DILLON CONSULTING

HOME OPPORTUNITIES

Detailed Noise Study

280 Clair Road West, Guelph, Ontario

October 2024 – 24-7484

Table of Contents

Tables

Figures

Appendices

References

1.0 Introduction

1.1 Purpose and Objectives

Dillon Consulting Limited (Dillon) was retained by Home Opportunities Non-Profit Corporation (Home Opportunities) to complete a Detailed Noise Study for the proposed development located at 280 Clair Road West in Guelph, Ontario (Proposed Development). This study has been completed in support of an Official Plan Amendment (OPA) and Zoning By-Law Amendment (ZBA) application for the Proposed Development.

The noise assessment presented herein was prepared in accordance with the guidelines and requirements of the City of Guelph's Noise Control Guidelines, the Ontario Ministry of Environment, Conservation and Parks (MECP) noise publication NPC-300, and MECP's land-use compatibility guidelines (D-series). This assessment focuses on the noise impacts from nearby surface transportation sources and stationary sources (i.e., nearby industrial operations) on the proposed development.

1.2 The Project and Surrounding Areas

The Proposed Development is located on a vacant lot at 280 Clair Road West. The lands occupied by the lot are currently zoned as Park and Urban Reserve land, per the City of Guelph's Zoning Bylaw (2023)-20790. The development will consist of:

- Tower A: Consisting of an 8-storey building adjacent to a 16-storey building;
- Tower B: Consisting of a 7-storey building adjacent to a 14-storey building;
- 15 multi-plex houses (8, 9, and 12-units); and
- 16 sets of stacked townhomes (between 6 and 12 units per stack).

Per the City of Guelph's Zoning Bylaw (2023)-20790, the area surrounding the proposed development include:

- Industrial (B), Natural Heritage System (NHS), and Low Density Residential (RL) zones to the north;
- Natural Heritage System (NHS), Open Space (OS), and Neighbourhood Institutional (NI) zones to the east;
- Industrial (B) and Natural Heritage System (NHS) zones to the south; and
- Industrial (B) zones to the west.

The subject site and surrounding areas are shown on **Figure 1** and **Figure 2**. The conceptual development plan for the site and a copy of the City of Guelph's interactive zoning map of the surrounding area are provided in **Appendix A**.

2.0 Transportation Noise

The transportation sources of noise with the potential to impact the proposed development include road traffic along Laird Road and Clair Road West. Road noise impacts were predicted and compared against the applicable criteria in the Ontario Ministry of Environment, Conservation and Parks (MECP) noise guideline publication, *NPC 300 – Environmental Noise Guideline – Stationary and Transportation Sources – Approvals and Planning* (2013). NPC-300 outlines noise level criteria for sensitive land uses, which assist in determining requirements for façade construction, ventilation requirements, warning clauses, and potential noise barriers for the proposed development.

2.1 Noise Criteria

The applicable transportation noise criteria, as outlined in Part C of NPC-300, are presented in **Table 1** through **Table 4**. **Table 1** summarizes the indoor sound level limits from road noise based on the type of indoor space assessed and time of day. The indoor noise levels are based on the assumption of closed windows and doors.

Table 1: Indoor Sound Level Limits for Road Noise

Type of Space	Time Period	Equivalent Sound Level - L_{eq} Road
General offices, reception areas, retail stores, etc.	Daytime (07:00 - 23:00)	50 dBA
Living/dining areas of residences, hospitals, nursing homes, schools, daycares, etc.	Daytime (07:00 - 23:00)	45 dBA
Living/dining areas of residences, hospitals, nursing homes, etc. (except schools and daycares)	Night-time (23:00 - 07:00)	45 dBA
Sleeping quarters of residences	Daytime (07:00 - 23:00)	45 dBA
	Night-time (23:00 - 07:00)	40 dBA
Sleeping quarters of hotels	Night-time (23:00 - 07:00)	45 dBA

Table 2 outlines the maximum equivalent plane-of-window sound levels for road noise where if exceeded, a detailed building component design assessment is required to ensure the indoor sound level limits (see **Table 1**) are achieved.

Table 2: Requirements for Building Component Assessment

Assessment Location	Time Period	Equivalent Sound Level - L_{eq} Road
Plane of window for living area or sleeping quarters	Daytime (07:00 - 23:00)	65 dBA
	Night-time (23:00 - 07:00)	60 dBA

Table 3 summarizes potential noise warning clauses and ventilation requirements that should be used to warn of potential annoyance due to existing surface transportation noise sources.

Table 3: Ventilation and Warning Clause Requirements for Combined Road and Rail Noise

Assessment Location	Time Period	Equivalent Sound Level - L_{eq} Road/Rail	Ventilation and Warning Clause Requirements [1]
Plane of window for living area or sleeping quarters	Daytime (07:00 - 23:00)	≤ 55 dBA	No Requirement
		> 55 dBA and ≤ 65 dBA	Provision for the installation of central air conditioning with a Type C warning clause
		> 65 dBA	Installation of central air conditioning with a Type D warning clause
Plane of window for living area or sleeping quarters	Nighttime (23:00 - 7:00)	≤ 50 dBA	No Requirement
		> 50 dBA and ≤ 60 dBA	Provision for the installation of central air conditioning with a Type C warning clause
		> 60 dBA	Installation of central air conditioning with a Type D warning clause

Note: [1] Warning clause types and requirements are provided in **Appendix C**.

The applicable noise criteria for Outdoor Living Areas (OLAs) specific to surface transportation are presented in **Table 4**. If the 16-Hour Equivalent Sound Level (Leq 16hr) at an OLA is greater than 55 dBA and less than or equal to 60 dBA, noise control measures may be applied to reduce the sound level to 55 dBA. Otherwise, prospective purchasers or tenants should be informed of potential elevated noise levels by way of a 'Type A' warning clause. For a Leq 16h of greater than 60 dBA, noise mitigation measures are required to reduce the noise levels to 55 dBA or less.

Table 4: OLA Level Limits for Combined Road and Rail Noise

Assessment Location	Equivalent Sound Level - L_{eq} 16hr[1] Road/Rail	Noise Control Measures and Warning Clause Requirements[2]
Outdoor Living Area	≤ 55 dBA	No requirement
	> 55 dBA and ≤ 60 dBA	Installation of noise control measure OR a Type A warning clause [1]
	> 60 dBA	Installation of noise control measure with a Type B warning clause

Notes: [1] Daytime only (07:00 - 23:00)
[2] Warning clause types and requirements are provided in **Appendix C**

2.2 Transportation Sources

In assessing potential transportation noise impacts on the proposed development, Laird Road and Clair Road West were analyzed as surface transportation sources. The Proposed Development is located west of Laird Road and south of Clair Road West.

Traffic data from each road were collected in the form of Hourly Multi-Channel Reports provided by the City of Guelph. For each road, the maximum daily traffic volume was used to predict the future Average Annual Daily Traffic (AADT) count. A 90% and 10% split for daytime and nighttime traffic volumes, respectively, was used in the analysis. The future traffic volumes (for 2035) were determined assuming an annual compounded growth rate of 1%. The forecasted future (2035) road traffic data is presented in **Table 5**. All traffic data used in modelling road traffic noise is provided in **Appendix B**.

Table 5: Future (2034) Road Traffic Data

Roadway	2035 AADT	Medium Trucks (%)	Heavy Trucks (%)	Speed (km/h)
Laird Road	18,648	15.1 %	5.9 %	50
Clair Road West	17,717	18.6 %	9.9 %	50

2.3 Predicted Sound Level

Road Noise Assessment

The assessment for roadway noise was completed using ORNAMENT, developed by the Ontario Ministry of Environment, Conservation, and Parks, implemented through STAMSON version 5.04. The model inputs used for the ORNAMENT assessment are outlined in **Table 5.**

Sensitive Receptor Locations

Sensitive receptors for the Transportation Noise Assessment were selected to reflect the worst-case noise impacts from Clair Road West and Laird Road. Receptor identification is outlined on **Figure 1.**

Transportation Noise Impacts – Plane of Window

Table 6 summarizes the predicted building façade noise levels from road noise sources at the sensitive receptors within the proposed development.

Table 6: Road Noise Prediction Summary Table - Façade Impacts

POR ID	Road Noise Impact - L_{eq} (dBA)[1]	
	Daytime (07:00-23:00)	Nighttime (23:00-07:00)
H01	**69 dBA**	**63 dBA**
H02	**69 dBA**	**63 dBA**
H03	**58 dBA**	**51 dBA**
H04	**57 dBA**	50 dBA
H05	54 dBA	47 dBA
TA (8th storey)	**59 dBA**	**53 dBA**
TA (16th storey)	**59 dBA**	**53 dBA**

Notes: [1] Predicted noise levels that exceed the applicable limits are presented in **bold**.

Transportation Noise Impacts – Outdoor Living Areas (OLAs)

Table 7 summarizes the predicted noise levels from road noise sources at the OLAs within the proposed development.

Table 7: Road Noise Prediction Summary Table - OLA Impacts

POR ID	Road Noise Impact – L_{eq} (dBA)[1], [2]
H01	**70 dBA**
H02	**70 dBA**
H03	**58 dBA**
H04	54 dBA
H05	52 dBA

Notes: [1] Predicted noise levels that exceed the applicable limits are presented in **bold**.
[2] OLAs are assessed during daytime hours (07:00-23:00) only.

STAMSON model outputs for the façade and OLA transportation noise assessments are provided in **Appendix D**.

2.4 Noise Control Measures

Façade Construction Recommendations

Based on the predicted façade sound levels shown in **Table 6** and the applicable noise criteria outlined in **Table 2**, a detailed building component design analysis is required for buildings H01 and H02. An initial building component analysis is shown in **Table 8**. As detailed floor plans are not yet available, typical unit layouts were assumed for the purposes of this assessment, which are provided in **Appendix E**. The predicted maximum impacts for road noise were used to assess the required glazing for the building.

Table 8: Building Component Analysis Using Maximum Impacts

POR ID	Maximum Required Glazing (STC)	
	Living/Dining Area	Sleeping Quarters
H01	28	26
H02	28	26

The above mentioned STC ratings are conservatively calculated and represent the recommended minimum STC ratings for the windows. Windows which meet the structural and energy saving requirements of the OBC typically have STC29 / STC30 ratings, upgraded glazing is not anticipated to be required for the Proposed Development.

Sensitive spaces located on corners of buildings, which have multiple façade exposure and potential contribution from multiple sources may require an STC rating increase of 3. As the design progresses, the façade and glazing requirements should by reviewed by an Acoustical Consultant, ideally at the Site Plan Approval (SPA) stage, to confirm or update the above recommended STC ratings. Windows should

be carefully selected to ensure the entire assembly (frame and glazing) meets the specified minimum STC ratings. It is recommended that manufacturer's test data and specifications be reviewed by an Acoustical Consultant upon selection. The building component analysis is attached in **Appendix E**.

Ventilation Requirements and Warning Clauses

Based on the predicted façade sound levels shown in **Table 6** and the threshold criteria outlined in **Table 6**, buildings H01 and H02 will require the installation of central air conditioning and 'Type D' warning clause, while Buildings H03, H04, and TA will require provisions for the installation of central air conditioning and a 'Type C' warning clause.

All warning clauses should be included in agreements that are registered on Title for all Offers of Purchase and Sale, lease/rental agreements, and condominium declarations. The list of applicable warning clauses required for the proposed development are provided in **Appendix C**.

Outdoor Living Area Mitigation

As transportation noise impacts at the OLAs of buildings H01 and H02 are predicted to exceed 60 dBA, NPC-300 stipulates that noise control measures should be implemented to reduce the noise impacts at these receptors to 55 dBA or lower. The City of Guelph's Noise Control Guidelines (Guelph Guideline) establishes guidance on noise control measures to be used in development applications. In this document, the City recommends the following noise control measures for protection of OLAs, in order of preference:

- Distance setback with soft intervening ground;
- Insertion of noise-insensitive land uses between the source and sensitive receptor;
- Orientation of the site and buildings to provide sheltered zones for rear yards;
- Earth berms; and
- Acoustic barriers.

Based on the site plan at the time of assessment, the most feasible options for controlling noise at the OLAs at H01 and H02 is either altering the Site Plan to relocate OLAs to a more protected location, or the installation of acoustic barriers. Distance setback and insertion of noise-insensitive land uses are not considered a feasible option due to the proximity of the Proposed Development to Clair Road West.

Acoustic barrier configurations were explored through iterative modelling to determine the minimum barrier requirements for meeting the NPC-300 criterion of 55 dBA. Based on the current site plan, the following barriers would be required in order to attenuate transportation noise at the OLAs of H01 and H02 to 55 dBA:

- A U-shaped barrier along the fence line of H01 with a height of 3.8 metres and total length of 28 metres; and
- A U-shaped barrier along the fence line of H02 with a height of 4 metres and total length of 47.5 metres.

The location and orientation of the barriers is attached in **Appendix F**. The Guelph Noise Control Guideline provides Specification for Noise Barriers that stipulate requirements for the design and construction of acoustic barriers. It states that mitigation options must be appropriately chosen to provide for the health and safety of the occupants of the noise sensitive land use and:

- Keep existing, proposed and future land use context in mind;
- Meet land use planning and urban design objectives;
- Must not interfere with servicing the site.

As the above noted acoustic barriers are significant, it is recommended that the site and concept plan be updated to relocate the planned OLAs to a more protected location, such as in the interior of the Proposed Development. In the event this is not feasible, per the City of Guelph Noise Control Guidelines, this assessment should be updated to include Provision for Maintenance, Financial Securities, Conformation of Final Construction, and ensuring the design meets the Noise Barrier System Requirements.

Additionally, based on the predicted outdoor sound levels shown in **Table 7** and the threshold criteria outlined in **Table 4**, the buildings H01 and H02 would require the inclusion of a 'Type B' warning clause, and, building H03 would require the inclusion of a 'Type A' warning clause.

All acoustic barriers should have a minimum surface density of 20 kg/m^3, be structurally sound, appropriately designed to withstand wind and snow load, and constructed without cracks or surface gaps. Any gaps under the barrier that are necessary for drainage purposes should be minimized and localized, so that the acoustical performance of the barrier is maintained. All acoustic barriers should adhere to the Guelph Guideline's Specifications for Noise Barriers.

As the design progresses, and the built form and ground elevations are finalized, this assessment should be updated by an Acoustical Consultant to confirm that compliance with the transportation sound level limits is achievable at the Proposed Development.

3.0 Stationary Noise Assessment

A review of the site and surrounding area has been conducted to identify potential stationary sources (i.e., industrial/commercial) that have the potential to impact the proposed sensitive use. A site visit was completed by Dillon staff on February 13th, 2024 for the purpose of classifying facilities in proximity to the proposed developments, identifying potential sources of noise, and classifying the acoustic environment.

3.1 MECP Guideline D-6 Compatibility Between Industrial Facilities

The MECP's land-use compatibility guidelines (D-series) are intended to prevent or minimize the encroachment of sensitive land uses upon industrial/commercial land uses and vice versa, as these two types of land uses are normally incompatible, due to possible adverse effects (e.g., noise) on the sensitive land use. As per the guideline, potential noise impact from industrial or commercial establishments within the potential influence area or recommended minimum separation distance, as outlined in D-6 (see **Table 9**), should be assessed.

Table 9: Guideline D-6 Potential Influence Area and Recommended Minimum Separation Distance

Industrial Classification [1]	Area of Influence	Recommended Minimum Separation Distance
Class I	70 m	20 m
Class II	300 m	70 m
Class III	1000 m	300 m

Note: [1] Industrial classifications are outlined in Guideline D-6, and presented in **Appendix G**.

3.2 Facilities

The land use planning guide, *D-6 Compatibility between Industrial Facilities*, was used for the classification of the surrounding industrial facilities and the applicable setback distances in relation to the proposed sensitive land use. The criteria for classification of industrial categories are presented in **Appendix G.**

The surrounding industries that were identified with the potential to have noise impacts on the proposed development are summarized in **Table 10** and shown on **Figure 2**. Setback distances from the industry's property line to both the Proposed Development's property line and nearest sensitive receptor (POR) are included.

Table 10: Facilities with Proximity to Proposed Development

Facility and Address	Setback from Proposed Development		Industrial Classification	Description of Operations/Equipment	Environmental Compliance Approval
	Property Line	Nearest POR			
Denso Manufacturing Canada, 900 Southgate Dr, Guelph, ON	0 m[1]	115 m	II	Automotive parts manufacturing, injection molding, metal forming, parts degreasing, powder coating, flame brazing, welding, assembly and testing of parts	9696-AJFHC2
Clair Road Water Tower, 300 Clair Road, Guelph, ON	50 m	118 m	I	Water pumping	N/A
The TDL Group Corp., 950 Southgate Road, Guelph, ON	0 m[1]	10 m	II	Food product storage and logistics, diesel generators for peak period power generation	ECA: 1704-8W3HRC EASR: R-003-3132472017
Organic Meadow, 362 Laird Rd, Guelph, ON	200 m	260 m	II	Dairy products manufacturing	N/A
Oskam Welding & Machine Ltd., 40 Rutherford Ct, Guelph, ON	270 m	340 m	II	Custom steel fabrication (incl. welding), paint spray booth, NG-fired heating HVAC units	Certificate of Approval: 4520-7MZU7N
Sleeman Brewery, 551 Clair Rd W, Guelph, ON	700 m	765 m	III	Brewing, process exhaust systems, NG-fired boilers, welding, pulse jet baghouse dust collectors, cooling towers, outdoor storage, biogas burning	1390-8TJN9Z
Bishop Macdonell Catholic High School (BMCHS)	0 m[1]	10 m	I	Dust collector	N/A

Notes: [1] Property is adjacent to Proposed Development.
"N/A": Environmental Permissions not available / were not identified.

Industries were classified based on site visit observations from publicly accessible areas, consultation with industry staff, review of existing MECP approvals documents, and through publicly available information. The Guelph MECP District Office was contacted to request complaint related information for the area. It was communicated to Dillon that the District Office is unable to provide complaint related information and such inquiries are to be directed using the MECP's Freedom of Information (FOI) request system.

The TDL Group's Acoustic Assessment Report associated with their ECA was obtained by Dillon and used to inform stationary and impulsive noise modelling of the TDL facility. Where determined necessary, Dillon has submitted an FOI request on a per-industry basis in search of the industries' AARs. At the time of assessment, Dillon has not received the requested documents for all other requested facilities. FOI requests are attached in **Appendix H**.

Through a review of the City of Guelph's Zoning Bylaw (2023)-20790, vacant lots classified within Guelph's Zoning Bylaw as Employment zones under designation B were identified at 320 and 426 Clair Road West, immediately west of the Proposed Development.

The vacant lands at 320 Clair Road West are adjacent to the northwestern property boundary of the Proposed Development and are zoned as Industrial (B) per the City of Guelph's Zoning Bylaw (2023)-20790. It is Dillon's understanding that the lands were severed from the 900 Southgate Drive (Denso) property. No development applications for this property have been identified at this time.

For the purposes of this assessment, it's been assumed that the future use of the lands will be characteristic of a Class I industry which may include uses such as:

- Warehousing and distribution; and/or
- Enclosed light industrial uses such as assembly and packaging.

Per **Table 9**, the potential Area of Influence and Recommended Minimum Separation Distance of a Class I industry is 70 m and 20 m, respectively. The vacant lands at 320 Clair Road West were assessed using noise sources typical of a Class 1 warehousing and distribution facilities including, but not limited to truck movements, idling trucks, and rooftop HVAC units.

Based on information obtained online, it is Dillon's understanding that an industrial logistics facility is expected to be constructed at 426 Clair Road West, which may include cold storage.

3.3 Stationary Noise Criteria and Area Classification

MECP Publication NPC-300 outlines applicable noise criteria for the proposed development associated with surrounding industrial and commercial stationary noise sources. The noise criteria are defined using area classifications (not to be confused with the D-6 industrial classifications), which are based on the receptor's existing acoustical environment. NPC-300 classification are as follows:

- Class 1 – Urban Area;
- Class 2 – Semi-Urban / Semi-Rural;

- Class 3 – Rural Area; and
- Class 4 – Areas of Redevelopment and Infill (typically in proximity of lawfully operating industrial / commercial facilities).

Different noise guideline limits for stationary noise sources apply to each area classification, as presented in **Table 11.**

Table 11: Exclusionary Limits for Stationary Noise Sources

Assessment Location	Time Period	Exclusionary Sound Level Limit - L_{eq} 1hr			
		Class 1	Class 2	Class 3	Class 4
Plane of window for living area or sleeping quarters	Daytime (07:00 - 19:00)	50 dBA	50 dBA	45 dBA	60 dBA
	Evening (19:00 - 23:00)	50 dBA	50 dBA	40 dBA	60 dBA
	Nighttime (23:00 - 07:00)	45 dBA	45 dBA	40 dBA	55 dBA
Outdoor points of reception	Daytime (07:00 - 19:00)	50 dBA	50 dBA	45 dBA	55 dBA
	Evening (19:00 - 23:00)	50 dBA	45 dBA	40 dBA	55 dBA

NPC-300 sets separate limits for sources of impulsive noise, which are assessed using the Logarithmic Mean Impulse Sound Level (L_{LM}). The guideline limits for impulsive noise sources are presented in **Table 12**.

Table 12: Exclusionary Limits for Impulsive Noise Sources

# of Impulses in One-Hour Period	Class 1 Area		Class 2 Area		Class 3 Area		Class 4 Area	
	Plane of Window (07:00-23:00) / (23:00-07:00)	Outdoor Point of Reception (07:00-23:00)	Plane of Window (07:00-23:00) / (23:00-07:00)	Outdoor Point of Reception (07:00-23:00)	Plane of Window (07:00-23:00) / (23:00-07:00)	Outdoor Point of Reception (07:00-23:00)	Plane of Window (07:00-23:00) / (23:00-07:00)	Outdoor Point of Reception (07:00-23:00)
≥ 9	50/45	50	50/45	50	45/40	45	60/55	55
7-8	55/50	55	55/50	55	50/45	50	65/60	60
5-6	60/55	60	60/55	60	55/50	55	70/65	65
4	65/60	65	65/60	65	60/55	60	75/70	70
3	70/65	70	70/65	70	65/60	65	80/75	75
2	75/70	75	75/70	75	70/65	70	85/80	80
1	80/75	80	80/75	80	75/70	75	90/85	85

During the site visit conducted on February 13th, 2024, it was observed that the acoustic environment surrounding the proposed development is dominated by transportation noise and general urban hum from nearby industries during the daytime. Based on the nature of the area, the Class 1 (urban) sound level limits would apply.

Although sound level limits do not apply to emergency equipment operating in emergency situations, emergency equipment is to be assessed during any testing or maintenance procedures. The sound level limits for noise produced by emergency equipment operating in non-emergency situations (testing or maintenance) are 5 dB greater than the sound level limits outlined in **Table 10.** The impacts produced by such sources are to be assessed separately from all other stationary sources.

3.4 Stationary Sources

The noise sources associated with the industries identified in **Section 3.2** are outlined below in **Table 13.** Relevant noise source information was gathered from previous environmental approvals. The facilities' locations compared against the D-6 areas of influence (see **Table 9**) are presented on **Figure 2.**

Table 13: Stationary Noise Sources

Noise Source[1]	Associated Facility	Source Type
5-ton HVAC unit	TDL Inc.	Steady
	Denso Mfg.	Steady
	Organic Meadow	Steady
	320 Clair	Steady
10-ton HVAC unit	TDL Inc.	Steady
20-ton HVAC unit	TDL Inc.	Steady
	320 Clair	Steady
Cooling tower cell	TDL Inc.	Steady
Generator combustion exhaust (1750 W)	TDL Inc.	Steady
Generator intake (1750 W)	TDL Inc.	Steady
Generator exhaust (1750 W)	TDL Inc.	Steady
Generator combustion exhaust (900 W)	TDL Inc.	Steady
Generator intake (900 W)	TDL Inc.	Steady
Generator exhaust (900 W)	TDL Inc.	Steady
Generator mechanical noise (900 W)	TDL Inc.	Steady
Reefer truck	TDL Inc.	Steady

Noise Source[1]	Associated Facility	Source Type
Loading dock leveller	TDL Inc.	Impulsive
	Denso Mfg.	Impulsive
	Vacant Lot	Impulsive
Condenser	Denso Mfg.	Steady
	320 Clair	Steady
Regenerative Thermal Oxidizer	Denso Mfg.	Steady
	Vacant Lot	Steady
Air Handling Unit Intake	Denso Mfg.	Steady
	Organic Meadow	Steady
Air Handling Unit Exhaust	Denso Mfg.	Steady
	Organic Meadow	Steady
Idling Truck	Denso Mfg.	Steady
	Severed Lot	Steady
Cooling Tower	Sleeman	Steady
Baghouse Dust Collector	Sleeman	Steady
Dust Collector	BMCHS	Steady
Delivery truck movements	TDL Inc.	Moving point
	Denso Mfg,	Moving point
	Organic Meadow	Moving point
	320 Clair	Moving point

Note: [1] Sound power levels and spectra of noise sources are provided in **Appendix I**.

3.4.1 Noise Sensitive Points of Reception

As per the MECP noise guidelines NPC-300, a Point of Reception (POR), as it applies to impact assessments of stationary sources, means any location on a noise sensitive land use where noise from a stationary source is received. Noise sensitive land uses include the following lands:

- Permanent, seasonal, or rental residences;
- Hotels, motels, and campgrounds;
- Schools, universities, libraries, and daycare centres;
- Hospitals and clinics, nursing / retirement homes; and
- Places of worship.

POR identification followed the convention from the Transportation Noise Assessment outlined in **Section 2.3.** All buildings within the site plan were assessed as noise-sensitive receptors (except for the parking structure).

PORs representing the Proposed Development's townhomes were assigned an outdoor POR representing a front or rear yard (ID: H##_O). The community garden space at the south end of the site was also assigned an outdoor POR (ID: CG_O). All outdoor PORs are located up to 30 m from the dwelling's façade at a height of 1.5 m above grade.

At the time of assessment, the Site Plan does not include information on the inclusion of balconies. It was assumed that any balconies included in the Proposed Development would not have a depth greater than 4 metres and as such, would not require assessment of stationary or transportation noise per NPC-300.

The most recent site plan for the Proposed Development is attached in **Appendix A**, while POR identifications are shown on **Figure 1**.

3.5 Predicted Sound Levels - Stationary

Impacts from the stationary noise sources were predicted through noise propagation modelling. The predicted receptor noise levels (at the proposed development site) were compared against the applicable criteria, as specified in NPC-300 (see **Table 11**).

All potential noise impacts from all industrial lands identified in **Section 3.2** were assessed for compatibility with the applicable MECP noise guidelines, with the following exceptions:

Oskam Welding & Machine Ltd.

With respect to the MECP Guideline D-6 industrial categorization criteria in **Appendix G**, Oskam appears to be a small-scale plant, with outside storage permitted and noise emissions that may be frequent and intense. Considering these characteristics, the facility is considered a Class II industry per the D-6 Guidelines. The Proposed Development's west property line is within the 300 m potential influence area of Oskam (see **Table 9**). However, per the Site Plan provided in **Appendix A**, there is a natural corridor along the western portion of the Proposed Development site that buffers the sensitive uses from industries located to the west. As the distance between Oskam's property line and the Proposed Development's nearest sensitive receptor is greater than 300 m, noise impacts are not anticipated.

426 Clair Road West

The vacant lands at 426 Clair Road West are located approximately 530 m west of the Proposed Development. Based on information obtained online, an industrial logistics facility is expected to be constructed, which may include cold storage. With respect to the MECP Guideline D-6 industrial categorization criteria in **Appendix G**, this type of facility would be considered a Class II industry. Given that the Proposed Development is located greater than the potential Area of Influence of a Class II industry (300 m), noise impacts from the future Class II industrial land use on the Proposed Development are not expected.

Clair Road Water Tower

The aforementioned natural corridor along the Proposed Development's west property line also provides buffer distance from the Clair Road Water Tower. It was found that the distance from the water tower's property line was greater than its potential influence area and as such, did not warrant assessment of potential noise impacts.

3.5.1 Noise Modelling Methodology

The noise analysis was completed using CADNA/A, an outdoor noise propagation model, based on ISO Standard 9613, Part 1: Calculation of the absorption of sound by the atmosphere, 1993 and Part 2: General method of calculation (ISO-9613-2:1996). The model is capable of incorporating various site-specific features, such as elevation, berms, absorptive grounds, and barriers to accurately predict noise levels at specific receptors, pertaining to noise emissions from a particular source / sources. The ISO based model accounts for reduction in sound level due to increased distance and geometrical spreading, air absorption, ground attenuation, and acoustical shielding by intervening structures and topography. The model is considered conservative as it represents atmospheric conditions that promote propagation of sound from the source to the receiver. For the purposes of the stationary assessment, the Building Evaluation feature in Cadna/A was used to determine building facades noise impacts (worst-case).

The stationary noise model incorporated the following assumptions:

- A global ground absorption coefficient of 0.7 was used to represent mostly grassy surroundings. Paved areas on site were assigned a local ground absorption coefficient of 0.3;
- A second-order reflection was assumed; and,
- Elevation changes on the site were incorporated using elevation contours with 1 m resolution.

The acoustic model for the predicted impacts from TDL Corp, Denso Mfg., and Sleeman was calibrated based on the information obtained from the facilities' Noise Summary Tables (sound levels at existing point of reception).

3.5.2 Plane-of-Window Sound Levels

Table 14 summarizes the predicted building façade noise levels from stationary noise sources from the surrounding industries at the proposed development. The worst-case noise impacts for the towers (TA/TB), the townhomes (H##), and the outdoor receptors (CG_O, H##_O) are shown for each industrial facility assessed.

Table 14: Stationary Noise Impact Summary Table – Surrounding Industries on Proposed Development

Industry	Worst-case Receptor ID	Maximum Daytime Façade Leq (1 hour) (dBA)[1]	Maximum Evening Façade Leq (1 hour) (dBA)[1]	Maximum Nighttime Façade Leq (1 hour) (dBA)[1]	MECP Compliance?	
					Class 1 Criteria[2]	Class 4 Criteria[2]
TDL Corp	TB	**56**	**56**	**54**	No	Yes
	H11	**55**	**55**	**52**	No	Yes
	H10_O	**54**	**54**	—	No	Yes
Denso Mfg.	TA	49	49	**49**	No	Yes
	H07	47	47	**47**	No	Yes
	CG_O	46	46	—	Yes	Yes
Organic Meadow	TA	47	47	40	Yes	Yes
	H02	49	49	42	Yes	Yes
	H02_O	44	44	—	Yes	Yes
Sleeman	TA	42	39	39	Yes	Yes
	H02	42	39	39	Yes	Yes
	H04_O	40	37	—	Yes	Yes
320 Clair	TA	**51**	**51**	**51**	No	Yes
	H06	**51**	**51**	**51**	No	Yes
	H04_O	50	50	—	Yes	Yes
BMCHS	TA	35	—	—	Yes	Yes
	H14	**51**	—	—	No	Yes
	H14_O	**51**	—	—	No	Yes

Notes: [1] Predicted noise levels that exceed the Class 1 limits are presented in **bold**.
[2] See **Table 9.**

The predicted worst-case stationary noise impacts from the surrounding industries at the façade of the proposed building are presented in **Figures 3a-f**.

Based on the predicted plane of window and outdoor noise levels listed in **Table 14**, the Proposed Development is expected to experience noise impacts from TDL Inc., Denso Manufacturing, and the potential industry at 320 Clair, that exceed the Class 1 stationary sound level limits.

However, the predicted stationary noise levels from all surrounding industries comply with all NPC-300 stationary façade and outdoor noise criteria for a Class 4 area. As such, it is recommended that the Proposed Development apply for Class 4 designation in order to comply with MECP regulations on stationary noise.

3.6 Predicted Sound Levels – Impulsive

Impacts from the surrounding industries' impulsive noise sources were predicted through noise propagation modelling and assessed using the logarithmic mean sound level. The predicted impulsive receptor noise levels (at the proposed development site) were compared against the applicable criteria, as specified in NPC-300 (see **Table 12**). In keeping with the stationary noise assessment, the modelling results are assessed against both Class 1 and Class 4 impulsive sound level criteria.

Table 15 summarizes the predicted impulsive noise impacts from the surrounding industries on the proposed development. For each industry with identified impulsive noise sources, the façade POR and outdoor POR experiencing the highest impulsive noise impacts were assessed. As such, **Table 15** presents each of the surrounding industries' worst-case impulsive noise impact at the Proposed Development. The most impacted PORs were compared against the most stringent NPC-300 impulsive noise limits (i.e., ≥ 9 impulses per hour, nighttime criteria for façade, daytime criteria for outdoor PORs).

Table 15: Impulsive Noise Impact Summary Table – Surrounding Industries on Proposed Development

Industry	POR ID	POR Location	Maximum L_{LM} (dBAI)[1]	MECP Compliance	
				Class 1[2]	Class 4[3]
TDL Inc.	TB	3rd storey façade	42	Yes	Yes
	H10_O	Outdoor, 1.5 m height	40	Yes	Yes
Denso Mfg	TA	4th storey façade	47	Yes	Yes
	CG	Outdoor, 1.5 m height	44	Yes	Yes
Sleeman	H06	3rd storey façade	35	Yes	Yes
	H04	Outdoor, 1.5 m height	31	Yes	Yes
320 Clair	H06	3rd storey façade	**52**	No	Yes
	H05	Outdoor, 1.5 m height	**52**	No	Yes

Notes: [1] Predicted noise levels that exceed the applicable limits are presented in **bold**.
[2] 45 dBAI (night) for façade PORs, 50 dBAI (day/evening) for outdoor PORs.
[3] 55 dBAI (night) for façade PORs, 55 dBAI (day/evening) for outdoor PORs.

The predicted impulsive noise impacts at the Proposed Development from the vacant lot exceed the Class 1 impulsive noise limits for both daytime/evening and nighttime hours at the plane of window, as well as the limits for daytime/evening impulsive noise at outdoor PORs. However, the predicted levels from all surrounding industries comply with all NPC-300 impulsive noise criteria for a Class 4 area. As such, it is recommended that the Proposed Development apply for Class 4 designation in order to comply with MECP regulations on impulsive noise.

3.7 Class 4 Designation

As shown in **Table 14 and 15**, multiple locations within the Proposed Development are predicted to exceed the Class 1 exclusionary sound level limits. Source-based mitigation measures are likely not feasible due to the number of sources, as well as the types of sources (shipping/receiving operations). Similarly, based on the locations of the sources relative the Proposed Development (16-storey in height), acoustic barriers are likely not feasible to control the predicted noise impacts. It is recommended that the Proposed Development seek a Class 4 designation approval from the land use planning authority.

Class 4 Justification

As outlined in NPC-300, a Class 4 area can be applied to proposed site under the following conditions:

- The site would otherwise be defined as a Class 1 or Class 2 area;
- The proposed site is an area intended for development with new noise sensitive land uses that are not yet built;
- The site is in proximity to existing, lawfully established stationary sources; and
- The site has formal confirmation from the land use planning authority (City of Guelph) with the Class 4 area designation.

The Proposed Development meets all of the above conditions, with the exception of the confirmation from the land use planning authority. As such, a Class 4 designation is considered reasonable for this Proposed Development.

In addition to the Class 4 designation for the Proposed Development, a 'Type F' warning clause and supplied ventilation/air conditioning system would be required. Furthermore, a Type E warning clause is recommended for all sensitive uses as industrial operations may be audible at times. Warning clauses should be included in agreements that are registered on title for all Offers of Purchase and Sale, lease/rental agreements, and condominium declarations.

4.0 Conclusions

Dillon Consulting Limited (Dillon) was retained by Home Opportunities Non-Profit Corporation (Home Opportunities) to complete a Detailed Noise Study for a proposed multi residential development located at 280 Clair Road West in Guelph, Ontario (Proposed Development). This study has been completed in support of Official Plan Amendment and Zoning By-law Amendment applications for the Proposed Development.

The Noise Study focuses on the noise impacts from nearby transportation sources and stationary sources (i.e., nearby industrial operations) on the Proposed Development.

Transportation Noise Assessment

As outlined in **Section 2.4**, the results of the transportation noise assessment confirm that the noise impacts on the proposed development can be sufficiently controlled by:

- Requiring that the buildings H01 and H02 include a 'Type D' warning clause and are constructed to include the installation of central air conditioning;
- Requiring that Buildings H03, H04, and TA include a 'Type C' warning clause and are constructed to include provisions for the installation of air conditioning;
- Incorporating noise mitigation measures that will attenuate outdoor noise impacts at H01 and H02 to 55 dBA or lower AND the inclusion a 'Type B' warning clause; and,
- Incorporating noise mitigation measures that will attenuate outdoor noise impacts at H03 **or** the inclusion a 'Type A' warning.

Warning clauses shall be included in agreements that are registered on Title for all Offers of Purchase and Sale, lease/rental agreements, and condominium declarations.

As the design progresses, and detailed floor plans become available, this assessment should be updated by an Acoustical Consultant to confirm the façade and glazing requirements.

Stationary Noise Assessment

The noise impacts from surrounding commercial and industrial properties on the development were assessed through modelling of stationary and impulsive noise sources in Cadna/A using ISO:9613 standards. It was predicted that the noise impacts from the surrounding commercial and industrial properties will exceed the Class 1 noise level limits set by the MECP for both stationary and impulsive noise. However, it was predicted that noise impacts from all surrounding industries assessed will comply with the MECP's Class 4 noise limits, which are reserved for areas of redevelopment and infill.

Multiple locations within the Proposed Development are predicted to exceed the Class 1 exclusionary sound level limits from the surrounding industries. Source-based mitigation measures are likely not feasible due to the number of sources, as well as the types of sources (shipping/receiving operations). Similarly, based on the locations of the sources relative the Proposed Development (16-storey in height),

acoustic barriers are likely not feasible to control the predicted noise impacts. It is recommended that the Proposed Development seek a Class 4 designation approval from the land use planning authority.

If Class 4 designation is obtained, the Proposed Development is predicted to comply with all applicable MECP stationary and impulsive noise level limits. Prospective purchasers of any property within the Proposed Development shall be informed of its Class 4 designation through a 'Type F' warning clause. Furthermore, a 'Type E' warning clause is recommended for all sensitive uses as industrial operations may be audible at times.

As the design progresses, and the built form and ground elevations are finalized, this assessment should be updated by an Acoustical Consultant to confirm that compliance with the stationary sound level limits is achievable at the Proposed Development.

5.0 Closure

This Detailed Noise Study assessment has been prepared based on the information provided and/or approved by Home Opportunities Non-Profit Corporation (Home Opportunities). This report was prepared by Dillon for the sole benefit of Home Opportunities. The material in the report reflects Dillon's judgement in light of the information available to Dillon at the time of this report preparation. Any use which a third party makes of this report, or any reliance on or decisions made based on it, are the responsibilities of such third parties. Dillon accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report.

We trust that the report is to your satisfaction. Please do not hesitate to contact the undersigned if you have any further questions on this report.

Respectfully Submitted:

DILLON CONSULTING LIMITED

Lucas Arnold, P.Eng
Associate

Thom Wright
Environmental EIT

Figures

Scale 1:3,000

Figure 1

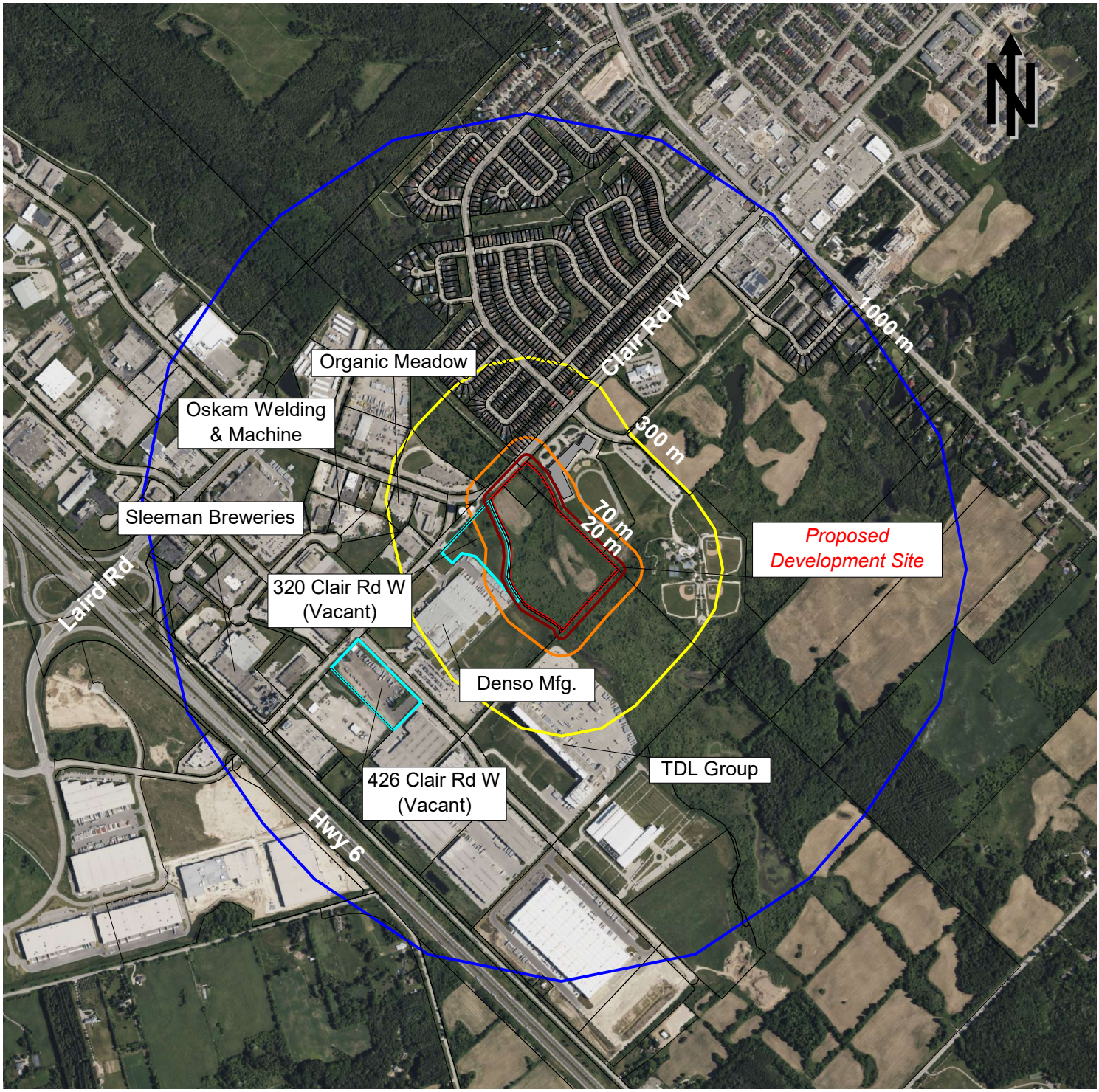
Development Site Plan

280 Clair Road W, Guelph, Ontario

Project # 24-7484

October 2024

DILLON CONSULTING



Scale 1:16,000

Figure 2

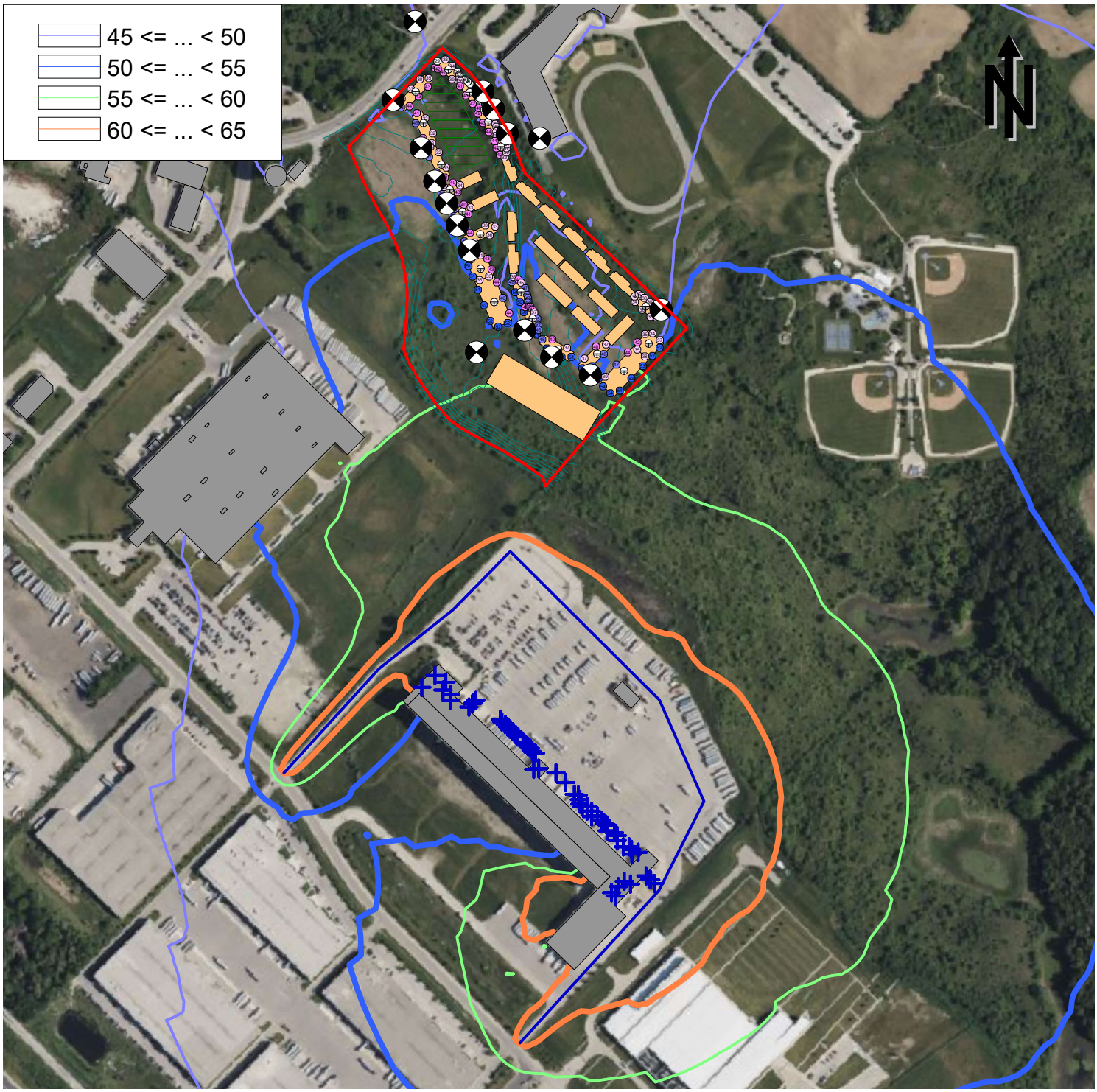
Project # 24-7484

October 2024

Surrounding Area with MECP D-6 Setbacks

280 Clair Road W, Guelph, Ontario

DILLON CONSULTING



Scale 1:6,000

Figure 3a

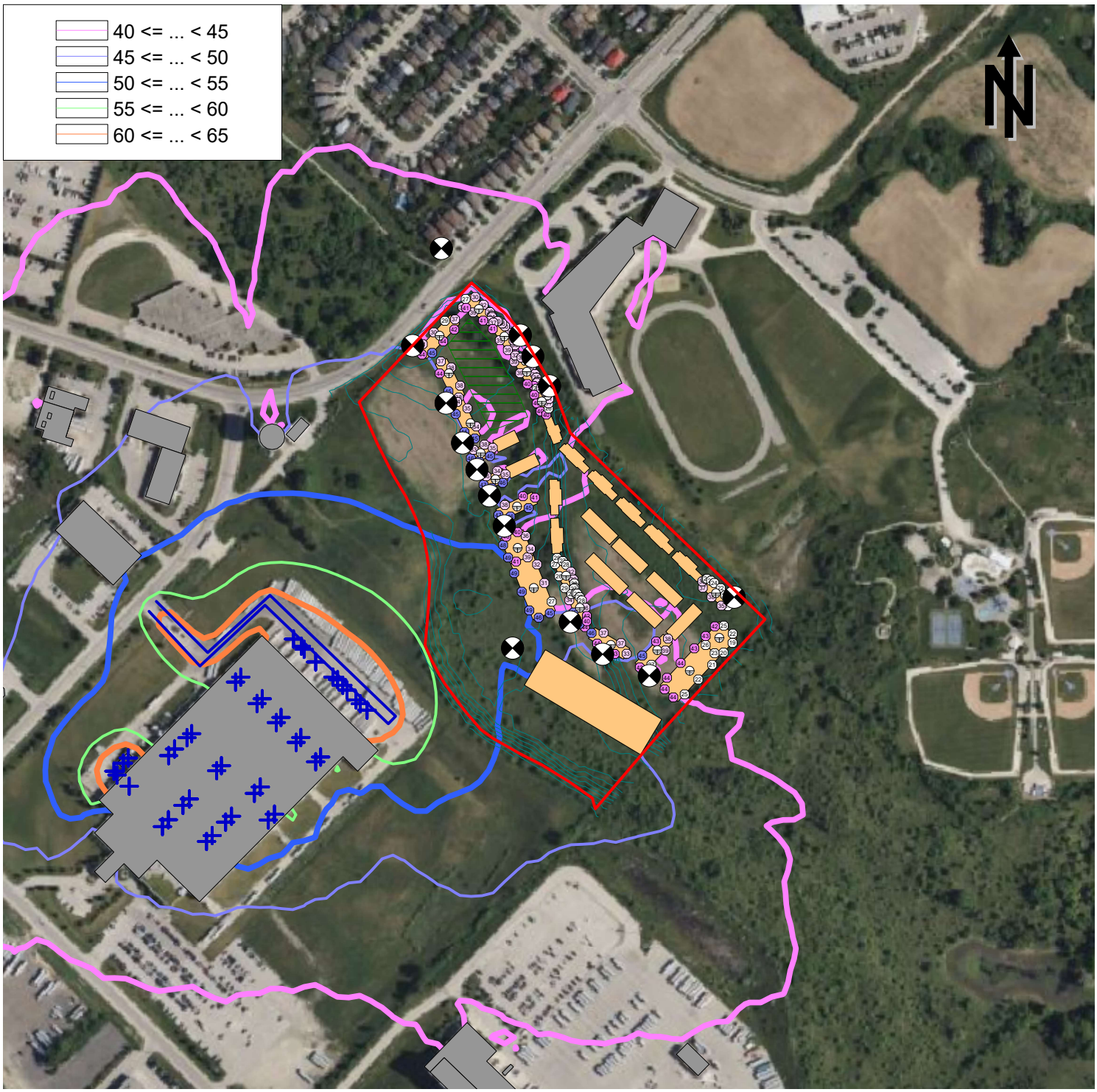
Nighttime Steady Noise Contours
TDL Group (h=7.5m)

280 Clair Road W, Guelph, Ontario

Project # 24-7484

October 2024

DILLON CONSULTING



Scale 1:5,000

Figure 3b

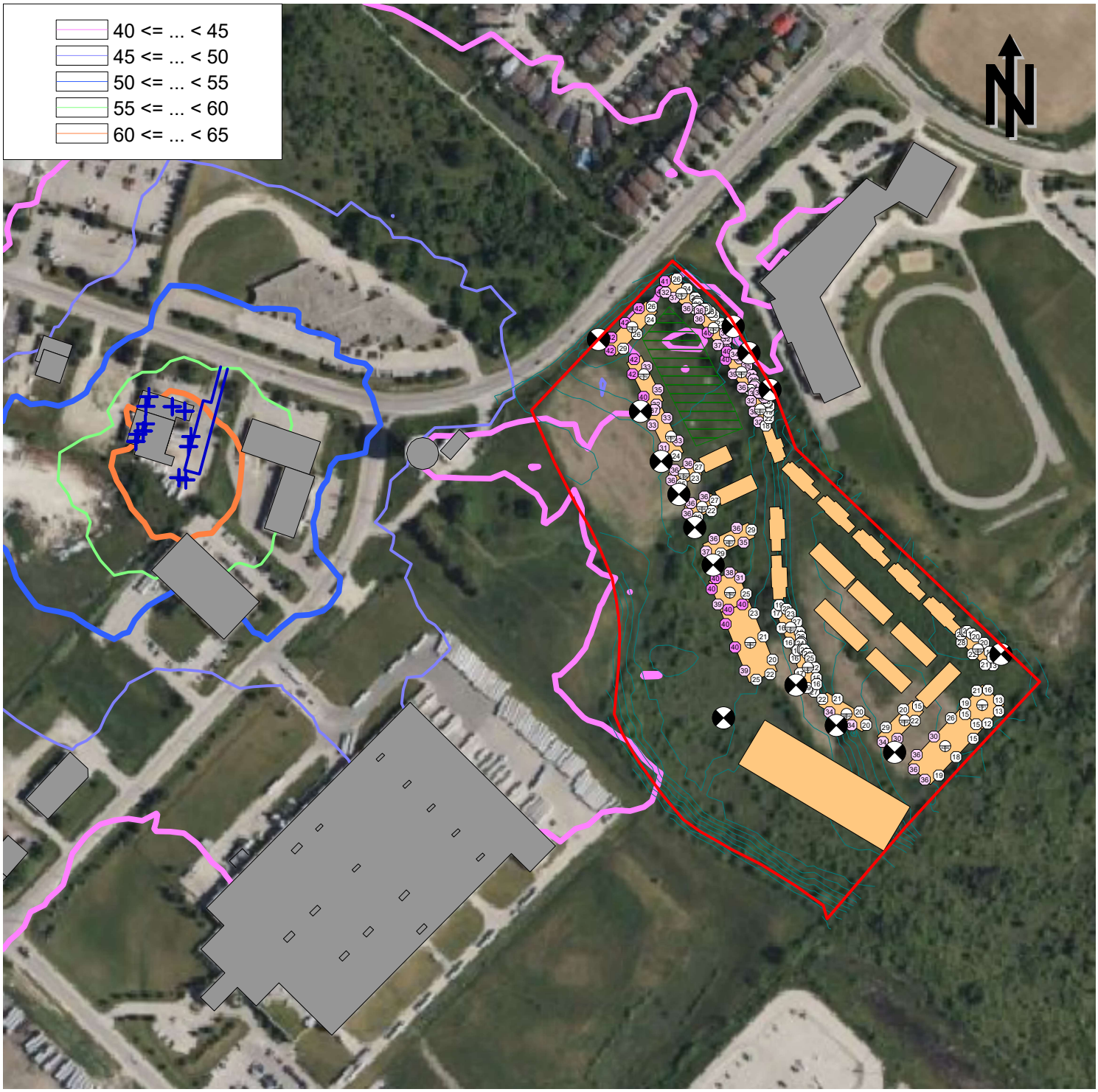
Nighttime Steady Noise Contours
Denso Manufacturing (h=7.5m)

280 Clair Road W, Guelph, Ontario

Project # 24-7484

October 2024

DILLON CONSULTING



Scale 1:4,000

Figure 3c

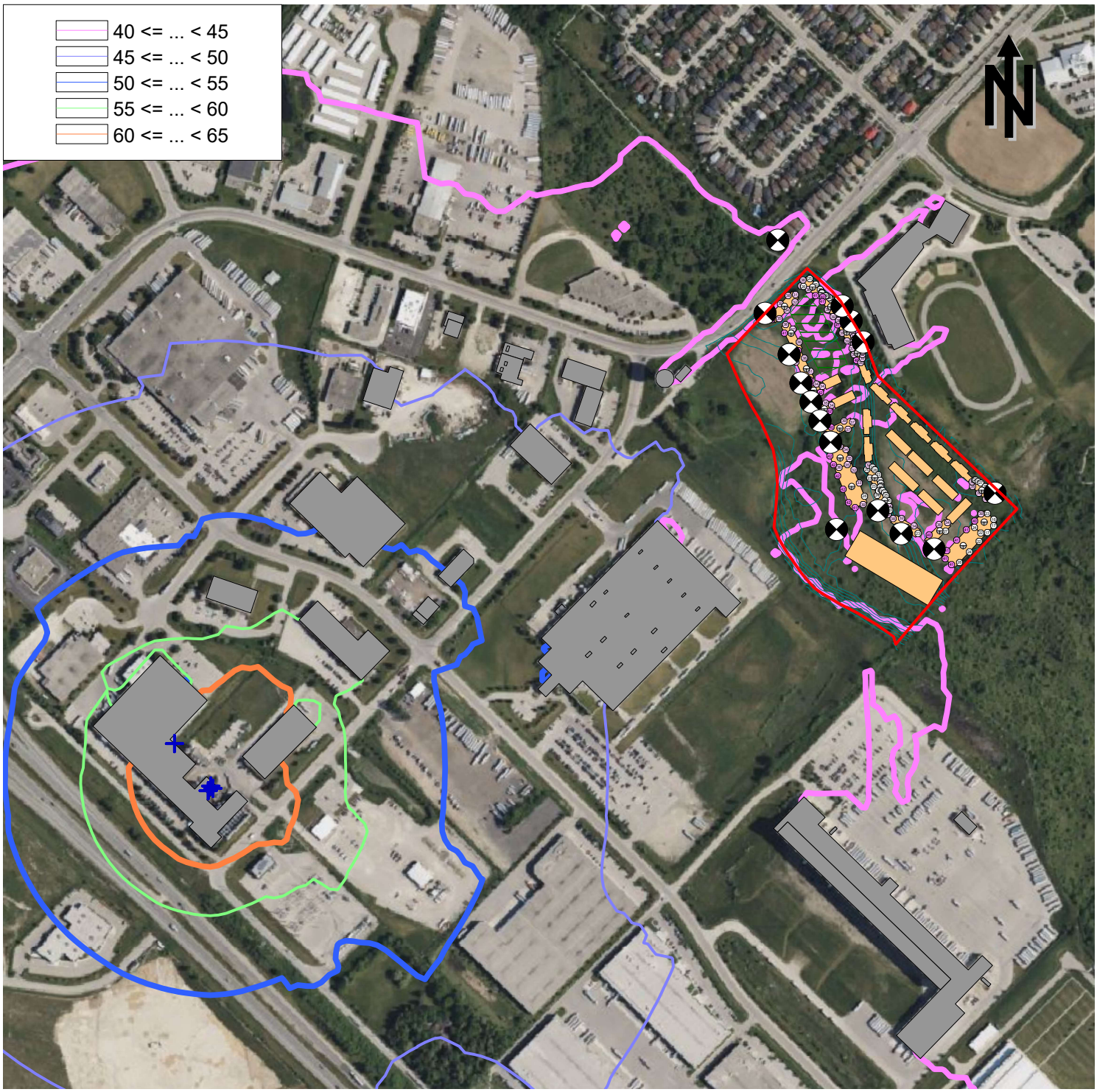
Nighttime Steady Noise Contours
Organic Meadow (h=7.5)

280 Clair Road W, Guelph, Ontario

Project # 24-7484

October 2024

DILLON CONSULTING



Scale 1:7,000

Figure 3d

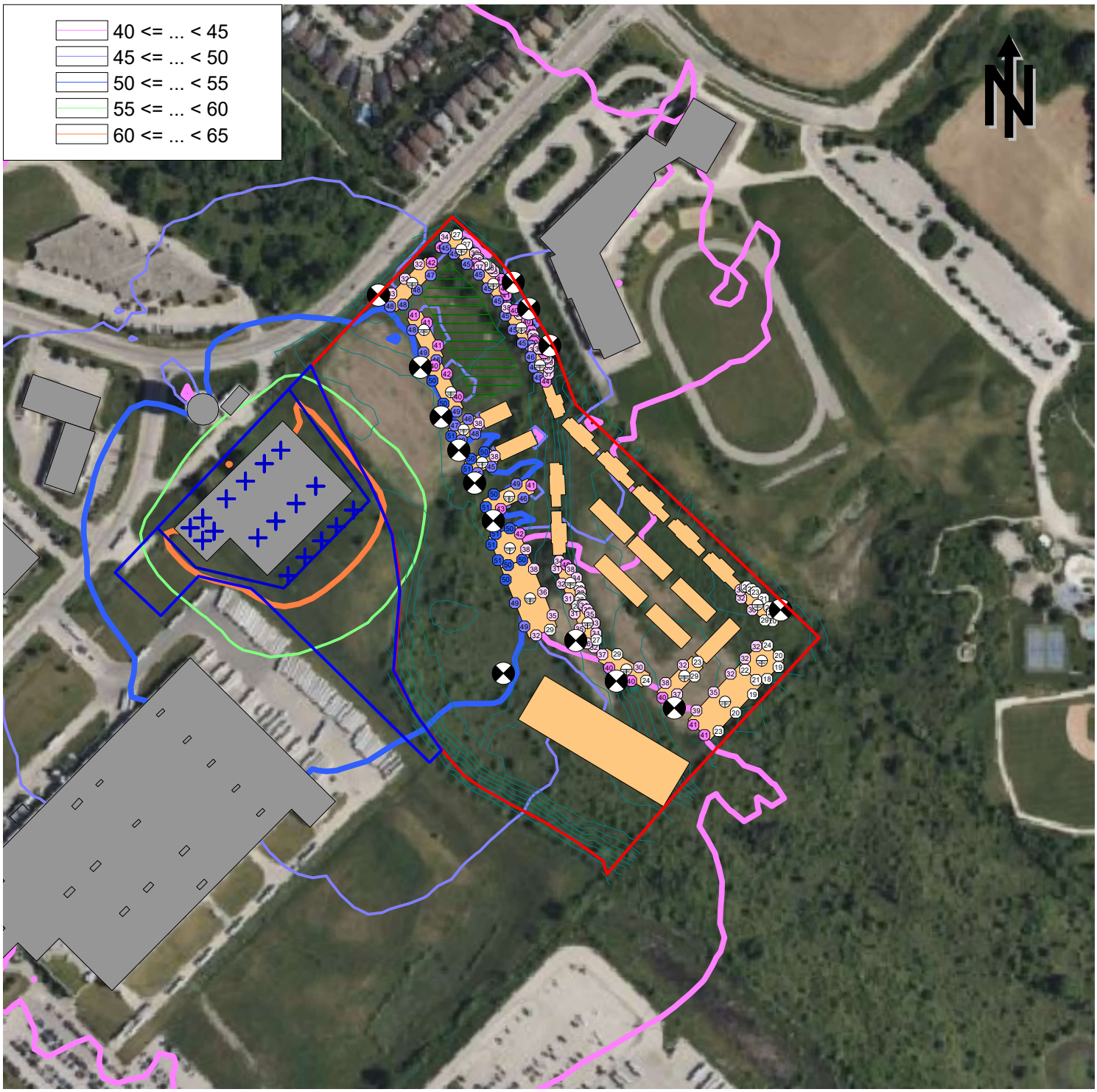
Daytime Steady Noise Contours Sleeman Breweries (h=7.5)

280 Clair Road W, Guelph, Ontario

Project # 24-7484

October 2024

DILLON CONSULTING



Scale 1:4,000

Figure 3e

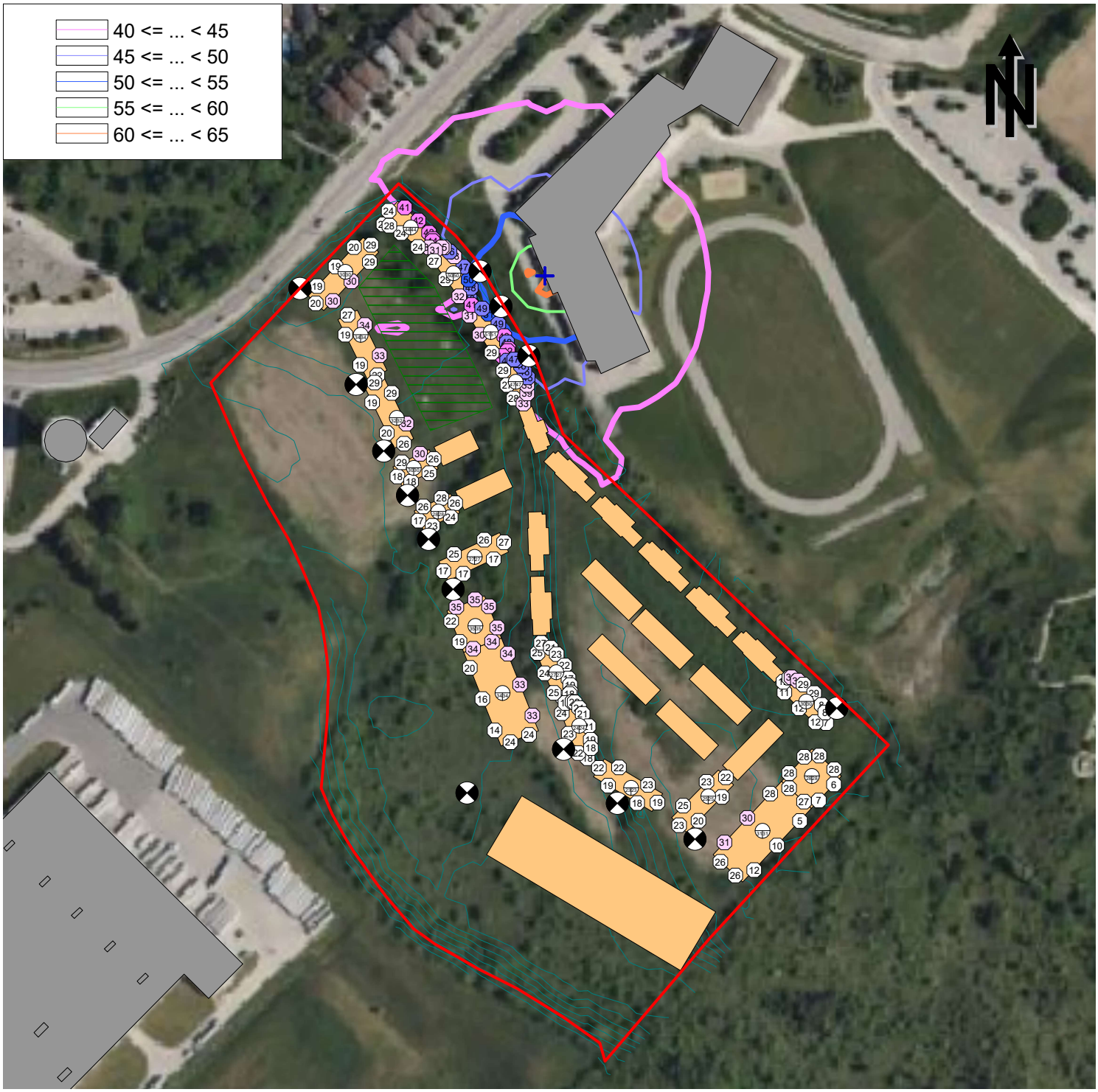
Nighttime Steady Noise Contours Vacant Lot at 320 Clair Rd W (h=7.5m)

280 Clair Road W, Guelph, Ontario

Project # 24-7484

October 2024

DILLON CONSULTING



Scale 1:3,000

Figure 3f

Daytime Steady Noise Contours Bishop MacDonell Catholic High School (h=7.5m)

280 Clair Road W, Guelph, Ontario

Project # 24-7484

October 2024

DILLON CONSULTING

Appendix A

Development Site Plan & Surrounding Area

notes:

architecture unfolded

tel: (416) 601 5416 info@unfolded.ca

368 dufferin street. toronto, on. M6K 1Z8

revisions: dd-mm-yy

architectural team :

Eduardo Ortiz
Ihab Daakour

spa no. -

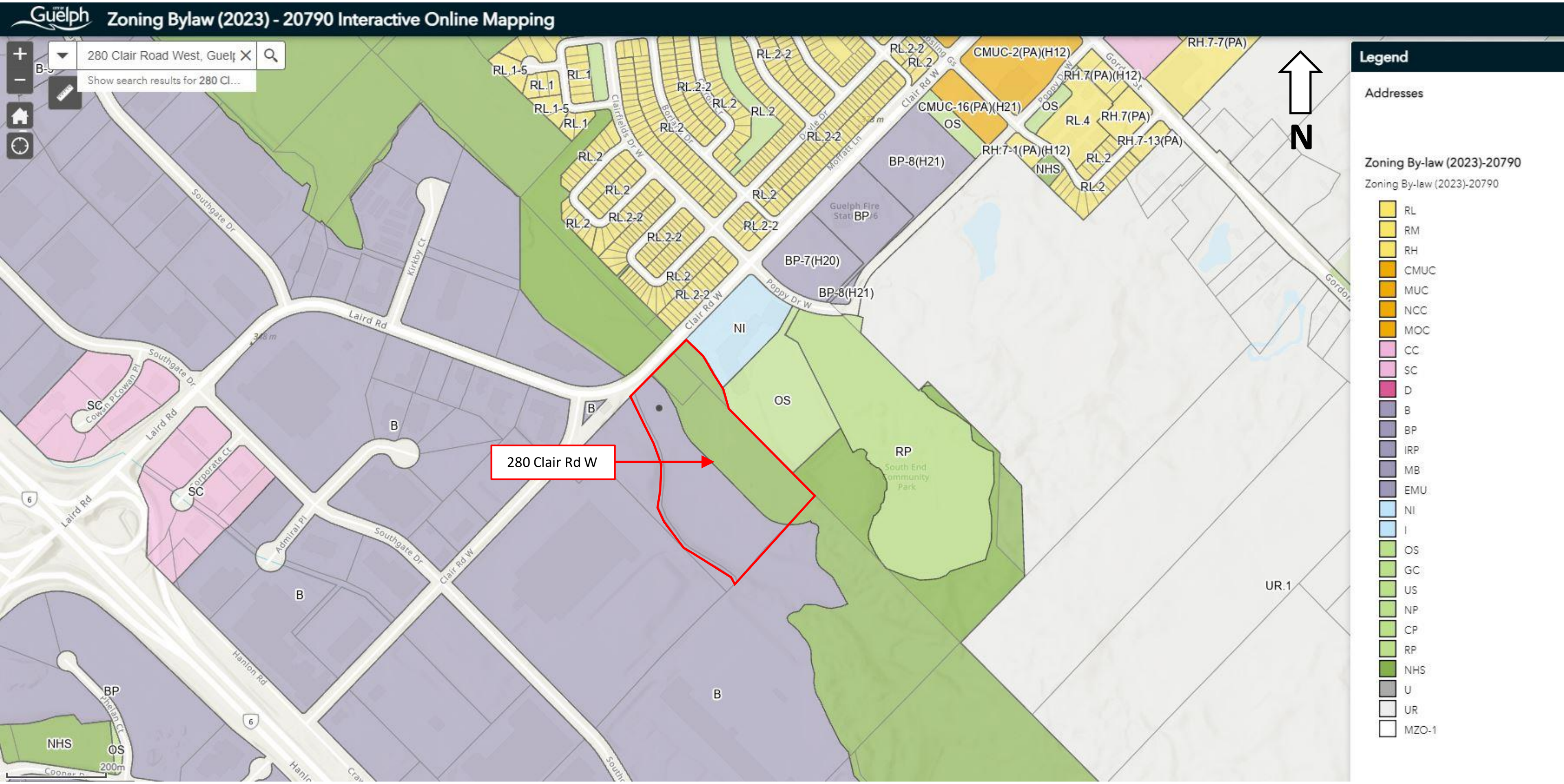
project:
280 Clair Rd W, Guelph, ON
xxxx

SITE PLAN

2024.10.04 date:
1:750 scale:
23-50 project:
ID drawn by:

true north / project north

drawning number:
A100



Guelph
Zoning Bylaw (2023) - 20790 Interactive Online Mapping
280 Clair Road West, Guelp
Show search results for 280 Cl...
280 Clair Rd W
N
NI
OS
RP
B
BP
SC
NHS
UR.1
BP-7(H20)
BP-8(H21)
CMUC-2(PA)(H12)
CMUC-16(PA)(H21)
RH.7-7(PA)
RH.7(PA)(H12)
RH.7(PA)
RH.7-13(PA)
RH.7-1(PA)(H12)
RL.4
RL.2
RL.2-2
RL.1
RL.1-5
Legend
Addresses
Zoning By-law (2023)-20790
Zoning By-law (2023)-20790
RL
RM
RH
CMUC
MUC
NCC
MOC
CC
SC
D
B
BP
IRP
MB
EMU
NI
I
OS
GC
US
NP
CP
RP
NHS
U
UR
MZO-1

2. Establishment of zones and uses

2.1 Zones and zone symbols

This **by-law** establishes the following **zones** and places all lands subject to this **by-law** in one or more of the following **zones**:

Residential zones	
RL.1	Low density residential 1
RL.2	Low density residential 2
RL.3	Low density residential 3
RL.4	Low density residential 4
RM.5	Medium density residential 5
RM.6	Medium density residential 6
RH.7	High density residential 7
Mixed-use zones	
CMUC	Commercial mixed-use centre
MUC	Mixed-use corridor
NCC	Neighbourhood commercial centre
MOC	Mixed office/commercial
Commercial zones	
SC	Service commercial
CC	Convenience commercial
Downtown zones	
D.1	Downtown 1
D.2	Downtown 2
D.3	Downtown 3
D.3a	Downtown 3a
Employment zones	
B	Industrial
BP	Corporate business park
IRP	Institutional/research park
MB	Mixed business
EMU.1	Employment mixed-use 1
EMU.2	Employment mixed-use 2
Institutional zones	

Zone	Classification
NI	Neighbourhood institutional
I.1	Major institutional 1 - General
I.2	Major institutional 2 - University of Guelph
Open space, golf course and park zones	
OS	Open space
GC	Golf course
US	Urban square
NP	Neighbourhood park
CP	Community park
RP	Regional park
Natural heritage system zone	
NHS	Natural heritage system
Major utility zone	
U	Major utility
Urban reserve zones	
UR.1	Urban reserve 1
UR.2	Urban reserve 2

Appendix B

Road Traffic Data

Hourly Multi-Channel Report

Site Code:

Clair Road West
btwn Gosling Gardens and Clairfields

Start Time	23-Aug-18 Thu	EB	WB	Combined Total
12:00 AM		64	30	94
01:00		46	26	72
02:00		35	12	47
03:00		35	39	74
04:00		20	46	66
05:00		59	232	291
06:00		156	511	667
07:00		248	615	863
08:00		344	717	1061
09:00		305	425	730
10:00		312	327	639
11:00		469	419	888
12:00 PM		662	652	1314
01:00		408	583	991
02:00		460	534	994
03:00		671	462	1133
04:00		822	465	1287
05:00		787	439	1226
06:00		500	449	949
07:00		408	332	740
08:00		367	279	646
09:00		197	214	411
10:00		128	168	296
11:00		182	85	267
Total		7685	8061	15746
Percent		48.8%	51.2%	

Basic Axle Classification Report

Site Code:

Clair Road West
btwn Gosling Gardens and Clairfields

EB

Start Time	Bikes	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classe	Total
08/23/18	0	18	2	0	0	0	0	0	0	0	0	0	0	0	20
00:15	0	15	0	0	1	0	0	0	0	0	0	0	0	0	16
00:30	0	14	0	0	0	0	0	0	1	0	0	0	0	0	15
00:45	0	13	0	0	0	0	0	0	0	0	0	0	0	0	13
	0	60	2	0	1	0	0	0	1	0	0	0	0	0	64
01:00	1	14	2	0	0	0	0	0	0	0	0	0	0	0	17
01:15	0	17	0	0	0	0	0	0	0	0	0	0	0	0	17
01:30	0	10	0	0	0	0	0	0	0	0	0	0	0	0	10
01:45	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
	1	43	2	0	0	0	0	0	0	0	0	0	0	0	46
02:00	0	10	0	0	0	0	0	0	0	0	0	0	0	0	10
02:15	0	7	1	0	0	0	0	0	0	0	0	0	0	0	8
02:30	0	10	0	0	0	0	0	0	0	0	0	0	0	0	10
02:45	1	4	1	0	0	1	0	0	0	0	0	0	0	0	7
	1	31	2	0	0	1	0	0	0	0	0	0	0	0	35
03:00	0	12	4	0	0	0	0	0	0	0	0	0	0	0	16
03:15	0	5	4	0	0	1	0	0	0	0	0	0	0	0	10
03:30	0	4	1	0	1	0	0	0	0	0	0	0	0	0	6
03:45	0	3	0	0	0	0	0	0	0	0	0	0	0	0	3
	0	24	9	0	1	1	0	0	0	0	0	0	0	0	35
04:00	0	2	1	0	1	0	0	1	0	0	0	0	0	0	5
04:15	0	3	0	0	1	0	0	0	0	0	0	0	0	0	4
04:30	0	6	1	0	0	0	0	0	0	0	0	0	0	0	7
04:45	0	4	0	0	0	0	0	0	0	0	0	0	0	0	4
	0	15	2	0	2	0	0	1	0	0	0	0	0	0	20
05:00	1	5	1	1	1	0	0	0	1	0	0	0	0	0	10
05:15	0	11	0	2	3	0	0	0	0	0	0	0	0	0	16
05:30	1	7	3	1	0	0	0	0	0	0	0	0	0	0	12
05:45	1	17	2	0	0	1	0	0	0	0	0	0	0	0	21
	3	40	6	4	4	1	0	0	1	0	0	0	0	0	59
06:00	0	14	0	2	3	1	0	0	0	0	0	0	0	0	20
06:15	2	20	7	0	1	0	0	0	0	0	0	0	0	0	30
06:30	0	37	8	0	0	1	0	0	2	0	0	0	0	0	48
06:45	0	44	12	0	2	0	0	0	0	0	0	0	0	0	58
	2	115	27	2	6	2	0	0	2	0	0	0	0	0	156
07:00	0	44	7	1	3	3	0	1	0	0	0	0	0	0	59
07:15	0	39	8	1	5	2	0	3	0	0	0	0	0	0	58
07:30	0	44	12	0	1	0	0	2	1	0	0	0	0	0	60
07:45	1	43	13	0	8	4	0	1	1	0	0	0	0	0	71
	1	170	40	2	17	9	0	7	2	0	0	0	0	0	248
08:00	3	48	15	1	9	2	0	2	1	1	0	0	0	1	83
08:15	0	39	17	2	7	2	2	2	2	0	0	0	0	0	73
08:30	3	67	13	3	1	1	0	0	2	1	0	0	0	0	91
08:45	0	68	20	0	5	1	0	0	1	0	1	0	0	1	97
	6	222	65	6	22	6	2	4	6	2	1	0	0	2	344
09:00	1	48	18	0	4	1	0	1	1	0	0	0	0	0	74
09:15	1	46	14	2	9	3	0	0	1	0	0	0	0	0	76
09:30	0	40	12	1	4	0	0	2	1	0	0	0	0	0	60
09:45	0	67	14	1	7	0	0	1	2	1	0	0	1	1	95
	2	201	58	4	24	4	0	4	5	1	0	0	1	1	305
10:00	0	49	20	1	5	0	1	1	0	1	0	0	0	0	78
10:15	2	42	21	1	7	2	0	0	0	0	0	0	0	0	75
10:30	2	49	11	1	4	1	0	1	1	1	0	0	0	4	75
10:45	4	61	17	0	1	0	0	0	1	0	0	0	0	0	84
	8	201	69	3	17	3	1	2	2	2	0	0	0	4	312
11:00	1	68	12	5	7	0	0	4	2	0	0	0	0	1	100
11:15	0	88	16	2	5	2	0	0	1	2	0	0	0	1	117
11:30	0	87	14	0	8	0	0	0	0	0	0	0	0	0	109
11:45	3	104	20	3	7	1	1	2	1	0	0	0	0	1	143
	4	347	62	10	27	3	1	6	4	2	0	0	0	3	469
Total	28	1469	344	31	121	30	4	24	23	7	1	0	1	10	2093
Percent	1.3%	70.2%	16.4%	1.5%	5.8%	1.4%	0.2%	1.1%	1.1%	0.3%	0.0%	0.0%	0.0%	0.5%	

Basic Axle Classification Report

Site Code:

Clair Road West
btwn Gosling Gardens and Clairfields

EB

Start Time	Bikes	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classe	Total
12 PM	5	147	39	1	7	2	0	1	0	1	0	0	0	4	207
12:15	1	133	28	1	5	2	0	2	0	0	0	0	0	3	175
12:30	0	136	12	2	4	1	0	0	0	0	0	0	0	1	156
12:45	0	87	16	2	11	1	0	3	2	0	0	0	0	2	124
	6	503	95	6	27	6	0	6	2	1	0	0	0	10	662
13:00	3	82	28	0	3	2	0	0	2	1	0	0	0	2	123
13:15	1	86	13	0	2	1	0	0	2	0	0	0	0	0	105
13:30	2	63	7	2	1	2	1	2	2	1	0	0	0	0	83
13:45	1	73	14	1	6	0	0	1	1	0	0	0	0	0	97
	7	304	62	3	12	5	1	3	7	2	0	0	0	2	408
14:00	2	73	20	4	5	0	0	0	0	0	1	0	0	1	106
14:15	2	102	35	4	4	0	0	1	3	0	0	0	0	1	152
14:30	1	71	13	2	3	1	0	0	3	1	0	0	0	4	99
14:45	2	76	17	0	3	2	0	1	1	0	0	0	0	1	103
	7	322	85	10	15	3	0	2	7	1	1	0	0	7	460
15:00	0	138	22	2	4	1	1	0	0	0	0	0	0	6	174
15:15	0	102	23	0	1	0	0	1	1	0	0	0	0	3	131
15:30	1	143	29	1	5	1	1	2	0	0	0	0	1	1	185
15:45	5	134	28	2	4	3	0	1	1	1	0	0	0	2	181
	6	517	102	5	14	5	2	4	2	1	0	0	1	12	671
16:00	6	134	30	4	8	1	0	3	0	0	0	0	1	4	191
16:15	8	168	25	2	6	1	0	4	0	0	0	0	0	1	215
16:30	4	179	24	1	3	2	0	2	1	0	0	0	0	1	217
16:45	4	166	19	1	6	0	0	2	0	0	0	0	0	1	199
	22	647	98	8	23	4	0	11	1	0	0	0	1	7	822
17:00	8	203	25	0	3	0	0	2	0	1	0	0	0	1	243
17:15	2	172	20	0	4	2	0	1	1	1	0	0	0	2	205
17:30	5	163	19	0	4	1	1	0	0	0	0	0	0	0	193
17:45	2	114	18	0	4	0	0	5	3	0	0	0	0	0	146
	17	652	82	0	15	3	1	8	4	2	0	0	0	3	787
18:00	5	119	21	0	0	1	1	1	1	0	0	0	1	2	152
18:15	4	82	21	1	3	1	0	0	1	0	0	0	0	1	114
18:30	4	97	16	0	2	1	0	0	0	0	0	0	0	1	121
18:45	0	94	11	1	3	1	0	2	0	0	0	0	0	1	113
	13	392	69	2	8	4	1	3	2	0	0	0	1	5	500
19:00	1	89	14	0	0	0	0	0	0	1	0	0	0	0	105
19:15	1	74	15	0	3	1	0	2	0	0	0	0	0	1	97
19:30	0	90	18	0	0	1	0	0	0	0	0	0	0	0	109
19:45	2	82	11	0	1	0	0	0	0	0	0	0	0	1	97
	4	335	58	0	4	2	0	2	0	1	0	0	0	2	408
20:00	1	95	4	0	1	1	0	0	0	0	0	0	0	3	105
20:15	6	77	11	0	1	0	0	0	0	0	0	0	0	0	95
20:30	1	74	11	1	3	0	0	0	0	0	0	0	0	0	90
20:45	0	70	6	0	1	0	0	0	0	0	0	0	0	0	77
	8	316	32	1	6	1	0	0	0	0	0	0	0	3	367
21:00	2	49	4	0	0	0	0	0	0	0	0	0	0	0	55
21:15	1	37	7	1	0	0	0	0	0	0	0	0	0	0	46
21:30	0	48	3	0	0	0	0	0	0	0	0	0	0	0	51
21:45	0	34	7	0	2	0	0	1	0	0	0	0	0	1	45
	3	168	21	1	2	0	0	1	0	0	0	0	0	1	197
22:00	2	39	5	0	0	0	0	0	1	0	0	0	0	0	47
22:15	0	27	3	0	0	0	0	0	0	0	0	0	0	0	30
22:30	0	28	0	0	0	0	0	0	0	0	0	0	0	0	28
22:45	0	23	0	0	0	0	0	0	0	0	0	0	0	0	23
	2	117	8	0	0	0	0	0	1	0	0	0	0	0	128
23:00	3	61	5	0	1	0	0	0	2	0	0	0	0	1	73
23:15	0	34	5	0	0	0	0	0	0	0	0	0	0	0	39
23:30	0	46	5	0	0	0	0	0	1	0	0	0	0	1	53
23:45	0	14	2	0	1	0	0	0	0	0	0	0	0	0	17
	3	155	17	0	2	0	0	0	3	0	0	0	0	2	182
Total	98	4428	729	36	128	33	5	40	29	8	1	0	3	54	5592
Percent	1.8%	79.2%	13.0%	0.6%	2.3%	0.6%	0.1%	0.7%	0.5%	0.1%	0.0%	0.0%	0.1%	1.0%	

Basic Axle Classification Report

Site Code:

Clair Road West
btwn Gosling Gardens and Clairfields

WB

Start Time	Bikes	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classe	Total
08/23/18	0	12	0	0	0	0	0	0	1	0	0	0	0	0	13
00:15	0	5	0	1	0	0	0	0	0	0	0	0	0	0	6
00:30	0	3	1	0	1	0	0	0	0	0	0	0	0	0	5
00:45	0	5	0	0	0	0	0	0	1	0	0	0	0	0	6
	0	25	1	1	1	0	0	0	2	0	0	0	0	0	30
01:00	0	7	0	0	0	0	0	0	0	0	0	0	0	0	7
01:15	1	4	1	0	0	0	0	0	0	0	0	0	0	0	6
01:30	0	3	1	0	1	0	0	0	0	0	0	0	0	0	5
01:45	0	7	1	0	0	0	0	0	0	0	0	0	0	0	8
	1	21	3	0	1	0	0	0	0	0	0	0	0	0	26
02:00	0	2	0	0	1	0	0	0	1	0	0	0	0	0	4
02:15	0	1	0	0	1	0	0	0	0	0	0	0	0	0	2
02:30	0	3	0	0	1	0	0	0	0	0	0	0	0	0	4
02:45	0	1	0	0	1	0	0	0	0	0	0	0	0	0	2
	0	7	0	0	4	0	0	0	1	0	0	0	0	0	12
03:00	0	13	1	0	0	0	0	0	0	0	0	0	0	0	14
03:15	0	8	0	0	1	0	0	0	1	0	0	0	0	0	10
03:30	0	2	4	0	0	0	0	0	1	0	0	0	0	0	7
03:45	0	6	1	0	1	0	0	0	0	0	0	0	0	0	8
	0	29	6	0	2	0	0	0	2	0	0	0	0	0	39
04:00	0	7	0	0	0	0	0	0	0	0	0	0	0	0	7
04:15	0	8	3	0	0	0	0	0	0	0	0	0	0	0	11
04:30	2	14	0	0	0	0	0	0	0	0	0	0	0	0	16
04:45	0	8	3	0	0	1	0	0	0	0	0	0	0	0	12
	2	37	6	0	0	1	0	0	0	0	0	0	0	0	46
05:00	0	16	4	0	1	0	0	0	0	0	0	0	0	0	21
05:15	0	39	16	0	1	0	0	0	0	0	0	0	0	0	56
05:30	1	67	15	0	1	1	0	0	0	0	0	0	0	1	86
05:45	0	55	13	1	0	0	0	0	0	0	0	0	0	0	69
	1	177	48	1	3	1	0	0	0	0	0	0	0	1	232
06:00	1	62	18	0	2	0	0	1	0	0	0	0	0	0	84
06:15	2	86	20	1	3	2	0	0	2	0	0	0	0	0	116
06:30	3	129	25	0	6	1	0	0	0	0	0	0	0	0	164
06:45	2	108	30	1	2	1	0	0	1	0	0	0	0	2	147
	8	385	93	2	13	4	0	1	3	0	0	0	0	2	511
07:00	0	76	16	1	8	1	0	0	2	0	0	0	0	0	104
07:15	1	102	26	2	7	0	0	0	0	0	0	0	0	2	140
07:30	4	144	27	2	5	0	0	2	0	0	0	0	0	2	186
07:45	1	159	16	2	2	1	0	0	0	0	0	0	1	3	185
	6	481	85	7	22	2	0	2	2	0	0	0	1	7	615
08:00	3	166	13	0	6	1	0	0	0	0	0	0	0	1	190
08:15	1	154	22	1	3	0	0	0	3	0	0	0	0	2	186
08:30	0	155	18	1	6	0	0	0	1	0	0	0	1	0	182
08:45	0	139	9	3	5	0	0	0	1	0	1	0	0	1	159
	4	614	62	5	20	1	0	0	5	0	1	0	1	4	717
09:00	1	102	19	1	4	1	0	0	2	0	0	0	0	1	131
09:15	4	70	14	2	6	2	0	2	2	0	0	0	0	0	102
09:30	1	72	17	4	5	1	0	1	3	0	0	0	0	0	104
09:45	3	55	18	3	2	2	0	3	1	0	1	0	0	0	88
	9	299	68	10	17	6	0	6	8	0	1	0	0	1	425
10:00	1	63	13	0	1	0	0	1	1	0	0	0	0	0	80
10:15	2	50	17	1	1	1	0	1	2	0	0	0	0	0	75
10:30	3	55	8	2	9	0	0	0	2	0	0	0	0	1	80
10:45	0	68	13	4	4	1	0	2	0	0	0	0	0	0	92
	6	236	51	7	15	2	0	4	5	0	0	0	0	1	327
11:00	1	59	6	1	4	0	0	0	0	0	0	0	0	0	71
11:15	0	76	20	5	7	0	0	0	2	0	0	0	0	0	110
11:30	1	78	24	2	5	1	0	1	2	0	0	0	0	2	116
11:45	3	84	20	6	4	1	0	1	3	0	0	0	0	0	122
	5	297	70	14	20	2	0	2	7	0	0	0	0	2	419
Total	42	2608	493	47	118	19	0	15	35	0	2	0	2	18	3399
Percent	1.2%	76.7%	14.5%	1.4%	3.5%	0.6%	0.0%	0.4%	1.0%	0.0%	0.1%	0.0%	0.1%	0.5%	

Basic Axle Classification Report

Site Code:

Clair Road West
btwn Gosling Gardens and Clairfields

WB

Start Time	Bikes	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classe	Total
12 PM	3	102	18	3	3	1	0	2	1	0	0	0	0	0	133
12:15	2	129	20	2	6	0	0	1	2	0	0	0	0	1	163
12:30	1	134	18	2	8	2	1	1	1	0	0	0	0	1	169
12:45	5	145	22	2	6	3	0	0	2	0	0	0	0	2	187
	11	510	78	9	23	6	1	4	6	0	0	0	0	4	652
13:00	1	116	20	3	5	2	0	2	1	0	0	0	0	0	150
13:15	2	123	18	2	8	1	0	3	1	0	0	0	0	1	159
13:30	2	102	21	3	4	4	0	2	2	0	1	0	0	0	141
13:45	3	98	20	0	4	3	0	0	3	0	0	0	0	2	133
	8	439	79	8	21	10	0	7	7	0	1	0	0	3	583
14:00	0	86	21	2	4	1	0	1	1	0	0	0	1	0	117
14:15	0	98	15	1	3	3	0	0	1	0	0	0	0	0	121
14:30	2	116	27	2	5	2	2	3	1	0	0	0	0	2	162
14:45	3	97	15	5	6	4	0	2	1	0	0	0	0	1	134
	5	397	78	10	18	10	2	6	4	0	0	0	1	3	534
15:00	1	97	19	2	1	0	1	2	1	0	0	0	0	0	124
15:15	1	78	20	3	5	2	0	1	1	0	0	0	0	0	111
15:30	1	79	17	4	7	3	0	0	1	0	0	0	0	0	112
15:45	1	73	22	6	7	2	0	2	2	0	0	0	0	0	115
	4	327	78	15	20	7	1	5	5	0	0	0	0	0	462
16:00	0	78	21	1	7	0	0	1	0	0	0	0	0	1	109
16:15	3	88	19	0	3	1	0	3	4	0	0	0	0	0	121
16:30	1	89	22	2	4	2	0	1	0	0	0	0	0	0	121
16:45	1	85	17	4	4	0	0	2	1	0	0	0	0	0	114
	5	340	79	7	18	3	0	7	5	0	0	0	0	1	465
17:00	1	76	17	1	2	0	0	3	1	0	0	0	0	0	101
17:15	2	78	12	2	3	4	1	4	0	0	0	0	0	1	107
17:30	2	85	20	2	3	1	1	0	2	0	1	0	0	1	118
17:45	2	90	16	1	3	0	0	0	0	0	0	0	0	1	113
	7	329	65	6	11	5	2	7	3	0	1	0	0	3	439
18:00	2	104	23	1	0	1	1	1	2	0	0	0	0	2	137
18:15	0	103	6	2	3	2	0	0	0	0	0	0	0	0	116
18:30	0	89	10	0	2	1	0	1	0	0	0	0	0	1	104
18:45	4	74	10	1	2	0	0	1	0	0	0	0	0	0	92
	6	370	49	4	7	4	1	3	2	0	0	0	0	3	449
19:00	0	69	12	0	1	1	0	0	0	1	0	0	0	0	84
19:15	0	77	12	0	1	0	0	0	0	0	0	0	0	1	91
19:30	1	53	8	2	1	1	0	0	0	0	0	0	0	0	66
19:45	1	72	11	0	3	1	0	0	2	0	0	0	0	1	91
	2	271	43	2	6	3	0	0	2	1	0	0	0	2	332
20:00	2	60	12	0	2	0	0	0	1	0	0	0	0	2	79
20:15	5	64	7	0	0	0	0	0	1	0	0	0	0	0	77
20:30	0	59	5	1	1	0	0	1	0	0	0	0	0	0	67
20:45	2	42	9	0	1	1	0	0	1	0	0	0	0	0	56
	9	225	33	1	4	1	0	1	3	0	0	0	0	2	279
21:00	0	46	4	2	4	1	0	0	0	0	0	0	0	0	57
21:15	1	48	7	1	1	0	0	0	0	0	0	0	1	0	59
21:30	1	51	7	0	0	0	0	0	0	0	0	0	0	0	59
21:45	0	32	3	1	3	0	0	0	0	0	0	0	0	0	39
	2	177	21	4	8	1	0	0	0	0	0	0	1	0	214
22:00	0	40	7	0	1	0	0	0	0	0	0	0	0	0	48
22:15	0	26	4	1	0	0	0	0	0	0	0	0	0	0	31
22:30	0	50	1	0	1	0	0	0	0	0	0	0	0	0	52
22:45	0	33	2	1	0	0	0	0	1	0	0	0	0	0	37
	0	149	14	2	2	0	0	0	1	0	0	0	0	0	168
23:00	0	24	5	0	0	0	0	0	0	0	0	0	0	0	29
23:15	0	17	5	1	0	0	0	0	1	0	0	0	0	0	24
23:30	0	16	3	0	0	0	0	0	0	0	0	0	0	0	19
23:45	1	11	0	1	0	0	0	0	0	0	0	0	0	0	13
	1	68	13	2	0	0	0	0	1	0	0	0	0	0	85
Total	60	3602	630	70	138	50	7	40	39	1	2	0	2	21	4662
Percent	1.3%	77.3%	13.5%	1.5%	3.0%	1.1%	0.2%	0.9%	0.8%	0.0%	0.0%	0.0%	0.0%	0.5%	

Hourly Multi-Channel Report

Site Code:

Laird Road
Kirby Court/Clair Road (HP#12)

Start Time	09-Nov-17 Thu	EB	WB	Combined Total
12:00 AM		71	36	107
01:00		31	17	48
02:00		23	17	40
03:00		21	6	27
04:00		19	29	48
05:00		41	74	115
06:00		78	235	313
07:00		240	546	786
08:00		370	754	1124
09:00		339	554	893
10:00		282	396	678
11:00		346	337	683
12:00 PM		480	443	923
01:00		430	540	970
02:00		384	472	856
03:00		460	475	935
04:00		684	479	1163
05:00		811	445	1256
06:00		610	471	1081
07:00		469	435	904
08:00		367	383	750
09:00		277	279	556
10:00		182	172	354
11:00		116	86	202
Total		7131	7681	14812
Percent		48.1%	51.9%	
Grand Total		37499	38443	
Percentage		49.4%	50.6%	
ADT		ADT 8,325		AADT 8,325

Basic Axle Classification Report

Site Code:

Laird Road
Kirby Court/Clair Road (HP#12)

EB

Start Time	Bikes	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classe	Total
11-09-17	0	29	4	0	0	0	0	0	0	0	0	0	0	0	33
00:15	0	10	2	0	0	0	0	0	0	0	0	0	0	0	12
00:30	0	12	6	0	0	0	0	0	0	0	0	0	0	0	18
00:45	0	8	0	0	0	0	0	0	0	0	0	0	0	0	8
	0	59	12	0	0	0	0	0	0	0	0	0	0	0	71
01:00	0	7	2	0	0	0	0	0	0	0	0	0	0	0	9
01:15	0	4	2	0	0	0	0	0	0	0	0	0	0	0	6
01:30	0	6	1	0	1	0	0	0	0	0	0	0	0	0	8
01:45	0	5	3	0	0	0	0	0	0	0	0	0	0	0	8
	0	22	8	0	1	0	0	0	0	0	0	0	0	0	31
02:00	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
02:15	0	1	1	0	0	0	0	0	0	0	0	0	0	0	2
02:30	0	11	3	0	0	0	0	0	0	0	0	0	0	0	14
02:45	0	4	1	0	0	0	0	0	1	0	0	0	0	0	6
	0	17	5	0	0	0	0	0	1	0	0	0	0	0	23
03:00	0	5	0	0	0	0	0	0	0	0	0	0	0	0	5
03:15	1	5	2	0	0	1	0	0	0	0	0	0	0	0	9
03:30	0	3	0	0	0	0	0	0	0	0	0	0	0	0	3
03:45	0	2	2	0	0	0	0	0	0	0	0	0	0	0	4
	1	15	4	0	0	1	0	0	0	0	0	0	0	0	21
04:00	0	3	2	0	0	0	0	0	0	0	0	0	0	0	5
04:15	0	2	0	0	0	1	0	0	0	0	0	0	0	0	3
04:30	0	5	0	0	0	0	0	0	0	0	0	0	0	0	5
04:45	0	4	1	0	1	0	0	0	0	0	0	0	0	0	6
	0	14	3	0	1	1	0	0	0	0	0	0	0	0	19
05:00	0	6	3	1	1	0	0	0	0	0	0	0	0	0	11
05:15	0	6	1	0	0	0	0	0	0	0	0	0	0	0	7
05:30	2	9	0	0	0	2	0	0	0	0	0	0	0	0	13
05:45	0	7	1	1	1	0	0	0	0	0	0	0	0	0	10
	2	28	5	2	2	2	0	0	0	0	0	0	0	0	41
06:00	1	8	1	0	1	0	0	0	0	0	0	0	0	0	11
06:15	0	9	5	0	0	0	0	0	0	0	0	0	0	1	15
06:30	1	15	3	0	2	1	0	0	0	0	0	0	0	0	22
06:45	0	19	7	1	2	0	0	0	0	0	0	0	0	1	30
	2	51	16	1	5	1	0	0	0	0	0	0	0	2	78
07:00	4	28	8	0	5	1	0	0	0	0	0	0	0	4	50
07:15	3	40	13	1	3	1	0	2	0	0	0	0	0	1	64
07:30	1	36	17	5	1	5	0	0	0	0	0	0	0	1	66
07:45	0	32	16	4	3	3	0	1	1	0	0	0	0	0	60
	8	136	54	10	12	10	0	3	1	0	0	0	0	6	240
08:00	2	53	20	1	8	2	0	3	0	0	0	0	0	3	92
08:15	7	61	18	3	6	5	0	2	0	0	0	0	0	4	106
08:30	1	53	10	1	6	3	0	0	2	0	0	0	0	5	81
08:45	4	44	27	0	8	5	0	0	1	0	0	0	0	2	91
	14	211	75	5	28	15	0	5	3	0	0	0	0	14	370
09:00	5	39	16	6	8	6	0	0	1	0	0	0	0	11	92
09:15	2	61	17	1	5	2	0	1	1	0	0	0	0	4	94
09:30	0	45	19	2	6	8	0	1	2	0	0	0	0	3	86
09:45	1	35	16	1	6	7	0	1	0	0	0	0	0	0	67
	8	180	68	10	25	23	0	3	4	0	0	0	0	18	339
10:00	0	47	18	2	3	2	0	0	0	0	0	0	0	2	74
10:15	0	43	11	0	2	8	0	1	1	0	0	0	0	2	68
10:30	0	39	17	1	4	0	0	1	1	0	0	0	0	1	64
10:45	1	35	18	7	5	8	0	0	0	0	0	0	0	2	76
	1	164	64	10	14	18	0	2	2	0	0	0	0	7	282
11:00	2	52	22	4	6	8	0	1	0	0	0	0	0	3	98
11:15	1	47	11	1	5	4	0	2	1	0	0	0	0	1	73
11:30	0	56	14	1	8	4	0	0	0	0	0	0	0	3	86
11:45	2	50	15	3	7	8	0	2	2	0	0	0	0	0	89
	5	205	62	9	26	24	0	5	3	0	0	0	0	7	346
Total	41	1102	376	47	114	95	0	18	14	0	0	0	0	54	1861
Percent	2.2%	59.2%	20.2%	2.5%	6.1%	5.1%	0.0%	1.0%	0.8%	0.0%	0.0%	0.0%	0.0%	2.9%	

Basic Axle Classification Report

Site Code:

Laird Road
Kirby Court/Clair Road (HP#12)

EB

Start Time	Bikes	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classe	Total
12 PM	0	64	19	2	6	9	0	1	0	0	0	0	0	0	101
12:15	0	75	22	0	6	1	0	0	0	0	0	0	0	3	107
12:30	2	103	18	3	7	5	0	1	1	0	0	0	0	7	147
12:45	2	76	25	2	7	6	0	1	0	0	0	0	0	6	125
	4	318	84	7	26	21	0	3	1	0	0	0	0	16	480
13:00	4	82	21	4	4	8	0	0	0	1	0	0	0	0	124
13:15	0	79	13	0	3	2	0	1	1	0	0	0	0	4	103
13:30	1	75	19	2	2	6	0	0	0	0	0	0	0	3	108
13:45	2	66	10	1	4	8	0	2	0	0	0	0	0	2	95
	7	302	63	7	13	24	0	3	1	1	0	0	0	9	430
14:00	1	71	13	1	6	5	0	1	2	0	0	0	0	3	103
14:15	0	54	7	3	3	5	0	0	1	0	0	0	0	2	75
14:30	3	66	12	0	2	6	0	2	1	0	0	0	0	3	95
14:45	2	68	19	4	11	2	0	0	2	0	0	0	0	3	111
	6	259	51	8	22	18	0	3	6	0	0	0	0	11	384
15:00	1	76	27	6	4	8	0	0	0	0	0	0	0	4	126
15:15	4	73	15	3	8	4	0	0	1	0	0	0	0	8	116
15:30	2	81	18	3	4	5	0	1	1	0	0	0	0	1	116
15:45	2	65	19	1	4	6	0	0	0	0	0	0	0	5	102
	9	295	79	13	20	23	0	1	2	0	0	0	0	18	460
16:00	7	114	25	2	2	8	0	0	1	0	0	0	0	6	165
16:15	2	110	21	3	3	6	1	2	1	0	0	0	0	5	154
16:30	4	124	19	7	12	3	0	1	1	0	0	0	0	3	174
16:45	3	132	34	2	10	4	0	1	0	0	0	0	0	5	191
	16	480	99	14	27	21	1	4	3	0	0	0	0	19	684
17:00	3	161	32	1	4	1	0	0	0	0	0	0	0	2	204
17:15	4	139	40	1	11	0	0	0	1	0	0	0	0	10	206
17:30	4	148	31	0	7	3	0	0	0	0	0	0	0	4	197
17:45	3	167	26	0	1	3	0	0	0	0	0	0	0	4	204
	14	615	129	2	23	7	0	0	1	0	0	0	0	20	811
18:00	5	114	34	1	6	0	0	0	0	0	0	0	0	4	164
18:15	2	127	35	0	7	1	0	0	1	0	0	0	0	2	175
18:30	1	91	22	0	1	0	0	0	0	0	0	0	0	2	117
18:45	4	112	27	2	3	1	0	0	0	0	0	0	0	5	154
	12	444	118	3	17	2	0	0	1	0	0	0	0	13	610
19:00	3	87	19	0	3	1	0	0	0	0	0	0	0	3	116
19:15	1	79	27	1	2	1	0	0	1	0	0	0	0	1	113
19:30	2	95	16	1	5	0	0	0	0	0	0	0	0	0	119
19:45	4	83	29	1	2	1	0	0	0	0	0	0	0	1	121
	10	344	91	3	12	3	0	0	1	0	0	0	0	5	469
20:00	2	82	15	1	1	0	0	0	1	0	0	0	0	4	106
20:15	1	76	15	0	1	0	0	0	0	0	0	0	0	1	94
20:30	2	69	15	0	1	1	0	0	0	0	0	0	0	3	91
20:45	0	60	9	1	3	0	0	0	1	0	0	0	0	2	76
	5	287	54	2	6	1	0	0	2	0	0	0	0	10	367
21:00	1	50	8	0	1	0	0	0	0	0	0	0	0	1	61
21:15	2	75	12	0	0	0	0	0	0	0	0	0	0	0	89
21:30	0	57	8	1	1	0	0	0	0	0	0	0	0	1	68
21:45	0	45	11	0	2	0	0	0	0	0	0	0	0	1	59
	3	227	39	1	4	0	0	0	0	0	0	0	0	3	277
22:00	0	40	5	0	0	0	0	0	0	0	0	0	0	0	45
22:15	0	41	5	0	1	0	0	0	0	0	0	0	0	0	47
22:30	0	31	3	1	1	0	0	0	0	0	0	0	0	1	37
22:45	0	42	9	1	1	0	0	0	0	0	0	0	0	0	53
	0	154	22	2	3	0	0	0	0	0	0	0	0	1	182
23:00	0	25	3	0	0	0	0	0	0	0	0	0	0	0	28
23:15	0	22	3	1	0	0	0	0	0	0	0	0	0	0	26
23:30	0	31	2	0	0	0	0	0	1	0	0	0	0	0	34
23:45	0	26	2	0	0	0	0	0	0	0	0	0	0	0	28
	0	104	10	1	0	0	0	0	1	0	0	0	0	0	116
Total	86	3829	839	63	173	120	1	14	19	1	0	0	0	125	5270
Percent	1.6%	72.7%	15.9%	1.2%	3.3%	2.3%	0.0%	0.3%	0.4%	0.0%	0.0%	0.0%	0.0%	2.4%	

Basic Axle Classification Report

Site Code:

Laird Road
Kirby Court/Clair Road (HP#12)

WB

Start Time	Bikes	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classe	Total
11-09-17	0	9	1	1	1	0	0	0	0	0	0	0	0	1	13
00:15	0	8	0	1	0	0	0	0	0	0	0	0	0	0	9
00:30	0	3	0	0	1	0	0	0	0	0	0	0	0	0	4
00:45	0	9	0	1	0	0	0	0	0	0	0	0	0	0	10
	0	29	1	3	2	0	0	0	0	0	0	0	0	1	36
01:00	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
01:15	0	4	0	0	1	0	0	0	0	0	0	0	0	0	5
01:30	0	5	1	0	0	0	0	0	0	0	0	0	0	0	6
01:45	0	4	1	0	0	0	0	0	0	0	0	0	0	0	5
	0	14	2	0	1	0	0	0	0	0	0	0	0	0	17
02:00	0	3	0	0	0	0	0	0	0	0	0	0	0	0	3
02:15	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
02:30	1	0	2	0	0	1	0	0	1	0	0	0	0	0	5
02:45	0	5	2	0	1	0	0	0	0	0	0	0	0	0	8
	1	9	4	0	1	1	0	0	1	0	0	0	0	0	17
03:00	0	1	0	0	0	1	0	0	0	0	0	0	0	0	2
03:15	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
03:30	0	1	1	0	0	0	0	0	0	0	0	0	0	0	2
03:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	4	1	0	0	1	0	0	0	0	0	0	0	0	6
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15	0	6	1	0	2	0	0	0	0	0	0	0	0	0	9
04:30	0	1	4	0	0	0	0	0	1	0	0	0	0	0	6
04:45	1	9	2	1	0	1	0	0	0	0	0	0	0	0	14
	1	16	7	1	2	1	0	0	1	0	0	0	0	0	29
05:00	0	5	4	0	2	0	0	0	0	0	0	0	0	0	11
05:15	1	7	5	0	4	1	0	0	0	0	0	0	0	0	18
05:30	0	10	4	0	2	0	0	0	1	0	0	0	0	0	17
05:45	0	18	7	0	3	0	0	0	0	0	0	0	0	0	28
	1	40	20	0	11	1	0	0	1	0	0	0	0	0	74
06:00	0	38	7	0	6	0	0	0	0	0	0	0	0	1	52
06:15	0	31	6	2	11	0	0	0	0	0	0	0	0	0	50
06:30	0	37	7	2	5	0	0	0	0	0	0	0	0	0	51
06:45	0	58	16	0	8	0	0	0	0	0	0	0	0	0	82
	0	164	36	4	30	0	0	0	0	0	0	0	0	1	235
07:00	2	95	17	2	7	0	0	0	1	0	0	0	0	2	126
07:15	2	85	18	0	10	0	0	0	1	0	0	0	0	2	118
07:30	0	81	26	2	8	2	0	0	0	0	0	0	0	2	121
07:45	0	136	22	2	16	0	0	1	1	0	0	0	0	3	181
	4	397	83	6	41	2	0	1	3	0	0	0	0	9	546
08:00	1	144	28	0	12	0	0	3	1	0	0	0	0	1	190
08:15	4	158	23	6	3	3	0	7	0	0	0	0	0	4	208
08:30	0	144	30	3	2	1	1	6	2	0	0	0	0	4	193
08:45	0	125	16	2	16	0	0	3	0	0	0	0	0	1	163
	5	571	97	11	33	4	1	19	3	0	0	0	0	10	754
09:00	1	141	18	7	10	1	0	2	1	0	0	0	0	5	186
09:15	0	107	25	8	7	1	0	6	1	0	0	0	0	7	162
09:30	0	73	16	0	13	5	0	6	1	0	0	0	0	2	116
09:45	1	57	15	3	8	1	0	3	1	0	0	0	0	1	90
	2	378	74	18	38	8	0	17	4	0	0	0	0	15	554
10:00	1	55	16	2	7	1	0	6	0	0	0	0	0	1	89
10:15	2	65	17	6	12	2	0	5	1	0	0	0	0	1	111
10:30	2	57	21	8	11	1	0	7	1	0	0	0	0	1	109
10:45	0	43	19	4	11	3	0	4	2	0	0	0	0	1	87
	5	220	73	20	41	7	0	22	4	0	0	0	0	4	396
11:00	1	44	13	0	8	0	0	0	0	0	0	0	0	2	68
11:15	0	41	14	3	12	1	0	6	1	0	0	0	0	5	83
11:30	1	58	16	1	12	5	1	5	2	0	0	0	0	1	102
11:45	3	44	12	3	12	3	0	4	1	0	0	0	0	2	84
	5	187	55	7	44	9	1	15	4	0	0	0	0	10	337
Total	24	2029	453	70	244	34	2	74	21	0	0	0	0	50	3001
Percent	0.8%	67.6%	15.1%	2.3%	8.1%	1.1%	0.1%	2.5%	0.7%	0.0%	0.0%	0.0%	0.0%	1.7%	

Basic Axle Classification Report

Site Code:

Laird Road
Kirby Court/Clair Road (HP#12)

WB

Start Time	Bikes	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classe	Total
12 PM	1	72	22	4	14	3	0	2	0	0	0	0	0	4	122
12:15	2	54	22	2	11	2	0	6	0	0	0	0	0	0	99
12:30	5	63	20	3	6	1	0	4	0	0	0	0	0	6	108
12:45	0	74	21	0	9	0	0	3	1	0	0	0	0	6	114
	8	263	85	9	40	6	0	15	1	0	0	0	0	16	443
13:00	5	102	27	5	10	3	0	7	0	0	0	0	0	5	164
13:15	1	92	21	2	8	3	0	4	1	0	0	0	0	2	134
13:30	1	80	24	8	15	1	0	5	0	0	0	0	0	2	136
13:45	2	70	22	0	7	0	0	4	0	0	0	0	0	1	106
	9	344	94	15	40	7	0	20	1	0	0	0	0	10	540
14:00	3	80	18	4	15	2	0	5	1	0	0	0	0	3	131
14:15	0	70	15	2	11	1	1	4	0	0	0	0	0	6	110
14:30	3	64	16	4	9	2	0	7	0	0	0	0	0	2	107
14:45	3	77	20	1	12	5	0	3	0	0	0	0	0	3	124
	9	291	69	11	47	10	1	19	1	0	0	0	0	14	472
15:00	5	66	20	1	16	5	0	2	0	0	0	0	0	3	118
15:15	8	56	14	3	9	3	0	4	2	0	0	0	0	5	104
15:30	0	72	17	9	13	2	0	6	2	0	0	0	0	2	123
15:45	3	77	23	2	10	5	1	4	1	0	0	0	0	4	130
	16	271	74	15	48	15	1	16	5	0	0	0	0	14	475
16:00	3	77	22	5	18	2	0	4	0	0	0	0	0	1	132
16:15	3	59	24	3	12	1	0	3	0	0	0	0	0	2	107
16:30	1	66	20	0	13	1	0	5	0	0	0	0	0	8	114
16:45	2	70	27	2	13	4	0	1	0	0	0	0	0	7	126
	9	272	93	10	56	8	0	13	0	0	0	0	0	18	479
17:00	4	66	23	3	14	2	0	1	0	0	0	0	0	3	116
17:15	2	49	28	1	7	1	1	1	1	0	0	0	0	8	99
17:30	2	80	14	0	9	0	0	1	1	0	0	0	0	6	113
17:45	4	78	22	1	8	1	0	1	1	0	0	0	0	1	117
	12	273	87	5	38	4	1	4	3	0	0	0	0	18	445
18:00	2	88	15	0	6	2	0	1	1	0	0	0	0	6	121
18:15	1	69	17	1	3	0	0	1	0	0	0	0	0	7	99
18:30	0	84	24	0	9	2	0	0	0	0	0	0	0	1	120
18:45	2	92	22	2	7	3	0	1	0	0	0	0	0	2	131
	5	333	78	3	25	7	0	3	1	0	0	0	0	16	471
19:00	1	85	29	3	6	1	0	0	0	0	0	0	0	1	126
19:15	1	91	16	2	5	2	0	0	0	0	0	0	0	2	119
19:30	1	70	18	1	9	0	0	0	0	0	0	0	0	3	102
19:45	0	69	9	1	4	1	0	0	0	0	0	0	0	4	88
	3	315	72	7	24	4	0	0	0	0	0	0	0	10	435
20:00	0	79	24	2	6	0	0	0	1	0	0	0	0	2	114
20:15	2	72	14	2	4	0	0	0	0	0	0	0	0	2	96
20:30	1	67	13	0	2	0	0	0	0	0	0	0	0	2	85
20:45	1	66	17	1	1	2	0	0	0	0	0	0	0	0	88
	4	284	68	5	13	2	0	0	1	0	0	0	0	6	383
21:00	0	68	10	1	3	1	0	0	0	0	0	0	0	0	83
21:15	1	59	10	3	6	0	0	0	0	0	0	0	0	3	82
21:30	0	34	14	0	2	0	0	0	1	0	0	0	0	1	52
21:45	0	45	13	1	1	0	0	0	0	0	0	0	0	2	62
	1	206	47	5	12	1	0	0	1	0	0	0	0	6	279
22:00	0	38	6	1	2	0	0	0	1	0	0	0	0	0	48
22:15	0	27	8	2	3	0	0	0	0	0	0	0	0	2	42
22:30	0	28	10	0	1	0	0	0	0	0	0	0	0	0	39
22:45	0	34	4	1	2	0	0	1	0	0	0	0	0	1	43
	0	127	28	4	8	0	0	1	1	0	0	0	0	3	172
23:00	0	24	4	2	1	0	0	0	0	0	0	0	0	0	31
23:15	0	16	6	0	1	0	0	0	0	0	0	0	0	1	24
23:30	0	16	1	0	0	0	0	0	0	0	0	0	0	0	17
23:45	0	10	3	1	0	0	0	0	0	0	0	0	0	0	14
	0	66	14	3	2	0	0	0	0	0	0	0	0	1	86
Total	76	3045	809	92	353	64	3	91	15	0	0	0	0	132	4680
Percent	1.6%	65.1%	17.3%	2.0%	7.5%	1.4%	0.1%	1.9%	0.3%	0.0%	0.0%	0.0%	0.0%	2.8%	

Appendix C

Warning Clauses

Appendix A - Warning Clauses and Standard Conditions

The following warning clauses and standard conditions are to be considered when finalizing a noise study, and for inclusion in a Development Agreement, registered on title and be included in Offers of Purchase and Sale for designated residential lots, blocks or units. Only those appropriate for the development shall be chosen from the below list, and some minor adjustment of wording or inclusion of additional clauses and conditions may be necessary for site-specific applications.

Warning Clauses

This clause shall be included in all cases:

"The Transferee covenants with the Transferor that the below clause, verbatim, will be included in all subsequent Agreements of Purchase of sale or lease and Sale and Deeds conveying the lands described herein, which covenant shall run with the said lands and is for the benefit of the subsequent owners and renters of the said lands and the owner of the adjacent road."

Select from the following clauses, as is appropriate for the site:

A.

"The Transferee of [insert lots/blocks/units], for himself, his heirs, executors, administrators, successors and assigns acknowledge being advised that despite the inclusion of noise control features in the development and/or within the building unit sound levels due to increasing road traffic may occasionally interfere with some indoor and/or outdoor activities of the dwelling occupants as the sound levels may at times exceed the sound level limits of the municipal and provincial noise criteria."

"This development includes a number of measures to help reduce noise impacts, listed below. To ensure that provincial and municipal sound level limits are not exceeded and/or to keep sound levels as low as possible it is important to maintain the sound attenuation features provided."

"This development includes building and street orientation to help increase setback distances to major noise sources and shield some rear yards from excessive noise levels."

B.

“This development includes an acoustic barrier to help reduce the sound levels within the rear yard of this and other nearby units.”

C.

“This dwelling unit has been designed with the provision for adding central air conditioning at the occupant’s discretion. Installation of central air conditioning by the occupant will allow windows and exterior doors to remain closed, thereby ensuring that the indoor sound levels are within the municipal and provincial sound level limits."

“The building components of this dwelling unit (walls, windows and exterior doors) have been designed to provide acoustic insulation so that, when windows and exterior doors are closed, the indoor sound levels are within the municipal and provincial sound level limits. The details of this building component design are available by contacting the builder of this unit.”

D.

"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 municipal and provincial sound level limits."

“The building components of this dwelling unit (walls, windows and exterior doors) have been designed to provide acoustic insulation so that, when windows and exterior doors are closed, the indoor sound levels are within the municipal and provincial sound level limits. The details of this building component design are available by contacting the builder of this unit.”

E.

"The Transferee, for himself, his heirs, executors, administrators, successors and assigns acknowledge being additionally advised that due to the proximity of the adjacent school, sound levels from the school may at times be audible”

F.

“The Transferee, for himself, his heirs, executors, administrators, successors and assigns acknowledge being additionally advised that the installed acoustic barrier is on private property and must be maintained and kept in good repair by the property owner. Any maintenance, repair or replacement is the responsibility of the

property owner and shall be the same material or to the same standards, having the same colour, appearance and function of the original."

G.

"Warning: Canadian National Railway Company or its assigns or successors in interest has or have a right-of-way within 300 metres from the land the subject hereof. There may be alterations to or expansions of the rail facilities on such right-of-way in the future including the possibility that the railway or its assigns or successors as aforesaid may expand its operations, which expansion may affect the living environment of the residents in the vicinity, notwithstanding the inclusion of any noise and vibration attenuating measures in the design of the development and individual dwelling(s). CN will not be responsible for any complaints or claims arising from use of such facilities and/or operations on, over or under the aforesaid right-of-way."

H.

"Purchasers/tenants are advised that due to the proximity of the adjacent industry (facility) (utility), noise from the industry (facility) (utility) may at times interfere with outdoor activities."

"To address potential impacts of noise from the adjacent industry (facility) (utility) this development has been designed to provide for specific outdoor amenity areas and a quieter indoor environment."

"Purchasers/tenants are further advised that sound levels due to the adjacent industry (facility) (utility) 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."

I.

"Purchasers/tenants are advised that due to the proximity of the Guelph Airpark, noise from the airport and individual aircraft may at times interfere with outdoor or indoor activities. Guelph Airpark and the City of Guelph are not responsible if the purchaser/occupant of this dwelling finds that the noise levels due to aircraft operations continue to be of concern or are offensive."

Standard Conditions

1. The Owner/Developer acknowledges and agrees to comply with the most current version of the City's Specifications for Noise Barriers.

2. The Owner/Developer acknowledges and agrees that the noise attenuation barriers are to be constructed 150 millimetres inside the property line on private property in a location and to the height (minimum top of noise barrier elevation) identified in the approved noise study. Fences shall be constructed as per municipal and provincial standards for noise barriers.

3. The Owner/Developer acknowledges and agrees to install noise barrier footings to a minimum depth of 2 metres depending on soil conditions when temperatures are above 5 degrees Celsius and when frost is not in the ground, whenever possible. The Owner/Developer agrees to install the footings in accordance with cold weather concrete provisions as per OPSS 904.07.03.08, if required.

4. The Owner/Developer acknowledges and agrees to ensure that all surface drainage channels such as grassed swales and ditches shall be located on private property and shall not cross the proposed noise barrier but shall be self-contained and in keeping with the approved stormwater management design for the site. This will ensure the mitigation effect of the noise barrier base by eliminating holes and gaps.

5. The Owner/Developer acknowledges and agrees that, if stepping of the noise barrier is required, the interval height per panel section of the required noise fence will be no greater than 101.6 millimetres (4 inches).

6. The Owner/Developer acknowledges and agrees that where a noise barrier is installed by the Owner/Developer as a condition of development, the Owner/Developer agrees that all purchase and sale agreements for the whole or any part of a lot/block that shall receive a noise barrier shall provide notification to the purchaser that they are responsible to maintain the noise barrier in a good and sound condition at their own expense including if necessary, the replacement or reconstruction of the barrier.

7. The Owner/Developer acknowledges and agrees that prior to construction of the noise barrier, their professional engineering consultant must file a certificate with the City certifying the acoustical and structural integrity of the design. The design drawings accompanying the certification are to include details such as, but not limited to, the location, grading, barrier details, elevations, lots affected, and are to be stamped and signed by a Professional Engineer.

8. The Owner/Developer acknowledges and agrees, after construction, to provide a certificate from their professional engineering consultant together with an "as-built" drawing of the noise barrier confirming details such as, but not limited to, the location, elevations and grades, and a statement certifying that the structure installed is a noise barrier that will mitigate traffic noise to the levels required in the approved study.

9. The Owner/Developer acknowledges and agrees that, where central air conditioners, heat pumps or other similar devices are required to be installed, the final installation shall comply with the provincial criteria "Residential Air Conditioning Devices, Publication NPC-216, 1993", or any subsequent revisions.

10. The Owner/Developer acknowledges and agrees to construct multi-unit buildings to provide at least a noise rating of STC 50 between adjoining units, or greater if required by the Ontario Building Code.

11. The Owner/Developer acknowledges and agrees that, prior to occupancy and/or final building inspection, their professional engineering consultant shall inspect the site and certify in a letter that the recommended interior/exterior noise control measures comply with the measures in the approved study; such certificate shall be provided to the City.

Appendix D

Stamson Modelling

Filename: clairdh1.te Time Period: 16 hours
Description:

Road data, segment # 1: Clair

Car traffic volume : 13257 veh/TimePeriod
Medium truck volume : 2537 veh/TimePeriod
Heavy truck volume : 989 veh/TimePeriod
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: Clair

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 2 (Reflective ground surface) Receiver source distance : 21.00 m
Receiver height : 7.50 m
Topography : 2 (Flat/gentle slope; with barrier) Barrier angle1 : -1.00 deg
Angle2 : 0.00 deg
Barrier height : 0.00 m
Barrier receiver distance : 1.00 m
Source elevation : 2.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

Road data, segment # 2: Laird

Car traffic volume : 11404 veh/TimePeriod
Medium truck volume : 2959 veh/TimePeriod
Heavy truck volume : 1583 veh/TimePeriod
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 2: Laird

Angle1 Angle2 : -90.00 deg -67.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 2 (Reflective ground surface) Receiver source distance : 83.00 m
Receiver height : 7.50 m Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -90.00 deg Angle2 : -67.00 deg
Barrier height : 0.00 m
Barrier receiver distance : 1.00 m
Source elevation : 2.00 m
Receiver elevation : 0.00 m

Barrier elevation : 0.00 m
Reference angle : 0.00

Results segment # 1: Clair

Source height = 1.56 m

Barrier height for grazing incidence

Source ! Receiver ! Barrier ! Elevation of
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m) ----------+---------
----+----------+----------
 1.56 ! 7.50 ! 7.31 ! 7.31

ROAD (66.05 + 46.55 + 66.10) = 69.11 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq -------
--- -90 -1
0.00 70.57 0.00 -1.46 -3.06 0.00 0.00 0.00 66.05 ----------
--- -1 0 0.00 70.57 0.00 -1.46
-22.55 0.00 0.00 0.00 46.55* -1 0 0.00 70.57 0.00 -1.46 -22.55 0.00 0.00
0.00 46.55 ----------
---------- 0 90 0.00 70.57 0.00 -1.46 -3.01 0.00 0.00 0.00 66.10 ----------
---

 * Bright Zone !

Segment Leq : 69.11 dBA

Results segment # 2: Laird

Source height = 1.78 m

Barrier height for grazing incidence

Source ! Receiver ! Barrier ! Elevation of
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m) ----------+---------
----+----------+----------
 1.78 ! 7.50 ! 7.46 ! 7.46
 ROAD (0.00 + 55.57 + 0.00) = 55.57 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq -------
--- -90 -
67 0.00 71.93 0.00 -7.43 -8.94 0.00 0.00 -0.05 55.52* -90 -67 0.00 71.93
0.00 -7.43 -8.94 0.00 0.00 0.00 55.57 ----------
---

 * Bright Zone !

Segment Leq : 55.57 dBA

Total Leq All Segments: 69.30 dBA

TOTAL Leq FROM ALL SOURCES: 69.30

Filename: clairnh1.te Time Period: 8 hours
Description:

Road data, segment # 1: Clair

Car traffic volume : 1473 veh/TimePeriod
Medium truck volume : 282 veh/TimePeriod
Heavy truck volume : 110 veh/TimePeriod
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: Clair

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 2 (Reflective ground surface) Receiver source distance : 21.00 m
Receiver height : 7.50 m
Topography : 2 (Flat/gentle slope; with barrier) Barrier angle1 : -1.00 deg
Angle2 : 0.00 deg
Barrier height : 0.00 m
Barrier receiver distance : 1.00 m
Source elevation : 2.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

Road data, segment # 2: Laird

Car traffic volume : 1267 veh/TimePeriod
Medium truck volume : 329 veh/TimePeriod
Heavy truck volume : 176 veh/TimePeriod
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 2: Laird

Angle1 Angle2 : -90.00 deg -67.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 2 (Reflective ground surface) Receiver source distance : 83.00 m
Receiver height : 7.50 m Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -90.00 deg Angle2 : -67.00 deg
Barrier height : 0.00 m
Barrier receiver distance : 1.00 m
Source elevation : 2.00 m
Receiver elevation : 0.00 m

Barrier elevation : 0.00 m
Reference angle : 0.00

Results segment # 1: Clair

Source height = 1.56 m

Barrier height for grazing incidence

Source ! Receiver ! Barrier ! Elevation of
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m) ----------+---------
----+-------------+--------------
 1.56 ! 7.50 ! 7.31 ! 7.31

ROAD (59.52 + 40.02 + 59.57) = 62.58 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq -------
--- -90 -1
0.00 64.04 0.00 -1.46 -3.06 0.00 0.00 0.00 59.52 ----------
--- -1 0 0.00 64.04 0.00 -1.46
-22.55 0.00 0.00 0.00 40.02* -1 0 0.00 64.04 0.00 -1.46 -22.55 0.00 0.00
0.00 40.02 ----------
---------- 0 90 0.00 64.04 0.00 -1.46 -3.01 0.00 0.00 0.00 59.57 ----------
---

 * Bright Zone !

Segment Leq : 62.58 dBA

Results segment # 2: Laird

Source height = 1.78 m

Barrier height for grazing incidence

Source ! Receiver ! Barrier ! Elevation of
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m) ----------+---------
----+-------------+--------------
 1.78 ! 7.50 ! 7.46 ! 7.46
 ROAD (0.00 + 49.04 + 0.00) = 49.04 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq -------
--- -90 -
67 0.00 65.40 0.00 -7.43 -8.94 0.00 0.00 -0.05 48.99* -90 -67 0.00 65.40
0.00 -7.43 -8.94 0.00 0.00 0.00 49.04 ----------
---

 * Bright Zone !

Segment Leq : 49.04 dBA

Total Leq All Segments: 62.77 dBA

TOTAL Leq FROM ALL SOURCES: 62.77

STAMSON 5.0 NORMAL REPORT Date: 30-09-2024 10:14:26
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

H02 (day)

Filename: clairdh2.te Time Period: 16 hours
Description:

Road data, segment # 1: Clair

Car traffic volume : 13257 veh/TimePeriod
Medium truck volume : 2537 veh/TimePeriod
Heavy truck volume : 989 veh/TimePeriod
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: Clair

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 2 (Reflective ground surface) Receiver source distance : 21.00 m
Receiver height : 7.50 m
Topography : 2 (Flat/gentle slope; with barrier) Barrier angle1 : -1.00 deg
Angle2 : 0.00 deg
Barrier height : 0.00 m
Barrier receiver distance : 1.00 m
Source elevation : 3.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

Road data, segment # 2: Laird

Car traffic volume : 11404 veh/TimePeriod
Medium truck volume : 2959 veh/TimePeriod
Heavy truck volume : 1583 veh/TimePeriod
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 2: Laird

Angle1 Angle2 : -90.00 deg -60.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 2 (Reflective ground surface) Receiver source distance : 83.00 m
Receiver height : 7.50 m Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -90.00 deg Angle2 : -60.00 deg
Barrier height : 0.00 m
Barrier receiver distance : 1.00 m
Source elevation : 3.00 m
Receiver elevation : 0.00 m

Barrier elevation : 0.00 m
Reference angle : 0.00

Results segment # 1: Clair

Source height = 1.56 m

Barrier height for grazing incidence

Source ! Receiver ! Barrier ! Elevation of
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m) ----------+---------
----+----------+----------
 1.56 ! 7.50 ! 7.36 ! 7.36

ROAD (66.05 + 46.55 + 66.10) = 69.11 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq -------
--- -90 -1
0.00 70.57 0.00 -1.46 -3.06 0.00 0.00 0.00 66.05 ----------
--- -1 0 0.00 70.57 0.00 -1.46
-22.55 0.00 0.00 0.00 46.55* -1 0 0.00 70.57 0.00 -1.46 -22.55 0.00 0.00
0.00 46.55 ----------
---------- 0 90 0.00 70.57 0.00 -1.46 -3.01 0.00 0.00 0.00 66.10 ----------
---

 * Bright Zone !

Segment Leq : 69.11 dBA

Results segment # 2: Laird

Source height = 1.78 m

Barrier height for grazing incidence

Source ! Receiver ! Barrier ! Elevation of
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m) ----------+---------
----+----------+----------
 1.78 ! 7.50 ! 7.47 ! 7.47
 ROAD (0.00 + 56.72 + 0.00) = 56.72 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq -------
--- -90 -
60 0.00 71.93 0.00 -7.43 -7.78 0.00 0.00 -0.04 56.68* -90 -60 0.00 71.93
0.00 -7.43 -7.78 0.00 0.00 0.00 56.72 ----------
---

 * Bright Zone !

Segment Leq : 56.72 dBA

Total Leq All Segments: 69.35 dBA

TOTAL Leq FROM ALL SOURCES: 69.35

STAMSON 5.0 NORMAL REPORT Date: 30-09-2024 10:15:04
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

H02 (night)

Filename: clairnh2.te Time Period: 8 hours
Description:

Road data, segment # 1: Clair

Car traffic volume : 1473 veh/TimePeriod
Medium truck volume : 282 veh/TimePeriod
Heavy truck volume : 110 veh/TimePeriod
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: Clair

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 2 (Reflective ground surface) Receiver source distance : 21.00 m
Receiver height : 7.50 m
Topography : 2 (Flat/gentle slope; with barrier) Barrier angle1 : -90.00 deg
Angle2 : 90.00 deg
Barrier height : 0.00 m
Barrier receiver distance : 1.00 m
Source elevation : 3.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

Road data, segment # 2: Laird

Car traffic volume : 1267 veh/TimePeriod
Medium truck volume : 329 veh/TimePeriod
Heavy truck volume : 176 veh/TimePeriod
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 2: Laird

Angle1 Angle2 : -90.00 deg -60.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 2 (Reflective ground surface) Receiver source distance : 83.00 m
Receiver height : 7.50 m Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -90.00 deg Angle2 : -60.00 deg
Barrier height : 0.00 m
Barrier receiver distance : 1.00 m
Source elevation : 3.00 m
Receiver elevation : 0.00 m

Barrier elevation : 0.00 m
Reference angle : 0.00

Results segment # 1: Clair

Source height = 1.56 m

Barrier height for grazing incidence

Source ! Receiver ! Barrier ! Elevation of
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m) ----------+---------
----+----------+----------
 1.56 ! 7.50 ! 7.36 ! 7.36

ROAD (0.00 + 62.58 + 0.00) = 62.58 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq -------
--- -90 90
0.00 64.04 0.00 -1.46 0.00 0.00 0.00 -0.01 62.56* -90 90 0.00 64.04 0.00 -
1.46 0.00 0.00 0.00 0.00 62.58 ----------
---

 * Bright Zone !

Segment Leq : 62.58 dBA

Results segment # 2: Laird

Source height = 1.78 m

Barrier height for grazing incidence

Source ! Receiver ! Barrier ! Elevation of
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m) ----------+---------
----+----------+----------
 1.78 ! 7.50 ! 7.47 ! 7.47

ROAD (0.00 + 50.19 + 0.00) = 50.19 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq -------
--- -90 -
60 0.00 65.40 0.00 -7.43 -7.78 0.00 0.00 -0.04 50.15* -90 -60 0.00 65.40
0.00 -7.43 -7.78 0.00 0.00 0.00 50.19 ----------
---

 * Bright Zone !

Segment Leq : 50.19 dBA

Total Leq All Segments: 62.82 dBA

TOTAL Leq FROM ALL SOURCES: 62.82

STAMSON 5.0 SUMMARY REPORT Date: 30-09-2024 11:43:28 MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

H03 (day)

Filename: clairdh3.te Time Period: 16 hours
Description:

Road data, segment # 1: Clair

Car traffic volume : 13257 veh/TimePeriod
Medium truck volume : 2537 veh/TimePeriod
Heavy truck volume : 989 veh/TimePeriod
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: Clair

Angle1 Angle2 : -54.00 deg -12.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 1 (Absorptive ground surface) Receiver source distance : 45.50 m
Receiver height : 7.50 m
Topography : 2 (Flat/gentle slope; with barrier) Barrier angle1 : -54.00 deg
Angle2 : -12.00 deg Barrier height : 0.00 m
Barrier receiver distance : 1.00 m
Source elevation : 2.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

Road data, segment # 2: Laird

Car traffic volume : 11404 veh/TimePeriod
Medium truck volume : 2959 veh/TimePeriod
Heavy truck volume : 1583 veh/TimePeriod
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 2: Laird

Angle1 Angle2 : -90.00 deg -54.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 1 (Absorptive ground surface) Receiver source distance : 103.00 m
Receiver height : 7.50 m Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -90.00 deg Angle2 : -54.00 deg Barrier height : 0.00 m
Barrier receiver distance : 1.00 m
Source elevation : 2.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

Result summary
---

source height (m)	Road Leq (dBA)	Total Leq (dBA)	
1.Clair	1.56	56.70	56.70 *
2.Laird	1.78	49.94	49.94 *

Total 57.53 dBA

* Bright Zone !

TOTAL Leq FROM ALL SOURCES: 57.53

Filename: clairnh3.te Time Period: 8 hours
Description:

Road data, segment # 1: Clair

Car traffic volume : 1473 veh/TimePeriod
Medium truck volume : 282 veh/TimePeriod
Heavy truck volume : 110 veh/TimePeriod
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: Clair

Angle1 Angle2 : -54.00 deg -12.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 1 (Absorptive ground surface) Receiver source distance : 45.50 m
Receiver height : 7.50 m
Topography : 2 (Flat/gentle slope; with barrier) Barrier angle1 : -54.00 deg
Angle2 : -12.00 deg
Barrier height : 0.00 m
Barrier receiver distance : 1.00 m
Source elevation : 2.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

Road data, segment # 2: Laird

Car traffic volume : 1267 veh/TimePeriod
Medium truck volume : 329 veh/TimePeriod
Heavy truck volume : 176 veh/TimePeriod
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 2: Laird

Angle1 Angle2 : -90.00 deg -54.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 1 (Absorptive ground surface) Receiver source distance : 103.00 m
Receiver height : 7.50 m Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -90.00 deg Angle2 : -54.00 deg
Barrier height : 0.00 m
Barrier receiver distance : 1.00 m
Source elevation : 2.00 m
Receiver elevation : 0.00 m

Barrier elevation : 0.00 m
Reference angle : 0.00

Results segment # 1: Clair

Source height = 1.56 m

Barrier height for grazing incidence

Source ! Receiver ! Barrier ! Elevation of
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m) ----------+---------
----+----------+----------
 1.56 ! 7.50 ! 7.41 ! 7.41

ROAD (0.00 + 50.17 + 0.00) = 50.17 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq -------
--- -54 -
12 0.48 64.04 0.00 -7.12 -6.74 0.00 0.00 0.00 50.17* -54 -12 0.48 64.04 0.00
-7.12 -6.74 0.00 0.00 0.00 50.17 ----------
---

 * Bright Zone !

Segment Leq : 50.17 dBA

Results segment # 2: Laird

Source height = 1.78 m

Barrier height for grazing incidence

Source ! Receiver ! Barrier ! Elevation of
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m) ----------+---------
----+----------+----------
 1.78 ! 7.50 ! 7.46 ! 7.46

ROAD (0.00 + 43.41 + 0.00) = 43.41 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq -------
--- -90 -
54 0.47 65.40 0.00 -12.31 -9.68 0.00 0.00 -0.03 43.38* -90 -54 0.47 65.40
0.00 -12.31 -9.68 0.00 0.00 0.00 43.41 ----------
---

 * Bright Zone !

Segment Leq : 43.41 dBA

Total Leq All Segments: 51.00 dBA

TOTAL Leq FROM ALL SOURCES: 51.00

STAMSON 5.0 NORMAL REPORT Date: 30-09-2024 11:38:25
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

H04 (day)

Filename: clairdh4.te Time Period: 16 hours
Description:

Road data, segment # 1: Clair

Car traffic volume : 13257 veh/TimePeriod
Medium truck volume : 2537 veh/TimePeriod
Heavy truck volume : 989 veh/TimePeriod
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: Clair

Angle1 Angle2 : -45.00 deg 22.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 1 (Absorptive ground surface) Receiver source distance : 77.60 m
Receiver height : 7.50 m
Topography : 2 (Flat/gentle slope; with barrier) Barrier angle1 : -45.00 deg
Angle2 : 22.00 deg
Barrier height : 0.00 m
Barrier receiver distance : 1.00 m
Source elevation : 2.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

Road data, segment # 2: Laird

Car traffic volume : 11404 veh/TimePeriod
Medium truck volume : 2959 veh/TimePeriod
Heavy truck volume : 1583 veh/TimePeriod
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 2: Laird

Angle1 Angle2 : -90.00 deg -45.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 1 (Absorptive ground surface) Receiver source distance : 139.20 m
Receiver height : 7.50 m Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -90.00 deg Angle2 : -45.00 deg
Barrier height : 0.00 m
Barrier receiver distance : 1.00 m
Source elevation : 2.00 m
Receiver elevation : 0.00 m

Barrier elevation : 0.00 m
Reference angle : 0.00

Results segment # 1: Clair

Source height = 1.56 m

Barrier height for grazing incidence

Source ! Receiver ! Barrier ! Elevation of
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m) ----------+---------
----+----------+----------
 1.56 ! 7.50 ! 7.45 ! 7.45

ROAD (0.00 + 55.56 + 0.00) = 55.56 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq -------
--- -45 22
0.48 70.57 0.00 -10.55 -4.46 0.00 0.00 0.00 55.56* -45 22 0.48 70.57 0.00 -
10.55 -4.46 0.00 0.00 0.00 55.56 ----------
---

 * Bright Zone !

Segment Leq : 55.56 dBA

Results segment # 2: Laird

Source height = 1.78 m

Barrier height for grazing incidence

Source ! Receiver ! Barrier ! Elevation of
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m) ----------+---------
----+----------+----------
 1.78 ! 7.50 ! 7.47 ! 7.47

ROAD (0.00 + 49.41 + 0.00) = 49.41 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq -------
--- -90 -
45 0.47 71.93 0.00 -14.24 -8.28 0.00 0.00 -0.02 49.38* -90 -45 0.47 71.93
0.00 -14.24 -8.28 0.00 0.00 0.00 49.41 ----------
---

 * Bright Zone !

Segment Leq : 49.41 dBA

Total Leq All Segments: 56.50 dBA

TOTAL Leq FROM ALL SOURCES: 56.50

STAMSON 5.0 COMPREHENSIVE REPORT Date: 30-09-2024 11:39:03 MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

H04 (night)

Filename: clairnh4.te Time Period: 8 hours
Description:

Road data, segment # 1: Clair

Car traffic volume : 1473 veh/TimePeriod
Medium truck volume : 282 veh/TimePeriod
Heavy truck volume : 110 veh/TimePeriod
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: Clair

Angle1 Angle2 : -45.00 deg 22.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 1 (Absorptive ground surface) Receiver source distance : 77.60 m
Receiver height : 7.50 m
Topography : 2 (Flat/gentle slope; with barrier) Barrier angle1 : -45.00 deg
Angle2 : 22.00 deg
Barrier height : 0.00 m
Barrier receiver distance : 1.00 m
Source elevation : 2.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

Road data, segment # 2: Laird

Car traffic volume : 1267 veh/TimePeriod
Medium truck volume : 329 veh/TimePeriod
Heavy truck volume : 176 veh/TimePeriod
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 2: Laird

Angle1 Angle2 : -90.00 deg -45.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 1 (Absorptive ground surface) Receiver source distance : 139.20 m
Receiver height : 7.50 m Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -90.00 deg Angle2 : -45.00 deg
Barrier height : 0.00 m
Barrier receiver distance : 1.00 m
Source elevation : 2.00 m
Receiver elevation : 0.00 m

Barrier elevation : 0.00 m
Reference angle : 0.00

Segment # 1: Clair

Source height = 1.56 m

Barrier height for grazing incidence

Source ! Receiver ! Barrier ! Elevation of
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m)

1.56 ! 7.50 ! 7.45 ! 7.45

ROAD (0.00 + 49.03 + 0.00) = 49.03 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq
---
-45 22 0.48 64.04 0.00 -10.55 -4.46 0.00 0.00 0.00 49.03* -45 22 0.48 64.04 0.00 -10.55 -4.46 0.00 0.00 0.00 49.03
---

* Bright Zone !

Segment Leq : 49.03 dBA

Segment # 2: Laird

Source height = 1.78 m

Barrier height for grazing incidence

Source ! Receiver ! Barrier ! Elevation of
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m)

1.78 ! 7.50 ! 7.47 ! 7.47

ROAD (0.00 + 42.88 + 0.00) = 42.88 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq
---
-90 -45 0.47 65.40 0.00 -14.24 -8.28 0.00 0.00 -0.02 42.85* -90 -45 0.47 65.40 0.00 -14.24 -8.28 0.00 0.00 0.00 42.88
---
* Bright Zone !

Segment Leq : 42.88 dBA

Total Leq All Segments: 49.97 dBA

TOTAL Leq FROM ALL SOURCES: 49.97

STAMSON 5.0 COMPREHENSIVE REPORT Date: 30-09-2024 11:39:46 MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

H05 (day)

Filename: clairdh5.te Time Period: 16 hours
Description:

Road data, segment # 1: Clair

Car traffic volume : 13257 veh/TimePeriod
Medium truck volume : 2537 veh/TimePeriod
Heavy truck volume : 989 veh/TimePeriod
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: Clair

Angle1 Angle2 : -33.00 deg 23.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 1 (Absorptive ground surface) Receiver source distance : 119.00 m
Receiver height : 7.50 m
Topography : 2 (Flat/gentle slope; with barrier) Barrier angle1 : -33.00 deg
Angle2 : 23.00 deg
Barrier height : 0.00 m
Barrier receiver distance : 1.00 m
Source elevation : 2.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

Road data, segment # 2: Laird

Car traffic volume : 11404 veh/TimePeriod
Medium truck volume : 2959 veh/TimePeriod
Heavy truck volume : 1583 veh/TimePeriod
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 2: Laird

Angle1 Angle2 : -90.00 deg -33.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 1 (Absorptive ground surface) Receiver source distance : 180.00 m
Receiver height : 7.50 m Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -90.00 deg Angle2 : -33.00 deg
Barrier height : 0.00 m
Barrier receiver distance : 1.00 m
Source elevation : 2.00 m
Receiver elevation : 0.00 m

Barrier elevation : 0.00 m
Reference angle : 0.00

Segment # 1: Clair

Source height = 1.56 m

Barrier height for grazing incidence

Source ! Receiver ! Barrier ! Elevation of
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m)

1.56 ! 7.50 ! 7.47 ! 7.47

ROAD (0.00 + 52.11 + 0.00) = 52.11 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq
---
-33 23 0.48 70.57 0.00 -13.30 -5.16 0.00 0.00 0.00 52.11*

-33 23 0.48 70.57 0.00 -13.30 -5.16 0.00 0.00 0.00 52.11
---

* Bright Zone !

Segment Leq : 52.11 dBA

Segment # 2: Laird

Source height = 1.78 m

Barrier height for grazing incidence

Source ! Receiver ! Barrier ! Elevation of
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m)

1.78 ! 7.50 ! 7.48 ! 7.48

ROAD (0.00 + 49.22 + 0.00) = 49.22 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq
---
-90 -33 0.47 71.93 0.00 -15.88 -6.83 0.00 0.00 -0.02 49.20*

-90 -33 0.47 71.93 0.00 -15.88 -6.83 0.00 0.00 0.00 49.22
---
* Bright Zone !

Segment Leq : 49.22 dBA

Total Leq All Segments: 53.91 dBA

TOTAL Leq FROM ALL SOURCES: 53.91

STAMSON 5.0 COMPREHENSIVE REPORT Date: 30-09-2024 11:40:24 MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

H05 (night)

Filename: clairnh5.te Time Period: 8 hours
Description:

Road data, segment # 1: Clair

Car traffic volume : 1473 veh/TimePeriod
Medium truck volume : 282 veh/TimePeriod
Heavy truck volume : 110 veh/TimePeriod
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: Clair

Angle1 Angle2 : -33.00 deg 23.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 1 (Absorptive ground surface) Receiver source distance : 119.00 m
Receiver height : 7.50 m
Topography : 2 (Flat/gentle slope; with barrier) Barrier angle1 : -33.00 deg
Angle2 : 23.00 deg
Barrier height : 0.00 m
Barrier receiver distance : 1.00 m
Source elevation : 2.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

Road data, segment # 2: Laird

Car traffic volume : 1267 veh/TimePeriod
Medium truck volume : 329 veh/TimePeriod
Heavy truck volume : 176 veh/TimePeriod
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 2: Laird

Angle1 Angle2 : -90.00 deg -33.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 1 (Absorptive ground surface) Receiver source distance : 180.00 m
Receiver height : 7.50 m Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -90.00 deg Angle2 : -33.00 deg
Barrier height : 0.00 m
Barrier receiver distance : 1.00 m
Source elevation : 2.00 m
Receiver elevation : 0.00 m

Barrier elevation : 0.00 m
Reference angle : 0.00

Segment # 1: Clair

Source height = 1.56 m

Barrier height for grazing incidence

Source ! Receiver ! Barrier ! Elevation of
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m)

1.56 ! 7.50 ! 7.47 ! 7.47

ROAD (0.00 + 45.58 + 0.00) = 45.58 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq
---
-33 23 0.48 64.04 0.00 -13.30 -5.16 0.00 0.00 0.00 45.58*

-33 23 0.48 64.04 0.00 -13.30 -5.16 0.00 0.00 0.00 45.58
---

* Bright Zone !

Segment Leq : 45.58 dBA

Segment # 2: Laird

Source height = 1.78 m

Barrier height for grazing incidence

Source ! Receiver ! Barrier ! Elevation of
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m)

1.78 ! 7.50 ! 7.48 ! 7.48

ROAD (0.00 + 42.69 + 0.00) = 42.69 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq
---
-90 -33 0.47 65.40 0.00 -15.88 -6.83 0.00 0.00 -0.02 42.67*

-90 -33 0.47 65.40 0.00 -15.88 -6.83 0.00 0.00 0.00 42.69
---
* Bright Zone !

Segment Leq : 42.69 dBA

Total Leq All Segments: 47.38 dBA

TOTAL Leq FROM ALL SOURCES: 47.38

STAMSON 5.0 SUMMARY REPORT Date: 30-09-2024 11:11:15 MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

H01_O

Filename: clairdo1.te Time Period: 16 hours
Description:

Road data, segment # 1: Clair

Car traffic volume : 13257 veh/TimePeriod
Medium truck volume : 2537 veh/TimePeriod
Heavy truck volume : 989 veh/TimePeriod
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: Clair

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 2 (Reflective ground surface) Receiver source distance : 18.00 m
Receiver height : 1.50 m
Topography : 2 (Flat/gentle slope; with barrier) Barrier angle1 : -1.00 deg
Angle2 : 0.00 deg
Barrier height : 0.00 m
Barrier receiver distance : 1.00 m
Source elevation : 2.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

Road data, segment # 2: Laird

Car traffic volume : 11404 veh/TimePeriod
Medium truck volume : 2959 veh/TimePeriod
Heavy truck volume : 1583 veh/TimePeriod
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 2: Laird

Angle1 Angle2 : -90.00 deg -69.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 2 (Reflective ground surface) Receiver source distance : 80.00 m
Receiver height : 1.50 m Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -90.00 deg Angle2 : -69.00 deg Barrier height : 0.00 m
Barrier receiver distance : 1.00 m
Source elevation : 2.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m

Reference angle : 0.00

Result summary
---

source height (m)	Road Leq (dBA)	Total Leq (dBA)	
1.Clair	1.56	69.78	69.78 *
2.Laird	1.78	55.33	55.33 *

Total 69.93 dBA

* Bright Zone !

TOTAL Leq FROM ALL SOURCES: 69.93

STAMSON 5.0 SUMMARY REPORT Date: 30-09-2024 11:10:37 MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

H02_O

Filename: clairdo2.te Time Period: 16 hours
Description:

Road data, segment # 1: Clair

Car traffic volume : 13257 veh/TimePeriod
Medium truck volume : 2537 veh/TimePeriod
Heavy truck volume : 989 veh/TimePeriod
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: Clair

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 2 (Reflective ground surface) Receiver source distance : 18.00 m
Receiver height : 1.50 m
Topography : 2 (Flat/gentle slope; with barrier) Barrier angle1 : -1.00 deg
Angle2 : 0.00 deg
Barrier height : 0.00 m
Barrier receiver distance : 1.00 m
Source elevation : 3.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

Road data, segment # 2: Laird

Car traffic volume : 11404 veh/TimePeriod
Medium truck volume : 2959 veh/TimePeriod
Heavy truck volume : 1583 veh/TimePeriod
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 2: Laird

Angle1 Angle2 : -90.00 deg -62.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 2 (Reflective ground surface) Receiver source distance : 80.00 m
Receiver height : 1.50 m Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -90.00 deg Angle2 : -62.00 deg Barrier height : 0.00 m
Barrier receiver distance : 1.00 m
Source elevation : 3.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m

Reference angle : 0.00

Result summary

source height (m)	Road Leq (dBA)	Total Leq (dBA)	
1.Clair	1.56	69.78	69.78 *
2.Laird	1.78	56.58	56.58 *

Total 69.98 dBA

* Bright Zone !

TOTAL Leq FROM ALL SOURCES: 69.98

STAMSON 5.0 SUMMARY REPORT Date: 30-09-2024 11:15:51 MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

H03_O

Filename: clairdo3.te Time Period: 16 hours
Description:

Road data, segment # 1: Clair

Car traffic volume : 13257 veh/TimePeriod
Medium truck volume : 2537 veh/TimePeriod
Heavy truck volume : 989 veh/TimePeriod
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: Clair

Angle1 Angle2 : -74.00 deg 4.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 1 (Absorptive ground surface) Receiver source distance : 48.80 m
Receiver height : 1.50 m
Topography : 2 (Flat/gentle slope; with barrier) Barrier angle1 : -74.00 deg
Angle2 : 4.00 deg
Barrier height : 0.00 m
Barrier receiver distance : 1.00 m
Source elevation : 2.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

Road data, segment # 2: Laird

Car traffic volume : 11404 veh/TimePeriod
Medium truck volume : 2959 veh/TimePeriod
Heavy truck volume : 1583 veh/TimePeriod
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 2: Laird

Angle1 Angle2 : -90.00 deg -74.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 1 (Absorptive ground surface) Receiver source distance : 106.70 m
Receiver height : 1.50 m Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -90.00 deg Angle2 : -74.00 deg Barrier height : 0.00 m
Barrier receiver distance : 1.00 m
Source elevation : 2.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m

Reference angle : 0.00

Result summary

source	Road	Total
height	Leq	Leq
(m)	(dBA)	(dBA)
1.Clair	1.56	57.60	57.60 *
2.Laird	1.78	41.54	41.54 *

Total 57.71 dBA

* Bright Zone !

TOTAL Leq FROM ALL SOURCES: 57.71

STAMSON 5.0 SUMMARY REPORT Date: 30-09-2024 11:22:31 MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

H04_O

Filename: clairdo4.te Time Period: 16 hours
Description:

Road data, segment # 1: Clair

Car traffic volume : 13257 veh/TimePeriod
Medium truck volume : 2537 veh/TimePeriod
Heavy truck volume : 989 veh/TimePeriod
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: Clair

Angle1 Angle2 : -41.00 deg 18.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 1 (Absorptive ground surface) Receiver source distance : 84.10 m
Receiver height : 1.50 m
Topography : 2 (Flat/gentle slope; with barrier) Barrier angle1 : -41.00 deg
Angle2 : 18.00 deg Barrier height : 0.00 m
Barrier receiver distance : 1.00 m
Source elevation : 2.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

Road data, segment # 2: Laird

Car traffic volume : 11404 veh/TimePeriod
Medium truck volume : 2959 veh/TimePeriod
Heavy truck volume : 1583 veh/TimePeriod
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 2: Laird

Angle1 Angle2 : -90.00 deg -41.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 1 (Absorptive ground surface) Receiver source distance : 139.20 m
Receiver height : 1.50 m Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -90.00 deg Angle2 : -41.00 deg Barrier height : 0.00 m
Barrier receiver distance : 1.00 m
Source elevation : 2.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

Result summary
---

source	Road	Total
height	Leq	Leq
(m)	(dBA)	(dBA)
1.Clair	1.56	53.12 *
2.Laird	1.78	47.52 *

Total 54.18 dBA

* Bright Zone !

TOTAL Leq FROM ALL SOURCES: 54.18

STAMSON 5.0 SUMMARY REPORT Date: 30-09-2024 11:25:53 MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

H05_O

Filename: clairdo5.te Time Period: 16 hours
Description:

Road data, segment # 1: Clair

Car traffic volume : 13257 veh/TimePeriod
Medium truck volume : 2537 veh/TimePeriod
Heavy truck volume : 989 veh/TimePeriod
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: Clair

Angle1 Angle2 : -33.00 deg 20.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 1 (Absorptive ground surface) Receiver source distance : 119.00 m
Receiver height : 1.50 m
Topography : 2 (Flat/gentle slope; with barrier) Barrier angle1 : -33.00 deg
Angle2 : 20.00 deg Barrier height : 0.00 m
Barrier receiver distance : 1.00 m
Source elevation : 2.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

Road data, segment # 2: Laird

Car traffic volume : 11404 veh/TimePeriod
Medium truck volume : 2959 veh/TimePeriod
Heavy truck volume : 1583 veh/TimePeriod
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 2: Laird

Angle1 Angle2 : -90.00 deg -33.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 1 (Absorptive ground surface) Receiver source distance : 178.00 m
Receiver height : 1.50 m Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -90.00 deg Angle2 : -33.00 deg Barrier height : 0.00 m
Barrier receiver distance : 1.00 m
Source elevation : 2.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

Result summary
---

	source height (m)	Road Leq (dBA)	Total Leq (dBA)	
1.	Clair	1.56	50.22	50.22 *
2.	Laird	1.78	46.79	46.79 *

Total 51.85 dBA

* Bright Zone !

TOTAL Leq FROM ALL SOURCES: 51.85

STAMSON 5.0 NORMAL REPORT Date: 30-09-2024 09:56:59
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

TA 8th storey (day)

Filename: 280cd8s.te Time Period: 16 hours
Description:

Road data, segment # 1: Clair

Car traffic volume : 13257 veh/TimePeriod
Medium truck volume : 2537 veh/TimePeriod
Heavy truck volume : 989 veh/TimePeriod
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: Clair

Angle1 Angle2 : -26.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 1 (Absorptive ground surface) Receiver source distance : 200.30 m
Receiver height : 22.50 m
Topography : 2 (Flat/gentle slope; with barrier) Barrier angle1 : -26.00 deg
Angle2 : 90.00 deg
Barrier height : 0.00 m
Barrier receiver distance : 10.00 m
Source elevation : 1.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

Road data, segment # 2: Laird

Car traffic volume : 11404 veh/TimePeriod
Medium truck volume : 2959 veh/TimePeriod
Heavy truck volume : 1583 veh/TimePeriod
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 2: Laird

Angle1 Angle2 : -90.00 deg -26.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 1 (Absorptive ground surface) Receiver source distance : 255.00 m
Receiver height : 22.50 m Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -90.00 deg Angle2 : -26.00 deg
Barrier height : 0.00 m
Barrier receiver distance : 10.00 m
Source elevation : 1.00 m
Receiver elevation : 0.00 m

Barrier elevation : 0.00 m
Reference angle : 0.00

Results segment # 1: Clair

Source height = 1.56 m

Barrier height for grazing incidence

Source ! Receiver ! Barrier ! Elevation of
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m) ----------+---------
----+----------+----------
 1.56 ! 22.50 ! 21.50 ! 21.50

ROAD (0.00 + 57.02 + 0.00) = 57.02 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq -------
--- -26 90
0.03 70.57 0.00 -11.57 -1.97 0.00 0.00 -0.00 57.01* -26 90 0.03 70.57 0.00 -
11.57 -1.97 0.00 0.00 0.00 57.02 ----------
---

 * Bright Zone !

Segment Leq : 57.02 dBA

Results segment # 2: Laird

Source height = 1.78 m

Barrier height for grazing incidence

Source ! Receiver ! Barrier ! Elevation of
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m) ----------+---------
----+----------+----------
 1.78 ! 22.50 ! 21.73 ! 21.73

ROAD (0.00 + 54.78 + 0.00) = 54.78 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq -------
--- -90 -
26 0.02 71.93 0.00 -12.57 -4.58 0.00 0.00 -0.01 54.77* -90 -26 0.02 71.93
0.00 -12.57 -4.58 0.00 0.00 0.00 54.78 ----------
---

 * Bright Zone !

Segment Leq : 54.78 dBA

Total Leq All Segments: 59.05 dBA

TOTAL Leq FROM ALL SOURCES: 59.05

STAMSON 5.0 NORMAL REPORT Date: 30-09-2024 10:01:15
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

TA 8th storey (night)

Filename: 280cn8s.te Time Period: 8 hours
Description:

Road data, segment # 1: Clair

Car traffic volume : 1473 veh/TimePeriod
Medium truck volume : 282 veh/TimePeriod
Heavy truck volume : 110 veh/TimePeriod
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: Clair

Angle1 Angle2 : -26.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 1 (Absorptive ground surface) Receiver source distance : 200.30 m
Receiver height : 22.50 m
Topography : 2 (Flat/gentle slope; with barrier) Barrier angle1 : -26.00 deg
Angle2 : 90.00 deg
Barrier height : 0.00 m
Barrier receiver distance : 10.00 m
Source elevation : 1.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

Road data, segment # 2: Laird

Car traffic volume : 1267 veh/TimePeriod
Medium truck volume : 329 veh/TimePeriod
Heavy truck volume : 176 veh/TimePeriod
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 2: Laird

Angle1 Angle2 : -90.00 deg -26.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 1 (Absorptive ground surface) Receiver source distance : 255.00 m
Receiver height : 22.50 m Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -90.00 deg Angle2 : -26.00 deg
Barrier height : 0.00 m
Barrier receiver distance : 10.00 m
Source elevation : 1.00 m
Receiver elevation : 0.00 m

Barrier elevation : 0.00 m
Reference angle : 0.00

Results segment # 1: Clair

Source height = 1.56 m

Barrier height for grazing incidence

Source ! Receiver ! Barrier ! Elevation of
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m) ----------+---------
----+----------+----------
 1.56 ! 22.50 ! 21.50 ! 21.50

ROAD (0.00 + 50.49 + 0.00) = 50.49 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq -------
--- -26 90
0.03 64.04 0.00 -11.57 -1.97 0.00 0.00 -0.00 50.49* -26 90 0.03 64.04 0.00 -
11.57 -1.97 0.00 0.00 0.00 50.49 ----------
---

 * Bright Zone !

Segment Leq : 50.49 dBA

Results segment # 2: Laird

Source height = 1.78 m

Barrier height for grazing incidence

Source ! Receiver ! Barrier ! Elevation of
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m) ----------+---------
----+----------+----------
 1.78 ! 22.50 ! 21.73 ! 21.73

ROAD (0.00 + 48.25 + 0.00) = 48.25 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq -------
--- -90 -
26 0.02 65.40 0.00 -12.57 -4.58 0.00 0.00 -0.01 48.24* -90 -26 0.02 65.40
0.00 -12.57 -4.58 0.00 0.00 0.00 48.25 ----------
---

 * Bright Zone !

Segment Leq : 48.25 dBA

Total Leq All Segments: 52.52 dBA

TOTAL Leq FROM ALL SOURCES: 52.52

STAMSON 5.0 NORMAL REPORT Date: 30-09-2024 10:06:07
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

TA 16th storey (day)

Filename: 280cd16s.te Time Period: 16 hours
Description:

Road data, segment # 1: Clair

Car traffic volume : 13257 veh/TimePeriod
Medium truck volume : 2537 veh/TimePeriod
Heavy truck volume : 989 veh/TimePeriod
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: Clair

Angle1 Angle2 : -22.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 1 (Absorptive ground surface) Receiver source distance : 220.00 m
Receiver height : 46.50 m
Topography : 2 (Flat/gentle slope; with barrier) Barrier angle1 : -22.00 deg
Angle2 : 90.00 deg
Barrier height : 0.00 m
Barrier receiver distance : 10.00 m
Source elevation : 1.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

Road data, segment # 2: Laird

Car traffic volume : 11404 veh/TimePeriod
Medium truck volume : 2959 veh/TimePeriod
Heavy truck volume : 1583 veh/TimePeriod
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 2: Laird

Angle1 Angle2 : -90.00 deg -22.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 1 (Absorptive ground surface) Receiver source distance : 276.80 m
Receiver height : 46.50 m Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -90.00 deg Angle2 : -22.00 deg
Barrier height : 0.00 m
Barrier receiver distance : 10.00 m
Source elevation : 1.00 m
Receiver elevation : 0.00 m

Barrier elevation : 0.00 m
Reference angle : 0.00

Results segment # 1: Clair

Source height = 1.56 m

Barrier height for grazing incidence

Source ! Receiver ! Barrier ! Elevation of
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m) ----------+---------
----+----------+----------
 1.56 ! 46.50 ! 44.50 ! 44.50

ROAD (0.00 + 56.84 + 0.00) = 56.84 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq -------
--- -22 90
0.00 70.57 0.00 -11.66 -2.06 0.00 0.00 -0.00 56.84* -22 90 0.00 70.57 0.00 -
11.66 -2.06 0.00 0.00 0.00 56.84 ---
---

 * Bright Zone !

Segment Leq : 56.84 dBA

Results segment # 2: Laird

Source height = 1.78 m

Barrier height for grazing incidence

Source ! Receiver ! Barrier ! Elevation of
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m) ----------+---------
----+----------+----------
 1.78 ! 46.50 ! 44.92 ! 44.92

ROAD (0.00 + 55.04 + 0.00) = 55.04 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq -------
--- -90 -
22 0.00 71.93 0.00 -12.66 -4.23 0.00 0.00 -0.00 55.04* -90 -22 0.00 71.93
0.00 -12.66 -4.23 0.00 0.00 0.00 55.04 ---
---

 * Bright Zone !

Segment Leq : 55.04 dBA

Total Leq All Segments: 59.04 dBA

TOTAL Leq FROM ALL SOURCES: 59.04

Filename: 280cn16s.te Time Period: 8 hours
Description:

Road data, segment # 1: Clair

Car traffic volume : 1473 veh/TimePeriod
Medium truck volume : 282 veh/TimePeriod
Heavy truck volume : 110 veh/TimePeriod
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: Clair

Angle1 Angle2 : -22.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 1 (Absorptive ground surface) Receiver source distance : 220.00 m
Receiver height : 46.50 m
Topography : 2 (Flat/gentle slope; with barrier) Barrier angle1 : -22.00 deg
Angle2 : 90.00 deg
Barrier height : 0.00 m
Barrier receiver distance : 10.00 m
Source elevation : 1.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

Road data, segment # 2: Laird

Car traffic volume : 1267 veh/TimePeriod
Medium truck volume : 329 veh/TimePeriod
Heavy truck volume : 176 veh/TimePeriod
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 2: Laird

Angle1 Angle2 : -90.00 deg -22.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 1 (Absorptive ground surface) Receiver source distance : 276.80 m
Receiver height : 46.50 m Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -90.00 deg Angle2 : -22.00 deg
Barrier height : 0.00 m
Barrier receiver distance : 10.00 m
Source elevation : 1.00 m
Receiver elevation : 0.00 m

Barrier elevation : 0.00 m
Reference angle : 0.00

Results segment # 1: Clair

Source height = 1.56 m

Barrier height for grazing incidence

Source ! Receiver ! Barrier ! Elevation of
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m) ----------+---------
----+----------+----------
 1.56 ! 46.50 ! 44.50 ! 44.50

ROAD (0.00 + 50.31 + 0.00) = 50.31 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq -------
--- -22 90
0.00 64.04 0.00 -11.66 -2.06 0.00 0.00 -0.00 50.31* -22 90 0.00 64.04 0.00 -
11.66 -2.06 0.00 0.00 0.00 50.31 ----------
---

 * Bright Zone !

Segment Leq : 50.31 dBA

Results segment # 2: Laird

Source height = 1.78 m

Barrier height for grazing incidence

Source ! Receiver ! Barrier ! Elevation of
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m) ----------+---------
----+----------+----------
 1.78 ! 46.50 ! 44.92 ! 44.92

ROAD (0.00 + 48.51 + 0.00) = 48.51 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq -------
--- -90 -
22 0.00 65.40 0.00 -12.66 -4.23 0.00 0.00 -0.00 48.51* -90 -22 0.00 65.40
0.00 -12.66 -4.23 0.00 0.00 0.00 48.51 ----------
---

 * Bright Zone !

Segment Leq : 48.51 dBA

Total Leq All Segments: 52.51 dBA

TOTAL Leq FROM ALL SOURCES: 52.51

Appendix E

Building Component Analysis

Table E.1: Building Component Analysis

BPN-56

Receptor	Source	Time of Day	Location	Sound Levels				Façade and Room Inputs										Source Inputs			Component 1 - Veneer						Component 2 - Glazing						Required Glazing	
				Façade Level	Free Field Correction	Indoor Requirement	Required Reduction	Exposed Façade Height	Exposed Façade Length	Room Depth	Floor Area	Façade Area	Glazing as % of Façade Area	Glazing as % of Floor Area	Veneer as % of Floor Area	Room Absorption	Height of Receptor	Horizontal Distance to Source	Incident Sound Angle	Angle Correction	Source Spectrum	Assumed Veneer	Building Component	Spectrum Correction	Room Correction	% Total Transmitted Energy	Energy Correction	Building Component	Spectrum Correction	Room Correction	% Total Transmitted Energy	Energy Correction		
				(dBA)	(dBA)	(dBA)	(dBA)	(m)	(m)	(m)	(m^2)	(m^2)	(%)	(%)	(%)		(m)	(m)	(deg)			(STC)				(%)					(%)		(STC)	
Single / Double Family Residential	Roadway	Daytime	Living/Dining	69	3	45	27	3.00	6.00	3.00	18.00	18.00	35%	35%	65%	Intermediate	7.5	21	19.65	0	D	45	D	7	-1	5%	39	C	4	-4	95%	0	*28*	Living / Dining Areas
	Roadway	Night-time	Living/Dining	63	3	45	21	3.00	6.00	3.00	18.00	18.00	35%	35%	65%	Intermediate	7.5	21	19.65	0	D	45	D	7	-1	5%	39	C	4	-4	95%	0	*22*	**28**
	Roadway	Daytime	Sleeping Quarters	69	3	45	27	3.00	3.00	3.00	9.00	9.00	25%	25%	75%	Intermediate	7.5	21	19.65	0	D	45	D	7	0	5%	38	C	4	-5	95%	0	*26*	Sleeping Quarters
	Roadway	Night-time	Sleeping Quarters	63	3	40	26	3.00	3.00	3.00	9.00	9.00	25%	25%	75%	Intermediate	7.5	21	19.65	0	D	45	D	7	0	5%	38	C	4	-5	95%	0	*25*	**26**

Appendix F

Barrier Location and Specifications

notes:

architecture unfolded

tel: (416) 601 5416 info@unfolded.ca

368 dufferin street. toronto, on. M6K 1Z8

revisions: dd-mm-yy

architectural team :

Eduardo Ortiz
Ihab Daakour

spa no. -

project:
280 Clair Rd W, Guelph, ON
xxxx

SITE PLAN

2024.10.04 date:
1:750 scale:
23-50 project:
ID drawn by:

true north / project north

drawning number:
A100

Appendix G

Stationary Source Data

Category	Outputs	Scale	Process	Operations/Intensity	Possible Examples
Class I	• Noise: Sound not audible off property • Dust and/or Odour: Infrequent and not intense • Vibration: No ground borne vibration on plant property	• No outside storage • Small scale plant or scale is irrelevant in relation to all other criteria for this Class	• Self-contained plant or building which produces/stores a packaged product. Low probability of fugitive emissions	• Daytime operations only • Infrequent movement of products and/or heavy trucks	• Electronics manufacturing and repair • Furniture repair and refinishing • Beverages bottling • Auto parts supply • Packaging and crafting services • Distribution of dairy products • Laundry and linen supply
Class II	• Noise: Sound occasionally audible off property • Dust and/or Odour: Frequent and occasionally intense • Vibration: Possible groundborne vibration, but cannot be perceived off property	• Outside storage permitted • Medium level of production allowed	• Open process • Periodic outputs of minor annoyance • Low probability of fugitive emissions	• Shift operations permitted • Frequent movement of products and/or heavy trucks with the majority of movements during daytime hours	• Magazine printing • Paint spray booths • Metal command • Electrical production manufacturing • Manufacturing of dairy products • Dry cleaning services • Feed packing plant
Class III	• Noise: sound frequently audible off property • Dust and/or Odour: Persistent and/or intense • Vibration: Ground-borne vibration can frequently be perceived off property	• Outside storage of raw and finished products • Large production levels	• Open process • Frequent outputs of major annoyances • High probability of fugitive emissions	• Continuous movement of products and employees • Daily shift operations permitted	• Manufacturing of paint and varnish • Organic chemicals manufacturing • Breweries • Solvent recovery plants • Soaps and detergent manufacturing • Manufacturing of resins and costing • Metal manufacturing

Appendix H

Freedom of Information Requests

DILLON CONSULTING

Seebach, Stephanie <sseebach@dillon.ca>

RE: Information request for 280 Clair Rd W studies

1 message

Darryl Robinson <darryl.robinson@na.denso.com> Tue, Jul 9, 2024 at 4:01 PM
To: "Seebach, Stephanie" <sseebach@dillon.ca>
Cc: John Farley <jdfarley@gmail.com>, John Klassen <john.klassen@na.denso.com>

Good morning Stephanie,

Thank you for your patience. Attached is the information you requested regarding an inquiry into our current air and noise compliance documents to inform your Noise Impact Study and Air Quality Study for 280 Clair Rd W.

This will be the only information I am able to share with you. Hope this helps

Regards

Darryl Robinson, P.Eng

Senior Manager / Quality Engineering

900 Southgate Dr / Guelph, Ontario / N1L1K1

Email darryl.robinson@na.denso.com

DENSO Crafting the Core 75TH

From: Seebach, Stephanie <sseebach@dillon.ca>
Sent: Thursday, July 4, 2024 1:45 PM
To: Darryl Robinson <darryl.robinson@na.denso.com>
Cc: John Farley <jdfarley@gmail.com>; John Klassen <john.klassen@na.denso.com>
Subject: Re: Information request for 280 Clair Rd W studies

Hi Darryl,

I hope you are enjoying your summer so far! Per our meeting on June 19, Dillon Consulting is requesting copies of the information summarized below to inform the Noise Impact Study and Air Quality Study for 280 Clair Rd W. We understand that this information is available however you require authorization to release the information to Dillon. Do you have any update you can please provide on our request? I know things must be very busy for you and your team but our deadline to complete the reports is approaching and without Denso's information, we would be required to initiate a Freedom of Information request to the Ministry of Environment to request the documents.

Summary of information request:

- Most recent Environmental Compliance Approval (we have a copy of the version dated April 11, 2017)
- Emission and Summary Dispersion Modelling Report that supports the ECA
- Acoustic Assessment Report that supports the ECA
- Description of expansion plans with respect to air and noise emissions sources (e.g., plans for a building expansion with certain # of rooftop HVAC units, doubling production capacity with additional thermal oxidizer)
- Confirmation on the source of the fill that is located on the severed property between 900 Southgate Dr and 280 Clair Rd W. Can you please confirm if this is topsoil that was stripped from 900 Southgate Dr? Was the fill certified before the severance was completed?

I really appreciate your assistance with this matter.
Thank you,

Stephanie

Stephanie Seebach
Associate
Dillon Consulting Limited
111 Farquhar Street, Suite 301
Guelph, Ontario, N1H 3N4
T - 519.571.9833 ext. 3158
M - 519.525.3898
sseebach@dillon.ca
www.dillon.ca

On Thu, Jun 27, 2024 at 11:25 AM Seebach, Stephanie <sseebach@dillon.ca> wrote:

> Hi Darryl,
>
> I wanted to follow up on the information request I sent below. Thank you again for your help with this and please let us know if you have any questions.
>
> Stephanie
>
> **Stephanie Seebach**
> *Associate*
> **Dillon Consulting Limited**
> 111 Farquhar Street, Suite 301
> Guelph, Ontario, N1H 3N4
> T - 519.571.9833 ext. 3158
> M - 519.525.3898
> sseebach@dillon.ca
> www.dillon.ca
>
> *Inclusiveness: Enabling belonging to draw strength from our differences.*

On Wed, Jun 19, 2024 at 4:41 PM Seebach, Stephanie <sseebach@dillon.ca> wrote:

> Hi Darryl,
>
> Thank you for taking the time to meet with John and I this afternoon. As discussed, Dillon is requesting the following information/copies of documents to inform the Noise Impact Study and Air Quality Study for 280 Clair Rd W:
>
> - Most recent Environmental Compliance Approval
> - Emission and Summary Dispersion Modelling Report that supports the updated ECA
> - Acoustic Assessment Report that supports the updated ECA
> - Description of expansion plans with respect to air and noise emissions sources (e.g., plans for a building expansion with certain # of rooftop HVAC units, doubling production capacity with additional thermal oxidizer)
>
> Additionally, we are requesting confirmation on the source of the fill that is located on the severed property between 900 Southgate Dr and 280 Clair Rd W. Can you please confirm if this is topsoil that was stripped from 900 Southgate Dr? Was the fill certified before the severance was completed?
>
> Thank you for your help and please let us know if you have any questions.
>
> Stephanie
>
> DILLON CONSULTING
>
> **Stephanie Seebach**
> *Associate*
> **Dillon Consulting Limited**
> 111 Farquhar Street, Suite 301
> Guelph, Ontario, N1H 3N4
> T - 519.571.9833 ext. 3158
> M - 519.525.3898
> sseebach@dillon.ca
> www.dillon.ca
>
> *Inclusiveness: Enabling belonging to draw strength from our differences.*

3 attachments

Approved ECA - Denso Manufacturing Canada, Inc. ECA No. 9696-AJFHC2.pdf
139K

2023 AAR Summary Table.pdf
88K

2023 ESDM Summary Table.pdf
144K

Ministry of the Environment, Conservation and Parks

Corporate Services Branch
40 St. Clair Avenue West
Toronto ON M4V 1M2

Ministère de l'Environnement, de la Protection de la nature et des Parcs

Direction des services ministériels
40, avenue St. Clair Ouest
Toronto ON M4V 1M2

Ontario

October 9, 2024

Mr. Thom Wright
Dillon Consulting Limited
425 Adelaide Street West, Unit 300
Toronto, Ontario M5V 3C1
twright@dillon.ca

Dear Thom Wright:

RE: MECP FOI A-2024-05357 – Decision Letter

This letter is further to your request made pursuant to the Freedom of Information and Protection of Privacy Act (the Act) relating to:

> 900 Southgate Drive, Guelph
> Timeframe: January 1st, 2016 to August 15th, 2024 as clarified on September 11th

After a thorough search through the ministry files, records were located in response to your request. The final decision has been made to provide partial access to the requested information. The official responsible for making the access decision on your request is the undersigned.

Some of the information has been severed or withheld under the following sections of the Act:

> s.17(1)(a) Corporate information supplied to the ministry in confidence for the protection of third-party records that, if disclosed, would prejudice significantly the competitive position or interfere significantly with the contractual or other negotiations of a person, group of persons or organization.

As noted in my letter of September 16, 2024, the responsive records contain information relating to a third party under section 17 of the Act. Records will be released to you once the affected third party's opportunity to appeal the ministry's decision is complete by November 15, 2024, in accordance with subsection 28(8) of the Act. If the third-party files an appeal, then the unaffected records will be released to you.

Section 57 of the Act authorizes certain fees to be charged for processing a request. Our charges for processing this request are:

Search Time 2 hours @ $30/hour o Time taken to locate and retrieve records	$60.00
Deposit	- $5.00
Total	**$ 55.00**

In order to receive a copy of the records please forward this amount in Canadian dollars to our office. Payment(s) may be made by **November 8, 2024**. If payment has not been received by this date, the file will be closed and you will be required to submit a new request.

Payment(s) may be made in Canadian dollars by one of the following options:

- Pay online through the Freedom of Information Request for Property Information Form: https://forms.mgcs.gov.on.ca/en/dataset/012-2146. Both the pdf download or "HTML" versions provide access to the payment option.
- Mail money order or cheque made payable to the "Minister of Finance (FOI)" or provide credit card information through the mail-in version of the form mentioned above.

Please **do not** mail cash or send your payment information via email.

You may request a review of my decision within 30 days from the date of this letter by contacting the Information and Privacy Commissioner/Ontario at http://www.ipc.on.ca. Please note there may be a fee associated with submitting the appeal. You will be given another 30-day opportunity to request a review of my decision at the time the records are released to you.

If you decide to pursue this request after the deadline has passed, please contact the analyst below to discuss options that are available.

If you have any questions, please contact Stephanie Rampino at 437-995-3228 or stephanie.rampino@ontario.ca.

Yours truly,

RampinoS

for
Josephine DeSouza
Manager, Access and Privacy Office

Ministry of the Environment, Conservation and Parks

Corporate Services Branch
40 St. Clair Avenue West
Toronto ON M4V 1M2

Ministère de l'Environnement, de la Protection de la nature et des Parcs

Direction des services ministériels
40, avenue St. Clair Ouest
Toronto ON M4V 1M2

Ontario

August 13, 2024

Thorn Wright
Dillon Consulting Limited
425 Adelaide Street West, Unit 300
Toronto, Ontario M5V 3C1
twright@dillon.ca

Dear Thorn Wright:

RE: MECP FOI A-2024-04659 – Decision Letter

This letter is further to your request made pursuant to the Freedom of Information and Protection of Privacy Act (the Act) relating to:

900 Southgate Drive, Guelph

After a thorough search through the ministry files, records were located in response to your request. The final decision has been made to provide partial access to the requested information. The official responsible for making the access decision on your request is the undersigned.

Some of the information has been severed or withheld under the following sections of the Act:

s.22(a) Records that are publicly available as follows:

- For corporate ownership (ONBIS records, Articles of Incorporation, Articles of Amendment) download forms ON00242E and 5310E to search for a public record available from Service Ontario at https://www.ontario.ca/page/ontario-business-registry-all-services. Go to "33. Searching the Public Record" to locate the forms.

Records or information that are not relevant to the request (e.g., records that are blank, outside of the date range or do not relate directly to the subject matter) have been removed and marked "Not Responsive"' or 'N/R'.

Section 57 of the Act authorizes certain fees to be charged for processing a request. Our charges for processing this request are:

Search Time 1.33 hours @ $30/hour o Time taken to locate and retrieve records	$40.00
Total	**$ 40.00**

In order to receive a copy of the records please forward this amount in Canadian dollars to our office. Payment(s) may be made by **September 12, 2024**. If payment has not been received by this date, the file will be closed and you will be required to submit a new request.

The ministry's Environmental Assessment and Permissions Division (EAPD) has advised that there are inactive records in the Records Centre, Mississauga, and below is a description of these records:

ECA#, Media type, ECA status, Year

- 9696-AJFHC2, Air & Noise, Approved, 2017
- 1689-83CLJB, Air & Noise, Approved, 2015
- 0527-937JGR, Air & Noise, Approved, 2014
- 1689-83CLJB, Air & Noise, Approved, 2011

If you would like us to retrieve these files, please submit a separate request quoting this file number and state you are seeking records from the Record Centre. The $5 application fee will be applied towards any costs incurred with the retrieval of the records from the Records Centre.

Payment(s) may be made in Canadian dollars by one of the following options:

- Pay online through the Freedom of Information Request for Property Information Form: https://forms.mgcs.gov.on.ca/en/dataset/012-2146. Both the pdf download or "HTML" versions provide access to the payment option.
- Mail money order or cheque made payable to the "Minister of Finance (FOI)" or provide credit card information through the mail-in version of the form mentioned above.

Please **do not** mail cash or send your payment information via email.

You may request a review of my decision within 30 days from the date of this letter by contacting the Information and Privacy Commissioner/Ontario at http://www.ipc.on.ca. Please note there may be a fee associated with submitting the appeal.

If you decide to pursue this request after the deadline has passed, please contact the analyst below to discuss options that are available.

If you have any questions, please contact Stephanie Rampino at 437-995-3228 or stephanie.rampino@ontario.ca.

Yours truly,

RampinoS

for
Josephine DeSouza

Manager, Access and Privacy Office

APPENDIX C
Current Emission Summary Table

(1 Page)

Table A3. Emission Summary Table

Contaminant	CAS #	Total Facility Emission Rate (g/s)	Air Dispersion Model Used*	Maximum POI Concentration ($\mu g/m^3$)	Averaging Period (h)	MECP POI Limit ($\mu g/m^3$)	Limiting Effect	Reg. Sch. No.	% of MECP POI Limit
Nitrogen oxides	10102-44-0	8.77E-02	AERMOD	7.24E+00	24	200	Health	3	4%
			AERMOD	1.83E+01	1	400	Health	3	5%
Distillates (petroleum), hydrotreated light	64742-47-8	4.87E-01	AERMOD	9.52E+01	24	375	Health	MD	25%
Soybean oil, methyl esters	67784-80-9	2.37E-02	AERMOD	4.89E+00	24	80	Health	JSL	6%
Ethyl cyanoacrylate	7085-85-0	1.98E-03	AERMOD	4.26E-01	24	5	Health	JSL	9%
Alcohols C12-13	75782-86-4	2.34E-02	AERMOD	4.87E+00	24	155	Health	JSL	3%
Fluorides (as HF) - Total Growing Season	7664-39-3	9.62E-04	AERMOD	5.75E-02	24	1.72	Vegetation	3	3%
			AERMOD	1.01E-02	30-day	0.69	Vegetation	3	1%
Fluorides (as HF) - Total Non-Growing Season			AERMOD	4.11E-02	24	3.44	Vegetation	3	1.2%
			AERMOD	7.23E-03	30-day	1.38	Vegetation	3	0.5%
Fluorides (as HF) - Gaseous Growing Season			AERMOD	5.75E-02	24	0.86	Vegetation	3	6.7%
			AERMOD	1.01E-02	30-day	0.34	Vegetation	3	3.0%
Particulate matter	n/a	2.13E-03	AERMOD	3.69E-01	24	120	Visibility	3	0.31%

*AERMOD v. 22112.

Air Contaminants Benchmarks (ACB) List, Version 3.0, April 2023

Reg. Sch. or Benchmark 1: 3 Standard - Schedule 3 of Reg. 419

Benchmark 2: JSL Jurisdictional Screening Level

MD Ministry Derived Screening Level

Seebach, Stephanie <sseebach@dillon.ca>

Re: Request for meeting: Land Use Compatibility Assessment for 280 Clair Rd W

1 message

Seebach, Stephanie <sseebach@dillon.ca> Wed, Apr 10, 2024 at 1:22 PM
To: michelle.watson@sleemanbreweries.ca
Cc: Lucas Arnold <larnold@dillon.ca>

Hi Michelle,

I am following up on the email I sent last month regarding Dillon's request to meet with you to discuss Sleeman's current and planned operations with respect to air and noise emissions. If there is someone else I should be reaching out to regarding this matter, can you please let me know?

As a recap, I work for Dillon Consulting Ltd. and we have been retained by Home Opportunities to complete a Detailed Noise Study and Air Quality Impact Study as required as part of the planning application for the proposed residential development at 280 Clair Rd W. The studies serve to protect existing industries from potential impacts from new sensitive land uses.

To complete the most accurate Noise and Air Quality Studies, information on Sleeman's current and future operations with respect to air and noise emission sources is required.

Would you be open to meeting with me and my colleague Lucas Arnold to discuss our information request further and address any questions you may have about the studies we are completing?

Thank you,
Stephanie

Stephanie Seebach
Associate
Dillon Consulting Limited
111 Farquhar Street, Suite 301
Guelph, Ontario, N1H 3N4
T - 519.571.9833 ext. 3158
F - 519.571.7424
M - 519.525.3898
sseebach@dillon.ca
www.dillon.ca

On Thu, Mar 7, 2024 at 1:00 PM Seebach, Stephanie <sseebach@dillon.ca> wrote:

> Hi Michelle,
>
> I received your contact information from Beverly. Dillon Consulting Ltd. has been retained by Home Opportunities to complete a Detailed Noise Study and Air Quality Impact Study as required as part of the planning application for the proposed residential development at 280 Clair Rd W.
>
> The purpose of the Noise and Air Quality Studies is to evaluate compatibility between the surrounding industries and the proposed development, with respect to air contaminants, odour, dust, noise and vibration. The studies serve to protect existing industries from potential impacts from new sensitive land uses.
>
> Since the Sleeman Brewery is located within the 1000m study area, Dillon requires information on Sleeman's current and planned operations as part of the Noise and Air Quality Studies.
>
> We would appreciate an opportunity to meet with you by phone or virtual meeting to further review the land use compatibility assessment process and discuss current operations and any future expansion plans. Can you please let us know if you are open to further discussion and if so, your availability to meet?
>
> Thank you,

Ministry of the Environment, Conservation and Parks

Corporate Services Branch
40 St. Clair Avenue West
Toronto ON M4V 1M2

Ministère de l'Environnement, de la Protection de la nature et des Parcs

Direction des services ministériels
40, avenue St. Clair Ouest
Toronto ON M4V 1M2

Ontario

August 18, 2024

Mr. Thom Wright
Dillon Consulting Limited
425 Adelaide Street West, Unit 300
Toronto, Ontario M5V 3C1
twright@dillon.ca

Dear Thom Wright:

RE: **MECP FOI A-2024-04892 – Decision Letter**

This letter is in response to your request made pursuant to the Freedom of Information and Protection of Privacy Act (the Act) relating to:

> 551 Clair Road West, Guelph
> Timeframe: January 1, 2014 to July 25, 2024

After a thorough search through the ministry files, no records were located responsive to your request. The official responsible for making the access decision on your request is the undersigned.

The ministry's District Office has advised that there are inactive records in the Records Centre, Mississauga, and below is a description of these records:

- ECA 1390-8TJN9Z, Air, Sleeman Breweries Ltd./ Brasserie Sleeman Ltee, Approved, Offsite, 1409, 2012
- ECA 8168-A3AQLE, Industrial, Sleeman Breweries Ltd./ Brasserie Sleeman Ltee, Approved, Offsite, 0030, 2015
- ECA 1220-8HLLRQ, Industrial, Sleeman Breweries Ltd./ Brasserie Sleeman Ltee, Revoked and/or Replaced, Offsite, 0030, 2015
- ECA 0000-874K62, Industrial, Sleeman Breweries Ltd./ Brasserie Sleeman Ltee, Revoked and/or Replaced, Offsite, 0030, 2015

If you would like us to retrieve these files, please submit a separate request quoting this file number. The $5 application fee will be applied towards any costs incurred with the retrieval of the records from the Records Centre.

You may request a review of my decision within 30 days from the date of this letter by contacting the Information and Privacy Commissioner/Ontario at http://www.ipc.on.ca.

Please note there may be a fee associated with submitting the appeal.

If you have any questions, please contact Roxanne Chambers at (807) 456-3035 or roxanne.chambers@ontario.ca.

Yours truly,

Roxanne Chambers

for
Josephine DeSouza
Manager, Access and Privacy Office

Seebach, Stephanie <sseebach@dillon.ca>

Fwd: MECP FOI A-2024-04892 - Additional Records

1 message

Wright, Thom <twright@dillon.ca> Tue, Oct 8, 2024 at 3:35 PM
To: Stephanie Seebach <sseebach@dillon.ca>

Hi Steph,

Decision email on Sleeman FOI attached:

---------- Forwarded message ---------
From: **Shah, Amina (MECP)** <Amina.Shah@ontario.ca>
Date: Tue, Sep 17, 2024 at 11:59 AM
Subject: MECP FOI A-2024-04892 - Additional Records
To: twright@dillon.ca <twright@dillon.ca>

Good morning Thom,

Upon a further search, it has been confirmed that the records you are requesting are not available within the timeframe you have requested. The last submission of these documents would have likely been submitted to us during an ECA application, which is in 2012. Please submit a new request with a revised timeframe as some of those items you're looking for may be available.

As of right now the decision to provide no records of August 18th sent by Roxanne Chambers still stands.

Thank you kindly,

Amina Shah

Freedom of Information Analyst, Access and Privacy Office

Emergency Management and Access Branch

Ministry of the Environment, Conservation and Parks

Email: Amina.shah@ontario.ca Mobile: 437-339-1251

--

Thom Wright
Dillon Consulting Limited
425 Adelaide St W, Suite 300
Toronto, Ontario, M5V 3C1
T - 416.229.4647ext. 2047
twright@dillon.ca
www.dillon.ca

DILLON CONSULTING

Seebach, Stephanie <sseebach@dillon.ca>

Re: MECP FOI A-2024-04892 – Decision Letter

1 message

Wright, Thom <twright@dillon.ca> Mon, Aug 19, 2024 at 9:33 AM
To: "Chambers, Roxanne (MECP)" <Roxanne.Chambers@ontario.ca>
Cc: Stephanie Seebach <sseebach@dillon.ca>

Hi Roxanne,

Thank you for getting back to me. I did a quick search on AccessEnvironment and found that the Sleeman facility at 551 Clair Road West also has a registered Air and Noise EASR (**R-010-9112817681**), dated January 7th, 2021. As we are looking for the most recent versions of the facility's ESDM/AAR/Odour and Dust BMPP, the materials associated with this EASR would be most applicable for us. Would the Records Centre also retain EASR registrations and their associated Air/Noise materials?

All the best,

On Sun, Aug 18, 2024 at 3:08 PM Chambers, Roxanne (MECP) <Roxanne.Chambers@ontario.ca> wrote:

> Good Afternoon Thom,
>
> Please find attached the Ministry's decision letter. There are no records related to the above request. If you have any questions, please e-mail me.
>
> Sincerely,
>
> **Roxanne Chambers| Freedom of Information Analyst**
>
> **Ministry of the Environment, Conservation and Parks| Operational Services, Access and Privacy**
>
> **40 St Clair Avenue W, Toronto, Ontario, M4T 1M9 | P: 807-456-3035**
>
> **roxanne.chambers@ontario.ca**
>
> **Website: www.ontario.ca/environment**

Ontario

We've gone digital! Use our new online form to submit your FOI requests and payments with ease! Requests submitted by fax will no longer be accepted starting August 31, 2021.

If you have any accommodation needs or require communication supports or alternate formats, please let me know.

Si vous avez besoin d'un aménagement particulier, de soutien à la communication ou de supports de substitution, veuillez m'en informer.

--

DILLON CONSULTING

Thom Wright
Dillon Consulting Limited
425 Adelaide St W, Suite 300
Toronto, Ontario, M5V 3C1
T - 416.628.4658ext. 2047
twright@dillon.ca
www.dillon.ca

Inclusiveness: Enabling belonging to draw strength from our differences.

Sleeman Breweries Ltd.
Emission Summary Table (2021)
Obtained from MECP's online database (Access Environment)

CAS Registry Number	Total Facility Emission Rate (g/s)	Air Dispersion Model Used	Maximum POI Concentration	Averaging Period	Ministry POI Limit	Limiting Effect	Section 19 or 20 of O. Reg. 419/05	Schedule	% of Ministry POI Limit	Source	Benchmark	Unit for POI Values	Notes	Name of Contaminant	Version Date of ACB List
	0.0742014	SCREEN3	56.369	24-hour	120	Visibility	s. 20	Sch. 3	47%	Standard	B1	ug/m3			
	0.000027	SCREEN3	0.17	10-minute	13	Odour	s. 20	Sch. 3	1%	Standard	B1	ug/m3	ACB List (Notes 3, 13, 14, 15)		
10102-44-0	0.696508	SCREEN3	91.913267	24-hour	200	Health	s. 20	Sch. 3	46%	Standard	B1	ug/m3	ACB List (Notes 2, 17)		2
630-08-0	0.890854	SCREEN3	256.309	1/2-hour	6000	Health	s. 20	Sch. 3	4%	Standard	B1	ug/m3	ACB List (Note 9)		2
7446-09-5	0.025363	SCREEN3	0.787315	24-hour	275	Health & Vegeta	s. 20	Sch. 3	0%	Standard	B1	ug/m3	ACB List (Effective until July 1, 2023, Note 2, URT - Not		2
7440-47-3	0.000000144	SCREEN3	0.0000239	Annual	0.00014	Health	s. 20	Sch. 3	17%	Standard	B1	ug/m3	ACB List (Notes 11, 19, Table 2, 3, URT - Note 4, Table	Chromium	2
7440-48-4	0.000000003	SCREEN3	0.0000023	24-hour	0.1	Health	s. 20		0%	Guideline	B1	ug/m3			2
7439-96-5	0.0000017	SCREEN3	0.001508	24-hour	0.4	Health	s. 20	Sch. 3	0%	Standard	B1	ug/m3	ACB List (URT - Note 4, Table 4)		2
7440-02-0	0.000000016	SCREEN3	0.000003	Annual	0.04	Health	s. 20	Sch. 3	0%	Standard	B1	ug/m3	ACB List (Note 19, Table 2, 3, URT - Note 4, Table 4)		2
1309-37-1	0.0000314	SCREEN3	0.027212	24-hour	25	Soiling	s. 20	Sch. 3	0%	Standard	B1	ug/m3			2
1310-73-2	0.002203	SCREEN3	0.6496	24-hour	10	Corrosion	s. 20		6%	Guideline	B1	ug/m3			2
532-32-1	0.000095	SCREEN3	0.0153	24-hour	15	Health & Partic	s. 20		0%	SL-JSL	B2	ug/m3			2
51580-86-0	0.000158	SCREEN3	0.02551	24-hour	15	Health & Partic	s. 20		0%	SL-JSL	B2	ug/m3			2
7647-14-5	0.0000016	SCREEN3	0.0003	24-hour	15	Health & Partic	s. 20		0%	SL-JSL	B2	ug/m3			2
151006-66-5	0.00057	SCREEN3	0.093	24-hour			s. 20							Acrylic acid terp	
78620-7-2	0.00057	SCREEN3	0.093095	24-hour			s. 20							Hydroxyphosph	
3794-83-0	0.00025	SCREEN3	0.040301	24-hour			s. 20							Phosphonic acic	
64665-57-2	0.000135	SCREEN3	0.022	24-hour	2.5	Health	s. 20		1%	SL-JSL	B2	ug/m3			2
40372-66-5	0.000135	SCREEN3	0.021763	24-hour			s. 20							2-Phosphonobu	
64-17-5	0.2098	SCREEN3	618.071	1-hour	19000	Odour	s. 20		3%	Guideline	B1	ug/m3	ACB List (To be updated - Note 5)		2
18540-29-9	0.000000956	SCREEN3	0.000828	24-hour	0.5	Health	s. 20	Sch. 3	0%	Standard	B1	ug/m3	ACB List (Note 11a, URT - Note 4, Table 4)		2
10102-44-0	0.696508	SCREEN3	223.79	1-hour	400	Health	s. 20	Sch. 3	56%	Standard	B1	ug/m3	ACB List (Notes 2, 17)		2
7446-09-5	0.025363	SCREEN3	1.92	1-hour	690	Health & Vegeta	s. 20	Sch. 3	0%	Standard	B1	ug/m3	ACB List (Effective until July 1, 2023, Note 2, URT - Not		2

Appendix I

Noise Source Sound Power Levels

Table I.1: Noise Source Sound Power Spectra

Noise Source	1/1 Octave Sound Power Spectra (dB)									PWL (dBA)	Source
	31.5	63	125	250	500	1000	2000	4000	8000		
Reefer Truck	69.3	87	90.6	93.7	96.6	96.6	97.4	90.4	80.5	103	TDL AAR
HVAC	88.3	92.6	87.8	87.7	85.3	81.2	70.8	67.2	59.2	86.2	Dillon Sound Library
Truck Passby	95.7	97	98.6	100	101.3	95	97.9	98.8	96	105	Dillon Sound Library
Idling Truck	99.5	100.8	96.2	92.8	95.3	95.2	92.8	86.6	79.1	99.3	Dillon Library
Engine 2 Combustion Exhaust (900 kW)	—	79.2	99.2	114.2	117.2	116.2	115.2	106.2	90.2	122	TDL AAR
Engine 1 Combustion Exhaust (1750 kW)	—	105.2	114.2	118.2	121.2	118.2	116.2	109.2	102.2	125.3	TDL AAR
Engine 2 Intake Mitigated (900 kW)	—	21.2	41.2	56.2	59.2	58.2	57.2	48.2	32.2	64	TDL AAR
Engine 1 Intake Mitigated (1750 kW)	—	46.8	55.8	59.8	62.8	59.8	57.8	50.8	43.8	67	TDL AAR
Engine 1 Exhaust Mitigated (1750 kW)	—	51.8	60.8	64.8	67.8	64.8	62.8	55.8	48.8	72	TDL AAR
Engine 2 Exhaust Mitigated (900 kW)	—	27.2	47.2	62.2	65.2	64.2	63.2	54.2	38.2	70	TDL AAR
Cooling Tower	—	105	103	99	94	93	90	88	81	98.5	Dillon Sound Library
Cooling Tower (TDL)	—	86.8	94.9	98.4	98.8	101	99.2	97	87.9	106.5	TDL AAR
Engine 2 Mechanical	—	81	95.6	95.7	91.2	97	99.3	97.9	87.4	104.6	TDL AAR
Engine 1 Mechanical	—	90.6	106.7	118.9	123.4	121.3	117.8	118.7	120.4	128.3	TDL AAR
Loading Dock Leveller	126.2	113	113.4	104.3	99.1	97.3	98.5	94.7	87.9	105.2	Dillon Sound Library
Engine 2 Exhaust	—	105.7	115.5	116.5	118.5	116.1	120.9	121.7	116.7	126.7	Dillon Sound Library
AHU Inlet	—	79	78	86	78	73	72	67	64	81.3	Dillon Sound Library
AHU Exhaust	—	85	84	89	84	82	79	74	69	87.3	Dillon Sound Library
air cooled condensor	90	91.3	95.3	87.6	84.1	86.9	78.3	77.6	75.7	89.9	Dillon Sound Library
Baghouse Dust Collector (Steady)	107.1	105.9	108.3	107.3	103.9	102.8	97.2	92.3	88.3	107	Dillon Sound Library
Baghouse Dust Collector	70.9	81.3	95.7	101.5	104.4	105.5	101.3	97	91.6	110	Dillon Sound Library
Dust Collector (HS)	51.2	66.4	82.3	83.3	85.1	85.3	80.2	78.4	76.9	91	Dillon Sound Library

References

Ontario Ministry of Environment Publication NPC-300, Environmental Noise Guideline, Stationary and Transportation Sources- Approval and Planning, October 2013.

US FTA Transit Noise and Vibration Impact Assessment Manual, 2018

Ontario Ministry of Environment Publication D-6, Compatibility between Industrial Facilities, July 1995.

Guidelines for New Development in Proximity to Railway Operations, Railway Association of Canada and Federation of Canadian Municipalities, May 2013.