sources are summarized in Table C5.





**Figure C6:** C/S Construction Specialties Company, 895 Lakefront Promenade

**Table C5:** C/S Construction Specialties, Permitted Emission Sources

| Emission Source   | Discharge Height Above Grade (m) | Exhaust Flow Rate (m <sup>3</sup> /s) | Exit Diameter (m) |
|---|----------------------------------|---------------------------------------|-------------------|
| Natural gas cure oven for powder paint finishing operations | 8.4 (3.0m above roof)            | n/a                                   | 0.15              |

**7. Plaster Form Inc.**

Plaster Form manufactures plaster, plaster board and other gypsum products (Figure C7). The ECA was issued in 2015. Table C6 lists the permitted emission sources. Given the nature of the operations at the facility (spray coating operations) and the size and number of emission sources, it is a potentially significant source of odours.



**Figure C7:** Plaster Form Inc. (1180 Lakeshore Road East)

**Table C6:** Plaster Form Inc., Permitted Emission Sources

| <b>Emission Source</b>                                 | <b>Discharge Height Above Grade (m)</b> | <b>Exhaust Flow Rate (m<sup>3</sup>/s)</b> | <b>Exit Diameter (m)</b> |
|--|---|--|--------------------------|
| <b>Gelcoat Booths A1 and B1</b>                        | 12.5 (6.4m above roof)                  | 5.66 each                                  | 0.76m each               |
| <b>Chopper Booths A2 and B2</b>                        | 12.5 (6.4m above roof)                  | 5.66 each                                  | 0.76m each               |
| <b>Chopper Booths A3 and B3</b>                        | 12.5 (6.4m above roof)                  | 5.66 each                                  | 0.76m each               |
| <b>FTP paint spray booth</b>                           | 10.8 (4.7m above roof)                  | 5.66                                       | 0.61                     |
| <b>Gelcoat Booth</b>                                   | 11 (4.88m above roof)                   | 7.08                                       | 0.91                     |
| <b>3 General Exhausts, gelcoat resin cutting areas</b> | 10.8 (4.7m above roof)                  | 2.36 each                                  | 0.61 each                |
| <b>Mill room baghouse</b>                              | 6.4 (0.3m above roof)                   | 4.28                                       | 0.51                     |
| <b>2 natural gas boilers</b>                           | 7.9 (1.8m above roof)                   | n/a  | 0.76                     |
| <b>3 natural gas make-up air units</b>                 | n/a                                     | n/a  | n/a                      |

**8. G.E. Booth (Lakeview) Wastewater Treatment Plant**

This wastewater treatment plant processes wastewater from homes and businesses in Bolton, Caledon East, Brampton and the eastern parts of Mississauga (Figure A8). The most recent air ECA's currently in effect were issued in 2001, 2003, and 2012. The permitted emission sources listed in those ECAs are summarized in Table C7.



**Figure C8:** G.E. Booth (Lakeview) Wastewater Treatment Plant

**Table C7:** G.E. Booth (Lakeview) WWTP, Permitted Emission Sources

| <b>Emission Source</b>  | <b>Discharge Height Above Grade (m)</b> | <b>Exhaust Flow Rate (m³/s)</b> | <b>Exit Diameter (m)</b> |
|---|---|---------------------------------|--------------------------|
| <b>Thermal oxidation facility for dewatered raw and activated sludge</b>  | n/a                                     | n/a                             | n/a                      |
| <b>Fluidized bed reactors for the combustion of dewatered biosolids and regenerative thermal oxidation unit</b> | n/a                                     | n/a                             | n/a                      |
| <b>Regenerative thermal oxidizer RTO2</b>   | 13.7                                    | 11.6                            | 1.0                      |
| <b>Regenerative thermal oxidizer RTO3</b>   | 13.7                                    | 7.5                             | 0.8                      |



## APPENDIX D

On September 7, 2018, employees of RWDI toured the G.E. Booth (Lakeview) Wastewater Treatment Plant (WWTP) and surrounding area to review potential sources of air quality or noise emissions that could affect the proposed Lakeview Village development. Observations from the site visit are included below.

### **G.E. Booth (Lakeview) Wastewater Treatment Plant**

Air emission sources at the WWTP are as follows:

- Biofiltration system to treat odours in the head space of the incoming sewage lines;
- Charcoal filter odour control systems at the headworks building;
- Charcoal filter odour control systems for ducts leading into and out of primary settling tanks;
- Open primary clarifier cells;
- Open aeration cells;
- Open secondary clarifier cells;
- Biosolids incinerator stack; and
- A number of stand-by generator exhausts.

The facility also has an open ash lagoon, for ash from the biosolids incinerator. It is a source of dust from time to time, when they are cleaning out the lagoon, but is not a source of odours.

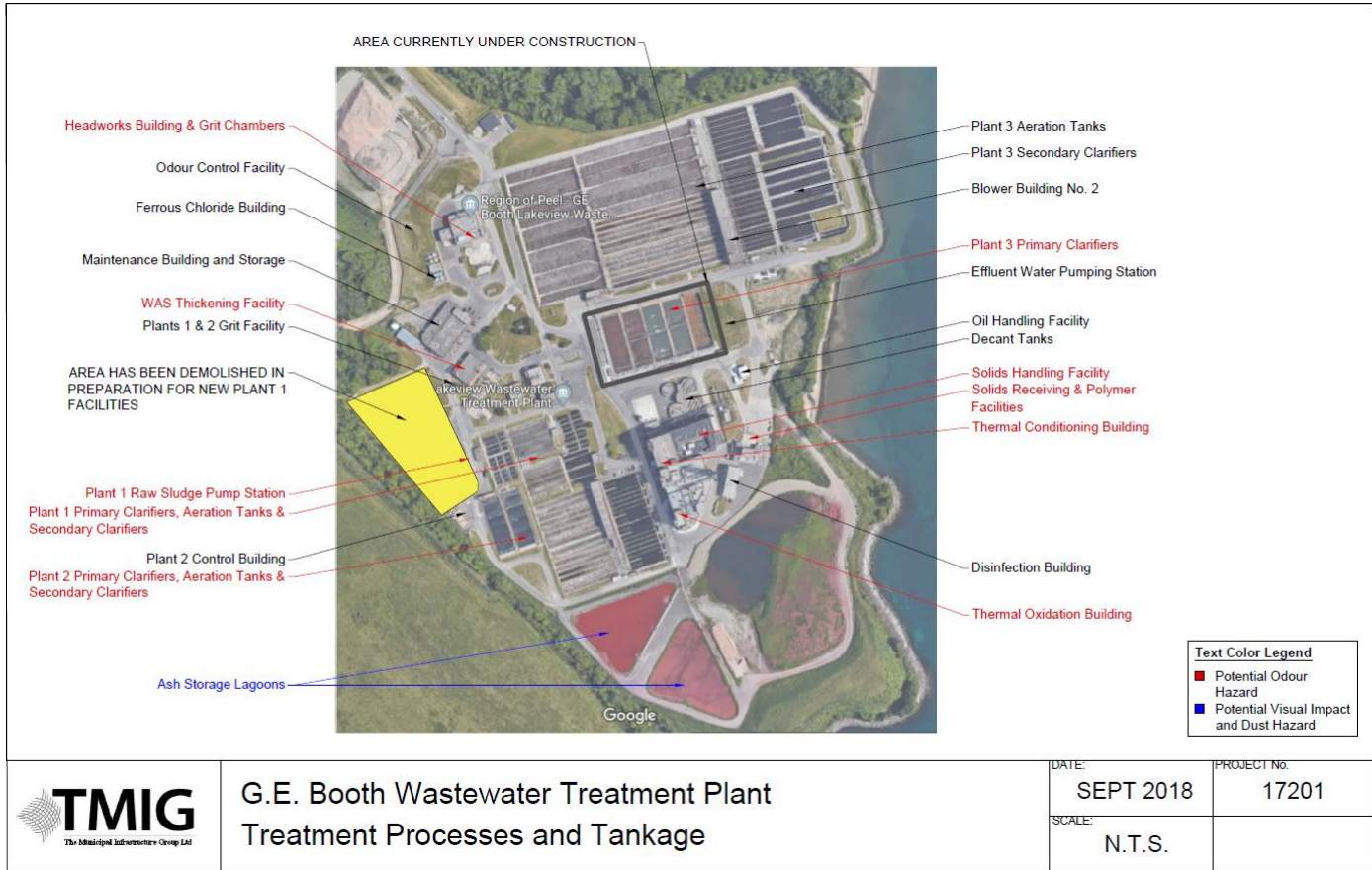
While on-site, odours were observed at the aeration tanks, primary clarifiers, manholes of the sewage inflow lines at the headworks building and some fugitive odours at the biosolids facility. John Glass of Peel Region indicated that the only complaints they get are foul odours associated with the bins that hold the waste from the screens at the headworks building. The complaints come from an apartment building that is about 440m away from the headworks and only occur when the overhead doors are open and the waste bins are taken out to be emptied. The relevant winds for these complaints are from the southeast, and are very uncommon. Therefore, these complaints only occur from time to time.

The predominant winds are from northwesterly directions which direct odours out over the lake rather than toward any residences. The facility gets no complaints at existing residences to the northeast of the site, the nearest of which are on the order of 600m away.

Noise sources at the facility were relatively limited, with most sources being enclosed within buildings. Some noise was emitted through building vents and openings (e.g., open overhead doors); however, these were primarily directed away from the proposed developed or were not overly audible at some distance (i.e., more than 100m) from the source. Lack of audibility of the WWTP process sources was confirmed at a location along Hydro Road near Rangeview Road. Access to the subject lands was not possible due to ongoing demolition work at the site, so confirmation of audibility of the WWTP sources deeper on the subject lands could not be confirmed; however, they are not expected to be audible given onsite observations at the WWTP.

The area nearest to the proposed development, in the northwest corner of the WWTP site, is currently under construction as part of a project to replace the existing Plant 1 facilities (see Figure below). Vehicles (trucks) associated with this demolition were the primary sources audible in the area.





**Other Industries**

While touring the industrial neighbourhood, solvent odours were observed in the parking lot of Plaster Form Inc., on Lakeshore Road at Haig Boulevard, which has numerous spray booths for applying various surface coatings. This facility was also a significant source of noise (a low frequency hum) that could be heard at the northeast side of the Lakeview development site near the intersection of Hydro Road and Rangeview Road.

Organic odours were faintly detected across the street from Filamat, on Rangeview Road, southwest of Lakefront Promenade, which has spray booths for resins, etc.. Lastly, a very faint metallic odour was noted around the Lakeview Foundry on Rangeview Road. No other noise or odour issues were noted. A lot of background noise occurred in conjunction with soil excavation activities on the development site, which interfered with the ability to discern noise from any of the industries.



## APPENDIX E

### 1. Odour Complaint Summary

Peel Region provided odour complaint records covering a period of several years. The complaints are summarized in Table C1. The frequency of odour complaints is low, averaging at approximately 7 per year.

**Table C1:** G. E. Booth WWTP, Summary of Odour Complaints

| Year | Number of Complaints |
|------|----------------------|
| 2005 | 3                    |
| 2006 | 1                    |
| 2007 | 4                    |
| 2008 | 5                    |
| 2009 | 10                   |
| 2010 | 8                    |
| 2011 | 5                    |
| 2012 | 5                    |
| 2013 | 24                   |
| 2014 | 7                    |
| 2015 | 10                   |
| 2016 | 4                    |
| 2017 | 4                    |

### 2. Odour Reports 2010-2017

Peel Region provided copies of daily odour monitoring reports for the summer months (May through August), from 2010 through 2017. These reports summarized the findings of odour observations made at various locations in the general vicinity of the G. E. Booth (Lakeview) WWTP. Table C2 provides a summary for the year 2017, indicating the number of days on which sewage odours were observed. Tables C3 and C4 provide a similar summary for the years 2016 and 2015. At Hydro Road, in the eastern portion of the Lakeview Village area, sewage odours were observed on approximately 1 out of every 6 or 7 days. The odours were mostly weak (D/T of 4 or less). On Lakeshore Promenade, at the west end of the Lakeview Village area, no odours were detected.



**Table C2:** Summary of Odour Observations on 82 days during May-August 2017

| Location                      | Observed Odour Level (D/T) |       |       |        |       |         | Average |
|-------------------------------|----------------------------|-------|-------|--------|-------|---------|---------|
|                               | < 2                        | 2 - 4 | 4 - 7 | 7 - 15 | 15-30 | 30 - 60 |         |
|                               | Number of Observation Days |       |       |        |       |         |         |
| GE Booth Driveway @ Lakeshore | 2                          | 3     | 3     | 1      | 3     | 1       | 13      |
| Marie Curtis Park             | 1                          |       |       |        |       |         | 1       |
| NE corner, Dixie & Lakeshore  | 1                          | 4     | 4     | 1      |       |         | 10      |
| Fergus and St. James          | 1                          | 2     | 1     | 5      | 1     |         | 10      |
| Orchard Heights               | 2                          | 4     | 4     | 3      | 1     |         | 14      |
| Haig Blvd. at tracks          | 2                          | 2     | 1     |        |       |         | 5       |
| Ogden Road                    | 3                          | 2     | 2     | 2      | 1     |         | 10      |
| Hydro Road                    | 3                          | 6     | 3     | 3      |       |         | 15      |
| End of Lakefront Promenade    |                            |       |       |        |       |         | 0       |
| East Ave., S. of Lakeshore    | 1                          |       |       |        |       |         | 1       |

**Table C2:** Summary of Odour Observations on 80 days during May-August 2016

| Location                      | Observed Odour Level (D/T) |       |       |        |       |         | Average |
|-------------------------------|----------------------------|-------|-------|--------|-------|---------|---------|
|                               | < 2                        | 2 - 4 | 4 - 7 | 7 - 15 | 15-30 | 30 - 60 |         |
|                               | Number of Observation Days |       |       |        |       |         |         |
| GE Booth Driveway @ Lakeshore | 11                         | 16    | 2     |        |       |         | 29      |
| Marie Curtis Park             |                            |       |       |        |       |         | 0       |
| NE corner, Dixie & Lakeshore  | 5                          | 12    |       |        | 1     |         | 18      |
| Fergus and St. James          | 8                          | 11    | 1     |        |       |         | 20      |
| Orchard Heights               |                            |       |       |        |       |         | 0       |
| Haig Blvd. at tracks          | 2                          | 1     |       |        |       |         | 3       |
| Ogden Road @ S. Service Rd.   | 5                          |       |       |        |       |         | 5       |
| End of Lakefront Promenade    |                            |       |       |        |       |         | 0       |
| East Ave., S. of Lakeshore    |                            |       |       |        |       |         | 0       |

**Table C3:** Summary of Odour Observations on 70 days during May-August 2015

| Location                      | Observed Odour Level (D/T) |       |       |        |       |         | Average |
|-------------------------------|----------------------------|-------|-------|--------|-------|---------|---------|
|                               | < 2                        | 2 - 4 | 4 - 7 | 7 - 15 | 15-30 | 30 - 60 |         |
|                               | Number of Observation Days |       |       |        |       |         |         |
| GE Booth Driveway @ Lakeshore |                            |       |       |        |       |         | 0       |
| NE corner, Dixie & Lakeshore  | 4                          | 15    | 1     |        |       |         | 20      |
| Fergus and St. James          |                            | 1     |       |        |       |         | 1       |
| Orchard Heights               |                            |       |       |        |       |         | 0       |
| Haig Blvd. at tracks          |                            | 2     |       |        |       |         | 2       |
| Ogden Road @ S. Service Rd.   |                            |       |       |        |       |         | 0       |
| Hydro Road                    | 5                          | 6     |       |        |       |         | 11      |
| End of Lakefront Promenade    |                            |       |       |        |       |         | 0       |
| East Ave., S. of Lakeshore    | 1                          |       |       |        |       |         | 1       |

### 3. Source Testing Data

Peel Region also provided source testing reports for the sludge incinerators (Thermal Oxidizers 1, 2 and 4). Table C3 lists the source parameters. Reports were provided for the years 2014 through 2017. The reports included dispersion model predictions of maximum concentration at off-site points of impingement, for a long list of air contaminants. The limiting air contaminant is oxides of nitrogen (NO<sub>x</sub>), for which the predicted maximum concentration was 18% of the provincial standard for NO<sub>x</sub>.

**Table C3:** Source Parameters of Thermal Oxidizers

| Parameter   | Thermal Oxidizers 1 and 2 | Thermal Oxidizer 4 |
|---|---------------------------|--------------------|
| UTM Easting coordinate (m)                                      | 617426                    | 617426             |
| UTM Northing coordinate (m)                                     | 4825943                   | 4825943            |
| Base Elevation (m ASL)  | 74                        | 74                 |
| Release Height (m above grade)                                  | 53.4                      | 53.4               |
| Exit Temperature (K)  | 325.74                    | 322.45             |
| Exit Velocity (m/s)   | 26.52                     | 13.81              |
| Stack Diameter (m)  | 0.91                      | 0.91               |
| Average NO <sub>x</sub> emission rate (g/s, 2017 test campaign) | TOX1: 3.74<br>TOX2: 1.43  | 0.84               |





## APPENDIX F

### **1. Odours from G. E. Booth (Lakeview) Wastewater Treatment Plant**

ORTECH undertook seven sets of field observations of odours in the vicinity of the WWTP, between February 23 and April 21, 2016. A total of 36 observations were recorded. Eleven of the fifteen observation locations (1, 2, 6, 7, 8, 9, 10, 12, 13, 14 and 15) were located in the Lakeview Village development area. Sewage odours were detected during 21 of the 36 observations. In most cases, the odour was rated as slight. Moderate odours occurred during only four of the observations, and a strong odour was observed only once.

ORTECH also cited complaint records for the WWTP for 2014, and daily odour monitoring reports for 2015. The complaint records indicated that 5 sewage related complaints were addressed by the WWTP in 2014. Four of the complaints were from locations to the west of the WWTP. The odour monitoring reports indicated that, out of the 61 days that were monitored during the summer of 2015, 18 days had odours detected at the northeast corner of lakeshore Road East and Dixie Road, and 10 days had odours detected at Hydro Road. In almost all cases at these locations, the observed odour was weak (D/T of 2 or less).

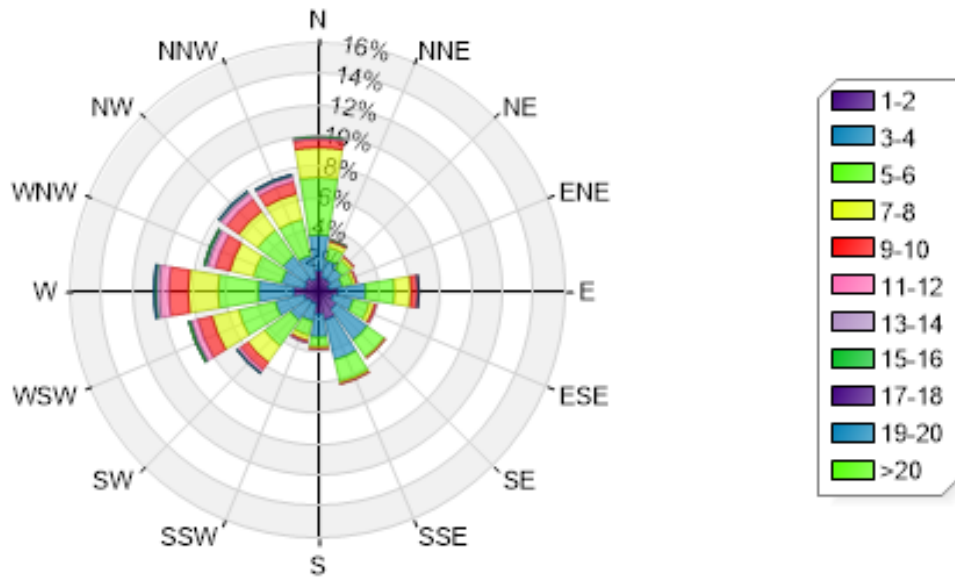
### **2. Other Industries**

ORTECH provided a brief review of other industries in the study area. Eleven industries were identified. For six of them, ORTECH estimated that the potential for dust, odour or noise was relatively minor and recommended a buffer distance of 20m. For the remaining 5 industries, ORTECH estimated a greater potential for dust, odours and/or noise and recommended a buffer distance of 70m. The latter industries were as follows: Plaster Form Inc.; Long Branch Foundry; Filamat Composites; Interior Manufacturing Group Inc. and ABC Fire Door Testing and Manufacturing Ltd.).



## APPENDIX G

**Directional Distribution (%) of Winds in m/s (Blowing From)  
Toronto Pearson International Airport, (1998-2018)**



**Directional Distribution (%) of Winds in m/s (Blowing From)  
Toronto Island Airport, (1997-2017)**

