

Environmental Noise Feasibility Report

Lakeview Village Community


Proposed Mixed-use Development
In the Vicinity of Lakeshore Road East and Hydro Road
City of Mississauga

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Project: 120-0302

Prepared for

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Canada Ltd.

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1.0 INTRODUCTION

1.1 BACKGROUND

Valcoustics Canada Ltd. (VCL) previously prepared an Environmental Noise Feasibility Study dated December 3, 2020 (herein referred to as the Noise Report) for the proposed mixed-use residential site known as the Lakeview Village Community, in Mississauga. After the submission of the Noise Report, there were several discussions with the City and Peer Reviewer regarding the use of Class 4 for the site. The result was that City Staff recommended the residential blocks in the northern portion of the overall site (Blocks 1 to 5 and 18, as shown on Figure 2) be deemed Class 4. There have also been some changes to some of the nearby industries along Rangeview Road. This updated report has been prepared to consolidate the current information and satisfy the conditions of Draft Plan Approval from the City, specifically condition 7.5 from Schedule A from the Amended Draft Plan Conditions dated January 19, 2022.

1.2 PURPOSE

The lands known as the Lakeview Village Community, south of Lakeshore Road East and located between the future Haig Boulevard Extension and Lakefront Promenade in the City of Mississauga, will be developed as a mixed-use community. The lands are on the site of the former (now demolished) Ontario Power Generation (OPG) coal burning power plant facility. The subject lands are located within the Lakeview Waterfront Major Node Character Area, as identified in the City of Mississauga Official Plan (MOP) and are designated for various uses including residential, employment, commercial and mixed-use residential. The proposal and draft plan of subdivision, which were approved in principle November 2021, revised the allowable uses and precinct unit targets, increased height permissions and overall delineation of land use designations.

This environmental noise feasibility study was prepared to consolidate the current information and is intended to supplement the Official Plan Amendment, Rezoning and Draft Plan of Subdivision approvals. The report discusses relevant policy, legislative background and provincial guidelines related to environmental noise (and vibration) and planning, in the context of the type of development proposed for the Lakeview Village Community (herein referred to as "Lakeview"). Both transportation (road and rail sound sources in this case) as well as industrial/commercial

operations sound sources (known as “stationary sources” in the terminology of the Ministry of Environment, Conservation and Parks – MECP) must be addressed. The proposed development must be made compatible with the surrounding environment and land uses.

Appropriate noise mitigation measures are proposed in order to achieve compliance with Provincial policy and the applicable MECP noise guidelines and to ensure land use compatibility.

2.0 SITE AND AREA DESCRIPTION

2.1 SITE AND SURROUNDING AREA

The site is generally rectangular in shape, positioned on the northern shore of Lake Ontario. The site includes an additional rectangular portion at the north end that extends up to Lakeshore Road East. The site is bounded by:

- The G.E. Booth Wastewater Treatment facility and other light industrial uses to the east;
- Lake Ontario to the south;
- Lakefront Promenade and light industrial uses, with Douglas Kennedy Park, the Lakeview Water Treatment Plant and other light industrial uses beyond to the west; and
- Light industrial uses and Lakeshore Road East, with existing residential and commercial uses beyond to the north.

Figure 1 shows a key plan of the area.

2.2 THE PROPOSED DEVELOPMENT

Figure 2 shows the approved Draft Plan dated October 8, 2021 prepared by Glen Schnarr and Associates Inc. Appendix A shows the massing plan prepared by Sasaki which was received 2022-08-16. The proposed development will consist of a mix of low, mid- and high-rise residential buildings, commercial buildings, institutional/cultural uses, open space and common private and public amenity areas. The Draft Plan and Massing drawings show:

- Commercial/office buildings ranging in height from 1 to 13 storeys along the eastern perimeter. The commercial/office buildings act as a buffer between the new community and the wastewater treatment facility to the east;
- Waterfront amenity areas along the south including the Cultural Pier extending out into Lake Ontario.
- Three and four storey townhouse dwellings in the interior at the north end of the site;
- Mid-rise and high-rise residential buildings throughout the site, ranging in height from three to 40- storeys;
- A three-storey school at the interior of the site.

The proposed building heights and renderings are also shown on the massing plan in Appendix A.

2.3 CLASS 4 USAGE AT LAKEVIEW

The Noise Study identified the potential noise influence areas from the closest adjacent existing industrial uses in the area extending into the site. To address the potential noise impact and

temporary nature of some of these industrial/commercial uses, the use of the Class 4 status, as defined in MECP Publication NPC 300, was recommended.

City of Mississauga Corporate Report dated October 15, 2021 recommended the approval of the Official Plan and Zoning By-law amendments as well as approval of the Draft Plan for the overall Lakeview site. In addition, the report recommended that Council classify the lands delineated in Appendix 11 as a Class 4 area in accordance with the Environmental Noise Guidelines – Stationary and Transportation Sources – Approval and Planning (NPC-300). This included residential areas, Blocks 1 to 5 and 18, at the north end. Appendix 11 from the Corporate Report is included in Appendix A for reference.

The assessment presented below considers the use of the Class 4 status for these blocks in the subject site.

3.0 PROVINCIAL POLICIES AND GUIDELINES APPLICABLE TO PLANNING AND ENVIRONMENTAL NOISE

The Noise Report contained a fulsome discussion of the various policies, regulations and guidelines related to environmental noise and vibration. As the Draft Plan for the site has now been approved, a majority of this discussion is no longer needed. However, it has been retained in Appendix B of this report for completeness. Relevant sections relating to transportation and stationary source noise limits are included below.

3.1 MECP GUIDELINE NPC-300

3.1.1 Introduction

The applicable noise guidelines for new sensitive uses (residential development) are those in MECP Publication NPC-300, “Environmental Noise Guideline, Stationary and Transportation Sources – Approval and Planning”.

3.1.2 Road and Rail Traffic Noise

If the sound level at the exterior face of a dwelling, in terms of $L_{eq\ Day}$ (16-hour energy equivalent sound level – 0700-2300 hours or $L_{eq\ Night}$ (8-hour energy equivalent sound level – 2300-0700 hours), exceeds 65 dBA or 60 dBA (respectively), means must be provided so that windows can be kept closed, if desired, for noise control purposes and central air conditioning is required. For daytime sound levels between 56 and 65 dBA inclusive, or for nighttime sound levels between 51 and 60 dBA inclusive, there need only be the provision for adding air conditioning at a later date, at the occupant's discretion. A warning clause advising the occupants of the potential interference with some activities is also required.

For outdoor amenity areas ("Outdoor Living Areas" - OLA), the guideline is 55 dBA $L_{eq\ Day}$ (0700 to 2300 hours), with an excess not exceeding 5 dBA considered acceptable if it is technically not practicable to achieve the 55 dBA objective, providing warning clauses are registered on title. Note that for road and rail traffic sources, a balcony is not considered an OLA, unless it is the only OLA for the occupant and it is:

- at least 4 m in depth;
- outside the building facade; and
- unenclosed.

For indoor areas, the daytime guideline when dealing with road/rail traffic sources for sensitive spaces such as living/dining rooms, and bedrooms, private offices and conference rooms is $L_{eq\ Day} = 45\ dBA/40\ dBA$. For general office, reception areas, retail stores, etc., the daytime indoor guideline limit is $L_{eq\ Day} = 50\ dBA/45\ dBA$. The nighttime guideline for living rooms and dens is $L_{eq\ Night} = 45/40\ dBA$. For bedrooms at night, the indoor limit is $L_{eq\ Night} = 40\ dBA/35\ dBA$. There are no nighttime indoor sound level guideline limits for office or commercial uses. The architectural design of the building envelope (walls, windows, etc.) must provide adequate sound isolation to achieve these indoor sound limits. Where standard construction would otherwise result in exceeding the indicated noise limits, the building envelope elements must be upgraded.

3.1.3 Stationary Sources

The applicable stationary noise source guidelines, as outlined in NPC-300, are summarized below and in Appendix B.

The site and area would typically be considered Class 1; i.e., an area where the ambient sound environment is dominated by “urban hum”, primarily traffic noise during the daytime, evening and nighttime.

As discussed above, Blocks 1 to 5 and 18 will be Class 4.

The MECP requires a “worst case” one-hour operating scenario be analyzed. This would typically occur when the background ambient sound level is at a minimum and the noise generated from the stationary noise sources is at a maximum.

The guideline limits apply to the outdoor plane of window of habitable spaces such as living/dining/family rooms and sleep areas as well as at locations amenable for use outdoors. No indoor sound level guidelines are provided for stationary sources.

3.1.3.1 Non-Impulse Sound Level Limits

MECP Publication NPC-300 states that the guideline limits shall be defined by the higher of the ambient sound level, due to road traffic noise, or the minimum exclusion limits. The guideline limits apply to habitable spaces such as living/dining/family rooms and sleep areas. No indoor sound level limits are provided for stationary sources. The sound level limits are presented in Table 1.

TABLE 1 STATIONARY SOURCE NON-IMPULSE EXCLUSION LIMITS ($L_{eq\ 1\ hour}$)

Time of Day	Class 1 Area (dBA)		Class 4 Area (dBA)	
	Plane of Window	Outdoor Point of Reception	Plane of Window	Outdoor Point of Reception
Day - 0700 – 1900	50	50	60	55
Evening - 1900 – 2300	50	50	60	55
Night - 2300-0700	45	-	55	-

3.1.3.2 Impulsive Sound Level Limits

Impulsive sounds are a category of sounds which last for a brief time (typically fractions of one second). Examples are the sounds of banging metal, punch presses or gunshots. During the loading/unloading of trucks, the impact of dock levellers on a trailer when a forklift drives over it are also classified as impulsive sounds.

Impulse sounds are measured and treated separately from non-impulse sounds because of their special time characteristics. The logarithmic mean impulse sound level (L_{LM} , in dBA) is used to assess impulse noise. The L_{LM} descriptor is the energy average of the range of impulse sound levels impinging on a receptor. Because of the logarithmic relationship involved, L_{LM} is weighted to the higher values and is unlike an arithmetic average, which would yield a much lower numerical result for a wide range of values.

The sound level limits for impulse sources are dependant on the Class of area as well as the number of impulses that occur in the worst case hour. The minimum exclusion sound level limits are shown in Table 2.

TABLE 2 STATIONARY SOURCE IMPULSE EXCLUSION LIMITS (L_{LM})

Actual # of Impulses in Period of One- Hour	Class 1 Area Daytime/Nighttime 0700 –2300 / 2300-0700		Class 4 Area Daytime/Nighttime 0700 –2300 / 2300-0700	
	Plane of Window	Outdoor Point of Reception	Plane of Window	Outdoor Point of Reception
9 or more	50/45	50/-	60/55	55/-
7 to 8	55/50	55/-	65/60	60/-
5 to 6	60/55	60/-	70/65	65/-
4	65/60	65/-	75/70	70/-
3	70/65	70/-	80/75	75/-
2	75/70	75/-	85/80	80/-
1	80/75	80/-	90/85	85/-

3.2 REGION OF PEEL NOISE GUIDELINES

The Region of Peel issued the document titled "General Guidelines for the Preparation of Acoustical Reports in the Region of Peel" dated November 2012. These guidelines are mostly concerned with dealing with noise from regional roads and policies primarily related to sound barriers. The guidance is based on the MECP noise guideline LU-131, which has been replaced with NPC-300 as of October 2013, although there are some noticeable differences between the Regional and MECP guidelines. These include:

The numerical requirement for the inclusion of air conditioning or the provision for adding air conditioning is 1 dB more stringent during the nighttime. That is, if the sound level at the outside plane of window is 60 dBA or greater air conditioning is required (MECP guidelines are 61 dBA or greater) and if the sound level is between 50 dBA and 59 dBA the provision for adding air conditioning is required (MECP guidelines are 50 dBA to 60 dBA).

Generic traffic volumes are provided for arterial roads for use in noise studies, unless specific data is obtained from the Region.

Acoustic fences shall generally not exceed 2 m in height unless approved by the area municipality. Consideration may be given to fence heights up to 2.4 m.

For industrial, rail and aircraft sources the MECP standard procedures should be employed.

3.3 FEDERATION OF CANADIAN MUNICIPALITIES AND RAILWAY ASSOCIATION OF CANADA

CN and Metrolinx have adopted the noise guidelines indicated by the Federation of Canadian Municipalities and the Railway Association of Canada (FCM/RAC).

There are some “standard” requirements that apply to proposed sensitive uses in proximity to the rail line. These include minimum setback distances, safety berms, acoustic fences and warning clauses. However, given the substantial setback distance of the site (about 350 m to the rail line) and the several rows of intervening, existing development, the “standard” requirements are not expected to apply.

Aside from “standard” requirements, the sound level design objectives of FCM/RAC are similar to those of the MECP.

4.0 NOISE SOURCES

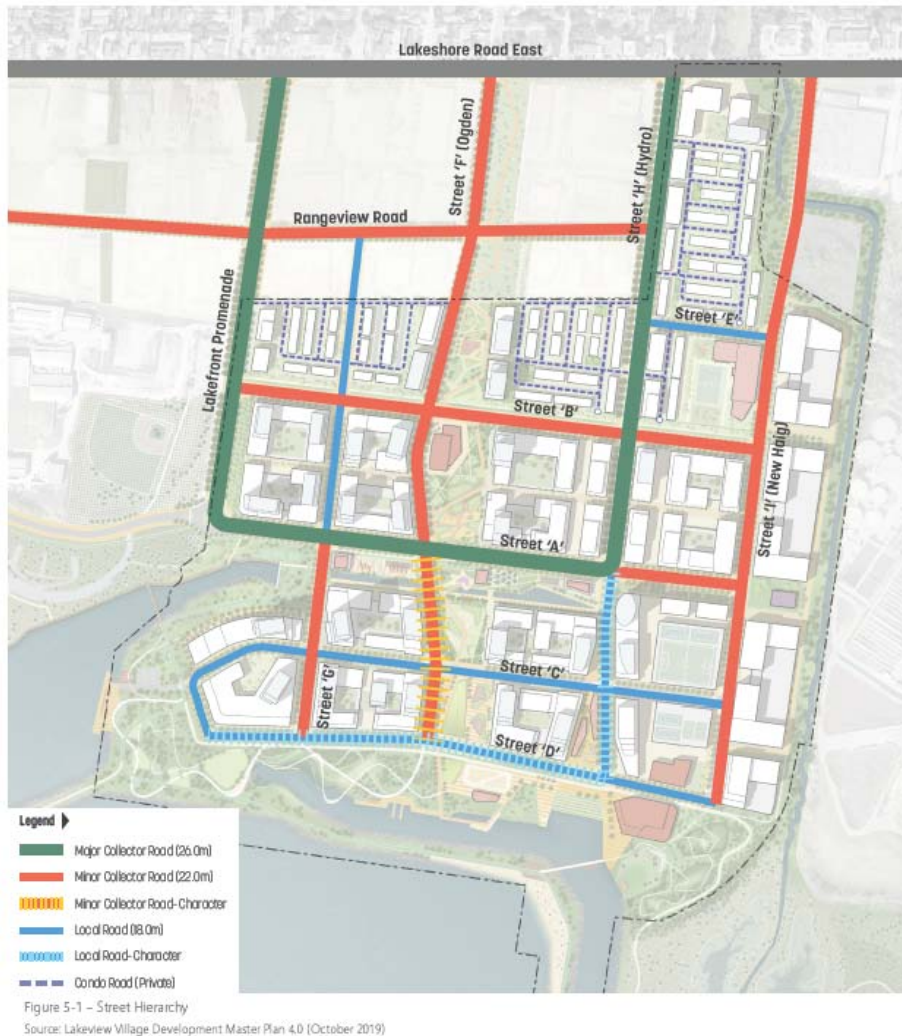
4.1 TRANSPORTATION NOISE SOURCES

4.1.1 Road Traffic

The road traffic noise sources with potential to impact the proposed development are vehicles using Lakeshore Road East, Rangeview Road, Lakefront Promenade and the future internal roads.

The future internal road network is shown in the Lakeview Village Transportation Considerations Report (TCR), prepared by TMIG, dated June 2020. The TCR shows that the internal road network will be made up of major collector, minor collector and local roads.

A preliminary plan for the internal road network (Figure 5-1 from the TCR) is shown below.



The road traffic noise impact from the major and minor collectors was included in the analysis. Traffic volumes on local roads are typically low and do not have a significant noise impact. Thus, the local roads were not included in the assessment.

The road traffic data used in the assessment is the same as presented in the Noise Report, with the only exception being the volume for Lakeshore Road. For all roads, updated AADT volumes were provided by TMIG. The volumes from TMIG were similar to the volumes used previously except for Lakeshore Road where the volumes had increased. The higher traffic volumes have been used in this assessment. The traffic volumes are shown below in Table 3.

TABLE 3 ROAD TRAFFIC DATA

Roadway	24-Hour Traffic Volume Used in Assessment	24-Hour Traffic Volumes Provided by TMIG (Year 2041)	Truck Percentages (%)		Speed (km/h) ⁽³⁾	Day/Night Split (%)
			Medium	Heavy		
Lakeshore Road East ⁽¹⁾	45 520	45 520	1.65	1.35	50	90/10
Rangeview Road ⁽²⁾	16 200	2 640	1.65	1.35	50	90/10
Lakefront Promenade ⁽²⁾	16 200	11 625	1.65	1.35	50	90/10
Street "F" (Ogden) ⁽²⁾	16 200	7 335	1.65	1.35	50	90/10
Street "H" (Hydro) ⁽²⁾	16 200	13 805	1.65	1.35	50	90/10
Street "A" ⁽²⁾	16 200	5 315	1.65	1.35	50	90/10
Street "B" ⁽²⁾	16 200	2 765	1.65	1.35	50	90/10
Street "I" ⁽²⁾	16 200	11 680	1.65	1.35	50	90/10

Notes:

- (1) Year 2041 traffic volumes for Lakeshore Road East were provided by TMIG. The truck percentages and day/night split were provided by the City of Mississauga. The road volume obtained from the Region was less than that provided by TMIG.
- (2) The Region of Peel ultimate traffic volume for 2-lane arterial roadways was applied to all internal major and minor collectors. The truck percentages and day/night split were assumed to be the same as Lakeshore Road East. This assessment is considered conservative and was done to demonstrate the feasibility of the site. The assessments will be updated and refined through the submission of later, more detailed studies.
- (3) It is understood that the speed limit on some of the internal roads may be 40 km/h. In such a case, the assessment done here would be considered conservative in that it would be overpredicting the sound levels at the proposed sensitive uses. The assessment will be updated through the submission of detailed studies.

4.1.2 Rail Traffic

The CN Oakville Subdivision is located about 350 m north of the subject site. Due to distance separation and screening from the intervening buildings, rail traffic is not expected to have a significant impact at the majority of the proposed development. At the north end of the site, the dwellings will have partial exposure to the rail line. Thus, rail traffic noise was included in the assessment.

Rail traffic on the CN Oakville Subdivision consists of freight, way freight, passenger (VIA) and GO commuter trains.

4.1.2.1 CN

Rail traffic data applicable to the year 2019 was obtained from CN. The rail traffic volumes were escalated to the year 2032 using a growth rate of 2.5%, compounded annually. This growth rate is recommended by MECP and rail authorities in preparing environmental noise studies.

4.1.2.2 GO Transit/Metrolinx

Future (minimum 10-year horizon) GO train forecasts were obtained from Metrolinx in 2021.

It is anticipated that GO services on the CN Oakville Subdivision will be comprised of a mix of diesel and electric trains within (at least) a 10-year time horizon. Metrolinx has not yet made final decisions regarding the electric train technology to be used. In the interim, for the purposes of environmental noise studies, Metrolinx is recommending that the noise level and spectrum of a diesel train be used to model the impact from the future electric trains.

The rail traffic data is summarized in the table below.

TABLE 4 RAIL TRAFFIC DATA

Period	Train Type	# of Trains	# of Cars/Trains	# of Locomotives/Trains	Maximum Speed (km/h)
Daytime (0700 to 2300)	Freight ⁽¹⁾	1 (1.4)	140	4	97
	Way Freight ⁽¹⁾	1 (1.4)	25	4	97
	Passenger ⁽¹⁾	12 (16.5)	10	2	153
	GO Commuter (1 Locomotive) ⁽²⁾	161 (165.0)	12	1	153
	GO Commuter (2 Locomotives) ⁽²⁾	53 (54.3)	12	2	153
Nighttime (2300 to 0700)	Freight ⁽¹⁾	0 (0)	140	4	97
	Way Freight ⁽¹⁾	4 (5.5)	25	4	97
	Passenger ⁽¹⁾	0 (0)	10	2	153
	GO Commuter (1 Locomotive) ⁽²⁾	29 (29.7)	12	1	153
	GO Commuter (2 Locomotives) ⁽²⁾	12 (12.3)	12	2	153

Notes:

- (1) Obtained from CN for the year 2019. Data shown in brackets was projected to the year 2032 with a 2.5% growth rate, compounded annually. The data provided showed the maximum number of trains and locomotives.
- (2) 10-year forecast obtained from Metrolinx in 2021. Data shown in brackets was projected to the year 2032 with a 2.5% growth rate, compounded annually.

4.1.3 Aircraft Noise

The Lakeview site is well outside the NEF 25 contour from Pearson International Airport. Thus, aircraft noise impacts are not anticipated for this site and have not been considered further.

4.2 STATIONARY NOISE SOURCES

4.2.1 Existing Sources

There are existing commercial/light industrial uses along Rangeview Road and along the south side of Lakeshore Road East in addition to the G.E. Booth Wastewater Treatment Plant to the

east of the site and the Lakeview Water Treatment Plant to the west. An inventory of these uses is included in Appendix C. Most of these facilities will have minimal noise emissions or are far enough away to not have any significant noise impact at the Lakeview site. It is noted that the previous tenant at 895 Lakefront Promenade has since left the building and a new tenant has leased the space. The surrounding uses with the potential for noise impact and for which additional investigation has been done include:

- The G.E. Booth Wastewater Treatment Plant (1300 Lakeshore Road East)
 - The facility processes wastewater for homes and businesses in the City of Toronto, Region of York, Bolton, Caledon East, Brampton and the eastern part of Mississauga. The primary noise sources on the site include ventilation louvres and open doors (emitting noise from activity occurring inside to the exterior), a condenser unit, make up air units, exhaust fans, and truck activity including trucks with on-board blowers used for deliveries.
- Interior Manufacturing Group (895 Lakefront Promenade, 992 and 996 Rangeview Road)
 - The facility manufacturers custom commercial furniture and fixtures and operates out of several buildings in the area. The buildings with the potential for impact are located on the south side of Rangeview Road. The most significant potential noise source at these facilities is the truck activity at the loading docks. There are also smaller comfort heating HVAC units on the roofs of the buildings. Note, it is understood that the lease agreement for the building at 996 Rangeview Road is (or is very close to being) expired and IMG is not going to renew. Thus, this building has not been included in the assessment.
- Xtreme Tire Garage (1044 Rangeview Road)
 - A full-service automotive garage. There are bay doors for servicing vehicles on the north and south sides of the facility. The primary source would be noise from maintenance activity occurring within the facility emitted to the exterior via open overhead doors.
- Long Branch Foundry (1062 Rangeview Road)
 - A manufacturing facility using aluminum and copper alloys. This is a non-ferrous sand and permanent mold castings company. The facility specializes in CNC milling, turning, grinding and assemblies. The main noise sources include, exhaust fans, noise emitted from activity occurring in the interior to the exterior via an open overhead door and vehicle movements on site.
- Plasterform Decorative Architectural Systems (1880 Lakeshore Road East)
 - Manufacturers of architectural castings including ceilings, walls, moldings, column covers and ornamental details. The major noise sources at the facility include a dust collector at the southwest end of the site, several roof top exhaust fans and HVAC units and truck activity.
- Allegion Security System Suppliers
 - This facility specializes in commercial security systems including commercial locks, door closers and exit devices, steel doors and frames. Noise sources at the facility include rooftop HVAC equipment and truck activity at the shipping and receiving docks.

Figure 3 shows the locations of the stationary noise sources relative to the Lakeview site.

4.2.2 Future Potential Noise Sources in Lakeview Community

As indicated in earlier, in addition to sensitive uses, the proposed land uses for Lakeview include commercial uses (mostly office) along the eastern periphery as well as retail/commercial uses which will likely be integrated into the lower levels of some of the higher-density buildings.

These uses would not be expected to have any significant noise sources. The only anticipated noise source would be the mechanical equipment used for comfort heating and air conditioning. These uses would need to be designed to meet sound emissions limits in the City noise bylaw and Publication NPC-300. Doing so would be a matter of proper engineering during development design. As such, these uses are not considered further in this report.

5.0 VIBRATION SOURCES

As there are no rail lines or heavy industrial uses (e.g., stamping plants) in close proximity to the site, there are no anticipated sources of significant environmental vibration. Thus, vibration impact at the site has not been considered further in this assessment.

6.0 ENVIRONMENTAL NOISE ASSESSMENT PURSUANT TO NPC-300

6.1 TRANSPORTATION NOISE SOURCES

Using the road and rail traffic data in Tables 3 and 4, respectively, the sound levels, in terms of $L_{eq\ Day}$ and $L_{eq\ Night}$, were calculated using the CadnaA v2021 MR2 environmental noise modelling software. The roadways and rail lines were modelled as line sources. The sound power levels of the line sources were normalized to the sound emission levels associated with each roadway or rail line at a distance of 15 m calculated using ORNAMENT and STEAM, the computerized road and rail traffic noise prediction model of the MECP. The sound propagation in CadnaA uses the protocols of ISO Standard 9613-2, "Acoustics – Attenuation of Sound During Propagation Outdoors".

The model accounts for sound propagation factors such as distance attenuation and ground attenuation. Inherent screening of each building due to its orientation to the noise source was taken into account.

It is recognized that there could be differences between the modelling done using CadnaA and that using ORNAMENT/STEAM. However, for this preliminary assessment, the differences would not result in any substantial changes to the conclusions or the determination of feasibility of the proposed development. Detailed noise studies should be completed for the individual buildings at later stages of the approval process. The detailed studies will update the preliminary assessment completed here.

6.1.1 Predicted Future Transportation (Road or Rail) Noise Impact

The highest sound levels of 70 dBA day and 66 dBA night are predicted to occur at the building at the northeast corner of the development (adjacent to Lakeshore Road East). The predicted daytime ($L_{eq\ 16hr}$) and nighttime ($L_{eq\ 8hr}$) road and rail traffic sound levels at all buildings within the development are shown in Appendix D.

The road and rail noise analysis results are used to determine the sound isolation requirements for building envelope design, in order to achieve the indoor road and rail noise criteria. Similarly, these results are used to determine whether road and rail noise mitigation is needed for outdoor living (amenity) areas.

6.2 TRANSPORTATION NOISE SOURCES - NOISE ABATEMENT REQUIREMENTS

Figure 4 shows the anticipated transportation noise mitigation requirements. The requirements should be refined as the site design progresses and the final building forms and uses are established.

The buildings east of Street “I” are commercial/office uses but may also include educational facilities. It is expected that these buildings will be provided with air conditioning regardless, which will allow the windows to remain closed for noise control purposes. In addition, based on the predicted sound levels, significant upgrades to the exterior walls and windows are not anticipated. The final requirements should be confirmed as detailed designs become available.

6.2.1 Architectural Upgrades

Based on the predicted sound levels, it is expected that upgrades to the building envelope construction for the dwellings adjacent to Lakeshore Road East and the collector roadways may be required.

The window STC requirements were calculated assuming a corner bedroom with windows on two facades. Wall and window areas on each façade were assumed to be 20%/80% or 70%/30%, of the associated floor area for tall buildings and townhouse dwellings, respectively.

At the building adjacent to Lakeshore Road East, the preliminary assessment shows that exterior walls meeting STC 54 and exterior windows up to STC 38 may be required. Assuming window wall is used, a typical spandrel panel with a typical gypsum board back up wall assembly would be expected to meet at least STC 54. Windows meeting STC 38 are considered an upgrade but are readily achievable.

The window requirements are expected to be lower at the other buildings that are farther setback from Lakeshore Road East. At the mid-rise and high-rise buildings adjacent to the collector roadways, it is expected that typical spandrel panel construction with a typical gypsum board back up wall assembly and slightly upgraded windows (e.g., between STC 30 and STC 35) would be sufficient to meet the indoor noise criteria. At facades with less exposure to the roadways, windows meeting the minimum-non acoustical requirements of the Ontario Building Code (OBC) may be sufficient.

At the townhouse dwellings adjacent to the collector roads, upgraded exterior walls or windows may be required. If upgraded exterior wall construction (e.g., brick veneer) is used, it is expected that exterior windows meeting the minimum non-acoustical standards of the OBC will be sufficient to meet the indoor noise criteria. Conversely, if the walls are not upgraded, slightly upgraded windows (e.g., between STC 30 to 35) may be required.

The buildings where upgraded exterior walls and/or windows can be anticipated are shown in red on Figure 4. These are the buildings where the daytime/nighttime sound levels are 65 dBA/60 dBA or greater.

At all other locations, exterior wall and window construction meeting the minimum non-acoustical standards of the OBC should be sufficient to meet the indoor noise criteria.

The assessment should be reviewed once detailed floor plans and elevations for the dwellings are available.

6.2.2 Ventilation Requirements

The sound levels are such that the first row of dwellings adjacent to Lakeshore Road East and the internal collector roadways will require mandatory air conditioning.

Dwellings that are in proximity to Lakeshore Road East and the collector roads (e.g., the second row of dwellings from the roadways or dwellings with greater setback distances to the roadways) will require the provision for adding air conditioning at the occupants' discretion.

Notwithstanding the above, it is understood that all dwellings south of Street B will be provided with air conditioning regardless of the noise control measures. Thus, for simplicity, the ventilation requirements have been upgraded to mandatory air conditioning for these blocks.

Further, all dwelling units north of Street B, will be Class 4. As part of the Class 4 status, proper means of ventilation must be provided to allow windows to remain closed for noise control purposes. In this case, air conditioning will be required.

As such, all dwellings in the development will be provided with air conditioning.

See Figure 4.

It is noted that there is the potential for the use of a district energy (DE) facility to provide heating/cooling for some of the buildings. The DE would centralize the large mechanical equipment such that individual building would not need to house specific equipment. The use of a DE system would still allow the noise control requirements to be met, as ultimately, the system would provide air conditioning that would allow windows to be kept closed for noise control purposes.

6.2.3 Outdoors – Sound Barriers

The sound barrier requirements for the proposed development will depend on the setback distance and orientation of the amenity areas relative to the traffic noise sources. At this early stage of the development, the site layout has not been finalized nor detailed. Detailed sound barrier assessments are therefore premature. However, general guidance on the expected requirements is provided below.

Several of the townhouse units will be provided with grade-level rear yard outdoor amenity space. The townhouse dwellings with the greatest exposure to road traffic noise are the units at the northeast corner of the site, with exposure to Lakeshore Road East to the north and Street "I" to the east. The unmitigated daytime OLA sound levels are predicted to be up to 64 dBA. The sound barrier heights to mitigate the daytime OLA sound level to the 55 dBA design objective as well as up to the 60 dBA maximum permitted under the MECP guidelines, in 1 dBA increments, are shown in Table 5. (See Appendix D for calculation details.). A 2.5 m high sound barrier is also anticipated to be required at these lots due to exposure from some sources at the adjacent industry, Plasterform (See Section 7.3.7). Thus, a 2.5 m high sound barrier is anticipated at these lots,

although this will need to be confirmed through detailed studies once the building form details are known.

TABLE 5 ROAD TRAFFIC SOUND BARRIER HEIGHTS

OLA Location	Barrier Height Requirement to Meet Indicated Daytime Sound Level					
	55 dBA	56 dBA	57 dBA	58 dBA	59 dBA	60 dBA
Townhouse Unit at Northeast Corner of Site	3.7 m	3.1 m	2.7 m	2.3 m	1.9 m	1.8 m

The other townhouse blocks in the development are oriented such that the rear yards are not adjacent to the roadways. Due to the setback distance from the roadways as well as screening provided by the townhouse blocks themselves, it is expected that the unmitigated daytime OLA sound levels at most locations will meet the guideline limits. At locations with more exposure to the roadways, it is expected that standard 1.8 m high acoustic fences will be sufficient.

The mixed-use and residential mid-rise and high-rise buildings will likely not have grade level amenity spaces but may have balconies or terraces. For balconies/terraces that are less than 4 m in depth, the NPC-300 OLA sound level limits do not apply. Thus, sound barriers would not be required at these locations.

The sound level limits do apply at balconies/terraces that are greater than 4 m in depth, provided they are the only OLA for the occupants. Larger terraces with exposure to Lakeshore Road East would likely require sound barriers to meet the noise guideline limits. At the buildings that are farther setback or screened from Lakeshore Road East, it is expected that the sound level limits can be met without sound barriers, or with sound barriers that are the height of typical safety parapets/railings.

Acoustic fences/sound barriers must be of solid construction with no gaps, cracks or holes and have a minimum surface density of 20 kg/m² (4 lbs/ft²).

Sound barrier requirements should be determined as part of the detailed noise studies to be completed later.

6.2.4 Warning Clauses

Warning clauses are a tool to inform prospective owners/occupants of potential annoyance due to existing noise sources. Where the guideline sound level limits are exceeded, appropriate warning clauses should be registered on title or included in the development agreement that is registered on title. The warning clauses should also be included in agreements of Offers of Purchase and Sale and lease/rental agreements to make future occupants aware of the potential noise situation.

The recommended warning clauses from NPC-300 are included below. The specific locations of these warning clauses will be determined through the submission of the more detailed studies.

Type B warning clause anticipated for all dwellings units in the development:

“Purchases/tenants are advised that despite the inclusion of noise control features in the development and within the building units, sound levels due to increasing road traffic may on occasions interfere with some activities of the dwelling occupants as the sound levels exceed the sound level limits of the Municipality and the Ministry of the Environment, Conservation and Parks.”

Type D warning clause to be used for all dwellings units in the development:

“This dwelling unit has been supplied with a central air conditioning system which will allow windows and exterior doors to remain closed, thereby ensuring that the indoor sound levels are within the sound level limits of the Municipality and the Ministry of the Environment, Conservation and Parks.”

Type E warning clause to be used for dwellings in the potential area of influence of a stationary source.

“Purchasers/tenants are advised that due to the proximity to the existing industrial uses along Rangeview Road, sound from these facilities may, at times, be audible.”

Dwellings in Blocks 1 to 5 and 18 also require the Class 4 warning clause. The recommended wording is:

“Purchasers/tenants are advised that sound levels due to adjacent industry or infrastructure facilities are required to comply with sound level limits that are protective of indoor areas and are based on the assumption that windows and exterior doors are closed. This dwelling unit has been supplied with a ventilation/air conditioning system which will allow windows and exterior doors to remain closed. Notwithstanding any noise mitigation at source or in the design of this development and individual dwellings, noise from the industrial/infrastructure facilities may at time interfere with some activities of the dwelling occupants. In the event of such an occurrence, residents are advised to close the windows.”

6.3 STATIONARY SOURCES

6.3.1 Acoustic Modelling

A 3-D acoustic model of the subject site, as shown on Figures 5A to 12, was developed to predict the potential sound levels at the residential points of reception from the neighbouring industries. The model was developed using the CadnaA v2021 MR2 environmental noise modelling software, which implements the protocols of ISO Standard 9613-2, "Acoustics – Attenuation of Sound During Propagation Outdoors". One order of sound reflection from the building facades was included in the analysis. This is consistent with References 15, 16 and 17.

For the assessment of G.E. Booth, the ground factor was set to be 0.50 to be consistent with that used in the Acoustic Assessment Report (see Section 7.3.3 below). For the assessment of all other facilities the entire site was modelled as moderately “hard” ground, with a ground factor of $G = 0.3$.

Specific information on the sources and operating scenarios are included in Appendix E.

6.3.2 Applicable Noise Limits at the Lakeview Community

The applicable sound limit for any stationary source at any point of reception is the higher of the exclusion limits, or the ambient (background) sound level, typically established by road traffic.

It is likely that once the site is built out, the ambient would exceed the minimum exclusion limits at the buildings closest to the larger roadways, at least in the daytime. However, for this preliminary assessment, the Class 1 or 4 minimum exclusion limits (most stringent) have been used.

6.3.3 G.E. Booth Wastewater Treatment Plant

This facility operates 24 hours a day, 7 days a week. A computerized model, which was based on the Acoustic Assessment Report (AAR) for the facility prepared by Wood Environment & Infrastructure Solution, dated October 25, 2019 in support of the current ECA, was obtained (Reference 17).

The facility operates under an Amended Environmental Compliance Approval Number 6339-BJJRCS dated January 22, 2020.

As mentioned, the site design for Lakeview includes commercial buildings along the east property line that will act as a buffer between the wastewater treatment plant and the proposed residential uses. However, it is understood that these buildings may include some noise sensitive uses, such as educational facilities (post secondary institutions). The assessment predicts sound levels at these buildings in the daytime only (as educational facilities would typically only be sensitive in the day when open and would not be expected to operate at night).

The results of the modelling indicate that the sound levels on the Lakeview site will be less than the Class 1 and Class 4 minimum exclusion limits at all buildings on the site. See Figures 5A and 5B (non-emergency sources) and Figure 6 (emergency generators).

Thus, compliance with the applicable sound level limits is concluded and mitigation measures for this facility are not required. These conclusions are similar to the results of the previous assessments of this facility (Reference 14).

It is noted that the AAR for this facility accounted for the proposed Lakeview development. The AAR showed that the sound levels due to the wastewater treatment plant would meet the noise guideline limits at the proposed Lakeview site.

Further to the above, it is understood that an expansion is planned for the G.E. Booth facility. The AAR did not account for the future noise sources that may be added as part of the expansion. However, since G.E. Booth has accounted for Lakeview as part of their current approvals, it is expected that the expansion will also be designed to comply with the noise guideline limits at Lakeview, implementing noise mitigation at-source, where required.

6.3.4 Interior Manufacturing Group

IMG manufacturers custom commercial furniture and fixtures and operates out of several buildings in the overall area. The closest to Lakeview are located at 992 Rangeview Road and 895 Lakefront Promenade. IMG was contacted during the preparation of this study and provided information on the activities that occur at each site. It was confirmed that the facilities are

operational in the daytime only, from 7:30 am to 4:00 pm. Specific operations at the buildings include:

- Interior Manufacturing Group - 992 Rangeview Road
 - Product, mainly based in acrylic, is manufactured, and assembled at this location and then shipped off to another facility for warehousing. All manufacturing occurs indoors, there is no activity occurring outdoors except for shipping/receiving trucks.
 - The facility receives about 3 to 4 trucks a day for shipping/receiving.
 - Of the shipping/receiving, the majority is done by small vehicle that would not result in significant noise impact.
 - Trucks do not idle at the loading docks.
 - IMG has indicated that they receive large trucks (53' tractor trailers) sporadically. Most trucks are unloaded/loaded on the street, further away from the subject site. When larger trucks do arrive, they generally contain only one or two pallets. Trucks containing more pallets would be very rare. When at the loading dock, the trucks are unloaded/loaded using a forklift, which accesses the back of the truck using a dock leveller.
 - IMG indicated that the trucking activity will remain as stated for the foreseeable future and there are no future expansion plans that would increase trucking activity.
 - The office area has air conditioning, but the remaining majority of the building does not.
- Interior Manufacturing Group - 996 Rangeview Road
 - The operations at this facility are similar to those at 992 Rangeview Road. However, the lease for this building expires in 2022 and IMG does not anticipate renewing. Thus, this facility has not been included in the assessment. It is expected that the zoning for the Lakeview Community will be approved shortly. Thus, any new operation that moves into the building would need to account for the surrounding Lakeview Community in the design of the facility.
- Interior Manufacturing Group – 895 Lakeview Promenade
 - IMG recently took over the lease of this building (it was previously tenanted by Construction Specialties Inc.). IMG indicates the building is not currently in use, due to production slow downs from COVID. It is anticipated that, when ready, the building will be used partly as warehouse space and partly as an assembly space for cabinetry and shelving units. Machining of parts will be done elsewhere. The office area will be air conditioned but the rest of the space will not be. The number of truck deliveries is currently unknown but will likely be similar to the volumes at 992 Rangeview Road.

Aerial imagery indicates that the only potential noise source at these facilities would be truck activity at the loading docks at the rear of the buildings, with exposure to the proposed Lakeview site. It is expected that these buildings would be operational in the daytime only (0700 to 2300), although this will need to be confirmed at the time of the detailed studies.

A computerized model of the facilities was created. It is expected that trucks would not idle the engines while at the loading docks. However, for modelling purposes, some incidental idling (2 mins) was accounted for, as well as trucks maneuvering to the docks at 992 Rangeview Road.

The assessment shows that:

The predicted sound levels from the non-impulse sources meet the Class 4 guideline limits at the closest Class 4 blocks (Blocks 1 and 2). The Class 1 sound level limits are met at all other blocks (the Class 1 sound level limits are also met at Block 1). Figure 7A shows the predicted daytime sound levels.

The predicted impulse sound levels from the unloading of trucks meet the Class 4 sound level limits at Blocks 1 and 2 and the Class 1 limits at other blocks. Recall the daytime sound level limits for 4 impulses/hr at POW/OPOR in a Class 1 area are 65/65 dBA and in a Class 4 area are 75/70 dBA. Figure 7B shows the results for 895 Lakefront Promenade and Figure 7C shows the results for 992 Rangeview Road.

Mitigation measures are not required to address the noise impact from the IMG buildings.

6.3.5 Xtreme Tire Garage

Xtreme Tire Garage is located on the south side of Rangeview Road. The facility is open in the daytime hours only: 8 am to 5 pm Monday to Friday and 8 am to 2 pm on Saturday.

Xtreme Tire Garage has six overhead doors at the rear of the building, in the direction of the Lakeview site. The interior layout of the building is not known. However, at least some of the overhead doors appear to open to vehicle repair bays. The main noise sources associated with Xtreme Tire Garage would be air tools (e.g., impact wrenches) operating inside the repair bays. During a site visit by VCL staff, it was observed that some of the overhead doors were open and noise from the tools was audible near the rear property line, although the noise was not considered significant. For this preliminary assessment, noise from Xtreme Tire Garage was modelled using VCL sound measurements of maintenance activity at similar facilities.

The predicted sound levels due to Xtreme Tire Garage are shown on Figure 8. The assessment shows that:

- At Block 3, which is closest to Xtreme Tire, the Class 4 sound level limits are met.
- At all other blocks, the Class 1 sound level limits are met.
- Mitigation measures are thus, not required for this facility.

6.3.6 Long Branch Foundry

The main noise sources associated with Long Branch Foundry are the exhaust fans on the rooftop, at the rear and along the east side of the building. Noise from these exhaust fans was audible near the rear property line.

The Long Branch Foundry operates under a Certificate of Approval Number 8268-626PQ7.

The facility is open in the daytime hours only: from 9 am to 6 pm Monday to Friday.

The source sound levels from Reference 16 were used in this assessment.

The predicted unmitigated daytime sound levels due to Long Branch Foundry are shown on the left pane of Figure 9. Sound level excesses over the Class 4 noise guideline limits are predicted

to occur at the closest townhouse buildings to the south of the facility as well as the townhouse rear yard outdoor points of reception (In Block 3).

To meet the Class 4 guideline limits at Block 3, mitigation is required for one source at the facility, the rear furnace exhaust fan. The required reduction would be 15 dBA (resulting in a maximum sound power level of 86 dBA for the source). With this mitigation, the Class 4 sound level limits would be met at Block 3 and the Class 1 sound level limits would be met at all other locations. The mitigated daytime sound levels are shown on the right pane of Figure 9.

It is expected that this reduction could be achieved by adding a silencer or acoustic enclosure to the unit or by replacing the unit altogether. At source noise mitigation in this case is seen as likely the most effective and economical. The foundry will need to be approached and cooperation sought. The proposal would be that the at-source noise mitigation would be at cost of Lakeview. The mitigation requirements will need to be confirmed through the submission of the detailed studies and once the final Lakeview site design is established.

6.3.7 Plasterform Decorative Architectural Systems

The facility operates under an Amended Environmental Compliance Approval Number 6327-A3ARJN. The main noise sources associated with Plasterform include rooftop HVAC units, general exhausts, exhaust fans associated with the paint spray booths and a baghouse dust collector at grade at the rear of the building. The source sound levels and operating scenarios were taken from Reference 16 and are based on the information presented in the Amended Environmental Compliance Approval.

The facility is expected to operate during the daytime hours only (i.e., between 0700 to 2300).

The predicted unmitigated daytime sound levels due to Plasterform are shown on the left pane of Figure 10. Sound levels excesses over the Class 4 noise guideline limits are predicted to occur at the closest townhouse and midrise buildings to the west. Excesses are also predicted at the rear yard outdoor points of reception (OPOR) at the closest townhouses.

To meet the Class 4 guideline limits at the closest blocks (Blocks 4 and 18), at-source mitigation at the baghouse (dust collector) exhaust as well as the two ground mounted AC units could be used, see the right pane of Figure 10. The required reduction would be 12 dBA (maximum sound power level of 95 dBA) for the baghouse (EF 14) and 5 dBA (maximum sound power level of 88 dBA each) each for the two AC units (AC1 and AC2). As with the foundry, it is recommended that Plasterform be approached to allow noise mitigation to be implemented at the cost of Lakeview. A 2.5 m high sound barrier would also be required along the rear property line of the two closest townhouse blocks.

With the above mitigation measures, the Class 4 guideline limits would be met at Blocks 4 and 18 and the Class 1 guideline limits would be met elsewhere.

6.3.8 Allegion

The main noise sources associated with Allegion would be the rooftop HVAC units and trucks at the receiving and shipping docks that point east toward the site.

The facility operates under Certificate of Approval Number 2718-6ZSNUV.

The facility is open during the daytime hours only 08:30 to 17:30, Monday to Friday.

The source sound levels and operating scenarios were assumed based on aerial imagery and information presented in the Certificate of Approval.

The predicted daytime sound levels due to Allegion are shown on Figure 11. The assessment shows that the predicted sound levels meet the Class 4 guideline limits at Block 18 (there is only a minor 1 dBA excess over the Class 1 limit) and the Class 1 sound level limits at all other locations. Thus, mitigation is not required for this facility.

7.0 CONCLUSIONS AND RECOMMENDATIONS

This preliminary assessment shows that the Lakeview Village Community can be made to comply with the applicable noise requirements and the proposed development will be feasible, in terms of achieving land use compatibility, acoustically, both with nearby existing land uses and within the Lakeview development itself. Thus, with proper design at Lakeview, no adverse effects of the proposed Lakeview development on existing industries/major facilities are to be expected. Compliance with applicable policies relating to environmental noise, such as the PPS and the MOP, etc. will result.

Applicable Noise Guidelines

1. The applicable MECP noise guideline is NPC-300 (as of October 2013). NPC-300 provides guidance and criteria with respect to environmental noise from transportation, and as well as from stationary sources, for planning of noise sensitive land uses such as residential. NPC-300 is also the basis for ECA's issued by MECP for stationary sources, under Section 9 of the EPA or EASR registration under O.Reg.1/17.
2. The proposed Lakeview Village Community, with the implementation of the recommendations in this preliminary assessment, will comply with NPC-300, as well as the other relevant municipal and regional requirements for environmental noise.

Transportation Noise Sources

3. With implementation of the noise control measures indicated above, which are reasonable and practicable, the transportation noise policies and guidelines will be met by the proposed Lakeview development.
4. Mandatory air conditioning should be anticipated for the first row of buildings/dwellings adjacent to the internal collector roads and to Lakeshore Road East. Provision for adding air conditioning should be anticipated for all other dwellings.
5. Architectural upgrades to windows and/or exterior facade construction should be anticipated for the first row of buildings/dwellings adjacent to the Internal Collector roads and to Lakeshore Road East. Any upgrade required is expected to be minor and would not affect building forms.
6. Sound barriers to mitigate transportation noise in the grade level OLA's should be anticipated for the townhouse dwellings with significant exposure to the internal collector roads or Lakeshore Road East.

Class 4

7. The Lakeview Village Community being an in-fill development, in proximity to existing industrial/commercial uses is proposed to be Class 4. The City has agreed to allow the northern blocks to be Class 4. This includes Blocks 1 to 5 and 18.
8. The overall area is one in transition, and it is expected that, ultimately, several of the existing industrial/commercial uses will be converted to residential. The Class 4 status will help to facilitate the transition by addressing potential temporary noise issues in a more feasible manner.
9. The Class 4 status will further promote land use compatibility by allowing for the approval of the proposed development while also allowing the nearby stationary sources to continue to operate in compliance with the applicable noise guidelines.
10. The use of the Class 4 receptor classification is concluded to be more suitable technically, practically and economically than Class 1 in this case and would be fully in compliance with the requirements and intent of NPC-300 and PPS 2020.

Vibration Impact

11. There are no anticipated sources of environmental vibration in the area. Thus, significant vibration impact on to the community is not expected.

Existing Stationary Sources

12. Sound emissions from the majority of the surrounding industrial commercial uses will comply with the Class 4 sound level limits at Blocks 1 to 5 and 18 and the Class 1 limits elsewhere, this includes the G.E Booth wastewater treatment plant (which also complies with the Class 1 sound level limits at the entirety of the Lakeview site).
13. There is one source at the Long Branch Foundry (an exhaust fan) and three sources at Plasterform (a baghouse dust collector and two AC units) that are predicted to result in excesses over the Class 4 limits at the closest proposed buildings on the Lakeview site;
14. It is expected that these sources could be addressed by at-source mitigation measures. This should be investigated further as part of the detailed studies. See below. We have been involved in a number of projects where significant noise abatement campaigns were successfully implemented at existing industries to allow adjacent sites to be redeveloped for residential uses, at the cost of the residential developer.
15. A 2.5 m high sound barrier is also recommended for the rear yards of the two townhouse blocks closest to Plasterform.

Future Stationary Source in Lakeview

16. Ensuring that any potential, stationary sources within Lakeview itself create no adverse noise impact on neighbouring land uses is a matter of proper engineering design, as is commonly done.

Future Studies

17. This preliminary study concludes that the proposed development for Lakeview Village site is feasible acoustically and can achieve land use compatibility with the surrounding environment and existing land uses.
18. Detailed noise studies should be completed as part of future land use approval applications (e.g., site-specific zoning by-law applications or site plan approval applications) to further refine the noise control requirements once further details of the building designs are known.

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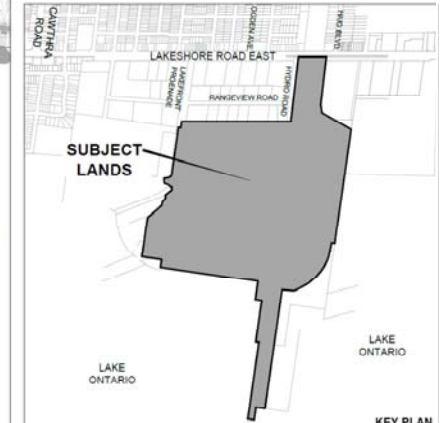
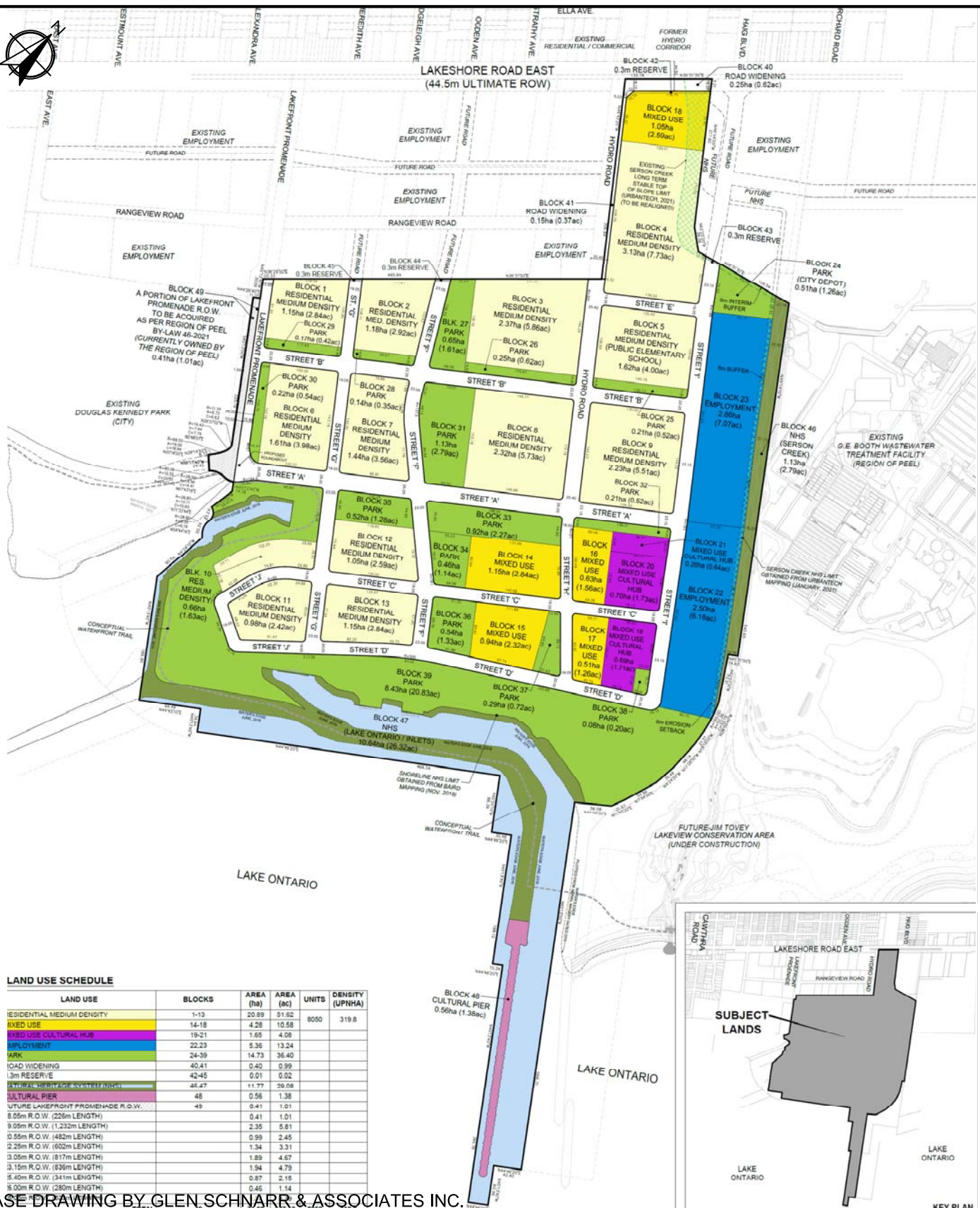
Title	Key Plan
Project Name	Lakeview Village

Date	Aug. 29, 2022
Project No.	120-0302-000

Figure
1



**LAKESHORE ROAD EAST
(44.5m ULTIMATE ROW)**



LAND USE SCHEDULE

LAND USE	BLOCKS	AREA (ha)	AREA (ac)	UNITS	DENSITY (UP/NHA)
RESIDENTIAL MEDIUM DENSITY	1-13	20.89	51.62	8050	319.8
MIXED USE	14-18	4.28	10.58		
MIXED USE CULTURAL HUB	19-21	1.65	4.08		
EMPLOYMENT	22-23	9.36	23.24		
PARK	24-39	14.73	36.40		
ROAD WIDENING	40-41	0.40	0.99		
0.3m RESERVE	42-45	0.01	0.02		
0.3m RESERVE (LAKESHORE ROAD)	46-47	11.77	29.08		
CULTURAL PIER	48	0.56	1.38		
FUTURE LAKEFRONT PROMENADE R.O.W.	49	0.41	1.01		
8.05m R.O.W. (226m LENGTH)		0.41	1.01		
9.05m R.O.W. (1,232m LENGTH)		2.35	5.81		
0.55m R.O.W. (482m LENGTH)		0.99	2.45		
2.25m R.O.W. (602m LENGTH)		1.34	3.31		
3.05m R.O.W. (817m LENGTH)		1.89	4.67		
3.15m R.O.W. (836m LENGTH)		1.94	4.79		
5.40m R.O.W. (341m LENGTH)		0.87	2.15		
16.00m R.O.W. (280m LENGTH)		0.46	1.14		
TOTAL		71.63	177.13	8050	319.8

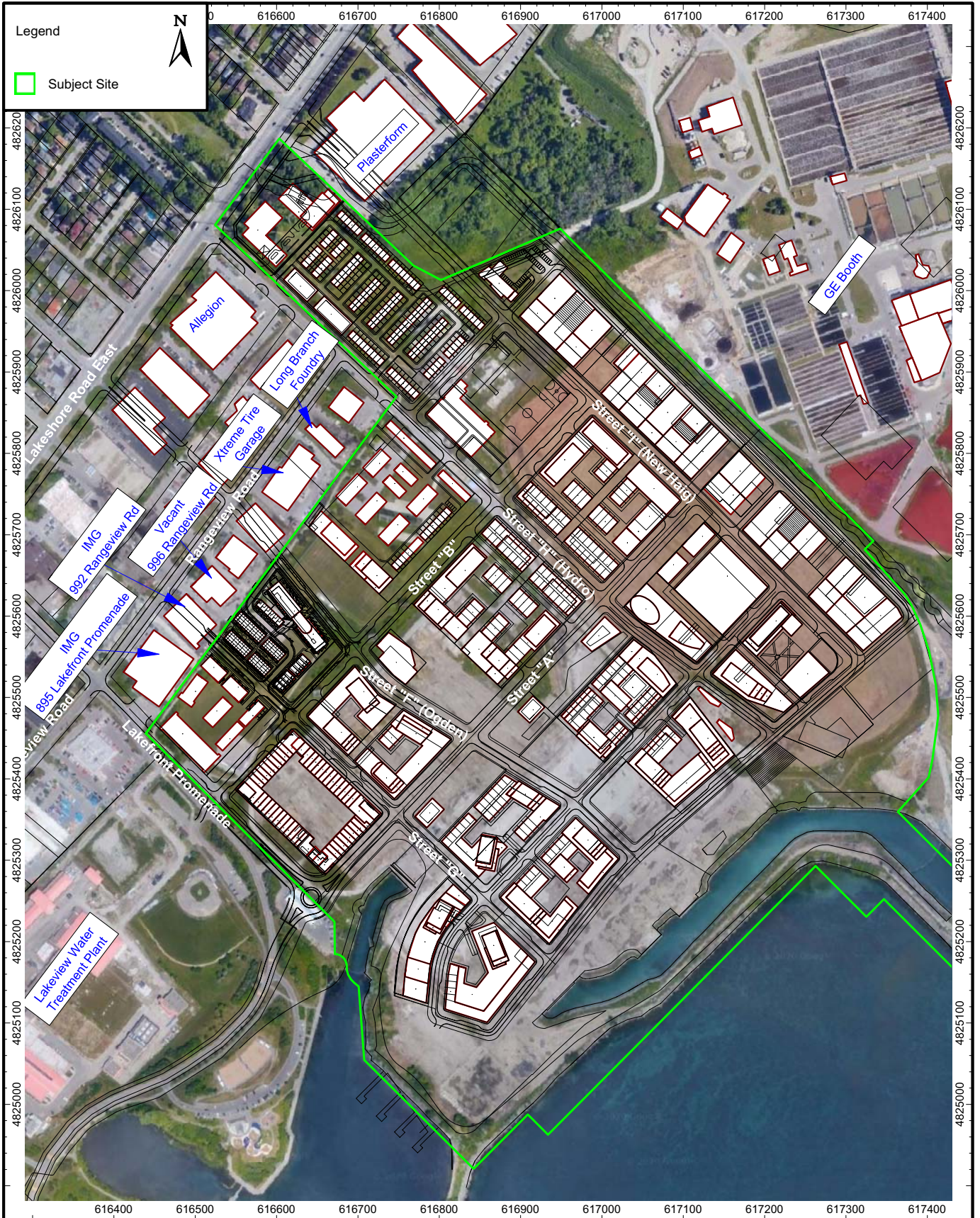
BASE DRAWING BY GLEN SCHNARR & ASSOCIATES INC.

VALCOUSTICS
Canada Ltd.

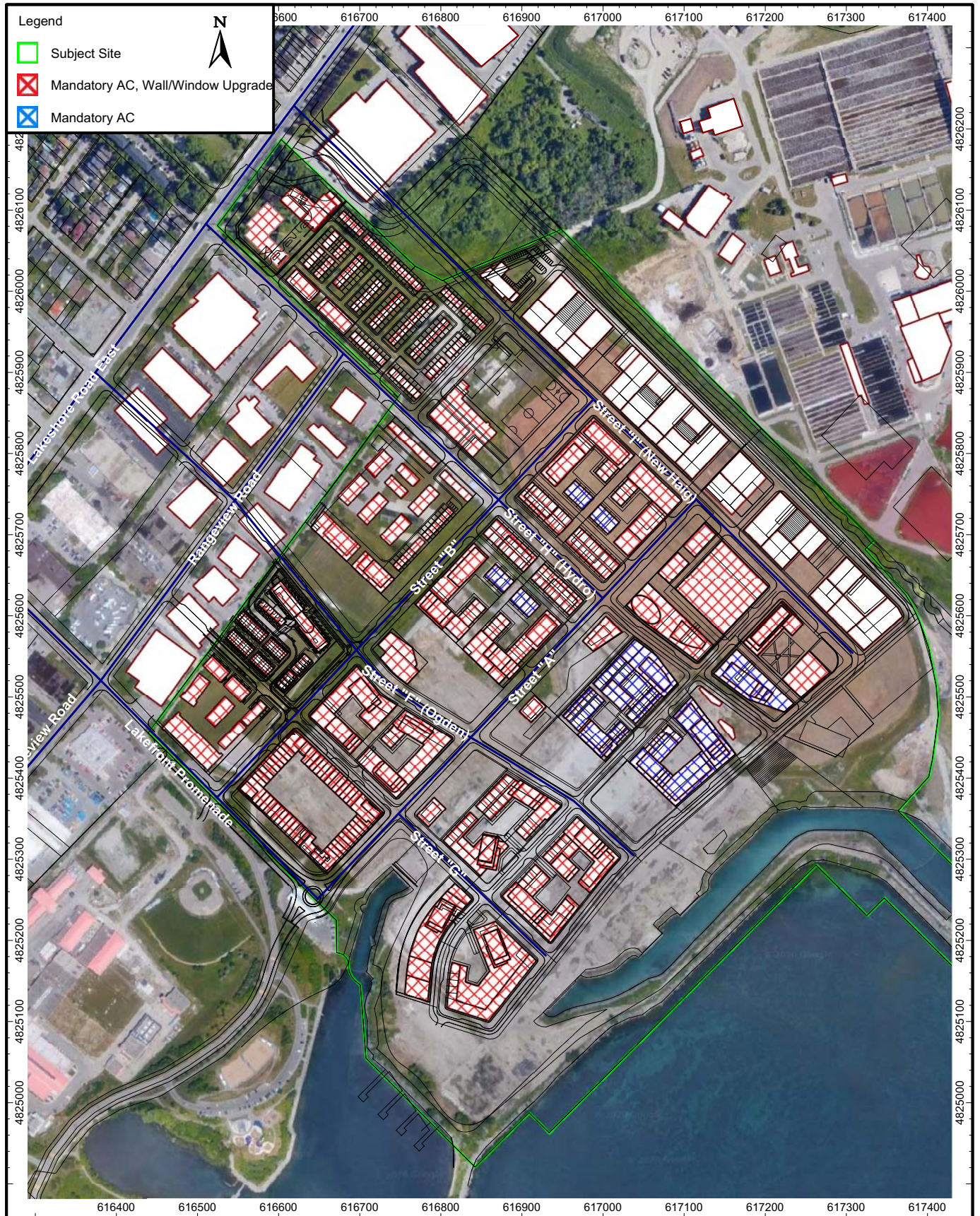
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Title	Project No.	Date
Draft Plan	120-0302-000	May 18, 2022
Project Name	Scale	Figure
Lakeview Village	N.T.S.	2

No.	Revision/Issue	Date



	Title	Date	Figure
	Industry Locations	Aug. 29, 2022	
	Project Name	Project No.	3
	Lakeview Village	120-0302-000	



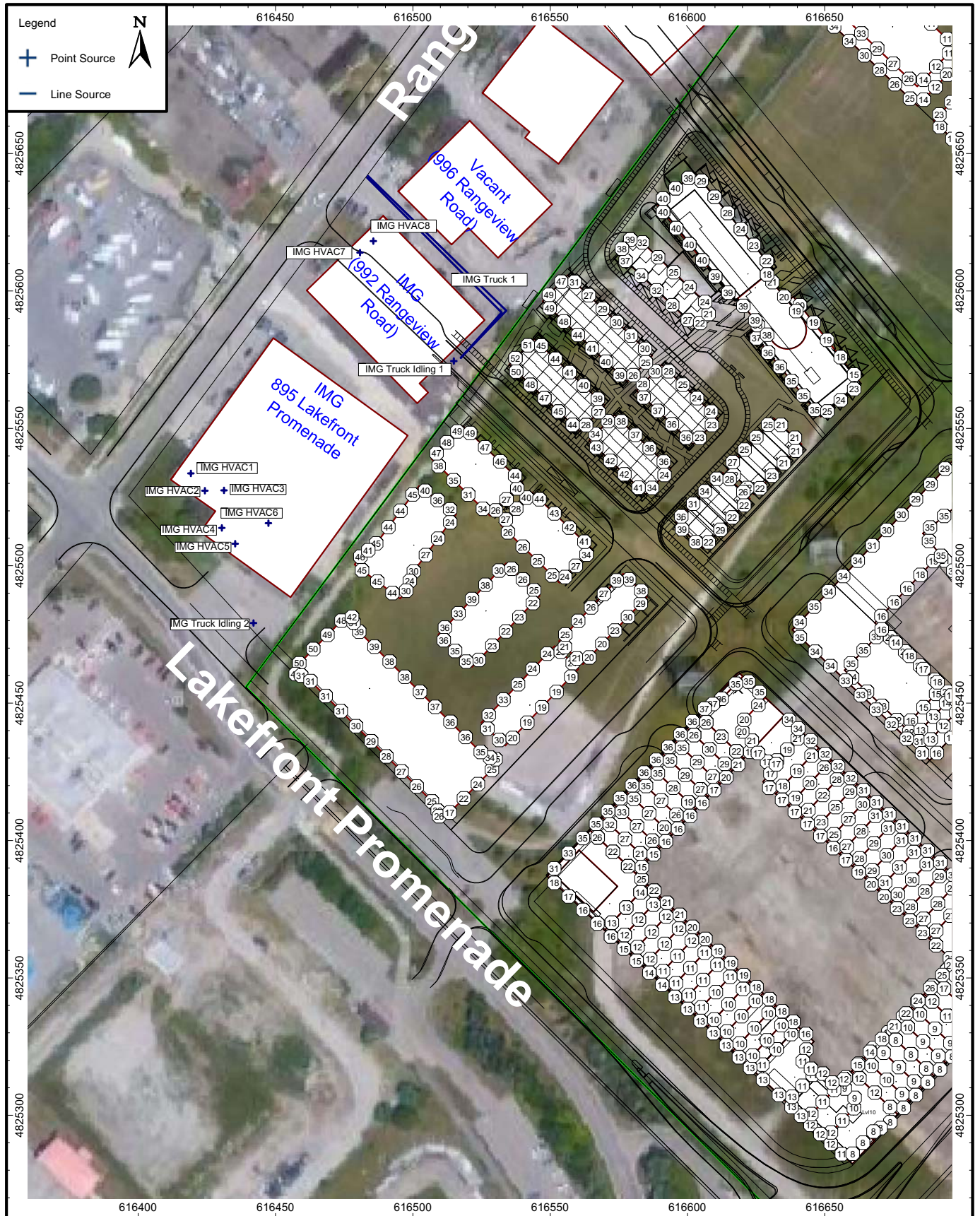
	Title	Date	Figure
	Traffic Noise Mitigation Measures Project Name Lakeview Village	Aug. 29, 2022 Project No. 120-0302-000	



	Title Predicted Sound Levels due to GE Booth - Non-Emergency Sources (dBA) - Nighttime	Date Aug. 29, 2022	Figure 5B
	Project Name Lakeview Village	Project No. 120-0302-000	



	Title Predicted Sound Levels due to GE Booth - Emergency Generators (dBA) - Daytime	Date Aug. 29, 2022	Figure 6
	Project Name Lakeview Village	Project No. 120-0302-000	



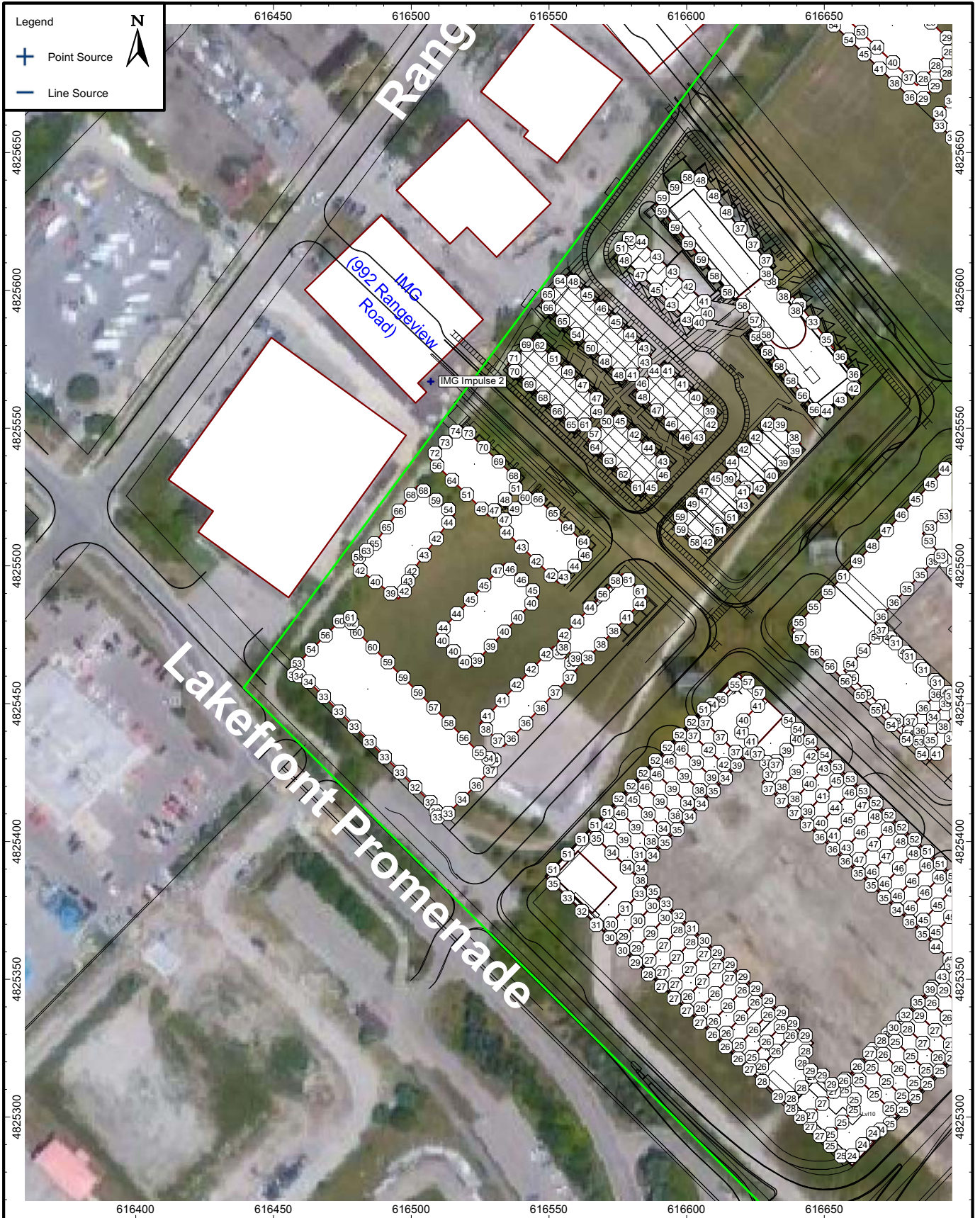
Title	Predicted Daytime Sound Levels due to IMG - Steady Sources (dBA)
Project Name	Lakeview Village

Date	Aug. 29, 2022
Project No.	120-0302-000

Figure	7A
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	Title	Date	Figure
	Predicted Daytime Sound Levels due to IMG - Impulse Sources at 895 Lakefront Promenade (dBa)	Aug. 29, 2022	7B
	Project Name	Project No.	
	Lakeview Village	120-0302-000	



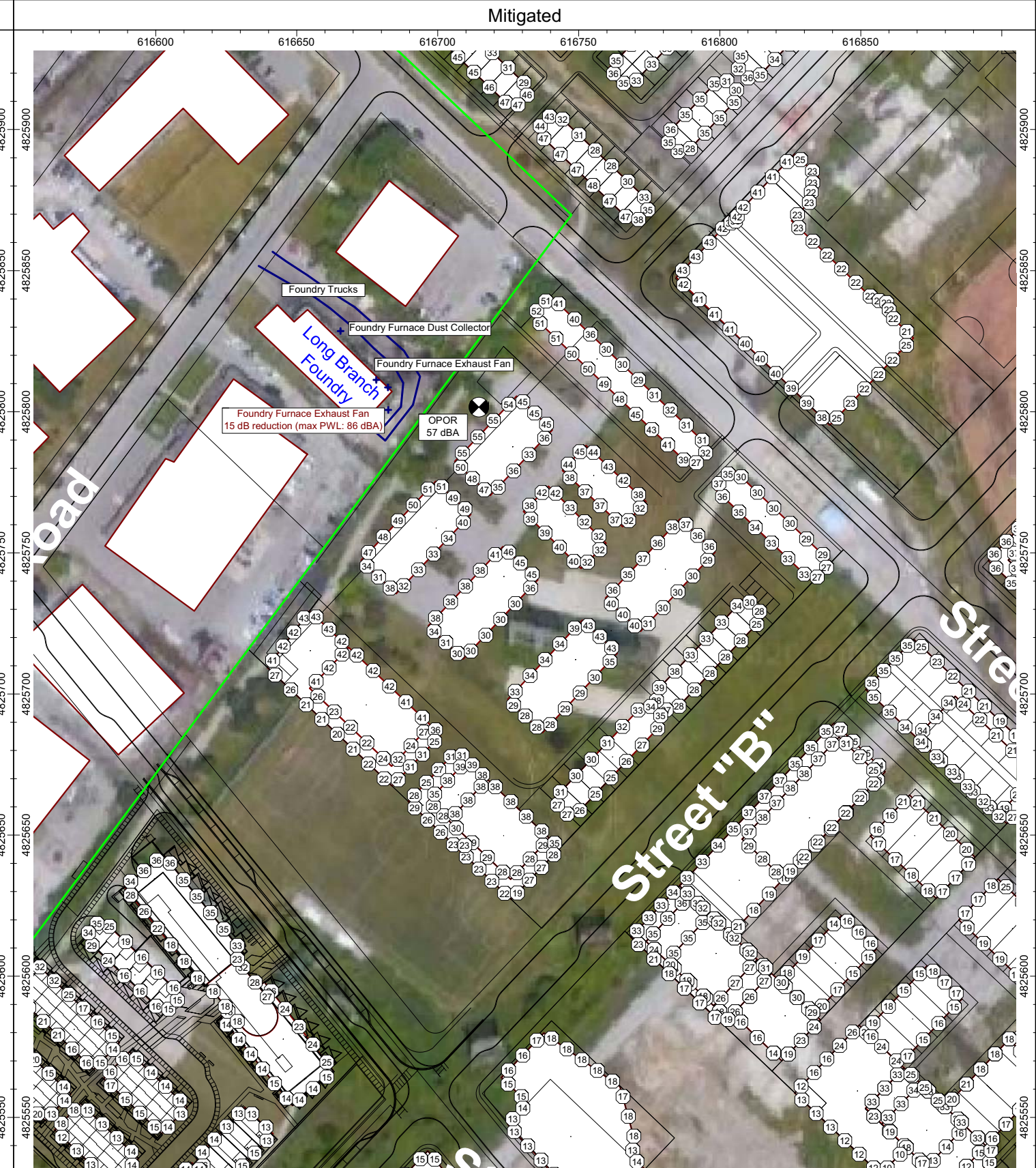
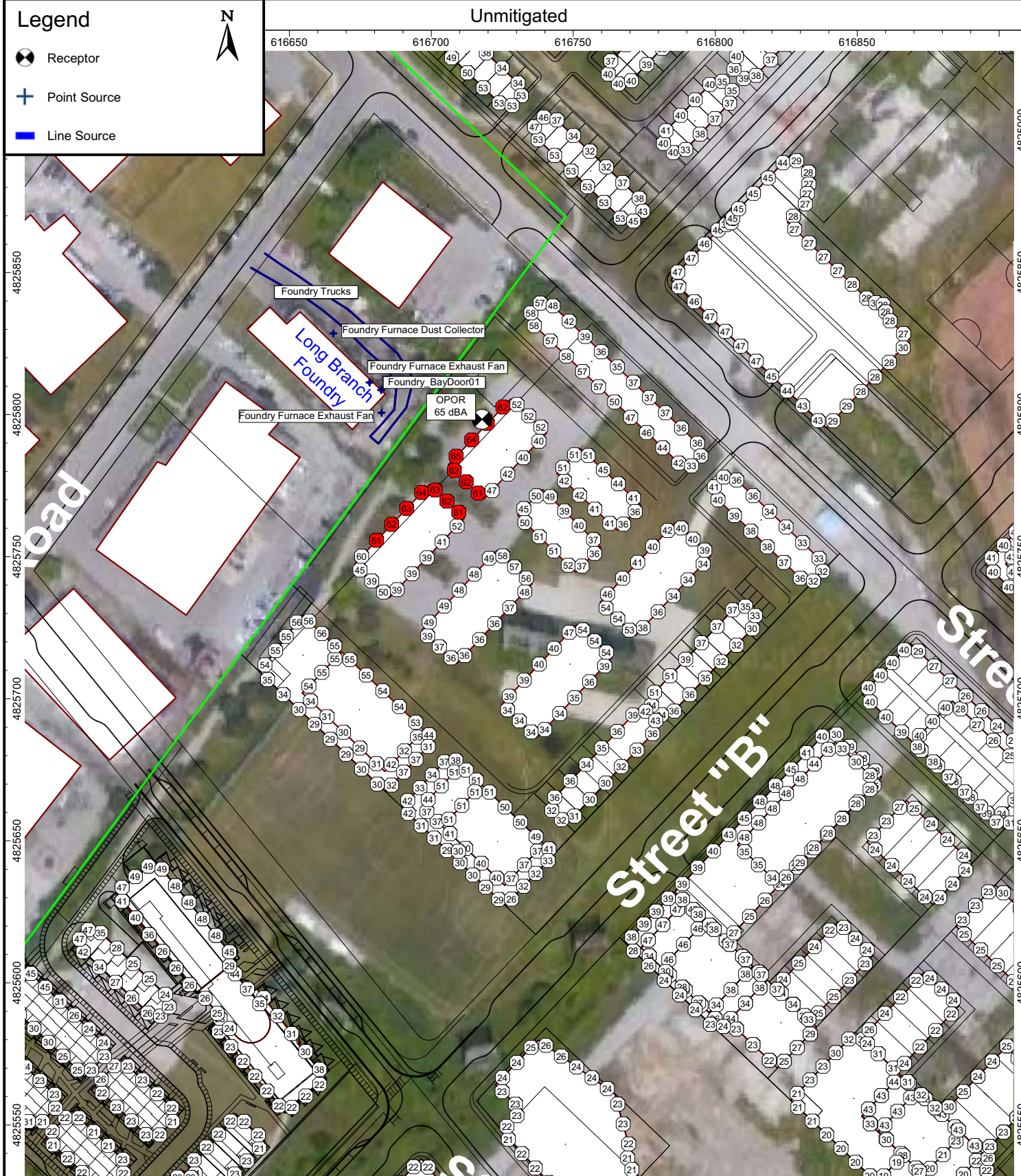
	Title	Date	Figure
	Predicted Daytime Sound Levels due to IMG - Impulse Sources at 992 Rangeview Road (dBA) Project Name Lakeview Village	Aug. 29, 2022 Project No. 120-0302-000	7C



	Title	Date	Figure
	Project Name Lakeview Village	Aug. 29, 2022 Project No. 120-0302-000	8

Legend

-  Receptor
-  Point Source
-  Line Source



Title Predicted Sound Levels due to Long Branch Foundry (dBA)		Date Aug. 29, 2022
Project Name Lakeview Village		Project No. 120-0302-000

Figure
9

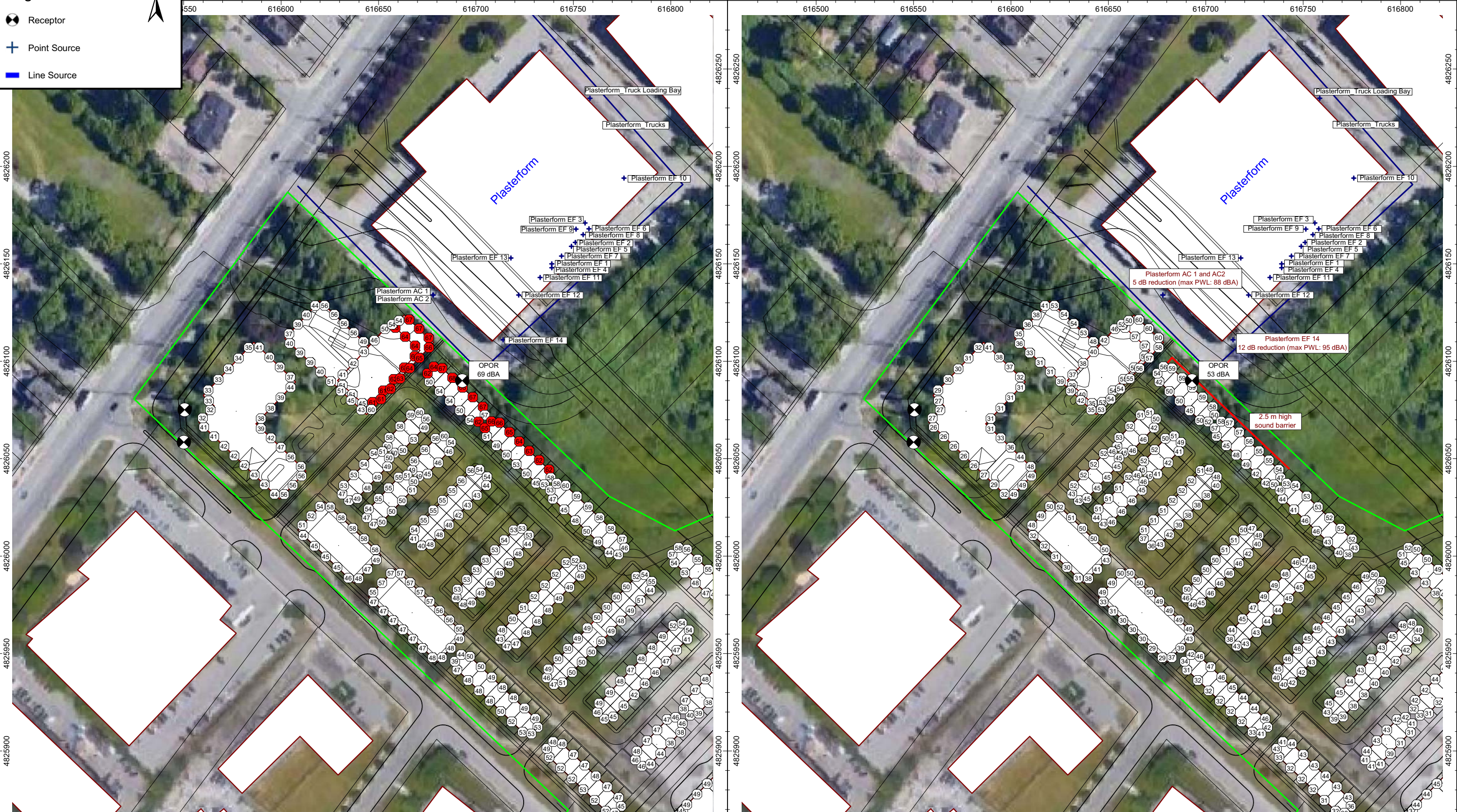
Legend

-  Receptor
-  Point Source
-  Line Source



Unmitigated

Mitigated



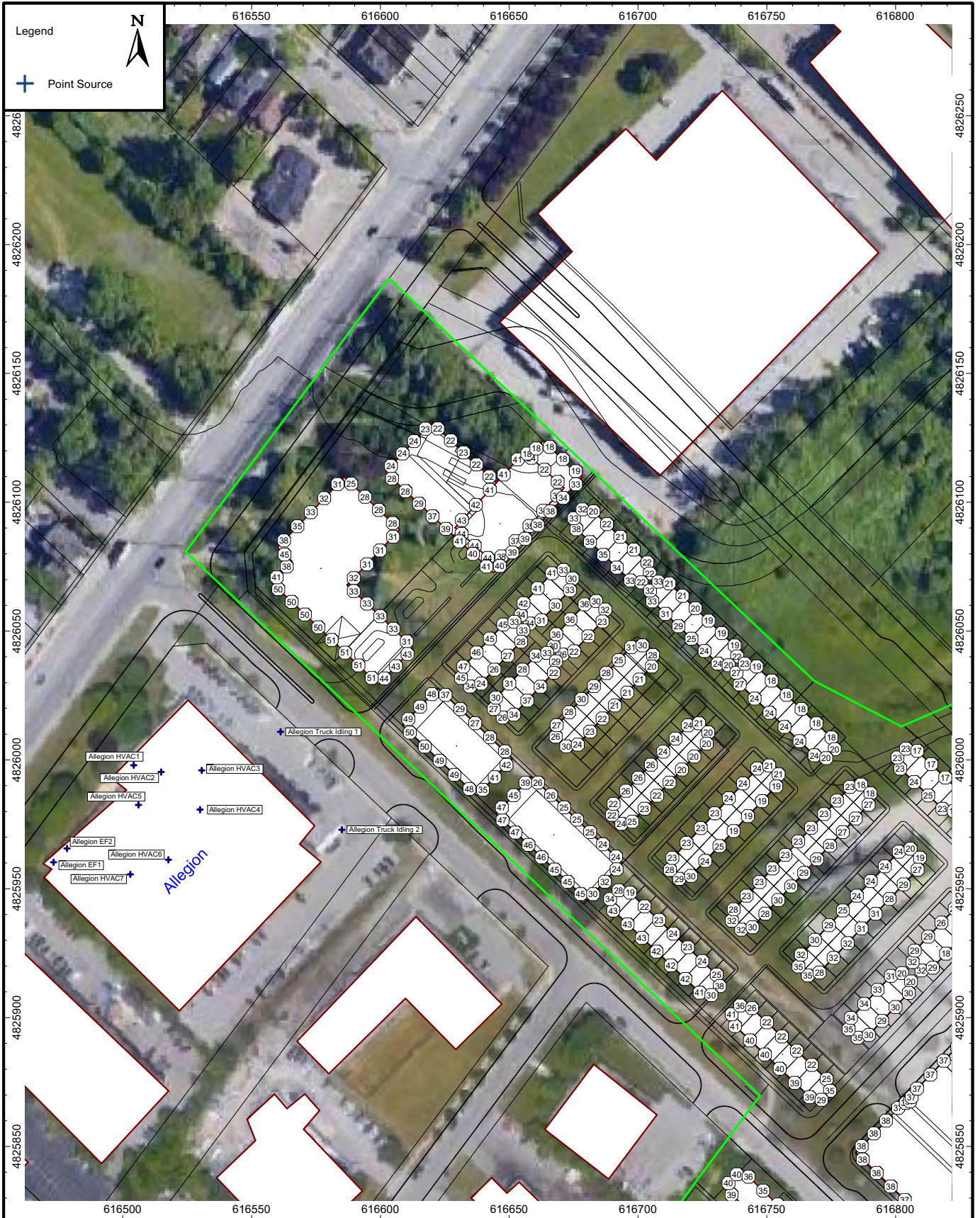
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Predicted Sound Levels due to Plasterform (dBA)

Project Name
Lakeview Village

Date
Aug. 29, 2022

Project No.
120-0302-000

Figure
10



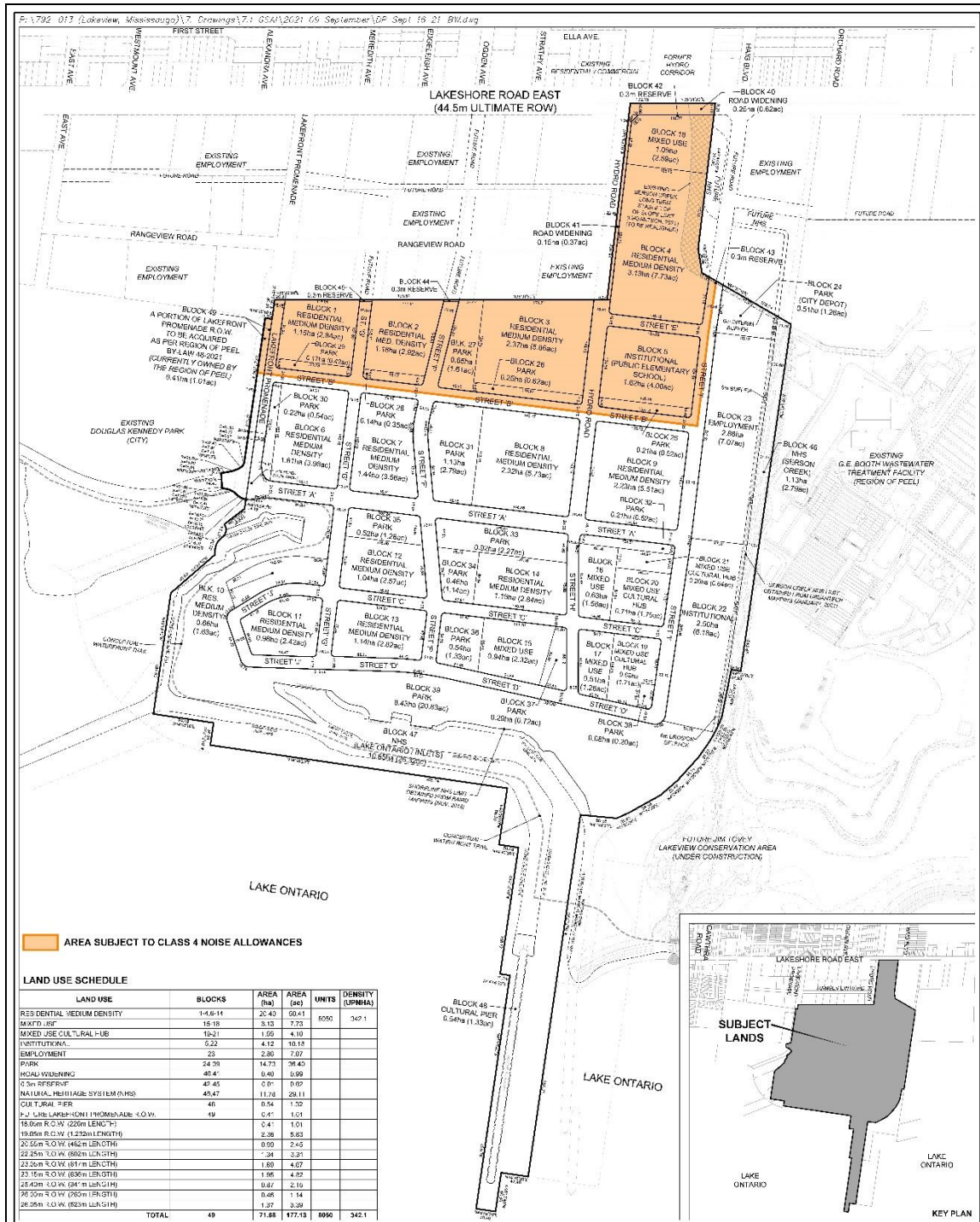
	Title	Date	11
	Predicted Daytime Sound Levels due to Allegion (dBA) Project Name Lakeview Village	Aug. 29, 2022 Project No. 120-0302-000	

APPENDIX A

DRAWINGS



Appendix 11 - Class 4 Area Noise Classification Delineation



APPENDIX B

DISCUSSION OF MECP NPC-300 AND OTHER RELEVANT GUIDELINES

B1 THE 2020 PROVINCIAL POLICY STATEMENT (PPS 2020)

As of May 1, 2020, the Provincial Policy Statement (PPS 2020), issued under Section 3 of the Planning Act, came into effect, replacing the 2014 PPS. The most relevant policy to the matter of environmental noise is 1.2.6 Land Use Compatibility. *Major Facilities* and *Sensitive Land Uses* must be planned and developed to avoid or minimize (where avoid is not possible) any *Adverse Effects* from noise, specifically, along with other factors and to ensure the long-term operational and economic viability of *Major Facilities*.

A new paragraph, 1.2.6.2 has been added in PPS 2020 in relation to encroachment of proposed *Sensitive Land Uses*. Where avoidance of adverse effects as per 1.6.2.1 is not possible the long-term viability of existing or planned industrial or manufacturing uses must be protected and, amongst other considerations, any adverse effects on the proposed *Sensitive Land Use* minimized and mitigated and potential impacts to industrial, manufacturing and other uses minimized and mitigated.

The term *Major Facilities* is defined to include industries, manufacturing plants, as well as infrastructure such as sewage and water treatment facilities. With respect to noise, the part of the definition of *Adverse Effects* that is most relevant to *Sensitive Land Uses* is “g) loss of enjoyment of normal use of property”. Examples of *Sensitive Land Uses* are residences, day care centres, education facilities and health facilities. An adverse effect on a *Major Facility* could be “h) interference with normal conduct of business”. This could take the form of a new *Sensitive Land Use* coming into effect (e.g., by designation or zoning) and thereby putting a *Major Facility* out of compliance with its environmental approvals. This could also contravene the policy of ensuring long term operational or economic viability of the *Major Facility*. All of the above is relevant to the consideration of introducing *Sensitive Land Uses* in Lakeview in relation to the existing industrial and infrastructure uses in the area, many of which would be defined as *Major Facilities*.

B2 ENVIRONMENTAL PROTECTION ACT (EPA)

The EPA, in Section 14, prohibits the discharge of a defined contaminant into the natural environment, if the discharge causes or may cause an adverse effect. Sound (noise) and vibration are defined contaminants. The definition of "adverse effect" in the Act includes:

- 1.(1) (a) *impairment of the quality of the natural environment for any use that can be made of it;*
- (c) *harm or material discomfort to any person;*
- (g) *loss of enjoyment of normal use of property;*
- (h) *interference with the normal conduct of business.*

The defined concepts of adverse effect are very broad.

Under Section 9 or 20.21 of the EPA, which are administered by the MECP, an industrial/commercial facility (stationary source) that emits a defined contaminant to the environment requires an Environmental Compliance Approval (ECA) or to be registered on the Environmental Activity and Sector Registry (EASR), to operate. In fact, a literal reading of the EPA shows that an ECA or EASR must be obtained, not just to operate, but prior to even

constructing a new process or altering an existing process that emits a defined contaminant, even if the alteration reduces emissions.

To obtain an ECA, where there are sound or vibration sources and emissions, the facility must make formal application to MECP and show compliance with the applicable noise and vibration guidelines (discussed later). For EASR registration there must be compliance with O.Reg. 1/17. Technically, the requirements with respect to environmental noise for obtaining an ECA or EASR registration are very similar. That is, the same sound limits apply. The reporting and “approval” procedures are logistically different. Whether an operation/facility requires an ECA or qualifies for EASR registration depends on its specific activities (as determined by its NAICS code). O.Reg. 1/17 specifically lists the NAICS codes for industries which require ECA’s. All other industries must register on the EASR.

B3 MECP D SERIES GUIDELINES - D-1, D-2 AND D-6

These MECP Guidelines (D series) are intended to assist in the planning process when new sensitive land uses are proposed within the potential influence area of existing facilities (stationary sources) or when new facilities are proposed where existing sensitive land uses would be within the new influence area. These guidelines are also relevant to planning land use designations in a “green field” context.

Guideline D-2 specifically addresses compatibility between Sewage Treatment Plants and Sensitive Land Uses and D-6 addresses compatibility between Industrial Facilities and Sensitive Land Uses.

Guideline D-1 states:

“The objective of this guideline is to minimize or prevent, through the use of buffers, the exposure of any person, property, plant or animal life to adverse effects associated with the operation of specific facilities.”

Environmental noise is one identified, potential, source of adverse effect.

The D series guidelines rely upon distance between stationary sources (or wastewater treatment facilities) and sensitive land uses as the default approach to addressing potential impacts expressed either as “influence areas” or “minimum separation distances” according to the Class of Industrial Facility (or category of wastewater treatment plant) being considered. Other types of buffers or mitigation are recognized, such as sound barrier berms, walls or buildings. Where a specific site is proposed for development, it is the proponent's responsibility, to investigate, propose and implement alternative forms of mitigation that can be located either at the source, elsewhere on the facility site, on the sensitive land use site, or on intervening sites.

Where noise is an issue, Guideline D-6 (4.6.1) requires MECP Guideline LU-131 to be used. LU-131 has now been replaced by Publication NPC-300 (see later).

The literal application of the separation distance recommendations of Guideline D-2 and D-6 can be problematic.

The D series guidelines are broad guidelines that consider a variety of potential environmental impacts, including noise and air quality, etc. Distance separation alone is generally not an efficient

mitigation technique for noise, because of the non-linear relationship between sound level and distance from a source. That is, the rate of fall-off of sound level diminishes with increasing distance. Thus, relying on distance alone to create land use compatibility with respect to noise can lead to inefficient use of infrastructure and available land. Including mitigation such as sound barriers, building orientation (e.g., direction that loading docks face), or noise control at source (e.g., equipment selection, silencers on fans, etc.) can often lead to appropriate compliance with noise criteria and land use compatibility, using separation distances less than the minimum identified in the D-2 or D-6 guidelines.

Furthermore, the D series guidelines predate all versions of the PPS, more particularly the 2020 version, and the current noise guideline, NPC-300. In some respects, D-1, D-2 and D-6 are inconsistent with current planning policies. D-1, D-2 and D-6 together with recently replaced noise guideline LU-131 either discourage or attempt to preclude juxtapositioning stationary sources and sensitive land uses, such as residential in mixed use settings, contrary to the current reality in many municipalities and the PPS policies.

The MECP has updated the applicable noise guideline to address this type of situation (see NPC-300 below). However, D-1, D-2 and D-6 are in need of updating to be consistent with current planning objectives and policy in the Province.

It should be noted that in processing an application for an ECA or EASR where environmental noise is involved, MECP does not concern itself with D-2 or D-6 and the distance separation approach; MECP only concerns itself as to whether there is compliance with O.Reg 1/17 or the NPC-300 noise guidelines (whichever is applicable).

For these reasons, this report focuses on the numerical sound limits in NPC-300 (the numerical sound limits in O.Reg 1/17 are the same as those in NPC-300).

B4 ENVIRONMENTAL VIBRATION CRITERIA

There are no vibration regulations or guidelines that are formally part of the land use planning process in Ontario, although vibration is defined as an environmental contaminant in the EPA.

The MECP has had a draft proposed vibration guideline relating to the effects of impulse vibration on people in buildings for a number of years (decades). An example of a source creating impulse vibration would be a metal stamping plant (e.g., producing auto parts). However, this draft vibration guideline has never been issued, although it is occasionally referred to and used by MECP. In the absence of any governmental regulations or guidelines, the railways have adopted their own vibration guidelines for reviewing proposed development adjacent to their rights-of-way. Canadian National Railways and Canadian Pacific Railways recommend a vibration velocity limit of 0.14 mm/sec overall (RMS).

Some guidance about vibration criteria for people in buildings including residential uses may be found in ISO 2631, "Evaluation of Human Exposure to Whole-Body Vibration". However, this standard no longer contains specific vibration limit recommendations.

There are no anticipated significant sources of environmental vibration in the vicinity of the Lakeview site.

B5 MECP GUIDELINE NPC-300

B51 Introduction

In October 2013, MECP issued the updated noise guideline NPC-300 (although dated August 2013), replacing former noise guidelines LU-131, NPC-205 and NPC-232. Previously, LU-131 was the noise guideline for development of noise sensitive land uses such as residential. NPC205 and NPC-232 were the noise guidelines applying to stationary sources for ECA's in urban/suburban and rural areas, respectively. One of the major difficulties with the use of the previous MECP documents related to inconsistencies/discrepancies between the noise guidelines with respect to stationary sources. This caused unnecessary confusion and difficulty in planning sensitive land uses in the vicinity of stationary sources.

NPC-300 consolidates and harmonizes the various (noise) requirements related to planning new noise sensitive land uses, planning new stationary noise sources and environmental approvals for stationary sources; removing many of the former discrepancies. NPC-300 is more consistent with the PPS. Another purpose of the consolidation of environmental noise requirements in NPC-300 is to emphasize the link between local planning and environmental approvals.

NPC-300, as did LU-131, also contains noise criteria for transportation (road, rail and aircraft) sources for new noise sensitive development. In this case, only road and rail traffic noise are relevant as transportation sources.

B52 Road and Rail Traffic Noise

If the sound level at the exterior face of a dwelling, in terms of $L_{eq\ Day}$ (16-hour energy equivalent sound level – 0700-2300 hours or $L_{eq\ Night}$ (8-hour energy equivalent sound level – 2300-0700 hours), exceeds 65 dBA or 60 dBA (respectively), means must be provided so that windows can be kept closed, if desired, for noise control purposes and central air conditioning is required. For daytime sound levels between 56 and 65 dBA inclusive, or for nighttime sound levels between 51 and 60 dBA inclusive, there need only be the provision for adding air conditioning at a later date, at the occupant's discretion. A warning clause advising the occupants of the potential interference with some activities is also required.

For outdoor amenity areas ("Outdoor Living Areas" - OLA), the guideline is 55 dBA $L_{eq\ Day}$ (0700 to 2300 hours), with an excess not exceeding 5 dBA considered acceptable if it is technically not practicable to achieve the 55 dBA objective, providing warning clauses are registered on title. Note that for road and rail traffic sources, a balcony is not considered an OLA, unless it is the only OLA for the occupant and it is:

- at least 4 m in depth;
- outside the building facade; and
- unenclosed.

For indoor areas, the daytime guideline when dealing with road/rail traffic sources for sensitive spaces such as living/dining rooms, and bedrooms, private offices and conference rooms is $L_{eq\ Day} = 45\text{ dBA}/40\text{ dBA}$. For general office, reception areas, retail stores, etc., the daytime indoor guideline limit is $L_{eq\ Day} = 50\text{ dBA}/45\text{ dBA}$. The nighttime guideline for living rooms and dens is $L_{eq\ Night} = 45/40\text{ dBA}$. For bedrooms at night, the indoor limit is $L_{eq\ Night} = 40\text{ dBA}/35\text{ dBA}$. There

are no nighttime indoor sound level guideline limits for office or commercial uses. The architectural design of the building envelope (walls, windows, etc.) must provide adequate sound isolation to achieve these indoor sound limits. Where standard construction would otherwise result in exceeding the indicated noise limits, the building envelope elements must be upgraded.

B53 Stationary Sources

Stationary sources are treated differently than transportation sources of noise. The sound limits apply at the exterior planes of windows associated with noise sensitive indoor spaces as well as outdoors in areas amenable for use (this applies to a 30 m radius around the dwelling, where large properties exist). Unlike for transportation sources, there are no indoor noise criteria. In the case of road/rail/aircraft noise, the building envelope must be designed (e.g., upgraded windows and exterior walls) to adequately reduce the sound to no more than the indicated indoor limit. In the case of stationary sources, since there are no indoor sound limits, only exterior plane of window sound limits, upgraded windows for sensitive (e.g., residential) land uses would not result in compliance with the noise guidelines even if adequate noise buffering of indoor spaces is achieved in practice.

A further difference between transportation and stationary source sound limits is the acoustic descriptor used. For stationary sources it is a one-hour L_{eq} as opposed to the 16-hour day and 8-hour night L_{eq} used for road sources. The one hour time period results in more stringent criteria.

Tables C-5 to C-8 from NPC-300 summarize the stationary source sound limits, termed "exclusion limits". Tables C-5 and C-6 are for non-impulsive sources, such as machinery like fans, compressors, chillers, etc. Tables C-7 and C-8 are for impulsive sources such as punch presses or coupling of tractors to trailers or coupling of railway cars (i.e., banging sounds). At any point of reception, the applicable stationary source sound limit is the relevant value in Table C-5 to C-8 or the ambient sound level whichever is higher. Regardless of ambient, a stationary source does not have to attenuate below the exclusion limits in Tables C-5 to C-8. That is, if the ambient sound level is less than the relevant values in the tables, the sound level limit is the applicable numerical value from the appropriate table. If the ambient sound level is higher than the relevant table entry, the ambient value becomes the sound limit for the stationary source at the point of reception. In many cases, particularly in urban areas, the ambient sound environment is dominated by, and determined by, road traffic sound (noise). In particular circumstances, in addition to traffic noise, the ambient sound level may also include contributions from existing adjacent stationary sources.

In Tables C-5 to C-8, a Class 1 Area is one where the sound environment around the clock is determined by the activities of people; i.e., an urban area. A Class 3 Area is one where the sound environment is determined primarily by the sounds of nature and where there is little road traffic; typical of a rural area. A Class 2 Area is one with the sound environment characteristics of Class 1 during day and Class 3 during evening and night.

Table C-5

Exclusion Limit Values of One-Hour Equivalent Sound Level (L_{eq} dBA)

Outdoor Points of Reception

Time of Day	Class 1 Area	Class 2 Area	Class 3 Area	Class 4 Area
0700 – 1900	50	50	45	55
1900 – 2300	50	45	40	55

Table C-6

Exclusion Limit Values of One-Hour Equivalent Sound Level (L_{eq} dBA)

Plane of Window of Noise Sensitive Spaces

Time of Day	Class 1 Area	Class 2 Area	Class 3 Area	Class 4 Area
0700 – 1900	50	50	45	60
1900 – 2300	50	50	40	60
2300 – 0700	45	45	40	55

For impulsive sounds, the guideline sound limits are in Tables C-7 and C-8 of NPC-300.

Table C-7

Exclusion Limit Values for Impulsive Sound Level (L_{LM} dBAI)

Outdoor Points of Reception

Time of Day	Actual # of Impulses in Period of One-Hour	Class 1 Area	Class 2 Area	Class 3 Area	Class 4 Area
0700 – 2300	9 or more	50	50	45	55
	7 to 8	55	55	50	60
	5 to 6	60	60	55	65
	4	65	65	60	70
	3	70	70	65	75
	2	75	75	70	80
	1	80	80	75	85

Table C-8
Exclusion Limit Values for Impulsive Sound Level (L_{LM} dBAI)
Plane of Window – Noise Sensitive Spaces

Actual # of Impulses in Period of One-Hour	Class 1 Area 0700 –2300/ 2300-0700	Class 2 Area 0700 –2300/ 2300-0700	Class 3 Area 0700 –1900/ 1900-0700	Class 4 Area 0700 –2300/ 2300-0700
9 or more	50/45	50/45	45/40	60/55
7 to 8	55/50	55/50	50/45	65/60
5 to 6	60/55	60/55	55/50	70/65
4	65/60	65/60	60/55	75/70
3	70/65	70/65	65/60	80/75
2	75/70	75/70	70/65	85/80
1	80/75	80/75	75/70	90/85

The Class 4 Area is newly introduced in NPC-300. This is an area or a specific site that would otherwise be Class 1 or 2 and which is:

intended for development with new sensitive land use(s) that are not yet built;

is in proximity to existing, lawfully established stationary source(s);

has formal confirmation from the land use planning authority (the municipality in this case) that it agrees with classifying the site or area in question as Class 4.

Existing noise sensitive land uses cannot be classified as Class 4; that is, it cannot be used retroactively. Class 4 is intended to be used where compliance with Class 1 or 2 noise criteria is not practical for valid technical, administrative or financial reasons. Further discussion of Class 4 and its use is found later.

B6 MECP ROLE IN LOCAL PLANNING

Originally, with the introduction of noise guidelines (in 1978), the MECP was involved in reviewing noise study submissions required by the land use planning process, or at least in providing technical support to municipalities in this regard. Subsequently, all matters relating to local planning were "downloaded" to the local planning authorities and MECP is no longer involved in local planning matters at all and concentrates solely on environmental approvals of stationary sources and other aspects of enforcing the EPA (and not the Planning Act).

The noise guidelines related to planning (Section C of NPC-300) and D series guidelines are offered as advice/guidance to planners and land use planning authorities. With respect to local planning matters, the guidance provided in these documents is not mandatory and has been recognized as such by the Ontario Municipal Board (now LPAT) in adjudicating land use approval disputes. That is, land use planning authorities are free to interpret the guidelines, vary, adjust or supplement them as they see fit. Nevertheless, most land use approval authorities try to follow the MECP guidelines, with minor deviations to suit local conditions. MECP has made it clear it has no intention of becoming involved in local planning issues, nor involved in providing interpretations of its (MECP) guidelines related to land use planning.

B7 RELATIONSHIP BETWEEN ENVIRONMENTAL AND LAND USE APPROVALS

The noise guidelines and noise limits are receptor based. That is, in the absence of a receptor, the noise limits applicable to a stationary source may be not very stringent or nil (as opposed to air quality regulations which apply at the property line, regardless of neighbouring land uses). The same facility operating in the presence of neighbouring sensitive land uses (receptors or Points of Reception [POR]), such as residential, would have more stringent noise requirements to meet, compared to having insensitive neighbouring land uses such as agriculture, industry or commercial.

In this particular case, the proposal is to introduce mixed land uses, some of which would be noise sensitive (residential) and some of which would not (commercial along the eastern periphery or other retail/commercial uses). At the same time, it is proposed to introduce some commercial land uses within the Lakeview, which are generally considered not to be noise sensitive, but which may be potential sources of noise (and/or vibration).

In principle, in establishing the land uses and zoning for individual sites, the proposed zoning standards should be cognizant of the other proposed land uses in the vicinity, with the objective of resulting in compatibility with respect to acoustics. It must also be kept in mind that any of the future commercial uses emitting noise (or vibration) will also require to be designed to comply with the municipal noise by-law and should also meet the noise guidelines in NPC-300, in addition to meeting the zoning standards.

B8 REGION OF PEEL OFFICIAL PLAN (ROP)

The ROP contains a number of policies dealing with noise and land use compatibility:

Section 5.1.3.1 is similar to the policy in PPS 2020 and requires plans for major facilities and sensitive uses to be appropriately designed, buffered and/or separated from each other to prevent adverse effects.

Sections 5.9.4.2.13; 5.9.6.2.6 and 5.9.7.2.6 address transportation noise sources - road, aircraft and rail, respectively.

Section 6.5.2.2 requires the Region to plan and develop waste management sites to ensure sensitive land uses are buffered and/or separated to prevent adverse effects.

Section 7.3.6.2.2 indicates noise and vibration studies may be required in order to amend the ROP.

B9 REGION OF PEEL NOISE GUIDELINES

The Region of Peel issued the document titled "General Guidelines for the Preparation of Acoustical Reports in the Region of Peel" dated November 2012. These guidelines are mostly concerned with dealing with noise from regional roads and policies primarily related to sound barriers. The guidance is based on the MECP noise guideline LU-131, which has been replaced with NPC-300 as of October 2013, although there are some noticeable differences between the Regional and MECP guidelines. These include:

The numerical requirement for the inclusion of air conditioning or the provision for adding air conditioning is 1 dB more stringent during the nighttime. That is, if the sound level at the outside plane of window is 60 dBA or greater air conditioning is required (MECP guidelines are 61 dBA

or greater) and if the sound level is between 50 dBA and 59 dBA the provision for adding air conditioning is required (MECP guidelines are 50 dBA to 60 dBA).

Generic traffic volumes are provided for arterial roads for use in noise studies, unless specific data is obtained from the Region.

Acoustic fences shall generally not exceed 2 m in height unless approved by the area municipality. Consideration may be given to fence heights up to 2.4 m.

For industrial, rail and aircraft sources the MECP standard procedures should be employed.

B10 CITY OF MISSISSAUGA OFFICIAL PLAN

The City of Mississauga OP (MOP) contains a variety of policies dealing with noise. The most relevant are in Chapter 6: Value the Environment, and include:

Section 6.10 is titled Noise and specifically references MECP Publication NPC-300 (or its successor) as the applicable Provincial Government environmental noise guideline.

Section 6.10.1 Stationary Sources – speaks to appropriate land use planning and building design techniques when locating sensitive land uses in the vicinity of stationary noise sources. Publication NPC-300 Tables C-5 to 8, see Section 3.5.3 above, are repeated in this section of the MOP.

Section 6.10.11 indicates the need for a Feasibility and/or detailed noise study when sensitive land uses are proposed in proximity to existing industrial noise sources. The studies are to identify options for mitigation at the source and at the proposed development site.

Section 6.10.1.5 requires mitigation to be done at the source or within the development to comply with the NPC-300 guideline limits.

Section 6.10.1.6 addresses the use of Class 4.

- a. The use of Class 4 will only be considered where it can be demonstrated that:
 - the development proposal is for a new noise sensitive land use in proximity to an existing, lawfully established stationary noise source;
 - the development proposal for a new noise sensitive use does not impair the long-term viability and operation of an employment use;
 - it is in the strategic interest of the City, furthers the objectives of Mississauga Official Plan and supports community building goals; and
 - all possible measures of noise attenuation have been assessed for both the proposed development site and the stationary noise source, including, but not limited to, building design and siting options for the proposed new noise sensitive use;
- b. Notwithstanding the above conditions, the use of Class 4 will receive more favourable consideration if the stationary noise source is a temporary situation and it is expected that the stationary noise source will be removed through future redevelopment; and
- c. Mississauga will require that prospective purchasers be notified that the building is located in a Class 4 area and informed of any agreements as may be required for noise mitigation. A noise warning clause shall be included in agreements that are registered on title, including condominium disclosure statements and declarations.

Section 6.10.2, 6.10.3 and 6.10.4 deal with aircraft noise, road noise and rail noise and vibration (respectively). The requirements are essentially the same as those in NPC-300.

B11 CLASS 4

B111 USE AT LAKEVIEW

The intent for Lakeview was to have the site deemed a Class 4 receptor under MECP noise guideline NPC-300, by the Municipality. As indicated above, the City will be using Class 4 for Blocks 1 to 5 and 18.

The original Noise Report included a fulsome discussion on the use of Class 4. Notwithstanding the decision by the City, a majority of this discussion has been retained below for reference.

B112 CLASS 4 DISCUSSION

The Class 4 status is being pursued to better promote land use compatibility between the new community and the existing commercial/industrial uses in the area. Lakeview meets the requirements from the MECP for Class 4 consideration as well as from the City of Mississauga Official Plan. The Class 4 status is considered appropriate for this site since:

The site is intended for new sensitive uses and is in proximity to several existing industrial/commercial/infrastructure operations.

The City has designated this area as a Major Node and it is ultimately intended for redevelopment with sensitive uses (i.e., residential and mixed use-residential). Thus, it is in the long term interest of the City to redevelop these lands. The Class 4 status will better facilitate this transition.

The Class 4 status was specifically designed for situations such as this where there are existing stationary sources and there is desire to develop new sensitive uses in proximity and mitigation to meet the otherwise applicable sound levels limits (Class 1 in this case) would not be practicable/feasible.

- For example, there are several facilities with loading docks that have a line-of-sight to the new sensitive uses. Mitigation for truck activity at a loading dock would require an enclosure for the loading dock. Given the space constraints, financial implications, and potential temporary nature of the sources (see below), this form of mitigation is not considered feasible.
- Appendix F of the Noise Report included a detailed assessment of the stationary sources relative to the Class 1 sound level limits. Given that the City has indicated that Class 4 will be used for the northern blocks, this analysis was not repeated in this report. The assessment can be found in the Noise Report for reference.

The Class 4 status allows for at-receptor, “on-building” noise control measures to be used at the new sensitive uses. At-receptor, on-building noise control measures would otherwise be precluded in a Class 1, 2 or 3 area. That is, in Class 4 receptor areas, there is a wider range of at-receptor noise mitigation measures that are acceptable, compared to the other classes. For high-rise multi-family buildings, there are several situations where on-building noise control measures are the most practicable.

The use of Class 4 is mutually beneficial for both the commercial/industrial uses as well as the new community, in that the higher sound levels afforded by the Class 4 status can be used for approval of the development as well as any future approvals that may be needed for the industries from the MECP. The use of Class 4 will better promote the long term viability and operation of the industrial/commercial uses.

It is important to note that, like for transportation noise sources, in Class 4 receptor areas, it is assumed that windows are closed for noise control purposes. In Class 1, 2, and 3 areas, windows are assumed to be open. This is the reason that the exterior plane of window sound levels for Class 4 are higher than for Class 1 or 2. The net effect on indoor sound levels under these circumstances is nil.

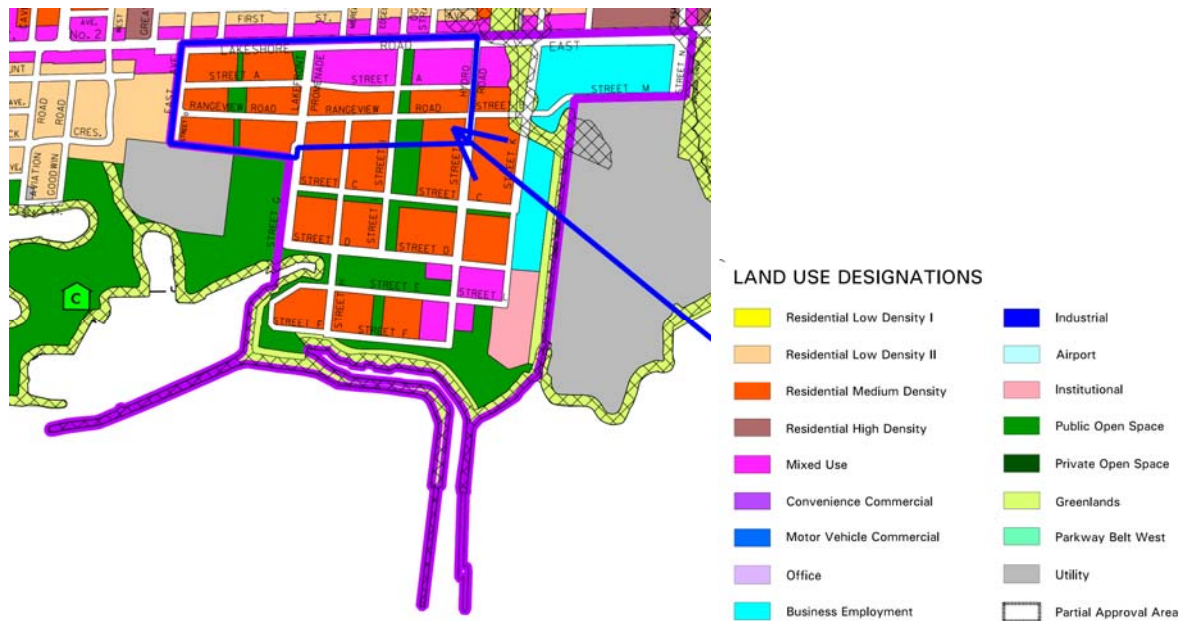
Lakeview is an infill development and part of an overall area in transition.

- It is expected that several of the existing industrial/commercial uses in the area will eventually be converted to sensitive uses. The MOP designates the lands along Rangeview Road (in proximity to the site) as Residential or Mixed Use. These lands are also part of the Lakeview Major Node area.
- The MOP shows that the future road network will cut through lands with existing industrial uses on them. It is expected that the industrial uses would need to either move or be reduced in size to accommodate this new road network.
- As such the current noise environment is likely temporary and only an interim condition prior to the redevelopment of the area.

MOP Policy 6.10.1.6 b speaks to the City providing more favourable consideration for the use of Class 4 if the stationary noise source is a temporary situation and it is expected that the stationary noise source will be removed through future redevelopment.

- This is the case for Lakeview, where it is expected that several (if not all) of the existing commercial/industrial uses in the immediate vicinity will ultimately be redeveloped over time.
- This is evidenced through the MOP designations where the area is shown to be Residential and Mixed Uses. See excerpt from MOP showing land use designations below.

In summary, based on all of the above, it is concluded that the Class 4 receptor classification under NPC-300 is the most appropriate receptor class for sensitive land uses in this proposed development.



Land Use Designations from MOP

B113 CLASS 4 WARNING CLAUSE

If the Lakeview site is made Class 4, warning clauses should be registered on title to inform future occupants/residents of the noise situation. This is in accordance with both NPC-300 and the MOP. Sample wording for the warning clause is given in NPC-300. A recommended, revised version is given below:

“Purchasers/tenants are advised that sound levels due to adjacent industry or infrastructure facilities are required to comply with sound level limits that are protective of indoor areas and are based on the assumption that windows and exterior doors are closed. This dwelling unit has been supplied with a ventilation/air conditioning system which will allow windows and exterior doors to remain closed. Notwithstanding any noise mitigation at source or in the design of this development and individual dwellings, noise from the industrial/infrastructure facilities may at time interfere with some activities of the dwelling occupants. In the event of such an occurrence, residents are advised to close the windows.”

APPENDIX B

ENVIRONMENTAL NOISE GUIDELINES – MINISTRY OF THE ENVIRONMENT, CONSERVATION
AND PARKS (MECP)

Reference: MECP Publication NPC-300, October 2013: “Environmental Noise Guideline, Stationary and Transportation Source – Approval and Planning”.

Space	Time	Sound Level Limit (L _{eq})						
		Road (dBA)	Rail (dBA)	Aircraft (NEF)	Sound Source (dBA) ⁽⁵⁾			
					Class 1 ⁽⁶⁾	Class 2 ⁽⁶⁾	Class 3 ⁽⁶⁾	Class 4 ⁽⁶⁾
Living/dining, den areas of residences, hospitals, nursing homes, schools, daycare centres, etc.	0700 – 2300 16 hours	45 ⁽¹⁾	40 ⁽¹⁾	5 ⁽⁴⁾	—	—	—	—
	2300 – 0700 8 hours	45 ^{(2), (3)}	40 ^{(2), (3)}	5 ⁽⁴⁾	—	—	—	—
Sleeping quarters	0700 – 2300	45 ⁽¹⁾	40 ⁽¹⁾	0 ⁽⁴⁾	—	—	—	—
	2300 – 0700	40 ⁽²⁾	35 ⁽²⁾	0 ⁽⁴⁾	—	—	—	—
Outdoor Living Areas	0700 – 2300	55 – 60	55 – 60	—	—	—	—	—
Plane of Window	0700 – 1900	—	—	—	50	50	45	60
	1900 – 2300	—	—	—	50	50	40	60
	2300 – 0700	—	—	—	45	45	40	55
Outdoor Point of Reception	0700 – 1900	—	—	—	50	50	45	55
	1900 – 2300	—	—	—	50	45	40	55

Notes:

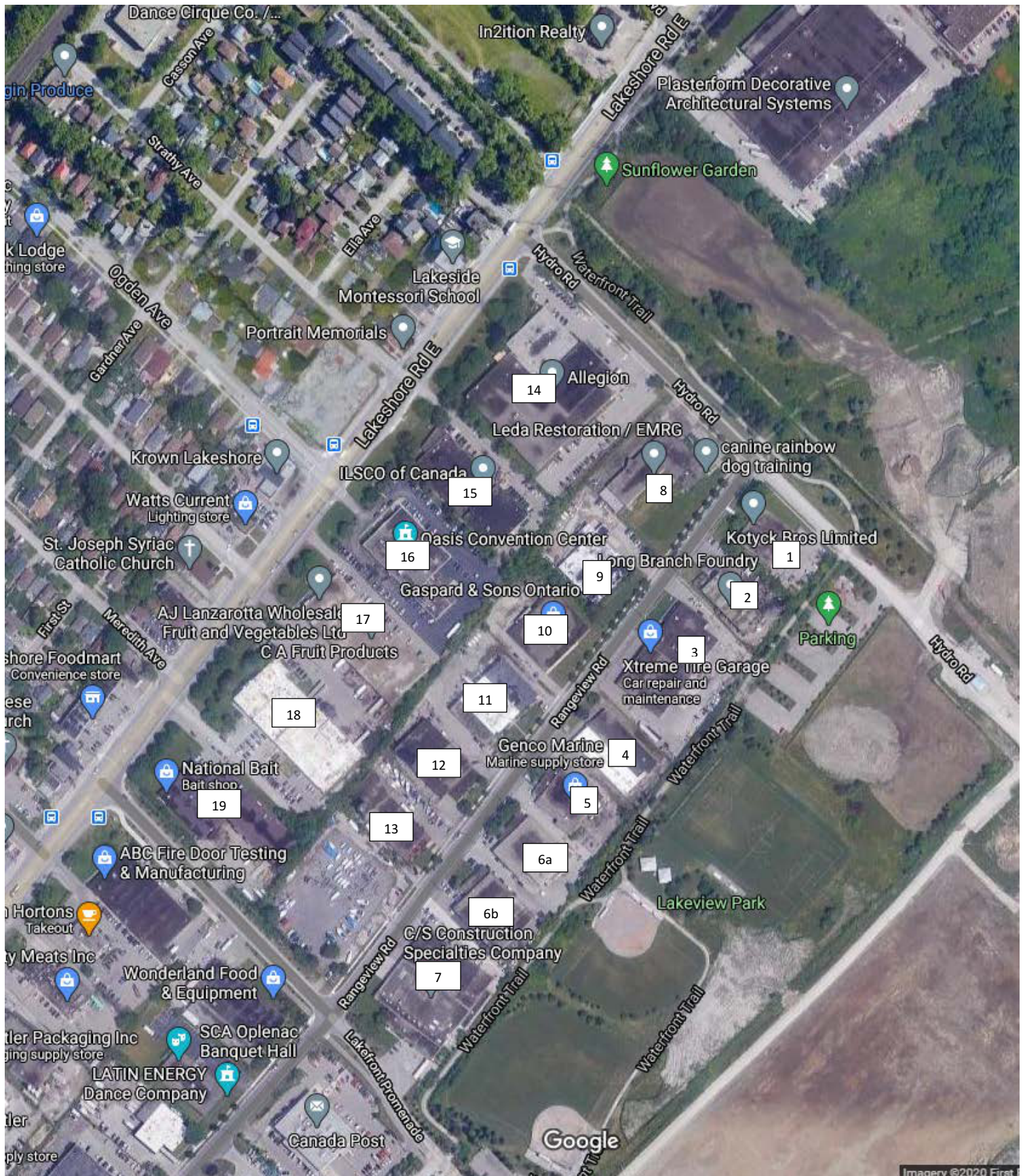
- (1) 16 hour L_{eq}.
- (2) 8 hour L_{eq}.
- (3) Not including schools, daycare centres.
- (4) Over 24 hours.
- (5) One-hour L_{eq} (dBA).
- (6) Receptor area class

APPENDIX C

INVENTORY OF STATIONARY SOURCES IN THE VICINITY

120-0302 – Lakeview Village

Neighbouring industries to the North



1. Kotyck Bros Limited (1076 Rangeview Road)

- Industrial plumbing, heating, hydraulic and industrial supplier.
- Noise sources associated with the facility are anticipated to be the rooftop mechanical equipment and activities inside the building.
- Aerial imagery shows small rooftop exhausts. Overhead door to the facility is located on the rear façade.
- Due to the small size of the mechanical units and the nature of the use, significant noise impact is not expected.

2. Long Branch Foundry (1062 Rangeview Road)

- Metal casting facility
- Noise sources associated with the facility are the mechanical units and indoor activities (when overhead doors are open)
- Noise from the facility was audible during VCL site visit
- Facility was included in the assessment

3. Xtreme Tire Garage (1044 Rangeview Road)

- Auto shop (include repair and maintenance).
- Tool noise audible from open overhead doors at the rear of the building during VCL site visit
- Facility was included in the assessment

4. Stratos Industries Inc. (1024 Rangeview Road)

- Cabinet manufacturer
- No signs visible. Not clear whether the building is in use.
- No noise sources observed during site visit by VCL staff.

5. Genco Marine (1008 Rangeview Road)

- Boating supply store
- Main noise sources are the rooftop HVAC units (3 units visible on aerial imagery)
- Due to the size of the units and the setback distance to the site, no significant noise impact is expected.

6. Interior Manufacturing Group (996 and 992 Rangeview Road)

- a. 992 Rangeview – Plastics plant/digital printing
- b. 996 Rangeview – Assembly
- Main noise sources are the rooftop HVAC units at 895 Rangeview Road and truck activities at the rear loading docks of 992 and 996 Rangeview Road.
- Facility was included in the assessment

7. Interior Manufacturing Group (895 Lakefront Promenade)

- Similar Operations to 992/996 Rangeview Road
- Main noise sources are the rooftop HVAC units and the truck activities at the loading dock
- Facility was included in the assessment

8. Leda Restoration / EMRG (1083 Rangeview Road)

- Water damage restoration service
- Main noise sources are anticipated to be the rooftop HVAC units.
- Due to small size of rooftop units (visible on aerial imagery) and setback distance to the subject site, no significant noise impact is expected.

9. Wilcox Door Services Inc. (1045 Rangeview Road)

- Industrial door supplier
- Main noise source is anticipated to be activities at the rear loading area
- Due to the location of the loading area (on the opposite side of the building to the site), distance separation and screening by the intervening building, no significant noise impact is expected.

10. Gaspard and Sons Ontario (1035 Rangeview Road)

- Graduation cap and gown store
- Main noise sources are anticipated to be rooftop HVAC units and activities at the rear loading area.

- Due to the small size of the HVAC unit (visible on aerial imagery), location of the loading area (on the opposite side of the building to the site), distance separation and screening by the intervening building, no significant noise impact is expected.

11. Aqua Force Power Clean Inc., Transatlas Moving Services (1025 Rangeview Road) – Facilities names are from address search. No signs visible.

- Aqua Force Power Clear – Cleaning services to commercial kitchens
- Transatlas – Moving company
- Main noise sources are anticipated to be rooftop HVAC units and activities at the rear loading area.
- Due to the small size of the HVAC unit (visible on aerial imagery), location of the loading area (on the opposite side of the building to the site), distance separation and screening by the intervening building, no significant noise impact is expected.

12. Toronto Fabricating and Mfg. Co. (1021 Rangeview Road)

- Outdoor furniture manufacturer
- Main noise sources are anticipated to be rooftop HVAC units and noise from activity inside facility (overhead door on east façade).
- Due to the small size of the HVAC unit (visible on aerial imagery), location of the overhead door (toward the rear of the building), distance separation and screening by the intervening buildings, no significant noise impact is expected.

13. City Marine (983 Rangeview Road)

- Boat storage facility
- Main noise sources are anticipated to be rooftop HVAC units and noise from activity inside facility (overhead doors on east and west façades).
- Due to distance separation, location of the overhead doors and screening by intervening buildings, no significant noise impact is expected.

14. Allegion (1076 Lakeshore Road East)

- Security system supplier
- Main noise sources are anticipated to be rooftop HVAC units, exhaust fans and activities at the loading area at east side of building.
- Facility was included in the assessment

15. ILSCO of Canada (1050 Lakeshore Road East)

- Electrical connector manufacturer
- Main noise sources are anticipated to be rooftop mechanical equipment and dust collector.
- Due to distance separation, no significant noise impact is expected.

16. Oasis Convention Centre (1036 Lakeshore Road East)

- Convention centre/banquet hall
- Main noise sources are anticipated to be rooftop HVAC units.
- Due to distance separation, no significant noise impact is expected.

17. A.J. Lanzarotta Wholesale Fruit and Vegetable Ltd. (1000 Lakeshore Road East)

- Produce wholesaler
- Main noise sources are anticipated to be rooftop HVAC units and activities at loading areas on west facade.
- Due to distance separation and screening by the intervening buildings, no significant noise impact is expected.

18. Interior Manufacturing Group (974 Lakeshore Road East)

- Head office/wood plant
- Main noise sources are anticipated to be rooftop HVAC units, dust and activities at the loading area at the east side of the building.
- Due to distance separation and screening by the intervening buildings, no significant noise impact is expected.

19. National Bait Inc. (946 Lakeshore Road East)

- Bait and tackle shop
- Main noise sources are anticipated to be the rooftop HVAC units and activities at the loading areas on the west façade.
- Due to distance separation and screening by the intervening buildings, no significant noise impact is expected.

Neighbouring Industries to the Northeast and East



20. Plasterform Decorative Architectural Systems (1880 Lakeshore Road East)

- Architectural castings (part of Armstrong Ceilings and Walls)
- Main noise sources are anticipated to the rooftop and grade level mechanical equipment.
- Facility was included in the assessment.

21. Cintube Ltd. (1200 Lakeshore Road East)

- Pipe bending and fabrication
- Main noise sources are anticipated to be the rooftop HVAC units and activities at the loading area.
- Due to the distance separation and the orientation of the loading areas (facing north, away from the subject site), no significant noise impact is expected.

22. Bluebird Self Storage (1230 Lakeshore Road East)

- Self storage facility
- Main noise sources are anticipated to be the rooftop HVAC units and vehicle movements on site.
- Due to the distance separation, no significant noise impact is expected.

23. Canadian Food for Children (1258 Lakeshore Road East)

- Charity warehouse
- Main noise sources are anticipated to be the activities at the rear loading docks
- Due to distance separation and small size of facility, no significant noise impact is expected

24. McKenna Logistics Centre (1260 Lakeshore Road East)

- Truck facility
- Main noise sources are anticipated to be the rooftop HVAC units and activities at the loading areas.
- Due to the distance separation and the orientation of the loading docks (on the east façade, the opposite side of the building to the site), no significant noise impact is expected.

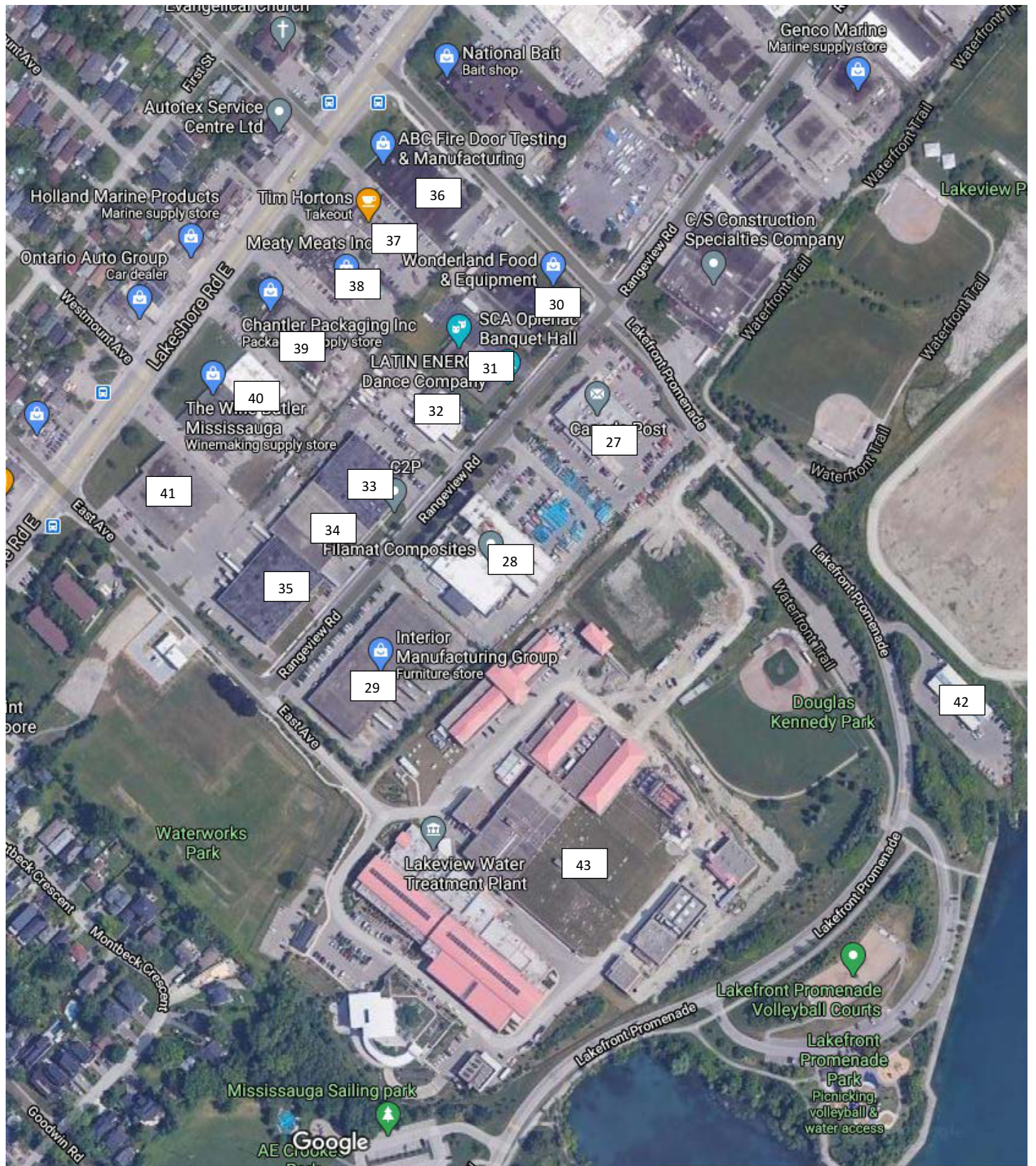
25. Lakeshore Arms Academy (1300 A Lakeshore Road East)

- Private gun club
- Indoor facility that is mostly below grade
- Due to the activities being indoors, no significant noise impact is expected.

26. G.E. Booth Lakeview Wastewater Treatment Plant (1300 Lakeshore Road East)

- Wastewater treatment facility
- Noise sources and sound levels taken from the AAR for the facility and the model provided by RWDI.
- Facility was included in the assessment.

Neighbouring Industries to the Northwest and West



27. Canada Post (890 Rangeview Road)

- Port Credit letter carrier depot
- Main noise sources are anticipated to be the rooftop HVAC units and vehicle movements on site
- Due to the distance separation, no significant noise impact is expected.

28. Filamat (880 Lakeshore Road East)

- Fiberglass/composites products manufacturer
- Main noise sources are anticipated to be the rooftop mechanical equipment, activities in the loading area and activities in the outdoor storage area
- Due to the distance separation and the orientation of the loading areas (on the west façade, the opposite side of the building to the subject site), no significant noise impact is expected

29. Interior Manufacturing Group Inc. (850 Rangeview Road)

- Metal plant/wood assembly
- Main noise sources are anticipated to be activities at the rear (south) loading areas.
- Due to distance separation and screening by intervening buildings, no significant noise impact is expected.

30. Wonderland Food and Equipment Inc. (930 Lakefront Promenade)

- Concession food and equipment supplier
- Main noise sources are anticipated to be the rooftop HVAC units and activities at the loading areas.
- Due to distance separation, location on the loading areas (loading dock on the north façade and overhead door at the northeast corner of the building) and screening from intervening buildings, no significant noise impact is expected.

31. SCA Oplenac Banquet Hall (895 Rangeview Road)

- Serbian Cultural Association Banquet Hall
- Main noise sources are anticipated to be the rooftop HVAC units
- Due to distance separation, no significant noise impact is expected

32. Focused on Food, Tech Sox, Minimax Foods (885 Rangeview Road) – From address search. No signs visible.

- Focused on Food – Prepared food supplier
- Tech Sox – unknown
- Minimax Foods – unknown
- Main noise source is anticipated to be loading activity at the front (south side) and rear (north side) of the building.
- Due to distance separation and screening by intervening buildings, no significant noise impact is expected.

33. C2P (865 Rangeview Road)

- Industrial design, engineering and manufacturing company
- Main noise sources are anticipated to be the rooftop HVAC units and loading activities at the front (south side) of the building.
- Due to distance separation and screening by intervening buildings, no significant noise impact is expected.

34. Komandor (863 Rangeview Road)

- Closet door manufacturer
- Main noise sources are anticipated to be the rooftop HVAC units and loading activities at the front (south side) of the building.
- Due to distance separation and screening by intervening buildings, no significant noise impact is expected.

35. ProSource Canada Inc. (861 Rangeview Road)

- Industrial equipment supplier
- Main noise sources are anticipated to be the rooftop HVAC units and loading activities at the rear of the building.
- Due to distance separation and screening by intervening buildings, no significant noise impact is expected.

36. ABC Fire Door Ltd. (920 Lakeshore Road East)

- Metal door and frame manufacturer

- Main noise sources are anticipated to be the rooftop HVAC units and loading activities at the front (east side) of the building.
- Due to distance separation and screening by intervening buildings, no significant noise impact is expected.

37. Tim Horton's (910 Lakeshore Road East)

- Restaurant
- Main noise sources are anticipated to be the rooftop HVAC units and activities at the drive-thru.
- Due to distance separation and screening by intervening building, no significant noise impact is expected.

38. Meaty Meats Inc. (896 Lakeshore Road East)

- Meat supplier
- Main noise sources are anticipated to be the rooftop HVAC units and condensers and activities at the loading areas at the front of the building.
- Due to distance separation and the orientation the loading area (on the opposite side of the building to the site), no significant noise impact is expected.

39. Chantler Packaging Inc. (880 Lakeshore Road East)

- Flexible packaging manufacturer
- Main noise sources are anticipated to be the rooftop HVAC units, exhaust fans and truck activity on site.
- Due to the distance separation and screening from intervening buildings, no significant noise impact is expected.

40. VCA Lakeshore Animal Hospital (872 Lakeshore Road East), Stonehooker Brewing Co. (866 Lakeshore Road East), Triton Sails (864 Lakeshore Road East), The Wine Butler (860 Lakeshore Road East), Wood Studio (852 Lakeshore Road East), Canadian Rooter (848 Lakeshore Road East)

- Various small businesses
- Main noise sources are anticipated to be the rooftop HVAC units and activities at the rear (south side) loading areas.
- Due to distance separation and screening by intervening buildings, no significant noise impact is expected.

41. Lakefront Graphix Technology (832 Lakeshore Road East)

- Sign manufacturer
- Main noise sources are anticipated to be the rooftop HVAC units and activities at the rear (south side) loading areas.
- Due to distance separation and screening by intervening buildings, no significant noise impact is expected.

42. Park Maintenance Compound (725 Lakefront Promenade)

- City of Mississauga park maintenance facility
- Main noise source is anticipated to be vehicle movements on site
- Due to distance separation and partial screening by the building itself, no significant noise impact is expected.

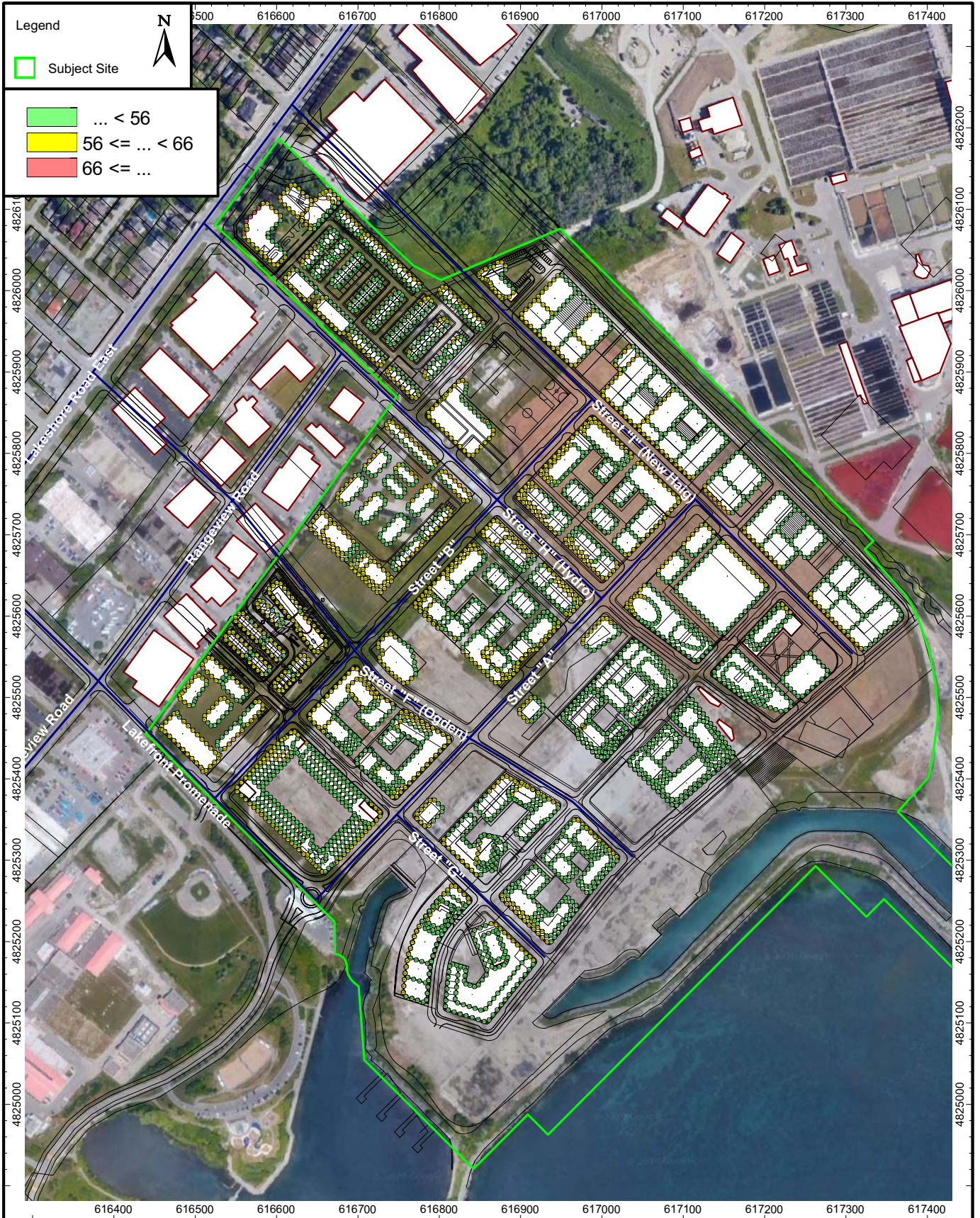
43. Lakeview Water Treatment Plant (920 East Avenue)

- Peel Region water treatment plant
- Ortech report states that Lakeview WTP has emergency generators that comply with MECP limits. No other significant noise sources.

APPENDIX D

TRANSPORTATION SOURCE

ASSESSMENT DETAILS



	Title	Date	Figure
	Predicted Sound Levels due to Road and Rail Traffic (dBA) Project Name Lakeview Village	Aug. 25, 2022 Project No. 120-0302-000	D1

Legend

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Daytime (0700-2300) Building Evaluations

Nighttime (2300-0700) Building Evaluations



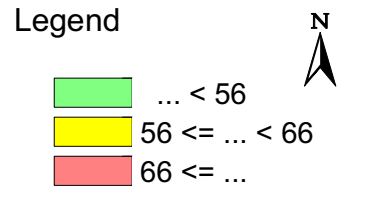
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Predicted Sound Levels due to Road and Rail Traffic - Area A

Project Name
Lakeview Village

Date
Aug. 25, 2022

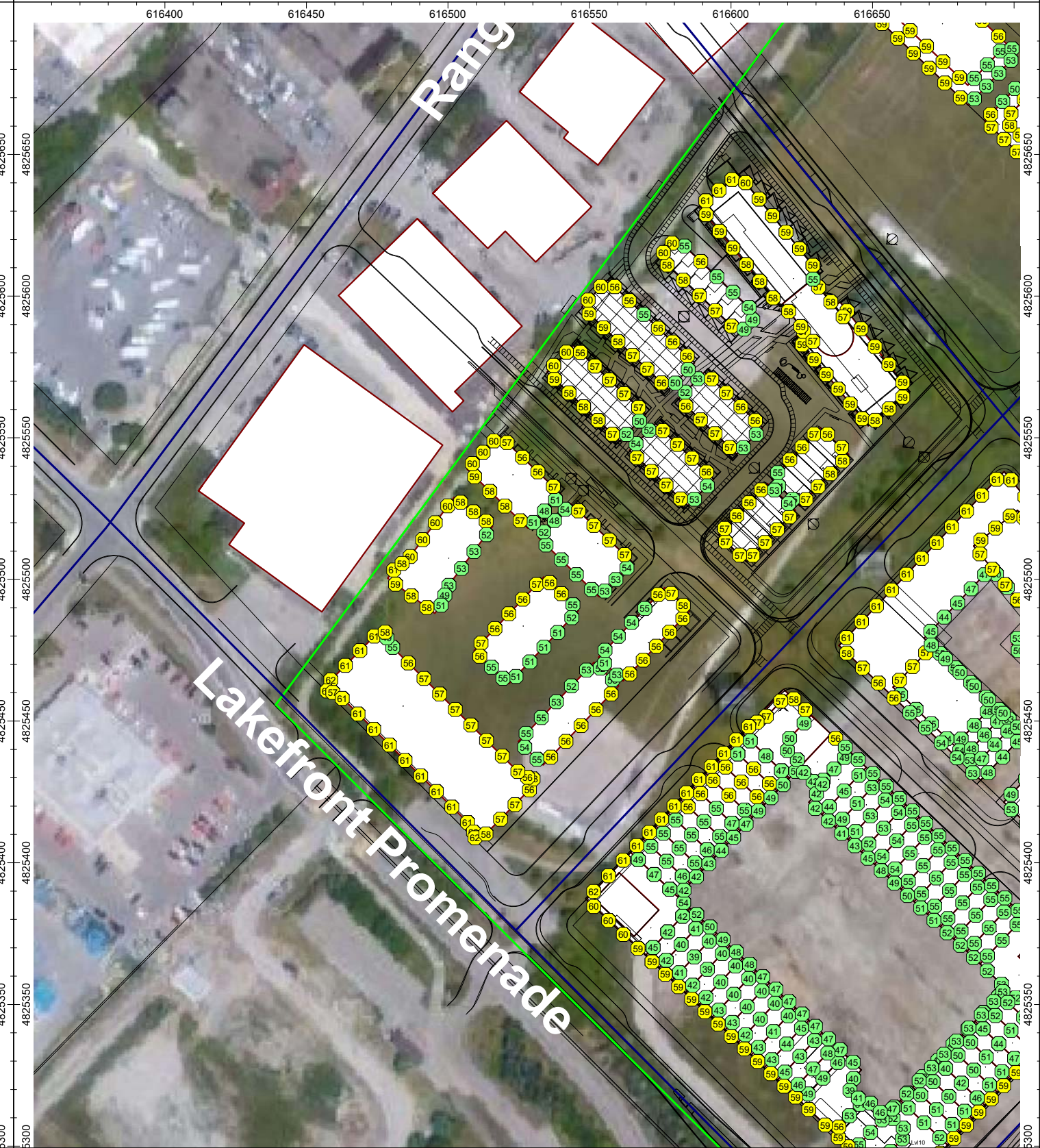
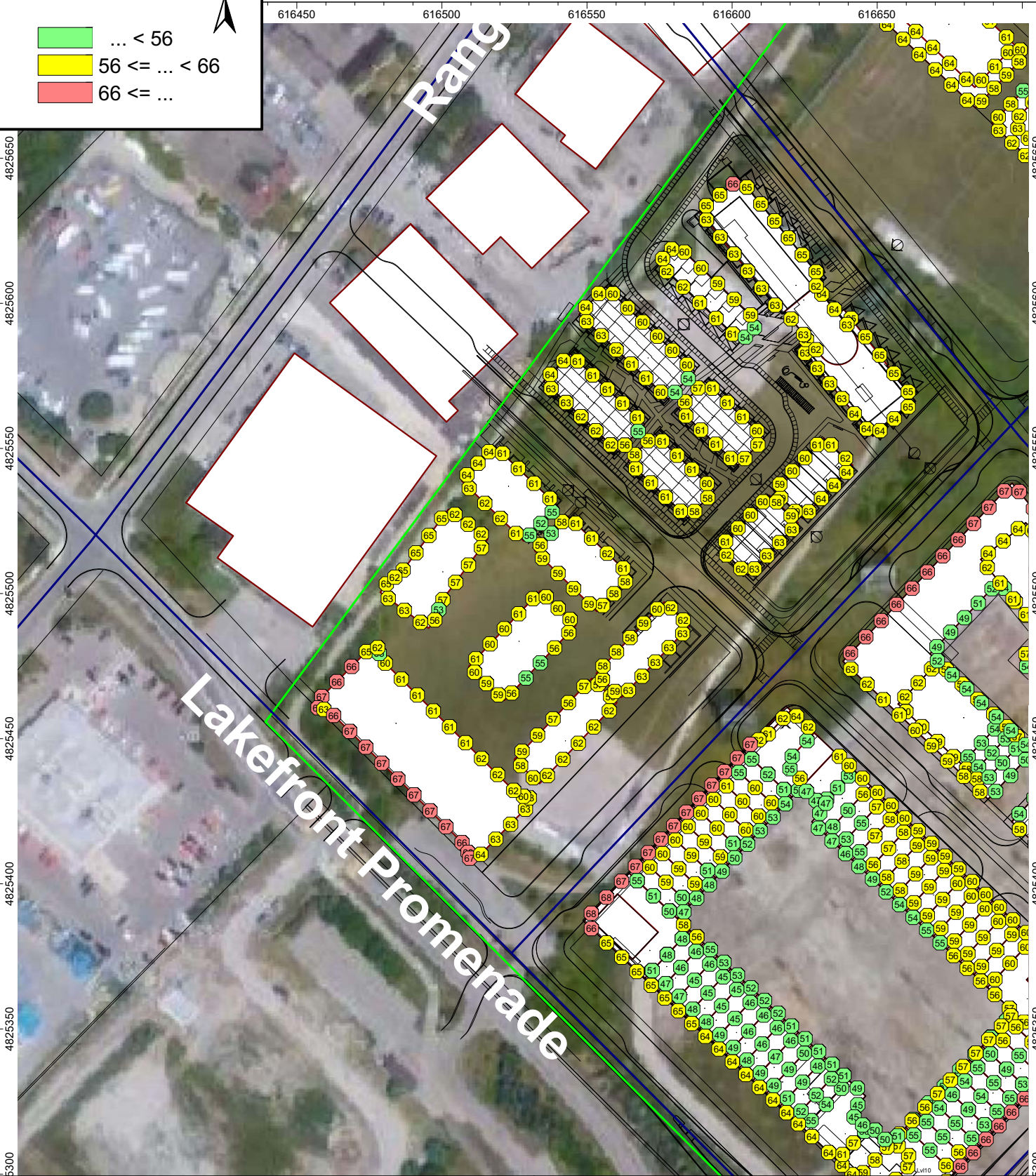
Project No.
120-0302-000

Figure
D1-A



Daytime (0700-2300) Building Evaluations

Nighttime (2300-0700) Building Evaluations



Title
Predicted Sound Levels due to Road and Rail Traffic - Area B

Project Name
Lakeview Village

Date
Aug. 25, 2022

Project No.
120-0302-000

Figure
D1-B

Legend

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Daytime (0700-2300) Building Evaluations

Nighttime (2300-0700) Building Evaluations



Title
Predicted Sound Levels due to Road and Rail Traffic - Area C

Project Name
Lakeview Village

Date
Aug. 25, 2022

Project No.
120-0302-000

Figure
D1-C

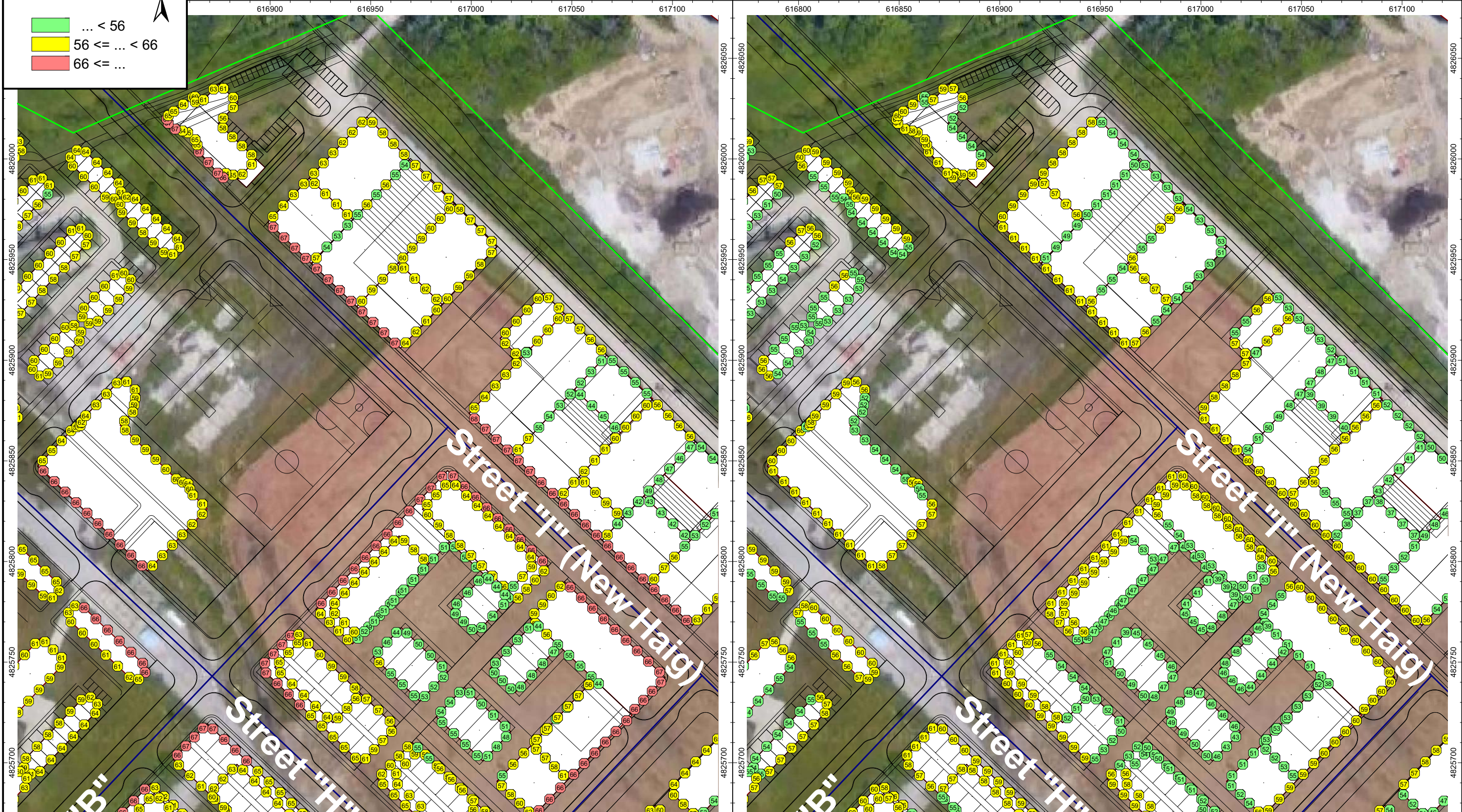
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Daytime (0700-2300) Building Evaluations

Nighttime (2300-0700) Building Evaluations



Title
Predicted Sound Levels due to Road and Rail Traffic - Area D

Project Name
Lakeview Village

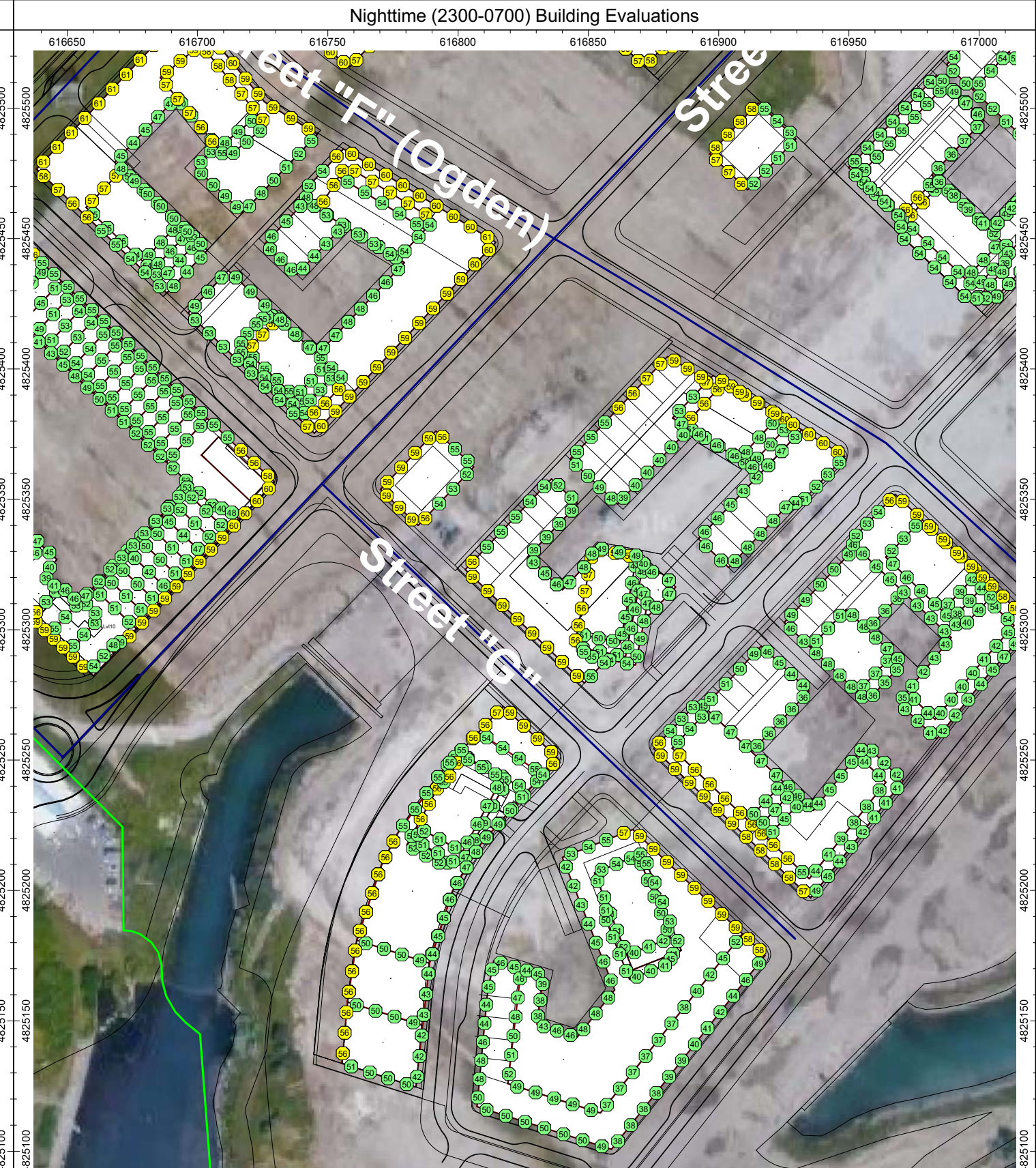
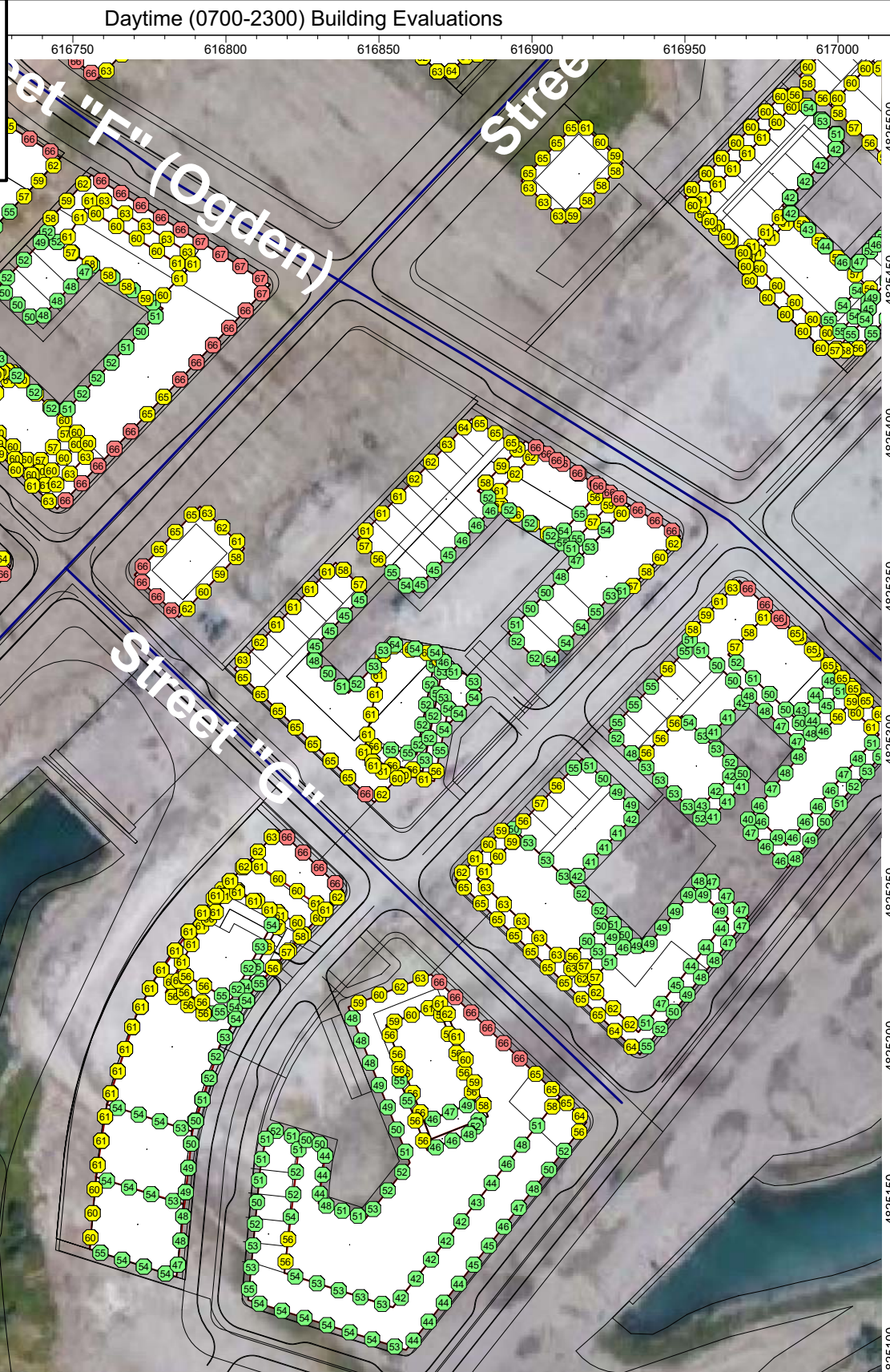
Date
Aug. 25, 2022

Project No.
120-0302-000

Figure
D1-D

Legend

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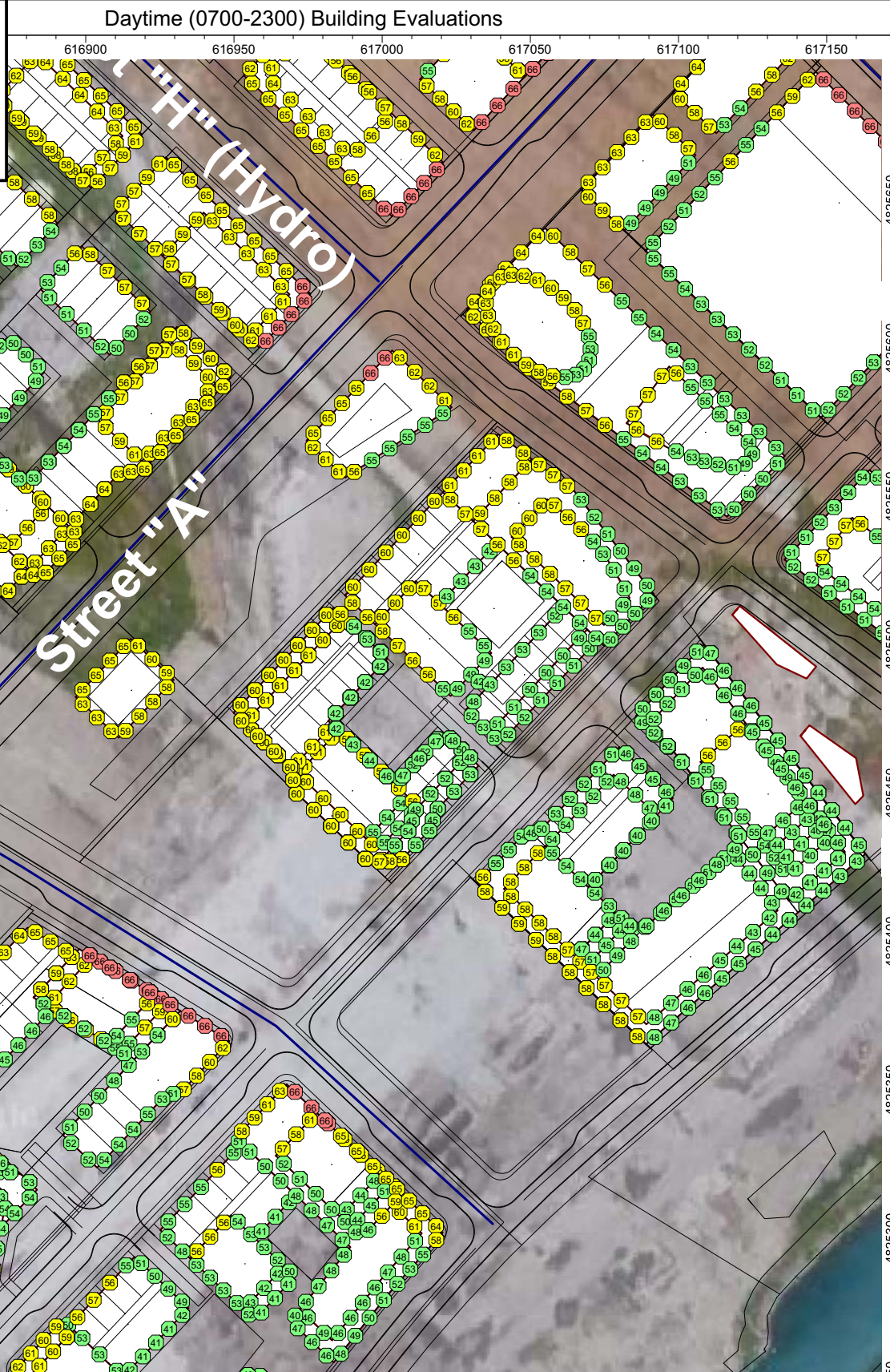
Title	Predicted Sound Levels due to Road and Rail Traffic - Area E
Project Name	Lakeview Village

Date	Aug. 25, 2022
Project No.	120-0302-000

Figure
D1-E

Legend

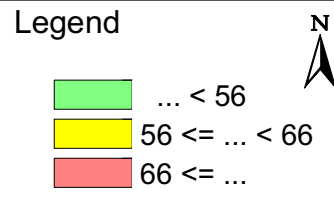
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Title	Predicted Sound Levels due to Road and Rail Traffic - Area F
Project Name	Lakeview Village

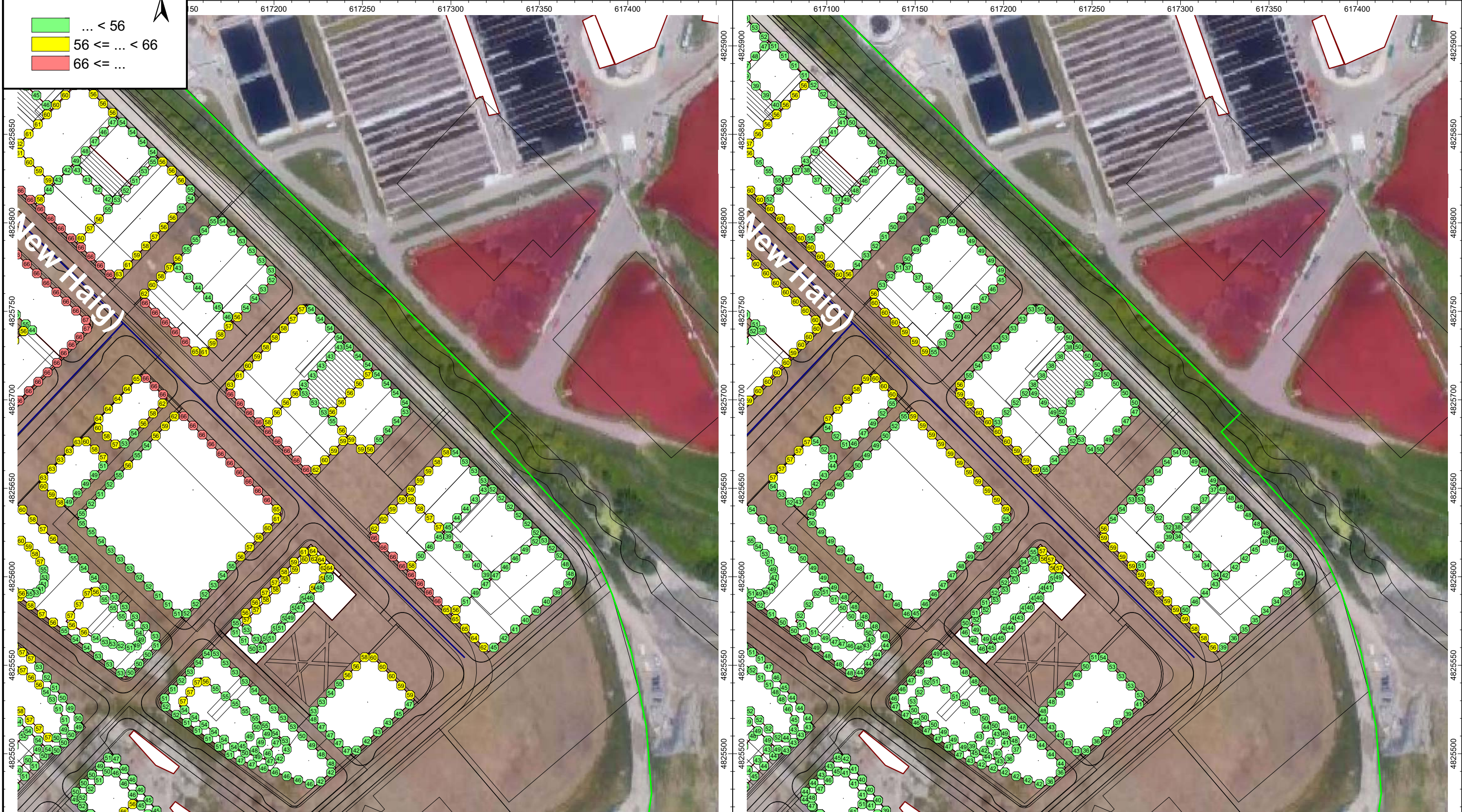
Date	Aug. 25, 2022
Project No.	120-0302-000

Figure
D1-F



Daytime (0700-2300) Building Evaluations

Nighttime (2300-0700) Building Evaluations



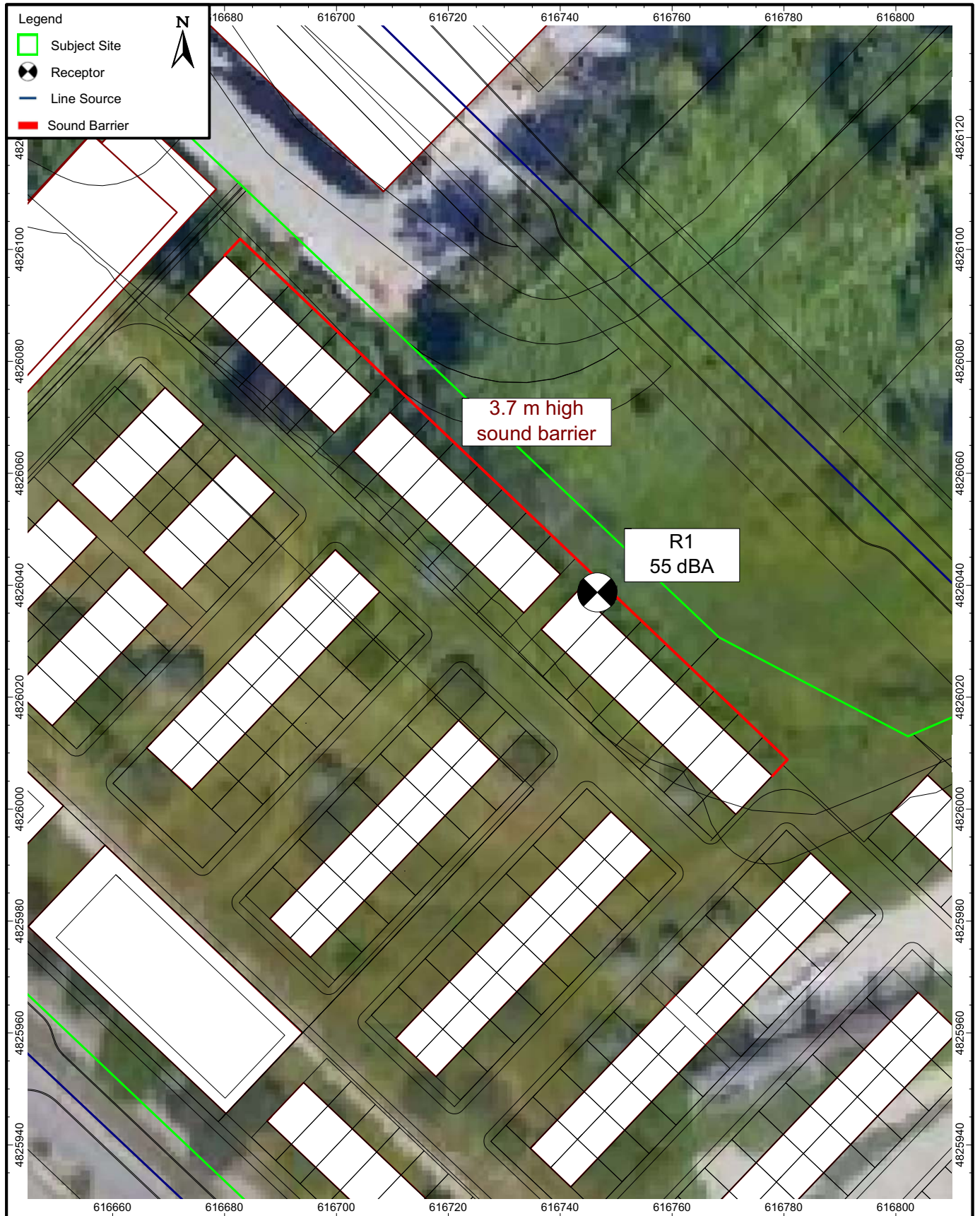
<small>Title</small>	Predicted Sound Levels due to Road and Rail Traffic - Area G
<small>Project Name</small>	Lakeview Village

<small>Date</small>	Aug. 25, 2022
<small>Project No.</small>	120-0302-000

Figure
D1-G



	Title	Date	Figure
	Unmitigated Daytime OLA Sound Level (dBA) Project Name Lakeview Village	Aug. 25, 2022 Project No. 120-0302-000	D2-A



Title	Sound Barrier Height to meet 55 dBA
Project Name	Lakeview Village

Date	Aug. 25, 2022
Project No.	120-0302-000

Figure
D2-B



Title Sound Barrier Height to meet 56 dBA		Date Aug. 25, 2022	Figure D2-C
Project Name Lakeview Village		Project No. 120-0302-000	



Title Sound Barrier Height to meet 57 dBA	Date Aug. 25, 2022	Figure D2-D
	Project Name Lakeview Village	



Title Sound Barrier Height to meet 58 dBA		Date Aug. 25, 2022	Figure D2-E
Project Name Lakeview Village		Project No. 120-0302-000	



Title Sound Barrier Height to meet 59 dBA		Date Aug. 25, 2022	Figure D2-F
Project Name Lakeview Village		Project No. 120-0302-000	



Title	Date
Sound Barrier Height to meet 60 dBA	Aug. 25, 2022
Project Name	Project No.
Lakeview Village	120-0302-000

Figure
D2-G

APPENDIX E

STATIONARY SOURCE ASSESSMENT DETAILS

TABLE 1: NOISE SOURCES AT GE BOOTH⁽¹⁾

Source ID ⁽²⁾	Source Description	Sound Power Level (dBA)	Source Height (m) ⁽⁵⁾	Operating Time (min/hour) or (movements/hour)	
				Daytime / Evening	Nighttime
<i>Non-Emergency Sources</i>					
WWTP_BB_AI1	Blower Building Air Intake1	82.7 ⁽⁴⁾	6	60	60
WWTP_BB_AI2	Blower Building Air Intake2	86.4 ⁽⁴⁾	6	60	60
WWTP_BB_AI2	Blower Building Air Intake2	86.4	6	60	60
WWTP_BB_AI3	Blower Building Air Intake3	86.4 ⁽⁴⁾	6	60	60
WWTP_BB_AI3	Blower Building Air Intake3	86.4	6	60	60
WWTP_BB_AI4	Blower Building Air Intake4	86.4 ⁽⁴⁾	6	60	60
WWTP_BB_AI5	Blower Building Air Intake5	86.4 ⁽⁴⁾	6	60	60
WWTP_BB_OD	Blower Building Overhead Door	86.4 ⁽⁴⁾	2	60	60
WWTP_BB_OD	Blower Building Overhead Door	86.4	2	60	60
WWTP_BF_L1	Biofilter Building Louvre 1	78.8 ⁽⁴⁾	2	60	60
WWTP_BF_L1	Biofilter Building Louvre 1	74.9	2 ⁽⁶⁾	60	60
WWTP_BF_L2	Biofilter Building Louvre 2	74.9 ⁽⁴⁾	2	60	60
WWTP_BF_L2	Biofilter Building Louvre 2	74.9 ⁽⁴⁾	2	60	60
WWTP_CB_CU1	Condenser 1 - Centrifuge Building	84.1	29.8	60	60
WWTP_CB_MAU1	Makeup Air Unit 1 - Centrifuge Building	89.3	29.8	60	60
WWTP_CB_MAU2	Makeup Air Unit 2 - Centrifuge Building	89.3	30.1	60	60
WWTP_FC_TB	Ferrous Chloride Truck Blower	100.4	0.5	60	0
WWTP_FC_TEI	Sodium Hypochlorite Truck Engine Idling	109.6	1	60	0
WWTP_FCB_OD	Ferrous Chloride Building Open Door	81.2 ⁽⁴⁾	1	60	60
WWTP_HW_CUS1	Headworks Carbon Unit Stack 1	88.2	16.8	60	60
WWTP_HW_CUS 1	Headworks Carbon Unit Stack 1	88.2	16.8	60	60
WWTP_HW_CUS2	Headworks Carbon Unit Stack 2	88.2	16.8	60	60
WWTP_HW_CUS 2	Headworks Carbon Unit Stack 2	88.2	16.8	60	60
WWTP_HW_EF1	Headworks Exhaust Fan 1	86.7 ⁽³⁾	12.3	60	60
WWTP_HW_EF1	Headworks Exhaust Fan 1	86.7 ⁽³⁾	12.3	60	60
WWTP_HW_EF2	Headworks Exhaust Fan 2	95.4	12.3	60	60
WWTP_HW_EF2	Headworks Exhaust Fan 2	95.4	12.3	60	60
WWTP_HW_EF3	Headworks Exhaust Fan 3	93.3	15.3	60	60
WWTP_HW_EF4	Headworks Exhaust Fan 4	93.3	15.3	60	60
WWTP_HW_EF5	Headworks Exhaust Fan 5	97 ⁽⁴⁾	2.5 ⁽⁶⁾	60	60
WWTP_OUB_CUS1	Odour Unit Building Carbon Unit Stack 1	88	13	60	60
WWTP_OUB_CUS2	Odour Unit Building Carbon Unit Stack 2	88	13	60	60
WWTP_OUB_CUS2	Odour Unit Building Carbon Unit Stack 2	88	13	60	60
WWTP_PO_TB	Polymer Truck Blower	100.8	0.75	30	0
WWTP_PO_TEI	Polymer Truck Engine Idling	96.4	1	30	0
WWTP_SH_OD1	Solids Handling Overhead Door 1	99	3 ⁽⁶⁾	60	60
WWTP_SH_OD2	Solids Handling Overhead Door 2	99	3 ⁽⁶⁾	60	60
WWTP_SH_TB	Sodium Hypochlorite Truck Blower	102.8	0.5	60	0
WWTP_SH_TEI	Sodium Hypochlorite Truck Engine Idling	100.4	1 ⁽⁶⁾	60	0
WWTP_SHCB_EF1	Exhaust Fan 1 Solids Handling/Centrifuge Building	82	29.8	60	60
WWTP_TOX_B1	Boiler Exhaust 1	85	32.6	60	60

Source ID ⁽²⁾	Source Description	Sound Power Level (dBA)	Source Height (m) ⁽⁵⁾	Operating Time (min/hour) or (movements/hour)	
				Daytime / Evening	Nighttime
WWTP_TOX_B2	Boiler Exhaust 2	85	32.6	60	60
WWTP_TOX_B2	Boiler Exhaust 2	85	32.6	60	60
WWTP_TOX_B3	Boiler Exhaust 3	85	32.6	60	60
WWTP_TOX_B4	Boiler Exhaust 4	85	32.6	60	60
WWTP_TOX_BE	TOX HVAC & Fluidized Air Blower Exhaust	82.5 ⁽³⁾ (4)	4	60	60
WWTP_TOX1_2EF1	TOX1&2 Exhaust Fan 1	72 ⁽³⁾	23.5	60	60
WWTP_TOX1_2EF2	TOX1&2 Exhaust Fan 2	72 ⁽³⁾	23.5	60	60
WWTP_TOX1_2EF3	TOX1&2 Exhaust Fan 3	72 ⁽³⁾	23.5	60	60
WWTP_TOX1_2EF4	TOX1&2 Exhaust Fan 4	72 ⁽³⁾	23.5	60	60
WWTP_TOX1_2EF5	TOX1&2 Exhaust Fan 5	72 ⁽³⁾	23.5	60	60
WWTP_TOX1_2EF6	TOX1&2 Exhaust Fan 6	72 ⁽³⁾	26.4	60	60
WWTP_TOX1_2EF6	TOX1&2 Exhaust Fan 6	72 ⁽³⁾	26.4	60	60
WWTP_TOX1_2EF7	TOX1&2 Exhaust Fan 7	72 ⁽³⁾	26.4	60	60
WWTP_TOX1_2EF7	TOX1&2 Exhaust Fan 7	72 ⁽³⁾ (4)	26.4	60	60
WWTP_TOX1_2EF8	TOX1&2 Exhaust Fan 8	72 ⁽³⁾	26.4	60	60
WWTP_TOX1_2EF8	TOX1&2 Exhaust Fan 8	72 ⁽³⁾	26.4	60	60
WWTP_TOX1_2EF9	TOX1&2 Exhaust Fan 9	72 ⁽³⁾	26.4	60	60
WWTP_TOX1_2EF9	TOX1&2 Exhaust Fan 9	72 ⁽³⁾	26.4	60	60
WWTP_TOX1_Inlet1	TOX1&2 Inlet 1	88 ⁽⁴⁾	4	60	60
WWTP_TOX1_Inlet2	TOZ1&2 Inlet 2	88 ⁽⁴⁾	4	60	60
WWTP_TOX1_OD	TOX1&2 Overhead Door	91.7	2.5 ⁽⁶⁾	60	60
WWTP_TOX2_OD	TOX1&2 Overhead Door	91.7	2.5 ⁽⁶⁾	60	60
WWTP_TOX3_EF1	TOX3 Exhaust Fan 1	83.7 ⁽³⁾	24.9	60	60
WWTP_TOX3_EF2	TOX3 Exhaust Fan 2	87	25.5	60	60
WWTP_TOX3_EF2	TOX3 Exhaust Fan 2	87	25.5	60	60
WWTP_TOX3_EF3	TOX3 Exhaust Fan 3	73.5 ⁽³⁾	25.5	60	60
WWTP_TOX3_EF4	TOX3 Exhaust Fan 4	90	25.5	60	60
WWTP_TOX3_EF5	TOX3 Exhaust Fan 5	73.5 ⁽³⁾	25.5	60	60
WWTP_TOX3_Inlet1	TOX3 Inlet 1	88	4	60	60
WWTP_TOX3_L1	HVAC Intake Louvre 1 (TOX3)	83.7 ⁽³⁾	7	60	60
WWTP_TOX3_L2	HVAC Intake Louvre 2 (TOX3)	75.9 ⁽³⁾	7	60	60
WWTP_TOX4_EF1	TOX4 Exhaust Fan 1	82.5 ⁽³⁾	24.9	60	60
WWTP_TOX4_EF2	TOX4 Exhaust Fan 2	82.5 ⁽³⁾	24.9	60	60
WWTP_TOX4_EF3	TOX4 Exhaust Fan 3	82.5 ⁽³⁾	24.9	60	60
WWTP_TOX4_L	HVAC Intake Louvre1 (TOX4)	95.3	25.1	60	60
WWTP_TOX4_OD	TOX4 Overhead Door	89.2	8 ⁽⁶⁾	60	0
WWTP_WGAC	West GAC Odour Control Unit Exhaust	89.4 ⁽³⁾ (4)	2.5	60	60
WWTP_ITT	Idling Transport Truck	97	1	60	60
WWT_Trucks	Unloading Truck Passby	97.6	2.5	1 movement	0 movements
WWT_Garbage Truck	Garbage Truck Passby	102.1	2.4	1 movement	0 movements
WWT_PTP	Polymer Blow-Off Delivery Truck Passby	102.1	2.4	1 movement	0 movements
WWT_SRTP	Sludge Receiving Truck Passby	102.1	2.4	1 movement	0 movements
WWT_FCTP	Ferrous Chloride Blow-Off Delivery Truck Passby	102.1	2.4	1 movement	0 movements
WWT_SHTP	Sodium Hypochlorite Blow-Off Delivery Truck Passby	102.1	2.4	1 movement	0 movements
Emergency Sources					
WWTP_HWGenIntake	Headworks Generator Room Intake	92.7	4	60	0

Source ID ⁽²⁾	Source Description	Sound Power Level (dBA)	Source Height (m) ⁽⁵⁾	Operating Time (min/hour) or (movements/hour)	
				Daytime / Evening	Nighttime
WWTP_HWGenRadExh	Headworks Generator Radiator Exhaust	93.2	4	60	0
WWTP_HWGenStackExh	Headworks Generator Exhaust Stack	87.9	16.8	60	0
WWTP_TCFGenIntake	Thermal Conditioning Facility Generator Room Intake	104.8	2	60	0
WWTP_TCFGenRadExh	Thermal Conditioning Facility Radiator Exhaust	111.6	2.4	60	0

Notes:

- (1) Source ID's, source heights, sound power levels and operating times were taken from the Acoustic Assessment Report.
- (2) See Figures E1-A to E1-E.
- (3) Includes sound reduction from the mitigation measures recommended in the Acoustic Assessment Report.
- (4) In the model, a $K_0=3$ correction was applied.
- (5) Source height relative to grade unless otherwise noted.
- (6) Source height relative to the top of the roof.

TABLE 2: NOISE SOURCES AT INTERIOR MANUFACTURING GROUP⁽¹⁾

Source ID ⁽²⁾	Source Description	Sound Power Level (dBA)	Source Height (m) ⁽³⁾	Operating Time (min/hour) or (movements/hour)	
				Daytime / Evening	Nighttime
IMG Truck Idling 1	Truck Idling at Loading Dock	100.9	2.4	2	0
IMG Truck 1	Truck Movements	106.1	2.4	1 movement	0 movements

Notes:

- (1) Source ID's, source heights, sound power levels and operating times were assumed.
- (2) See Figure E2.
- (3) Source height relative to grade.

TABLE 3: NOISE SOURCES AT XTREME TIRE⁽¹⁾

Source ID ⁽²⁾	Source Description	Sound Power Level (dBA)	Source Height (m) ⁽³⁾	Operating Time (min/hour) or (movements/hour)	
				Daytime / Evening	Nighttime
Xtreme OH Door 1	Tool operation inside repair bay	97	2	30	0
Xtreme OH Door 2	Tool operation inside repair bay	97	2	30	0
Xtreme OH Door 3	Tool operation inside repair bay	97	2	30	0

Notes:

- (1) Source ID's, source heights, sound power levels and operating times were assumed.
- (2) See Figure E3.
- (3) Source height relative to grade.

TABLE 4: NOISE SOURCES AT LONG BRANCH FOUNDRY⁽¹⁾

Source ID ⁽²⁾	Source Description	Sound Power Level (dBA)	Source Height (m) ⁽⁴⁾	Operating Time (min/hour) or (movements/hour)	
				Daytime / Evening	Nighttime
Foundry_BayDoor01	Open Bay Door	90.3 ⁽³⁾	2	60	0
Foundry Furnace Dust Collector	Furnace Dust Collector	96	3.6	20	0
Foundry Furnace Exhaust Fan	Furnace Exhaust Fan	85.5	1.7 ⁽⁵⁾	60	0
Foundry Furnace Exhaust Fan	Furnace Exhaust Fan	101.3	1.7	60	0
Foundry_Trucks_ss	Truck Movements	97.6	3.5	1 movement	0 movements

Notes:

- (1) Source ID's, source heights, sound power levels and operating times were taken from ???.
- (2) See Figure E4.
- (3) In the model, a $K_0=3$ correction was applied.
- (4) Source height relative to grade unless otherwise noted.
- (5) Source height relative to the top of the roof.

TABLE 5: NOISE SOURCES AT PLASTERFORM⁽¹⁾

Source ID ⁽²⁾	Source Description	Sound Power Level (dBA)	Source Height (m) ⁽³⁾	Operating Time (min/hour) or (movements/hour)	
				Daytime / Evening	Nighttime
Plasterform AC 1	Compressor	93	1	60	0
Plasterform AC 2	Compressor	93	1	60	0
Plasterform EF 1	Exhaust Fan	91.8	6.4 ⁽⁴⁾	60	0
Plasterform EF 2	Exhaust Fan	91.8	6.4 ⁽⁴⁾	60	0
Plasterform EF 3	Exhaust Fan	91.8	6.4 ⁽⁴⁾	60	0
Plasterform EF 4	Exhaust Fan	91.8	6.4 ⁽⁴⁾	60	0
Plasterform EF 5	Exhaust Fan	91.8	6.4 ⁽⁴⁾	60	0
Plasterform EF 6	Exhaust Fan	91.8	6.4 ⁽⁴⁾	60	0
Plasterform EF 7	Exhaust Fan	89.6	4.72 ⁽⁴⁾	60	0
Plasterform EF 8	Exhaust Fan	89.6	4.72 ⁽⁴⁾	60	0
Plasterform EF 9	Exhaust Fan	89.6	4.72 ⁽⁴⁾	60	0
Plasterform EF 10	Exhaust Fan	91.8	4.72 ⁽⁴⁾	60	0
Plasterform EF 11	Exhaust Fan	92.5	5.03 ⁽⁴⁾	60	0
Plasterform EF 12	Exhaust Fan	92.5	5.03 ⁽⁴⁾	60	0
Plasterform EF 13	Exhaust Fan	92.5	4.88 ⁽⁴⁾	60	0
Plasterform EF 14	Baghouse	106.5	6.4	60	0
Plasterform_Truck Loading Bay	Truck Loading	96	2.5	60	0
Plasterform_Trucks	Truck Movements	97.6	3.5	1 movement	0 movements

Notes:

- (1) Source ID's, source heights, sound power levels and operating times were taken from Reference 15 and 16.
- (2) See Figure E5.
- (3) Source height relative to grade unless otherwise noted.
- (4) Source height relative to the top of the roof.

TABLE 6: NOISE SOURCES AT CONSTRUCTION SPECIALTIES⁽¹⁾

Source ID ⁽²⁾	Source Description	Sound Power Level (dBA)	Source Height (m) ⁽³⁾	Operating Time (min/hour) or (movements/hour)	
				Daytime / Evening	Nighttime
CS HVAC 1	HVAC Unit	75.6	1.6	60	30
CS HVAC 2	HVAC Unit	75.6	1.6	60	30
CS HVAC 3	HVAC Unit	75.6	1.6	60	30
CS HVAC 4	HVAC Unit	75.6	1.6	60	30
CS HVAC 5	HVAC Unit	75.6	1.6	60	30
CS HVAC 6	HVAC Unit	75.6	1.6	60	30
CS Int	Paint booth intake	84.5	1.0	30	0
CS Exh	Paint booth exhaust	90.5	2.0	30	0
CS Truck Idling 1	Truck idling at loading dock	100.9	2.4	2	0

Notes:

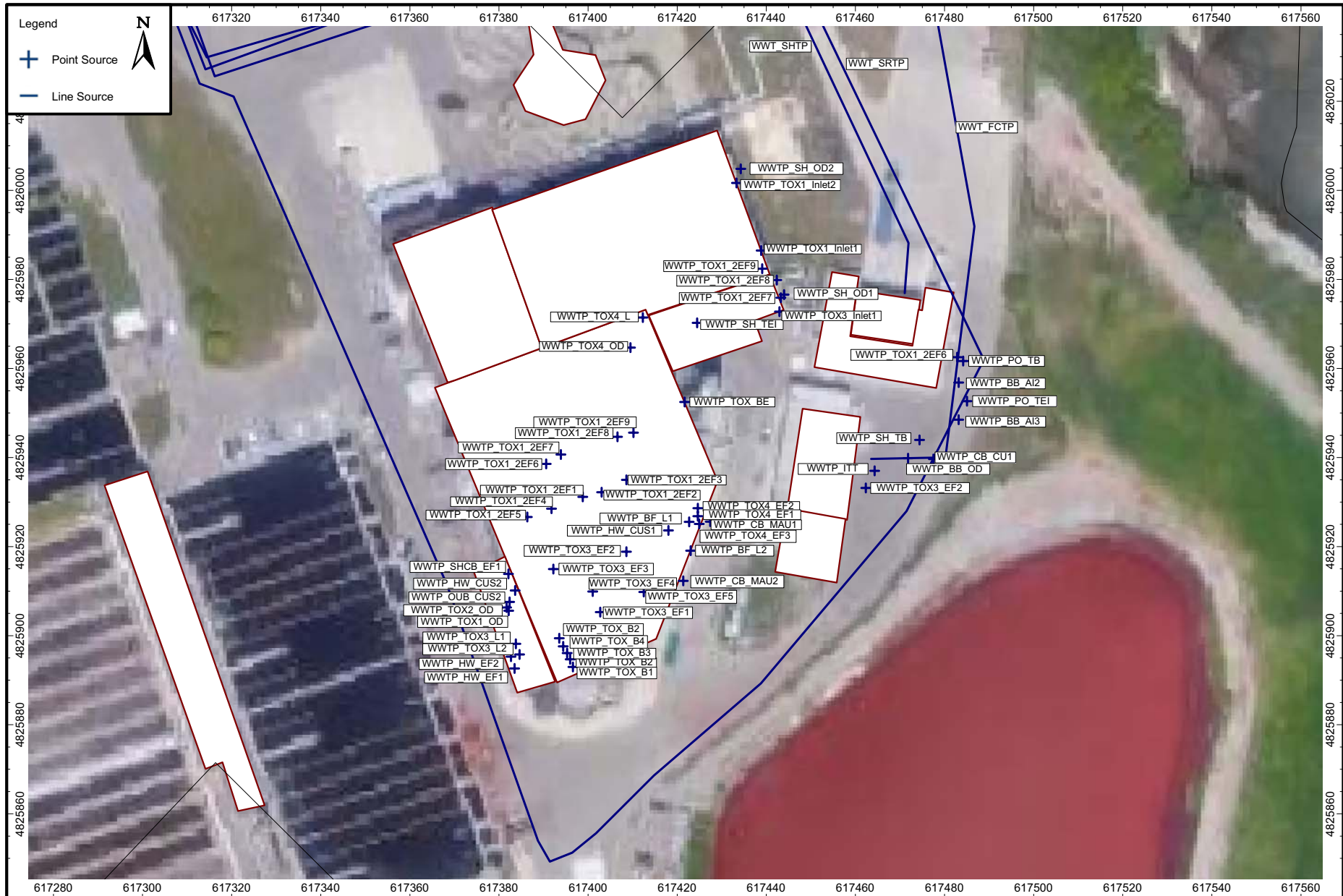
- (1) Source ID's, source heights, sound power levels and operating times were assumed.
- (2) See Figure E6.
- (3) Source height relative to the top of the roof.

TABLE 7: NOISE SOURCES AT ALLEGION⁽¹⁾

Source ID ⁽²⁾	Source Description	Sound Power Level (dBA)	Source Height (m) ⁽³⁾	Operating Time (min/hour) or (movements/hour)	
				Daytime / Evening	Nighttime
Allegion Truck Idling 1	Truck idling at loading dock	100.9	2.4	2	0
Allegion Truck Idling 2	Truck idling at loading dock	100.9	2.4	2	0
Allegion HVAC1	Rooftop HVAC unit	88.3	1.8	60	30
Allegion HVAC2	Rooftop HVAC unit	88.3	1.8	60	30
Allegion HVAC3	Rooftop HVAC unit	88.3	1.8	60	30
Allegion HVAC4	Rooftop HVAC unit	88.3	1.8	60	30
Allegion HVAC5	Rooftop HVAC unit	88.3	1.8	60	30
Allegion HVAC6	Rooftop HVAC unit	88.3	1.8	60	30
Allegion HVAC7	Rooftop HVAC unit	88.3	1.8	60	30
Allegion EF1	Exhaust stack	81.7	1.0	60	0
Allegion EF2	Exhaust stack	81.7	1.0	60	0

Notes:

- (1) Source ID's, source heights, sound power levels and operating times were assumed.
- (2) See Figure E7.
- (3) Source height relative to grade.



Title GE Booth Non-Emergency Sources - South	
Project Name Lakeview Village	

Date May 18, 2022
Project No. 120-0302-000

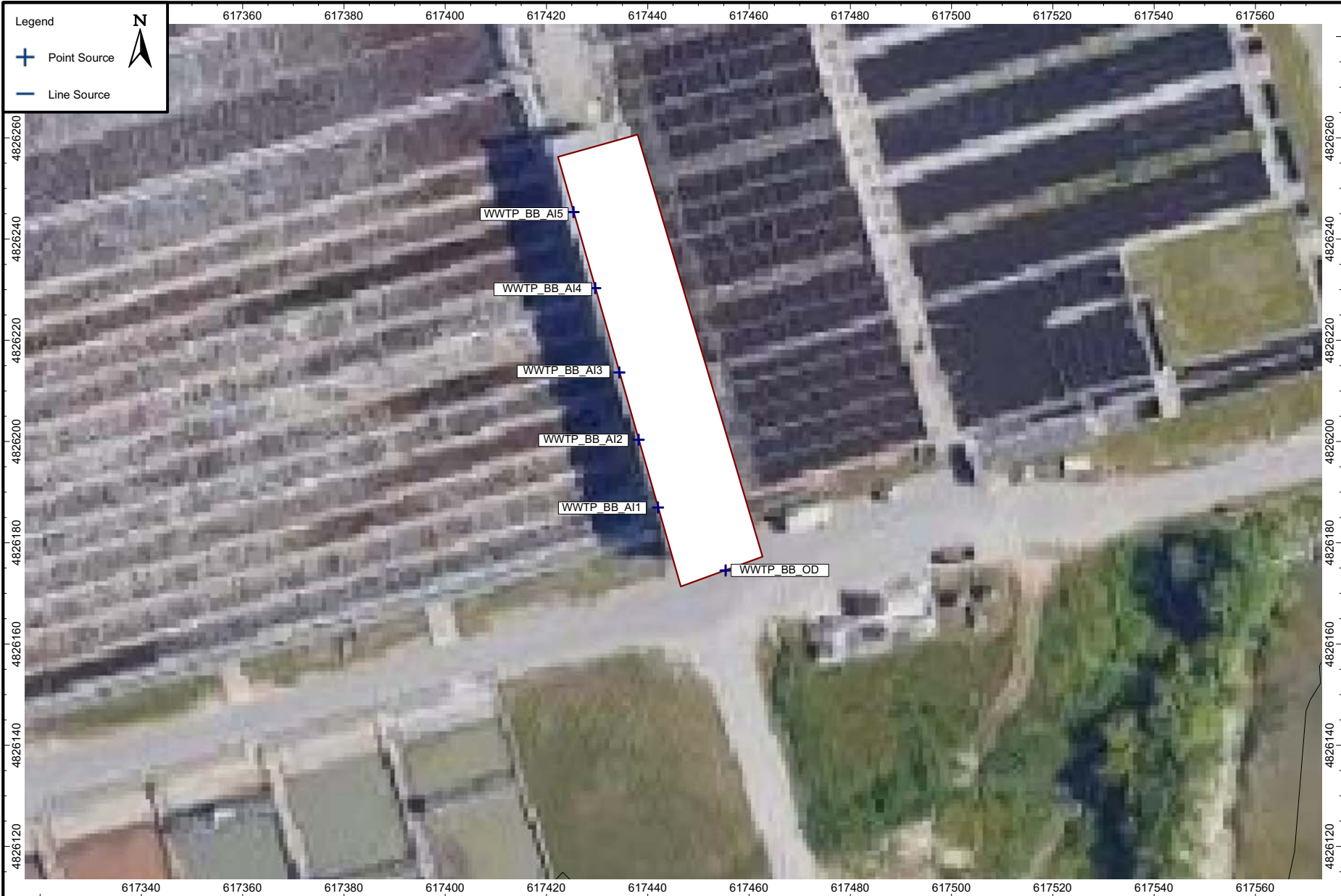
Figure
E1-A




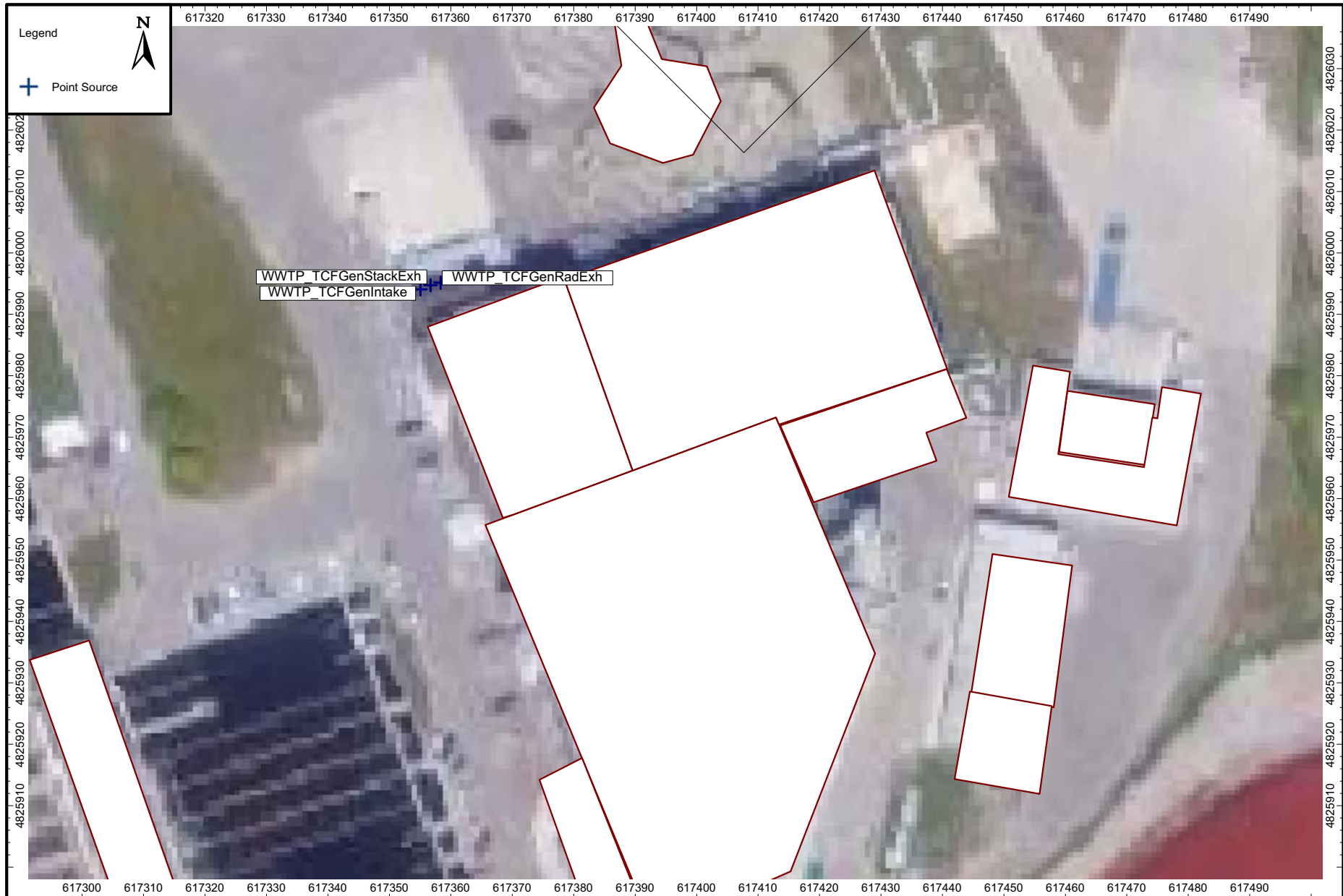
Title	GE Booth Non-Emergency Sources - Northwest
Project Name	Lakeview Village

Date	May 18, 2022
Project No.	120-0302-000

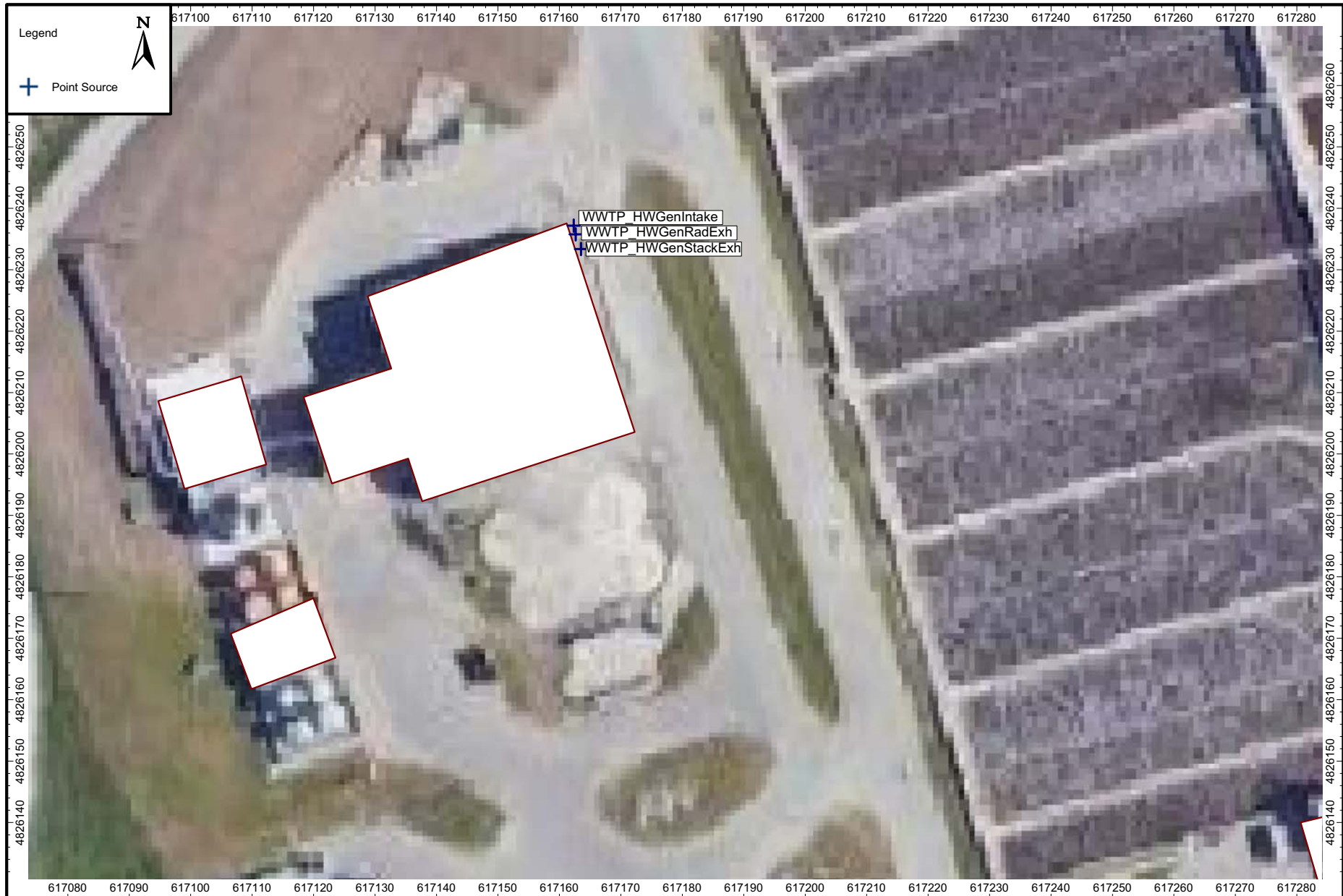
Figure
E1-B



	Title GE Booth Non-Emergency Sources - Northeast	Date May 18, 2022	Figure E1-C
	Project Name Lakeview Village	Project No. 120-0302-000	



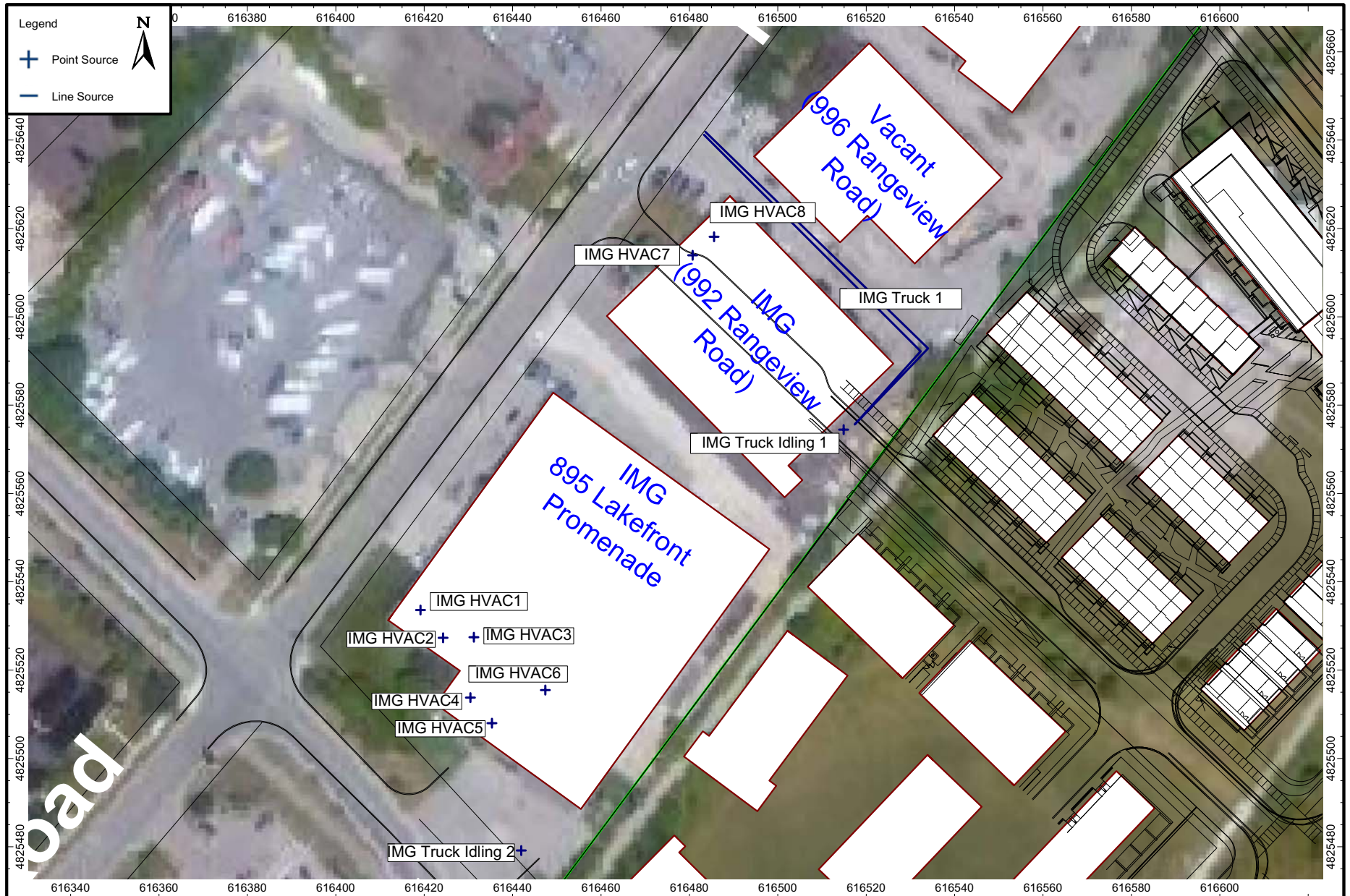
	Title GE Booth Emergency Sources - South	Date May 18, 2022	E1-D
	Project Name Lakeview Village	Project No. 120-0302-000	



Title	GE Booth Emergency Sources - North
Project Name	Lakeview Village

Date	May 18, 2022
Project No.	120-0302-000

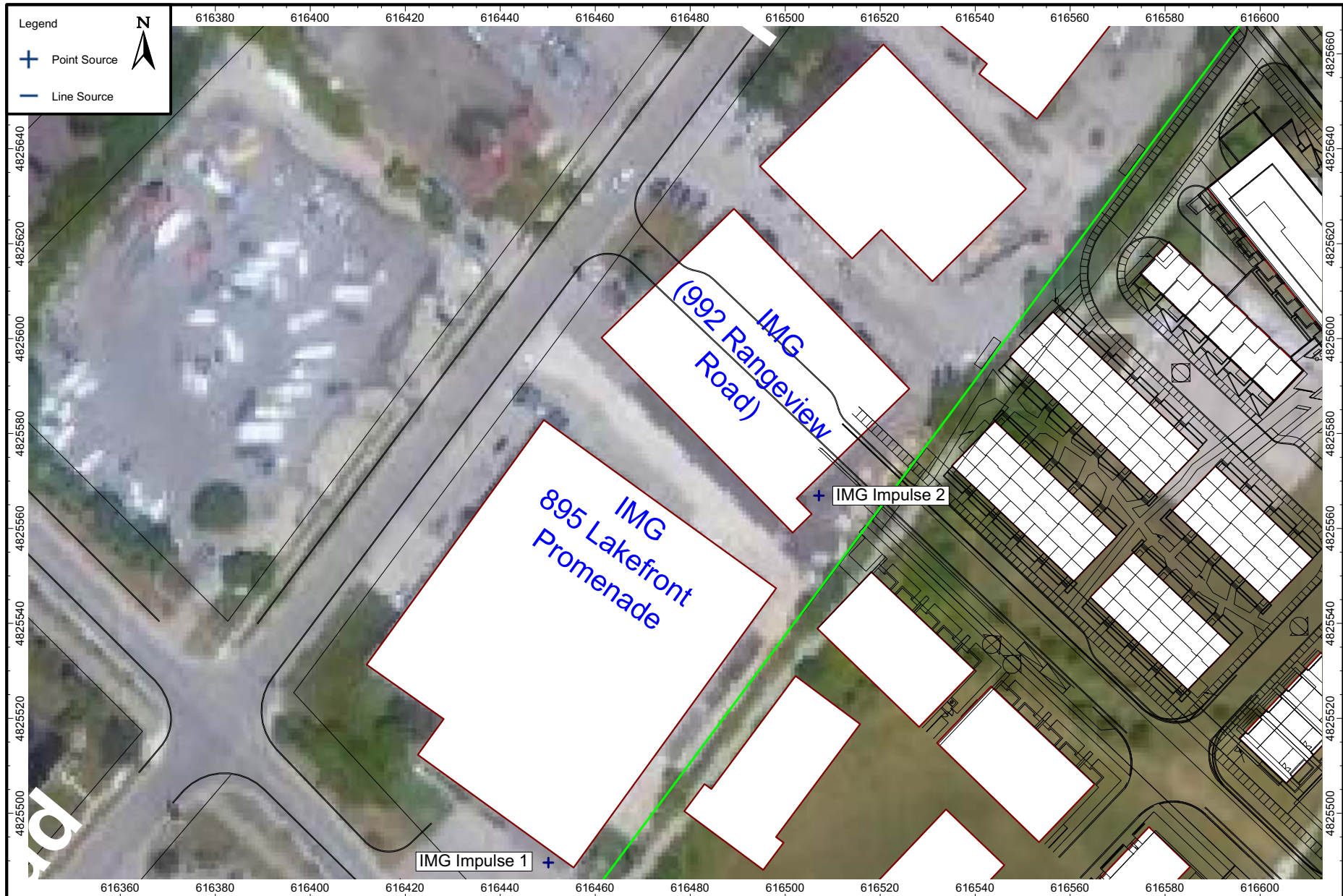
Figure	E1-E
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Title	IMG Steady Sources
Project Name	Lakeview Village

Date	Aug. 29, 2022
Project No.	120-0302-000

Figure
E2-A



Title	IMG Impulse Sources
Project Name	Lakeview Village

Date	May 18, 2022
Project No.	120-0302-000

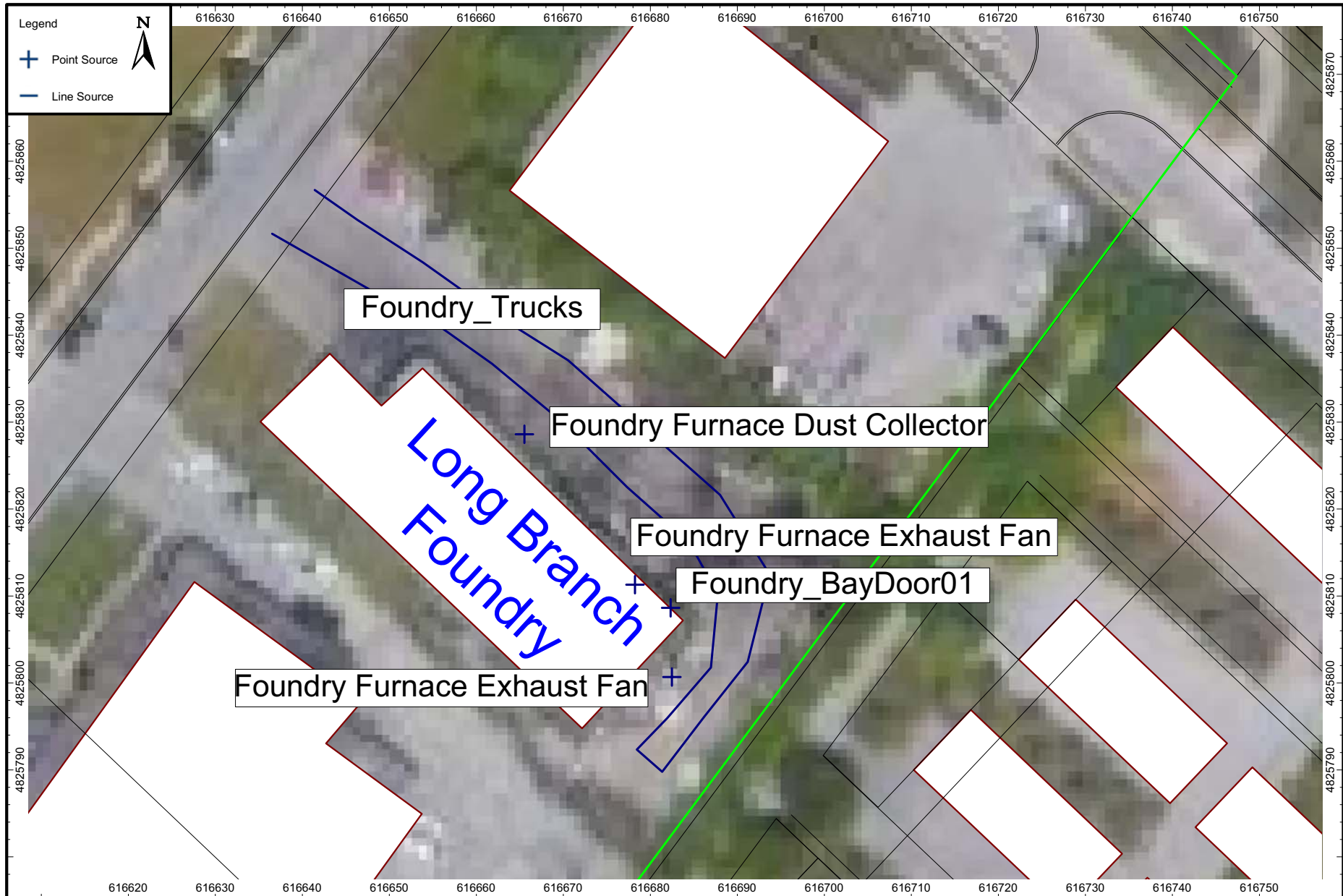
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Title	Xtreme Tire Garage Sources
Project Name	Lakeview Village

Date	May 18, 2022
Project No.	120-0302-000

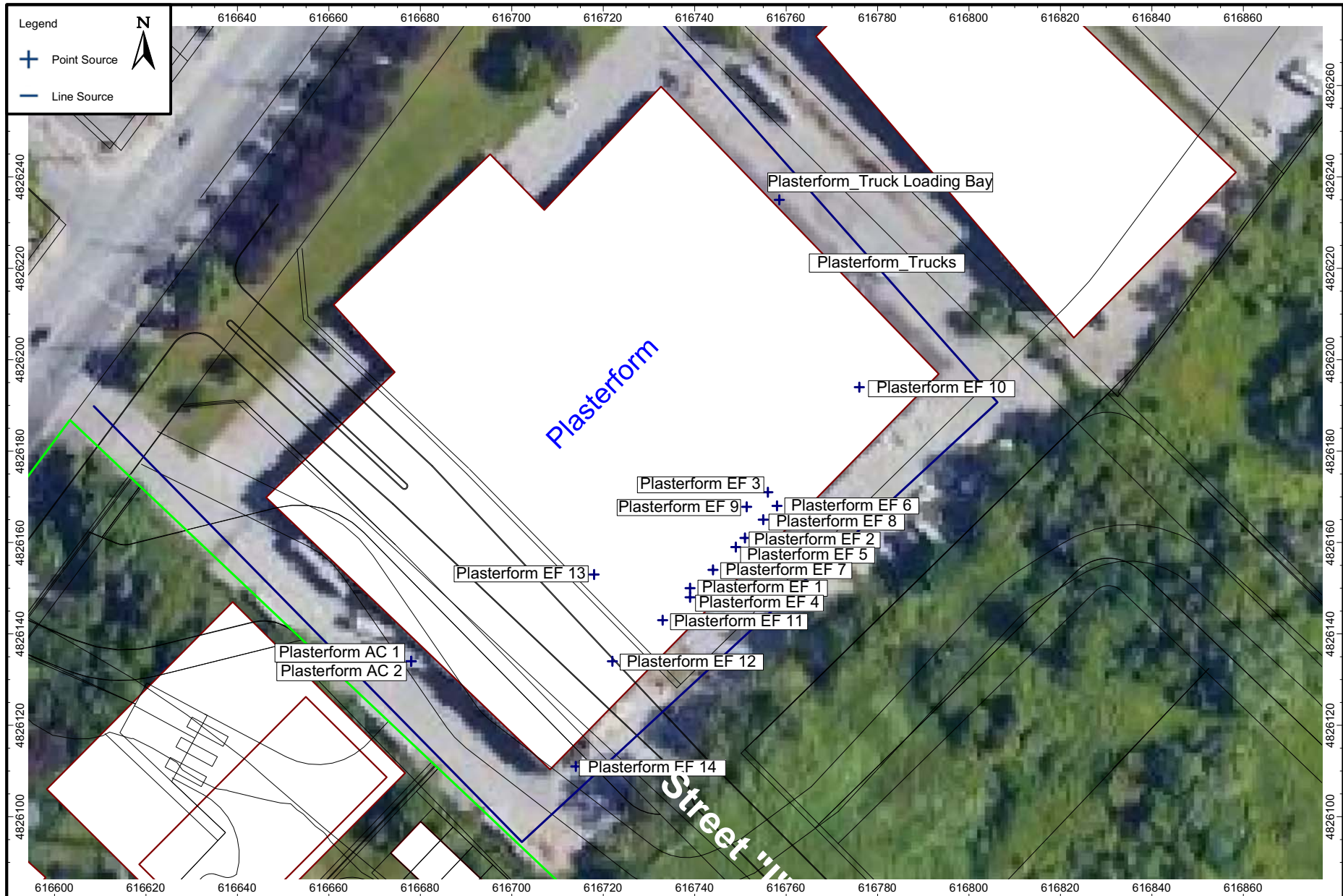
Figure	E3
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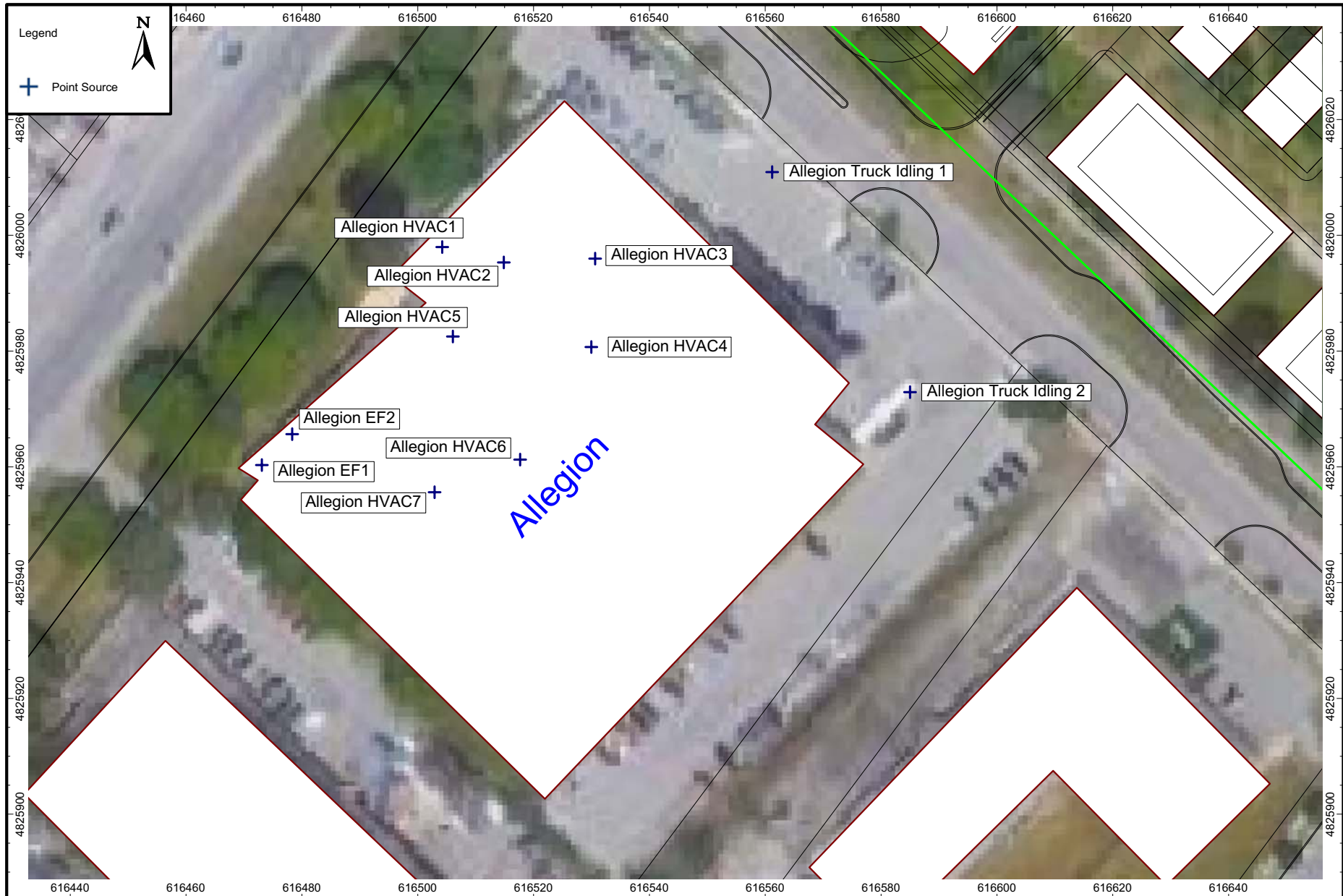
Title	Long Branch Foundry Sources
Project Name	Lakeview Village

Date	May 18, 2022
Project No.	120-0302-000

Figure	E4
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Title Plasterform Sources		Date May 18, 2022	Figure E5
Project Name Lakeview Village		Project No. 120-0302-000	



Title	Allegion Sources
Project Name	Lakeview Village

Date	May 18, 2022
Project No.	120-0302-000

Figure	E6
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