Noise Impact Study – 3195 East Bayshore Road, Owen Sound, Ontario

October 27, 2022

Prepared for:
SkyDev Bayshore Owen Sound LP

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VERSION CONTROL

Revision	Date	Revision Description	Prepared By:	Submitted To:
Version 1.0	October 27, 2022	Noise Impact Study	Cambium Inc.	SkyDev Bayshore Owen Sound LP

EXECUTIVE SUMMARY

Cambium Inc. has been retained by SkyDev Bayshore Owen Sound LP, in response to a request by the City of Owen Sound to complete a noise impact study of the proposed residential development located at 3195 East Bayshore Road in Owen Sound, Ontario. The proposed development consists of eight apartment buildings, two amenity buildings, and associated outdoor parking lots.

Cambium has assessed impacts from local road traffic onto the proposed severance in addition to the impact of stationary noise impacts, including those in *NPC-300 Environmental Noise Guideline Stationary and Transportation Sources – Approval and Planning* (NPC-300) (MOECC, 2017). The results of the measured and calculated noise impacts were compared against applicable guidelines to assess the potential impact to existing residential dwellings, and to determine the potentially required mitigation measures and warning clauses. The results of the measured and calculated noise impacts were compared against applicable guidelines to assess the potential impact to determine the potentially required mitigation measures and warning clauses.

The results of this noise impact study indicate the proposed development is feasible under the defined conditions, assumptions, and recommendations within. No specific noise control measures are required, and typical Ontario Building Code facade constructions are sufficient to achieve the indoor sound level criteria.

TABLE OF CONTENTS

LIST OF APPENDED FIGURES

LIST OF APPENDED TABLES

LIST OF APPENDICES

1.0 INTRODUCTION

Cambium Inc. has been retained by SkyDev Bayshore Owen Sound LP, in response to a request by the City of Owen Sound to complete a noise impact study of the proposed residential development located at 3195 East Bayshore Road in Owen Sound, Ontario. The proposed development consists of eight apartment buildings, two amenity buildings, and associated outdoor parking lots.

An evaluation of railway impacts was not required as the proposed severance location exceeds the 75 metre vibration, and 300 metre noise influence distance published by the Rail Authorities (RAC and FCM, 2013).

A Compatible Use Odour, Dust, and Noise Assessment Study for this property was prepared by R.J. Burnside & Associates Limited on May 10, 2016. This study concluded that an updated noise impact study should be completed to consider revised road noise impact calculations and a detailed assessment of the stationary noise sources associated with the McArthur Tire Retread Facility to the east of the site. Note that the proposed development in the 2016 Study was for a subdivision rather than for apartment buildings.

Therefore a review of the 2016 Study has also been completed to confirm that the new proposed development, and the previously identified industry classifications and facilities are consistent with the surrounding environment as per D6 Guidelines at the time of this study. As such, Cambium has assessed the impacts from local road traffic and stationary noise sources on the proposed severance following applicable guidelines, including those in *NPC-300 Environmental Noise Guideline Stationary and Transportation Sources – Approval and Planning* (NPC-300) (MOECC, 2017). The results of the measured and calculated noise impacts were compared against applicable guidelines to assess the potential impact to residential dwellings and determined the potentially required mitigation measures and warning clauses for the proposed future dwelling.

The results of this noise impact study indicate the proposed development is feasible under the defined conditions, assumptions, and recommendations within. No specific noise control measures are required, and typical Ontario Building Code facade constructions should be generally sufficient to achieve the indoor sound level criteria.

1.1 SITE DESCRIPTION

The proposed residential development is located at 3195 East Bayshore Road in Owen Sound, Ontario. The proposed development consists of eight (six-storey) apartment buildings, two amenity buildings, and associated outdoor parking lots. Cambium has assumed a plane of window height of 10 m for conservative assessment purposes for stationary noise assessment and traffic noise assessment. An outdoor living area has been assumed to be located on the west side of the property near the proposed fire pits, representing a worst case location for traffic noise impacts as per the site plan dated October 21, 2022. Additional outdoor living areas were considered for conservative assessment purposes for the stationary noise impact assessment. These areas typically consisted of the nearest community garden space in the direction of the considered facilities with stationary noise sources.

East Baysore Road is located approximately 85 metres to the west from the nearest proposed apartment building. There are multiple commercia facilities located near the site. The commercial facility to the north consists of a fitness centre, storage facility, and UPS shipment facility. The Hobart Food Equipment Group Canada facility is located approximately 200 metres to the south. The McArthur Tire Retread facility is located immediately east of the site on 9th Avenue East. Further information regarding these locations is provided in Section 3 within this report.

The Site is in a suburban area as defined by NPC-300 (MOECC, 2017), surrounded mostly by existing commercial facilities and existing residential dwellings to the south.

Figure 1 provides a site plan showing nearby transportation sources and overall location of the proposed development. Figure 2 provides the traffic noise impact calculation locations. Figure 3 and Figure 4 provide the location of stationary noise sources and calculation locations.

2.0 ASSESSMENT CRITERIA

For land use planning purposes, the noise criteria are provided in NPC-300 (MOECC, 2017). The guideline limits are set for road noise impacts onto a proposed noise sensitive land use, as well as limits for the impacts of stationary noise sources (commercial/industrial operations).

In the case of this proposed lot severances, the important limits are:

- Sound level limits for road impacts onto the proposed lot;
- Sound level limits for Stationary Noise Sources;

An assessment of the existing ambient sound levels due to road traffic in the area is also relevant. The limits for Stationary Noise Sources can be increased in the situation of high ambient sound levels. Specifically, if the ambient noise in an area exceeds the exclusionary limits published in NPC-300 (MOECC, 2017) that ambient noise level may act as the sound level limit. This only applies to stationary noise sources.

2.1.1 ROAD NOISE

The criteria for acceptable levels of road traffic noise are provided in NPC-300. It requires that for land use compatibility, a future sound level be used for assessment. Generally, a 10 year prediction is considered appropriate by NPC-300.

For road impacts, noise controls are not specifically required if predicted sound levels are less than 55 dBA during daytime and less than 50 dBA during nighttime.

If the sound level thresholds listed above are exceeded, the recommended indoor sound level criteria for road noise impacts for different commercial impacts are included in the table below. In the case of interior noise limits, these values assume closed windows and doors.

Table 1 Outdoor and Indoor Sound Level Limits (Road Noise Criteria)

Type of Space	07:00 to 23:00 Road (dBA)	23:00 to 07:00 Road (dBA)
Outdoor Living Area (NPC-300 Table C-1)	55	-
HYVALiving/Dining/Den Areas of Residence Indoor (NPC-300 Tale C-2)r	45	45
Sleeping Quarters Indoor (NPC-300 Tale C-2)	45	40

In NPC-300 (MOECC, 2017), an outdoor living area (OLA) is part of a noise sensitive land use (e.g. residential dwelling) that is intended and designed for the quiet enjoyment of the outdoor environment, and is readily accessible

from the building. In the context of proposed single family dwellings, the outdoor living area rules require that at least 56 square metres of space (if available) should be compliant with the above limits for road traffic noise.

Noise control measures may not be required if the Leq (16) daytime sound level in the plane of a bedroom or living/dining room window is less than or equal to 55 dBA. If the sound level in the plane of window is greater than 55 dBA and less than or equal to 65 dBA, the dwelling should be designed with a provision for the installation of central air conditioning in the future, at the user's discretion. Warning Clause Type C is also required.

If the daytime sound level in the plane of a bedroom or living/dining room window is greater than 65 dBA, installation of central air conditioning should be implemented, Warning Clause Type D is required, and building components including windows and walls should be designed so that the indoor sound levels are achieved.

Noise control measures may not be required if the Leq (8) nighttime sound level in the plane of a bedroom or living/dining room window is less than or equal to 50 dBA. If the sound level in the plane of a bedroom or living/dining room window is greater than 50 dBA and less than or equal to 60 dBA, the dwelling should be designed with a provision for the installation of central air conditioning in the future, at the owner's discretion. Warning Clause Type C is also required.

If the nighttime sound level in the plane of a room window is greater than 60 dBA, installation of central air conditioning should be implemented, Warning Clause Type D is required, and building components including windows and walls should be designed so that the indoor supplementary indoor sound levels are achieved.

2.1.2 STATIONARY NOISE SOURCES

NPC-300 Part C (MOECC, 2017) provides limits for stationary noise source impacts onto proposed residential or commercial developments with noise sensitive commercial uses. Receptors are classified as Class 1, Class 2, Class 3 or Class 4. The definitions of these classifications are:

- Class 1: an area with an acoustical environment typical of a major population centre, where the background sound level is dominated by the activities of people, usually road traffic, often referred to as "urban hum."
- Class 2: an area with an acoustical environment that has qualities representative of both Class 1 and Class 3 areas:
    - Sound levels characteristic of Class 1 during daytime (07:00 to 19:00 or to 23:00); and,
    - Low evening and night background sound level defined by natural environment and infrequent human activity starting as early as 19:00 (19:00 or 23:00 to 07:00).
- Class 3: a rural area with an acoustical environment that is dominated by natural sounds having little or no road traffic, such as:
    - a small community;

- agricultural area;
- a rural recreational area such as a cottage or a resort area; or
- a wilderness area.

- Class 4: an area or specific site that would otherwise be defined as Class 1 or 2 and which:
  - is an area intended for development with new noise sensitive land use(s) that are not yet built;
  - is in proximity to existing, lawfully established stationary source(s); and
  - has formal confirmation from the land use planning authority with the Class 4 area classification which is determined during the land use planning process.
  - Additionally, areas with existing noise sensitive land use(s) cannot be classified as Class 4 areas.

Based upon site observations and distance to significant roadways, the area can best be described with a Class 2 designation. Stationary noise source limits for each of the receptor classes are included in the following tables:

Table 2: Stationary Noise Criteria Outdoor Living Areas

Time of Day	Class 1 (dBA)	Class 2 (dBA)	Class 3 (dBA)	Class 4 (dBA)
07:00-19:00	50	50	45	55
19:00-23:00	50	45	40	55

Table 3: Stationary Noise Criteria Plane of Window

Time of Day	Class 1 (dBA)	Class 2 (dBA)	Class 3 (dBA)	Class 4 (dBA)
07:00-19:00	50	50	45	60
19:00-23:00	50	50	40	60
23:00-07:00	45	45	40	55

These limits are exclusionary for each class and time period under NPC-300 (MOECC, 2017), the higher of either the exclusionary limits, or the current ambient noise levels measured or predicted in accordance with Ministry guidelines in the area shall be used as the sound level limits. The compliance assessment within this study has been based upon exclusionary limits, as provided above.

3.0 LAND USE COMPATABLITY ASSESSMENT

The Ministry has developed a series of environmental considerations and requirements for adjacent industrial land uses and sensitive lands. The Ministry has issued these D-Series guidelines to aid in minimizing the adverse effects from the encroachment of incompatible land uses.

3.1 MINISTRY D-SERIES LAND USE COMPATABLITY GUIDES

Guideline D-1 – Land Use Compatibility (Guideline D-1) recommends separation distances and control measures for land use planning. These recommendations seek to minimize potential "adverse effects" for an existing or proposed facility. "Adverse effects" considered under Guideline D-1 may include:

- Noise and vibration;
- Visual impact (only for landfills); and,
- Air emissions including odour and dust.

Utilizing appropriate separation distances is the recommended method for minimizing the impact between incompatible sites. Municipalities may increase the Ministry's recommended setbacks and place restrictions for the land use or activities on the land. Where setback distances are not feasible, barriers and/or control measures must be designed to mitigate the impact of concern.

Guideline D-6, *Compatibility Between Stationary Industrial Facilities and Sensitive Land Uses* (Guideline D-6) is an application of Guideline D-1, specifically for industrial facilities. Guideline D-6 suggests separation distances between industrial and sensitive land uses from the effects of normal industrial operations; however, Guideline D-6 notes that detailed studies may be conducted to determine site-specific separation distances if the generalized separation distances are not met.

Guideline D-6 provides a potential influence area and a minimum separation distance, where the potential influence area acts as a flag identifying that further detailed studies may be required. The minimum separation distance does not preclude development but triggers specific conditions and considerations to be made by the Planning Authority.

Guideline D-6 categorizes industrial facilities into 3 class designations, each of which have an expected potential influence area and minimum separation distance. We have provided these distances and classification descriptions in the table below.

Table 4: D-6 Summary of Ministry Identified Areas of Influence and Recommended Separation Distances

Class	Description	Potential Area of Influence (m)	Minimum Separation Distance (m)
Class I	• Small scale, self-contained facility • Low probability of fugitive dust • Infrequent not intense point source outputs of dust and odour • Daytime operating hours • No outdoor storage • Not audible off site • No ground-borne vibration	**70**	**20**
Class II	• Medium scale processing facility • Outdoor storage of waste material • Periodic releases of odour, and/dust that could result in minor annoyance • Odour and dust can be occasionally intense • Frequent movement of product/heavy trucks during daytime • Sound is occasionally audible off property • Minimal ground-borne vibration	**300**	**70**
Class III	• Large scale manufacturing and processing • Outdoor storage of final and waste material • Large footprint and production capacity • Continues movement of products and employees during shifts • Frequent outputs of point source odour or dust casing major annoyance • Odour and dust emissions are intense • Sound is often audible off site • Vibration can be perceived off site	**1000**	**300**

As previously discussed, a Compatible Use Odour, Dust, and Noise Assessment Study was completed by R.J. Burnside & Associates Limited on May 10, 2016. The previous study concluded that an updated noise impact study should be completed to consider revised road noise impact calculations and a detailed assessment of the stationary noise sources associated with the McArthur Tire Retread Facility to the east of the site. Cambium has reviewed the previous study and assessed the area for any new industries or vacant lots that are permitted to contain industrial uses. The following existing industrial and commercial facilities were identified in the previous assessment or identified by Cambium during the review of any new facilities since the completion of the 2016 Study.

- 32 Street East – Commercial facility consisting of the UPS Depot, Self Storage, Dance Studio, Gym, and Intelcom. This facility would at most be considered a class 1 facility per the D-6 Guidelines and therefore, is located within the 20 metre minimum setback distance. A detailed noise assessment is provided in Section 5.1.2 below.
- 3095 9th Avenue East – Industrial facility consisting of the McArthur Tire Retread Facility. This facility would be considered a class 2 facility per the D-6 Guidelines and therefore, is located within the 70 metre minimum setback distance. A detailed noise assessment is provided in Section 5.1.3 below.
- 2875 East Bayshore Road – Industrial facility consisting of the Hobart Food Equipment Group of Canada. This facility would be considered a class 2 facility per the D-6 Guidelines and therefore, is located within the 70 metre minimum setback distance. As described within the 2016 Study, no significant noise sources were identified. In addition, Cambium personnel also confirmed that no significant noise sources were observed during the site visit.
- 2795 East Bayshore Road - Industrial facility consisting of the Alpha Precast facility. This industrial facility was identified within the 2016 Study however was observed to be no longer in operation during the site visit and available information online. The 2016 Study also concluded that there was no emitting noise from the facility and did not impact the proposed development. Cambium's updated field work agrees with this assessment.

3.2 D-6 SCREENING OF NEARBY INDUSTRY

3.2.1 32 STREET EAST – COMMERCIAL PLAZA

Based on the operations present, there would be no significant emission of Odour. Cambium Personnel attended the area on June 14, 2022. During that site visit Cambium personnel did not note any significant emissions of odour.

Similarly, there is no outdoor storage, the site is paved, and Cambium personnel did not identify any significant dust emission concern.

The only emissions of concern from this facility are noise emissions, which are discussing in Section 5.0.

3.2.2 3095 9TH AVENUE EAST – MCARTHUR TIRE

Cambium Personnel attended the area on June 14, 2022. That site visit and review of aerial photography showed no significant rooftop exhausts.

During the site visit Cambium was allowed on site and they did not observe any source of odour. Similarly, Cambium did not notice any significant dust emissions.

There is some possibility of fugitive dust due to the parking area, however significant portions were paved. Also traffic does not appear to reflect a significant amount of dust produced.

As found in the 2016 Study, Cambium identified a dust collector as a possible noise source of concern, therefore the site is further assessed in section 5.0.

3.2.3 2875 EAST BAYSHORE ROAD – HOBART FOOD EQUIPMENT MANUFACTURING

Review of aerial photography and site visit by Cambium conducted on June 14, 2022 indicated that there was no significant rooftop exhausts, or outdoor storage. During the site work in the area, no significant odour source was observed.

There is no outdoor storage of materials and the travelled surfaced are paved, indicating that fugitive dust is unlikely to be a concern.

This facility is approximately 150 m from the proposed site, and therefore would only be of concern if it were a Class II industry, however based on the observations from site, it is presumed that this operation is a Class I industry.

3.2.4 2795 EAST BAYSHORE ROAD – FORMER ALPHA PRECAST

This property previously held Alpha Precast. Cambium could not confirm a new use on the property. With regard to D-6 compatibility this property is approximately 450 m away from the proposed site. Meaning that only if the property were developed with a Class III industry would there be a compatibility concern.

In addition, the site has existing homes located approximately 60 metres away to the south. If a Class III industry were to develop on this property, it would require an Environmental Compliance Approval, under the Environmental Protection Act, and compliance at these homes would be the main restriction on the development of this lot.

3.2.5 VACANT LOT – M2 ZONING

During Cambium's assessment and review of vacant lots that permit industrial uses, a lot was identified on the northeast corner of 9th Avenue East and 32nd Street East. Based upon The City of Owen Sound Zoning By-Law Schedule A, the zoning is described as M2, which permits many different types of industrial uses. It is Cambium's understanding that no active industrial uses are currently proposed within this lot. Also, the M2 zoning permits many different types of facilities and classifications as per the D-6 Guideline.

Given that there is no planned industrial use known for the property, a detailed assessment of impacts cannot be completed. The D-6 guideline suggests in that case that assessment be based on the "worst case" allowed use and the setback distances involved. Under the zoning bylaw it appears to Cambium that M2 zoning would permit up to a Class III industry, with a maximum area of influence of 1000 m and a minimum separation distance of 300 m.

It should be noted that this vacant industrial property has sensitive residential uses already within approximately 150 meters of the northern extend of the property along East Bayshore Road. As well as existing residential uses within 700 meters to the south of the property. This would suggest that Class III industrial development on this property would already require detailed assessment as the existing sensitive uses are within the minimum separation distance.

Cambium understands that the subject site has already been zoned with a sensitive use, which would require any industry intending to develop on the vacant lot to assess the property as required by MECP guidelines, if they had any emissions requiring environmental approvals.

In addition, the proposed development will include parking areas that will result in the nearest apartment building being 80 metres from the property line of the industrial use. This 80 metre setback would be sufficient to show compatibility for Class I industries, and is beyond the 70 m minimum separation distance for Class II industries. While the development is within the minimum separation distance for Class III industries, the lot already has sensitive uses encroaching within the minimum separation distance to the north.

Finally, given there is not specific planned industrial use, there is no detailed work that could be done by the proponent at this time to confirm mitigation measures. However, in Cambium's opinion it would be feasible for a class III industry to be able to develop on the lot with proper mitigation design.

4.0 TRAFFIC IMPACT ON THE PROPOSED DEVELOPMENT

4.1.1 TRAFFIC NOISE ASSESSMENT

The traffic noise assessment was conducted using predictive calculations of road and rail noise developed by the Ministry: *Ontario Road Noise Analysis Method for Environment and Transportation* (ORNAMENT) (MOE, 1989).

Cambium evaluated noise impact at the upper storey plane of window receptor locations, and at potential outdoor living areas located at ground level.

Where,

- POW – Plane of window receptors representative of the worst case exposure on the building in the proposed dwelling; and
- OLA – Potential outdoor living area receptor located at ground level.

The traffic data used for the road noise assessment is based upon turning movement data provided by the project transportation consultant, Paradigm Transportation Solutions Limited. The AADT was calculated by multiplying the peak PM hour of data by ten. The resulting AADT was below the minimum input value accepted by ORNAMENT (MOE, 1989). As such, Cambium has conservatively increased the inputted AADT, and forecasted at a 2.5% yearly growth rate for 10 years. Cambium has used the ORNAMENT (MOE, 1989) recommended day/night split of 90/10 percent for regional roads, which assumes 90 percent of the daily traffic occurs between 07:00 and 23:00. A truck percentage of 7% has been utilized for medium trucks, and 5% for heavy trucks, as per the City of Ottawa Environmental Noise Control Guidelines.

4.1.2 TRAFFIC NOISE IMPACT PREDICTIONS - BUILDING FAÇADE

As noted in Section 2.1, the road sound level limits for the windows of noise sensitive land uses are 55 dBA at the window during daytime hours (07:00-23:00) and 50 dBA during nighttime hours (23:00-07:00) for typical building construction and without warning clauses.

The noise impacts from nearby roadways are calculated at the building façade. The results are then compared to the applicable limits and used to recommend building façade requirements if required.

Noise impacts due to road traffic noise are predicted to be less than 55 dBA during daytime hours, and less than 50 dBA during nighttime hours. As such, no specific noise control measures are required, and typical Ontario Building Code constructions will be sufficient to achieve the indoor sound level criteria.

4.1.3 TRAFFIC NOISE IMPACT PREDICTIONS – OUTDOOR LIVING SPACES

Road traffic noise must be assessed using potential future traffic conditions. The west side of the lot, with minimal shielding near the proposed fire pits, is assumed to be the worst case location of the OLA as per the site plan. As noted in Section 3.2, the predicted impacts at the OLA due to road traffic that are less than 55 dBA would not require noise controls, levels between 55 dBA and 60 dBA would require either noise controls or warning clauses. Sound levels above 60 dBA would require noise controls in addition to warning clauses.

Based on the noise impact calculations completed using STAMSON software, the noise impact from East Bayshore Road is expected to be less than 55 dBA for the worst case OLA on the proposed lot. As such, the traffic impact is expected to be less than the applicable limits at all outdoor locations. No specific noise control measures or warning clauses are required. Appendix A provides a summary of provided traffic data and supporting calculations.

5.0 IMPACT OF THE ENVIRONMENT ON THE PROPOSED DEVELOPMENT

5.1.1 STATIONARY NOISE IMPACT PREDICTIONS

The following relates to the impacts of existing stationary noise sources in the vicinity onto the proposed development. NPC-300 (MOECC, 2017) states that a proposed sensitive land use is required to ensure that compliance is maintained for any nearby approved stationary noise source. Ontario Regulation 528/98 exempts many types of smaller stationary noise sources from approval. Therefore, many nearby businesses may not have approvals in place. However as outlined in NPC-300 an exemption from approval does not mean exemption from compliance with noise guidelines in the context of land use planning, so Cambium has reviewed all nearby commercial operations, as well as those that have approvals or registrations in place.

Cambium personnel conducted a site visit on June 14, 2022. During the site visit, a noise survey was completed in order to identify all off-site potential sources of noise that should be considered. These include traffic noise, commercial, institutional, and industrial noise sources as applicable.

5.1.2 STATIONARY NOISE IMPACT PREDICTIONS – 32 STREET EAST NORTH COMMERCIAL FACILITY

A commercial facility is located to north of the proposed development and consist of a dance studio, gym, Intelcom, and UPS Canada Ltd. During the site visit, no significant noise sources were associated with this facility. The only observed sources of noise were from small rooftop HVAC equipment and trucking activities that were infrequent.

To further demonstrate compatibility, Cambium has conservatively assessed the potential noise impact from potential trucking activities and HVAC equipment. Sound data was based upon Cambium's database of similar equipment and operations that would occur at such facilities. The noise impact calculations were performed using the ISO 9613-2 calculation method, within the Bruel Kjaer *Predictor Type 7810 version V2021* (Predictor) environmental noise prediction and control software. A summary of the noise sources included within the model is provided below.

- AH_01 – Point source representing a rooftop HVAC units, operational during an entire one-hour period during daytime, evening, and nighttime hours. 6 units in total simultaneously operating.
- TR_01 - Moving source representing truck deliveries. This has been modelled as potentially 2 trucks within an hour period during daytime hours, and 1 truck per hour during evening and nighttime hours. which is a conservative approach and is not expected to be typical operations.
- TR_01_1 - Point source representing an idling highway truck during a delivery for 15 minutes during a one-hour period during daytime, evening, and nighttime hours.

The predicted noise impact at the nearest apartment façade within the development was determined to be 40 dBA during daytime, evening, and nighttime hours. As such, the predicted noise impact at all calculation locations is

below the applicable 45 dBA nighttime limit for a Class 2 area. The predicted noise impact is provided in appended Table 8 and contours are provided in Appendix B.

5.1.3 STATIONARY NOISE IMPACT PREDICTIONS – MCARTHUR TIRE

The McArthur Tire retread facility is located approximately 120 metres to the east of the nearest apartment building façade. Within the previous compatibility assessment completed by R.J. Burnside in 2016, the study recommended that a detailed assessment of the facility be conducted to determine the impact onto the proposed development during detailed design phases. A dust collector on the southwest side of the building was identified to be the significant noise source at the facility.

During the site visit, Cambium personnel established communication with the CEO of McArthur Tire, Jeff Armstrong, who did not permit sound level measurements to be conducted on site. However, it was confirmed that the facility operates during daytime hours only, which is also the listed hours of operation. It was observed that forklift activity occurs within the building along with small scale tools that would be utilized within repair facilities. These sources were not observed to be significant and occur within the building. The dust collector that was specified within the 2016 compatibility study was confirmed by Cambium and observed to be located on the southwest side of the building. This source could be described as a blower that transports scrap tire material from the interior of the building into a highway truck trailer that is located on the outside of the building.

As sound level measurements were not permitted within the property, Cambium completed sound level measurements from public property on the east side of 9th Avenue East, with direct line of sight to the blower on the southwest side of the building, approximately 85 metres away. The measurement did not include other sources of noise such as traffic, birds, or insects. In addition to this measurement, a 20-minute duration measurement was completed at this location and the measured sound level was 45 dBA (Leq). Traffic noise from 9th Avenue East was not included within this measurement, but birds and insect noise were not removed or filtered from the measurement.

To further demonstrate compatibility, Cambium has conservatively assessed the potential noise impact from all noise sources associated with the facility, including any possible trucking deliveries and forklift activity that could occur outside of the facility. The highway truck trailer that is typically located near the blower was not included in the model for conservative assessment purposes as it would likely shield noise from the proposed development. The noise impact calculations were performed using the ISO 9613-2 calculation method, within the Bruel Kjaer *Predictor Type 7810 version V2021* (Predictor) environmental noise prediction and control software. A summary of the noise sources included within the model is provided below.

- AH_01 – Point source representing one rooftop HVAC unit, operational during an entire one-hour period during daytime, evening, and nighttime hours. This unit was not observed during the site visit but was included for conservative assessment purposes.

- TR_01 - Moving source representing truck deliveries. This has been modelled as potentially 1 truck within an hour period during daytime hours.
- LD_01 - Moving source representing forklift activities. This has been modelled as 3 trips during an hour period during daytime hours.
- BL_01 – Point source representing the measurement of the blower on the southwest side of the building, identified as the dust collector in the original compatibility study, completed by others. This source has been modelled as operational during an entire one-hour period during daytime hours.
- DC_01 – Point source representing a potential rooftop dust collector or blow off noise being emitted from the facility. This source was not observed or audible during the site visit but was included within the 2016 compatibility study as a potential source. As such, Cambium has included this source within the assessment to represent an absolute worst-case scenario. This was modelled to be occurring for 30 minutes during an entire one-hour period during daytime hours.

The predicted noise impact at the nearest apartment façade within the development was determined to be 39 dBA during daytime hours. An outdoor living area was also included on the east side of the property, closer to the facility, and the predicted noise impact was determined to be 38 dBA during daytime hours. As such, the predicted noise impact at all calculation locations is below the applicable 50 dBA daytime limit for a Class 2 area. It is important to note that if McArthur Tire's operational hours included evening or nighttime hours, the predicted noise impact would still be below the applicable limits. The predicted noise impact is provided in appended Table 7 and contours are provided in Appendix C.

6.0 IMPACT OF THE PROPOSED DEVELOPMENT ON THE ENVIRONMENT

This assessment is included as a feasibility check to confirm that the facility is likely capable of complying with NPC-300 at the nearby sensitive receptors. Note that as residential dwellings, the proposed development would not have any noise sources that require analysis under NPC-300.

The only sources on site would typically include heating, ventilation, and air conditioning equipment installed at the apartment buildings and small amenity areas. These types of systems are not considered land use compatibility issues by NPC-300, and would typically be required to comply with MECP publication *NPC-216 Residential Air Conditioning Devices* (NPC-216) (Ontario Ministry of Environment and Energy, 1993) and the Environmental Noise Guidelines for Installation of Residential Air Conditioning Devices (Ontario Ministry of Environment and Energy, 1994). Alternatively, the local noise bylaw for the area may have guidance for installation of air conditioning systems.

7.0 CONCLUSIONS

Cambium Inc. has been retained by SkyDev Bayshore Owen Sound LP in response to a request by the City of Owen Sound to complete a noise impact study of the development located at 3195 East Bayshore Road in Owen Sound, Ontario. Cambium's assessment shows the proposed development is compatible with no mitigation required.

The contents of this report, including its analysis, shall be reviewed during the final design to ensure any alterations made will not affect compliance. Based on the terms and the information provided to Cambium, it is our opinion that the proposed development will comply with NPC-300 Guidelines and is compatible from a noise perspective.

Respectfully submitted,

Cambium Inc.

James Sellars
Project Coordinator

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Project Engineer

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8.0 REFERENCES

MOE. (1989). *ORNAMENT Ontario Road Noise Analysis Method for Environment and Transportation.* Ontario Ministry of the Environment.

MOECC. (2017). *NPC-300 - Environmental Noise Guideline Stationary and Transportation Sources - Approval and Planning.* Ontario Ministry of the Environment and Climate Change.

9.0 STANDARD LIMITATIONS

Limited Warranty`

In performing work on behalf of a client, Cambium relies on its client to provide instructions on the scope of its retainer and, on that basis, Cambium determines the precise nature of the work to be performed. Cambium undertakes all work in accordance with applicable accepted industry practices and standards. Unless required under local laws, other than as expressly stated herein, no other warranties or conditions, either expressed or implied, are made regarding the services, work or reports provided.

Reliance on Materials and Information

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Site Assessments

A site assessment is created using data and information collected during the investigation of a site and based on conditions encountered at the time and particular locations at which fieldwork is conducted. The information, sample results and data collected represent the conditions only at the specific times at which and at those specific locations from which the information, samples and data were obtained and the information, sample results and data may vary at other locations and times. To the extent that Cambium's work or report considers any locations or times other than those from which information, sample results and data was specifically received, the work or report is based on a reasonable extrapolation from such information, sample results and data but the actual conditions encountered may vary from those extrapolations.

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Appended Figures

Figure 1 - Overall Site Plan

27 Oct 2022, 09:00

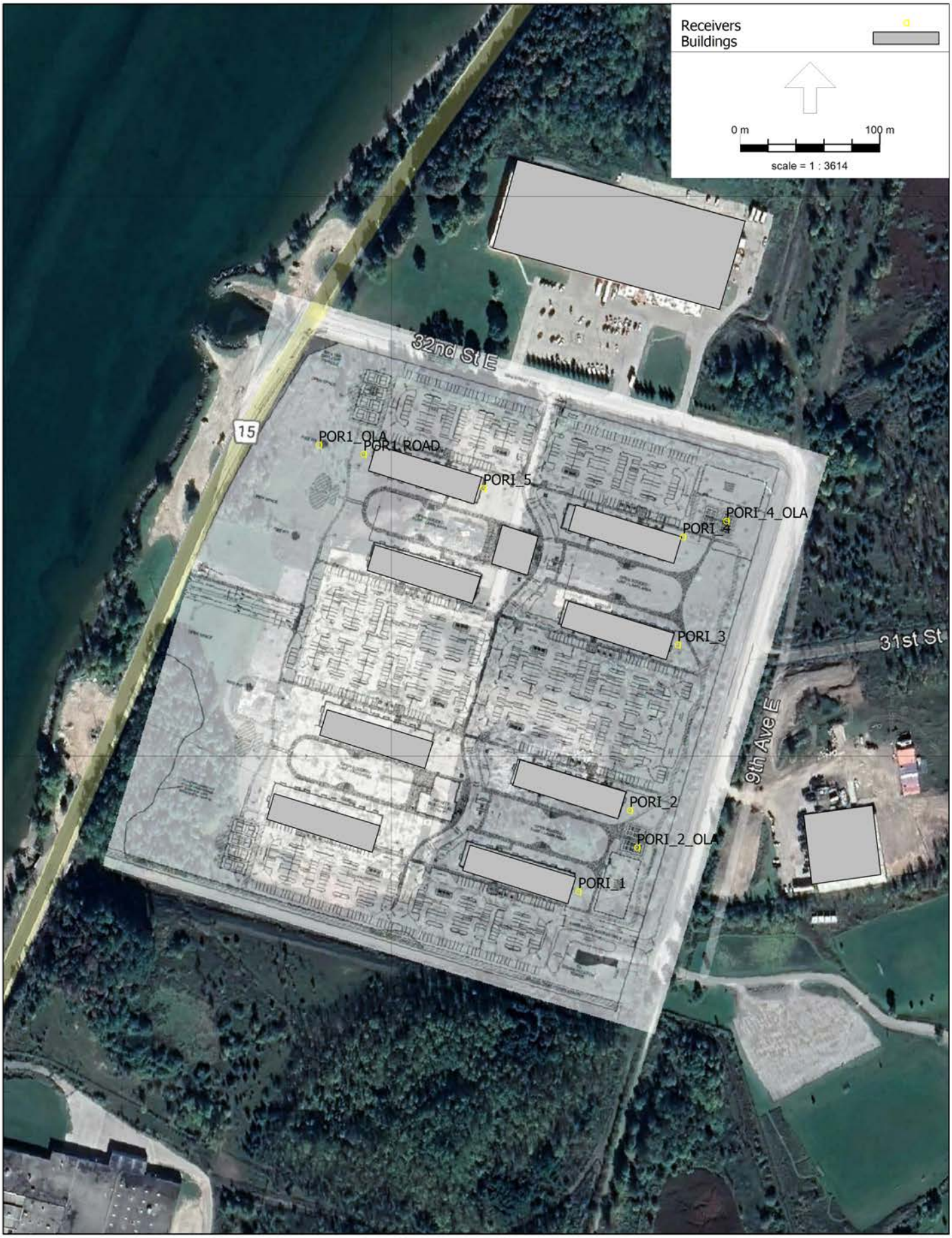
Cambium Inc., Canada

Industrial noise - ISO 9613.1/2, [version of Area - FIGURE] , Predictor V2021 Licensed to Cambium Inc., Canada

Figure 2 - Traffic and Stationary Noise Impact Calc Locations

Cambium Inc., Canada

27 Oct 2022, 09:04

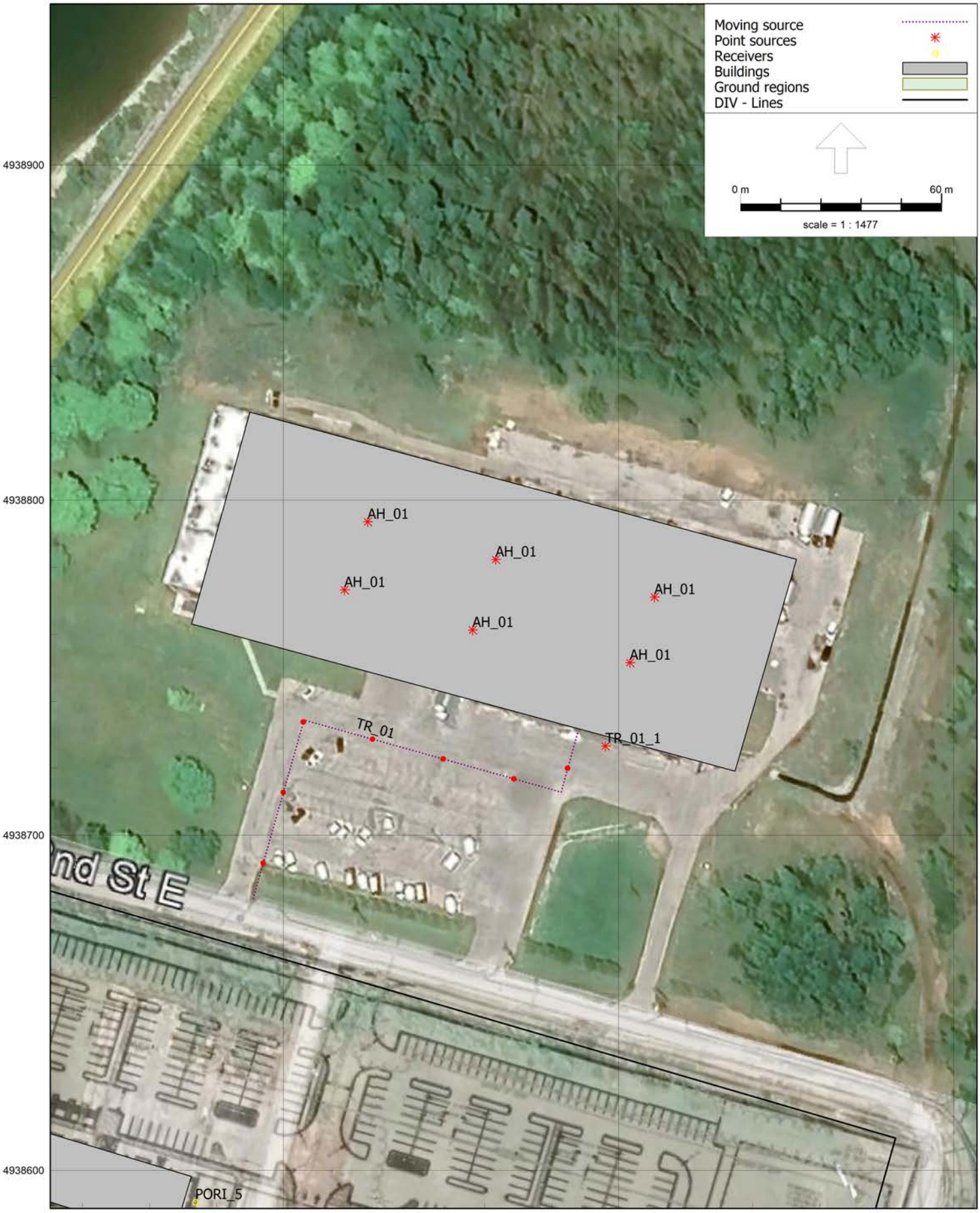


Industrial noise - ISO 9613.1/2, [version of Area - FIGURE] , Predictor V2021 Licensed to Cambium Inc., Canada

Figure 3 - Source Locations - North Commercial Facility

Cambium Inc., Canada

22 Sep 2022, 15:39

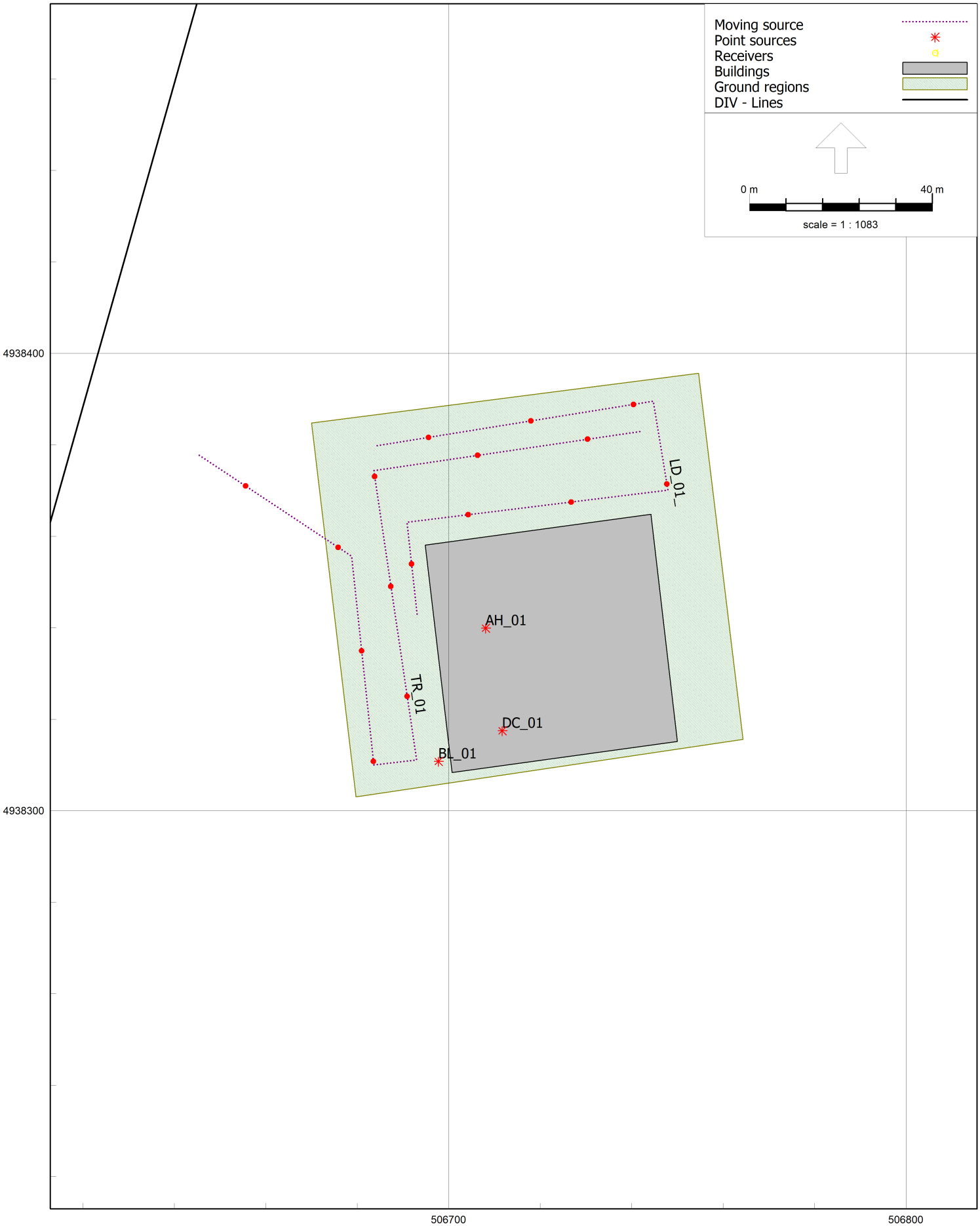


Industrial noise - ISO 9613.1/2, [version of Area - FIGURE] , Predictor V2021 Licensed to Cambium Inc., Canada

Figure 4 - Source Locations - McArthur Tire

Cambium Inc., Canada

22 Sep 2022, 15:39



Industrial noise - ISO 9613.1/2, [version of Area - FIGURE] , Predictor V2021 Licensed to Cambium Inc., Canada

Appended Tables

Table 5 - Traffic Noise Results Summary

Receptor	Ref. Forecasted AADT Traffic Volume [1]	Traffic Breakdown, (Day/Night)			Receptor	Notes	Impact due to background traffic (dBA) [3]	
		Cars	Med. Trucks	Heavy Trucks			Day	Night
POR1	2500	2535/282	202/22	144/16	85 m from East Bayshore Road	7.5 m Height	49	43
POR1_OLA	2500	2535/282	202/22	144/16	55 m from East Bayshore Road	1.5 m Height	51	44

1 - AADT based upon Paradigm Transportation Solutions Limited (Traffic Consultant) Peak PM Hour, assumed 10 years of growth at a rate of 2.5% per year

Table 6 - Road Noise Results Summary and Noise Controls

Receptor	Description	Noise Impact (dBA, Leq)			
		07:00 to 23:00		23:00 to 07:00	
		Road	Minimum Controls	Road	Minimum Controls
POR1	West Facing Façade	49	NONE	43	NONE
POR1_OLA	Outdoor Living Area	51	NONE	-	NONE

Table 7 - Noise Impact Summary - McArthur Tire Facility

Point of Reception ID	Point of Reception Information					Noise Characteristic	Daytime (dBA)	Evening (dBA)	Nighttime (dBA)	Daytime Limit (dBA)	Evening Limit (dBA)	Nighttime Limit (dBA)	Compliant with Limit
	Description	UTM Easting	UTM Northing	Height POW	Height OLA								
PORI_1_A	East Façade Apartment Building	506533	4938313	10.0	-	Steady State Leq	37	32	32	50	50	45	Yes
PORI_2_A	East Façade Apartment Building	506568	4938371	10.0	-	Steady State Leq	39	34	34	50	50	45	Yes
PORI_2_OLA	East Community Garden Space	506575	4938344	1.5	-	Steady State Leq	38	33	33	50	45	-	Yes
PORI_3_A	East Façade Apartment Building	506604	4938486	10.0	-	Steady State Leq	37	32	32	50	50	45	Yes
PORI_4_A	North Façade Apartment Building	506609	4938565	10.0	-	Steady State Leq	36	31	31	50	50	45	Yes

Table 8 - Noise Impact Summary - Commercial North

Point of Reception ID	Point of Reception Information					Noise Characteristic	Daytime (dBA)	Evening (dBA)	Nighttime (dBA)	Daytime Limit (dBA)	Evening Limit (dBA)	Nighttime Limit (dBA)	Compliant with Limit
	Description	UTM Easting	UTM Northing	Height POW	Height OLA								
PORI_1_A	East Façade Apartment Building	506533	4938313	10.0	-	Steady State Leq	20	20	20	50	50	45	Yes
PORI_2_A	East Façade Apartment Building	506568	4938371	10.0	-	Steady State Leq	16	16	16	50	50	45	Yes
PORI_2_OLA	East Community Garden Space	506575	4938344	1.5	-	Steady State Leq	21	21	21	50	45	-	Yes
PORI_3_A	East Façade Apartment Building	506604	4938486	10.0	-	Steady State Leq	24	24	24	50	50	45	Yes
PORI_4_A	North Façade Apartment Building	506609	4938565	10.0	-	Steady State Leq	39	39	39	50	50	45	Yes

Table 9 - ***Representative Noise Source Summary Table***

Source ID	Description	A-Weighted Sound Power Level								Total	Data Source	Equipment Location	Noise Quality[2]	Source Location	Height Above Rooftop or Ground
		63	125	250	500	1000	2000	4000	8000	dBA					
BL_01	Blower	67	72	77	79	82	79	66	55	86	Site Measurement	At Grade	SS	At Grade	1.5
DC_01	Dust Collector	79	85	90	85	83	78	74	73	93	Cambium Database	Rooftop	SS	Rooftop	2.0
AH_01	Rooftop HVAC	-	76	79	84	83	81	75	66	--	Cambium Database	Outdoor	SS	At Grade	1.5
TR_01	Highway Truck Movement	-	84	85	88	92	90	83	72	--	Cambium Database	Rooftop	SS	Rooftop	1.5
LD_01_	Forklift Movement	85	84	85	88	92	90	83	72	96	Cambium Database	Outdoor	SS	At Grade	1.5

SS Steady State
T Tonal
I Impulse

Table 10 - Representative Noise Source Summary Table

Source ID	Description	A-Weighted Sound Power Level								Total	Data Source	Equipment Location	Noise Quality[2]	Source Location	Height Above Rooftop or Ground
		63	125	250	500	1000	2000	4000	8000	dBA					
AH_01	Rooftop HVAC	-26	76	79	84	83	81	75	66	89	Site Measurement	At Grade	SS	At Grade	1.0
TR_01_1	Idling Highway Truck	85	84	85	88	92	90	83	72	96	Cambium Database	Rooftop	SS	Rooftop	2.0
TR_01	Highway Truck Movement	-	84	85	88	92	90	83	72	--	Cambium Database	Rooftop	SS	Rooftop	1.5

SS Steady State
T Tonal
I Impulse

Appendix A

Traffic Data and Supporting Calculations

STAMSON 5.0 NORMAL REPORT Date: 12-07-2022 11:30:14
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: POR1.te Time Period: Day/Night 16/8 hours
Description:

Road data, segment # 1: Bayshore (day/night)

Car traffic volume : 2535/282 veh/TimePeriod *
Medium truck volume : 202/22 veh/TimePeriod *
Heavy truck volume : 144/16 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT): 2500
Percentage of Annual Growth : 2.50
Number of Years of Growth : 10.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 1: Bayshore (day/night)

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 85.00 / 85.00 m
Receiver height : 7.50 / 7.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

↑
Results segment # 1: Bayshore (day)

Source height = 1.50 m

ROAD (0.00 + 49.39 + 0.00) = 49.39 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.48	61.68	0.00	-11.15	-1.14	0.00	0.00	0.00	49.39

Segment Leq : 49.39 dBA

Total Leq All Segments: 49.39 dBA

↟
Results segment # 1: Bayshore (night)

Source height = 1.50 m

ROAD (0.00 + 42.84 + 0.00) = 42.84 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.48	55.13	0.00	-11.15	-1.14	0.00	0.00	0.00	42.84

Segment Leq : 42.84 dBA

Total Leq All Segments: 42.84 dBA

↟

TOTAL Leq FROM ALL SOURCES (DAY): 49.39
(NIGHT): 42.84
↟
↟

STAMSON 5.0 NORMAL REPORT Date: 12-07-2022 11:40:24
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: POR1OLA.te Time Period: Day/Night 16/8 hours
Description:

Road data, segment # 1: Bayshore (day/night)

Car traffic volume : 2535/282 veh/TimePeriod *
Medium truck volume : 202/22 veh/TimePeriod *
Heavy truck volume : 144/16 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT): 2500
Percentage of Annual Growth : 2.50
Number of Years of Growth : 10.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 1: Bayshore (day/night)

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 55.00 / 55.00 m
Receiver height : 1.50 / 1.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

↑
Results segment # 1: Bayshore (day)

Source height = 1.50 m

ROAD (0.00 + 50.85 + 0.00) = 50.85 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.66	61.68	0.00	-9.37	-1.46	0.00	0.00	0.00	50.85

Segment Leq : 50.85 dBA

Total Leq All Segments: 50.85 dBA

↟
Results segment # 1: Bayshore (night)

Source height = 1.50 m

ROAD (0.00 + 44.30 + 0.00) = 44.30 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.66	55.13	0.00	-9.37	-1.46	0.00	0.00	0.00	44.30

Segment Leq : 44.30 dBA

Total Leq All Segments: 44.30 dBA

↟

TOTAL Leq FROM ALL SOURCES (DAY): 50.85
(NIGHT): 44.30
↟
↟

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: 32nd Street & East Bayshore Road
Site Code: 220220
Start Date: 05/04/2022

Turning Movement Data

Start Time	32nd Street E Westbound					East Bayshore Road Northbound					East Bayshore Road Southbound					
	Left	Right	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Int. Total
7:00 AM	0	1	0	0	1	7	2	0	0	9	1	8	0	0	9	19
7:15 AM	4	0	0	0	4	7	3	0	0	10	0	9	0	0	9	23
7:30 AM	4	1	0	0	5	3	2	0	0	5	0	18	0	0	18	28
7:45 AM	5	0	0	0	5	1	3	0	0	4	1	7	0	0	8	17
Hourly Total	13	2	0	0	15	18	10	0	0	28	2	42	0	0	44	87
8:00 AM	5	0	0	0	5	2	8	0	0	10	0	9	0	0	9	24
8:15 AM	3	0	0	0	3	5	10	0	0	15	0	34	0	0	34	52
8:30 AM	5	0	0	0	5	9	5	0	0	14	0	19	0	0	19	38
8:45 AM	2	0	0	0	2	13	8	0	0	21	0	18	0	0	18	41
Hourly Total	15	0	0	0	15	29	31	0	0	60	0	80	0	0	80	155
9:00 AM	4	2	0	0	6	11	12	0	0	23	0	13	0	0	13	42
9:15 AM	6	1	0	0	7	9	5	0	0	14	0	9	0	0	9	30
9:30 AM	13	0	0	0	13	13	3	0	0	16	0	18	0	0	18	47
9:45 AM	8	0	0	0	8	8	3	0	0	11	2	9	0	0	11	30
Hourly Total	31	3	0	0	34	41	23	0	0	64	2	49	0	0	51	149
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:30 AM	6	0	0	0	6	7	4	0	0	11	0	6	0	0	6	23
11:45 AM	4	0	0	0	4	9	2	0	1	11	0	11	0	0	11	26
Hourly Total	10	0	0	0	10	16	6	0	1	22	0	17	0	0	17	49
12:00 PM	1	0	0	0	1	9	6	0	2	15	0	9	0	0	9	25
12:15 PM	4	0	0	0	4	18	2	0	0	20	0	12	0	0	12	36
12:30 PM	6	0	0	0	6	10	7	0	0	17	0	9	0	0	9	32
12:45 PM	2	0	0	0	2	17	5	0	0	22	1	17	0	0	18	42
Hourly Total	13	0	0	0	13	54	20	0	2	74	1	47	0	0	48	135
1:00 PM	2	0	0	0	2	6	3	0	0	9	0	11	0	0	11	22
1:15 PM	0	1	0	0	1	11	5	0	0	16	0	16	0	0	16	33
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hourly Total	2	1	0	0	3	17	8	0	0	25	0	27	0	0	27	55
3:00 PM	11	0	0	0	11	12	2	0	0	14	0	18	0	0	18	43
3:15 PM	8	0	0	0	8	11	8	0	0	19	0	12	0	0	12	39
3:30 PM	8	0	0	0	8	17	8	0	0	25	1	9	0	0	10	43
3:45 PM	11	0	0	0	11	21	15	0	0	36	0	11	0	0	11	58
Hourly Total	38	0	0	0	38	61	33	0	0	94	1	50	0	0	51	183
4:00 PM	12	1	0	0	13	15	9	0	0	24	1	7	0	0	8	45
4:15 PM	4	1	0	0	5	19	13	0	0	32	0	10	0	0	10	47
4:30 PM	5	0	0	1	5	23	5	0	0	28	1	12	0	0	13	46

4:45 PM	6	0	0	0	6	23	7	0	0	30	1	9	0	0	10	46
Hourly Total	27	2	0	1	29	80	34	0	0	114	3	38	0	0	41	184
5:00 PM	9	1	0	0	10	23	13	0	0	36	1	11	0	0	12	58
5:15 PM	13	1	0	0	14	24	7	0	0	31	1	11	0	2	12	57
5:30 PM	5	1	0	0	6	16	7	0	0	23	0	11	0	0	11	40
5:45 PM	8	1	0	0	9	9	7	0	0	16	0	16	0	0	16	41
Hourly Total	35	4	0	0	39	72	34	0	0	106	2	49	0	2	51	196
Grand Total	184	12	0	1	196	388	199	0	3	587	11	399	0	2	410	1193
Approach %	93.9	6.1	0.0	-	-	66.1	33.9	0.0	-	-	2.7	97.3	0.0	-	-	-
Total %	15.4	1.0	0.0	-	16.4	32.5	16.7	0.0	-	49.2	0.9	33.4	0.0	-	34.4	-
Motorcycles	0	1	0	-	1	3	0	0	-	3	0	3	0	-	3	7
% Motorcycles	0.0	8.3	-	-	0.5	0.8	0.0	-	-	0.5	0.0	0.8	-	-	0.7	0.6
Cars & Light Goods	168	10	0	-	178	368	184	0	-	552	11	383	0	-	394	1124
% Cars & Light Goods	91.3	83.3	-	-	90.8	94.8	92.5	-	-	94.0	100.0	96.0	-	-	96.1	94.2
Buses	0	0	0	-	0	2	0	0	-	2	0	2	0	-	2	4
% Buses	0.0	0.0	-	-	0.0	0.5	0.0	-	-	0.3	0.0	0.5	-	-	0.5	0.3
Single-Unit Trucks	15	1	0	-	16	7	14	0	-	21	0	7	0	-	7	44
% Single-Unit Trucks	8.2	8.3	-	-	8.2	1.8	7.0	-	-	3.6	0.0	1.8	-	-	1.7	3.7
Articulated Trucks	1	0	0	-	1	4	1	0	-	5	0	2	0	-	2	8
% Articulated Trucks	0.5	0.0	-	-	0.5	1.0	0.5	-	-	0.9	0.0	0.5	-	-	0.5	0.7
Bicycles on Road	0	0	0	-	0	4	0	0	-	4	0	2	0	-	2	6
% Bicycles on Road	0.0	0.0	-	-	0.0	1.0	0.0	-	-	0.7	0.0	0.5	-	-	0.5	0.5
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	0.0	-	-	-	-	0.0	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	1	-	-	-	-	3	-	-	-	-	2	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	100.0	-	-	-	-	100.0	-	-

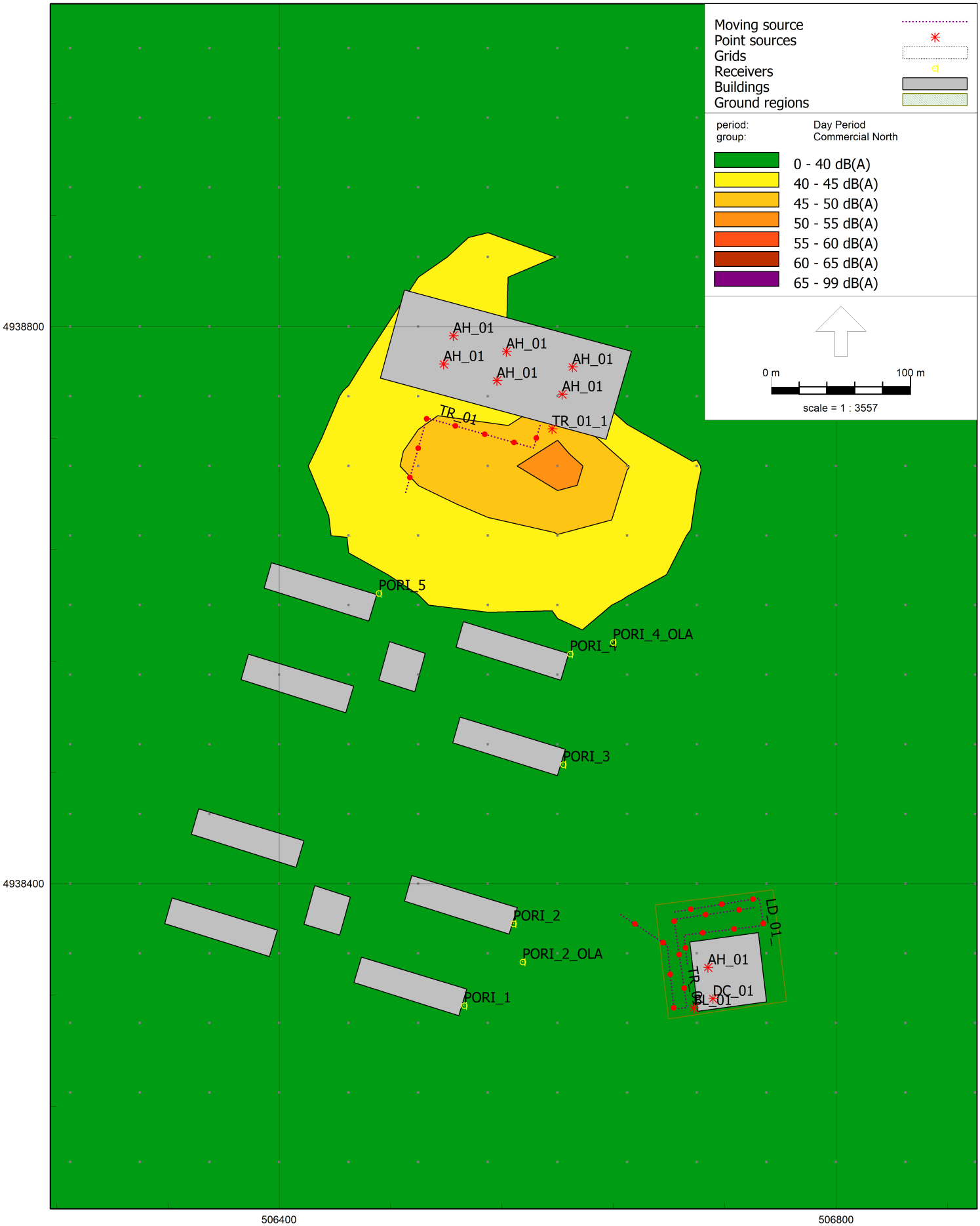
Appendix B

Stationary Noise Impact Calculations – North Commercial

Noise Impact Contours - 4.5m - Daytime - North Commercial Facility

22 Sep 2022, 15:45

Cambium Inc., Canada



Industrial noise - ISO 9613.1/2, [version of Area - initial model] , Predictor V2021 Licensed to Cambium Inc., Canada

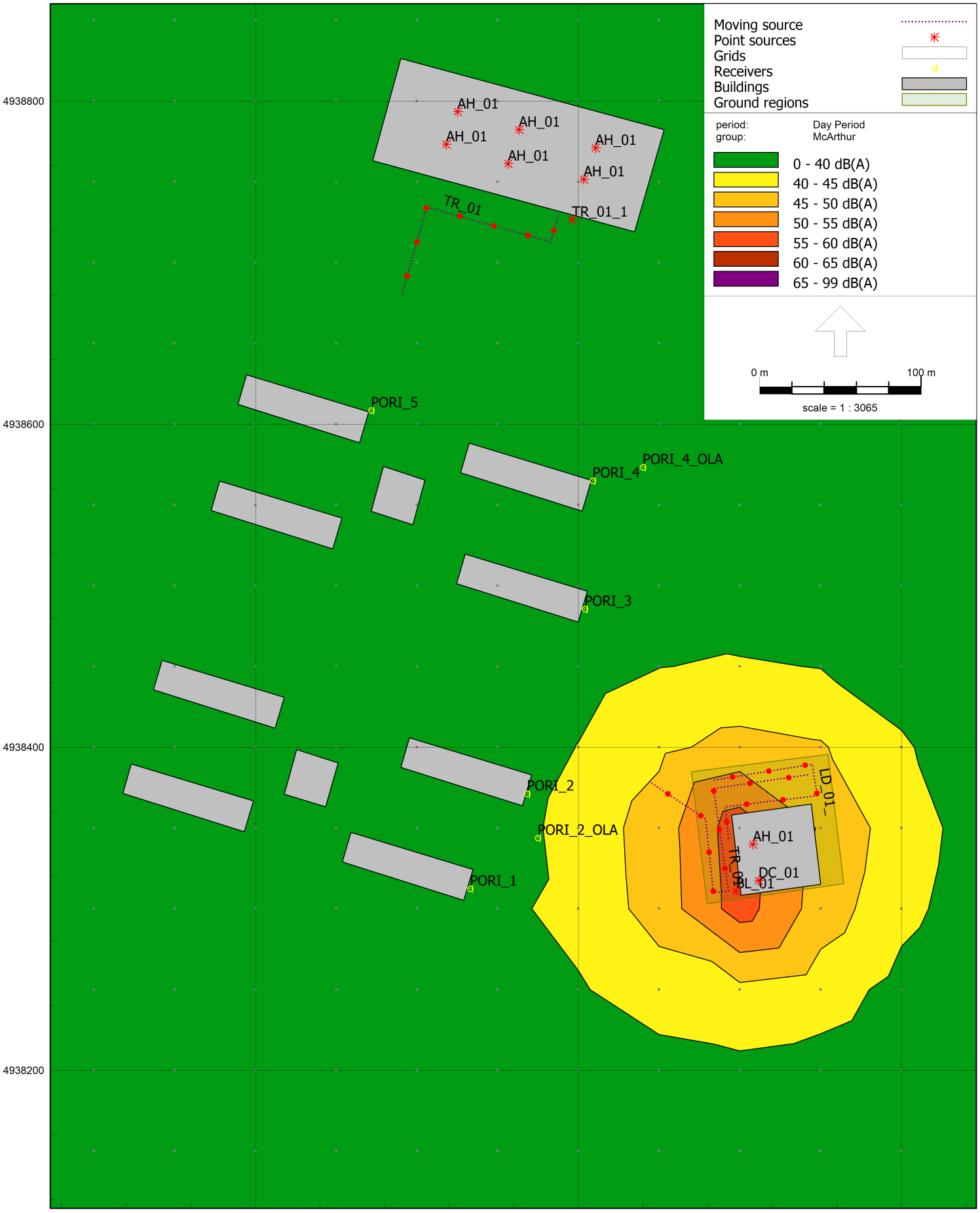
Appendix C

Stationary Noise Impact Calculations – McArthur Tire

Noise Impact Contours - 4.5m - Daytime McArthur Tire

22 Sep 2022, 15:44

Cambium Inc., Canada



Industrial noise - ISO 9613.1/2, [version of Area - initial model] , Predictor V2021 Licensed to Cambium Inc., Canada

Point Source Sound Power Level Calculations
*'Lw=Lp+20*log(r)+11-10*log(Q)*
*Lp(total)=10*log(10(Lp(31Hz)/10)+10(Lp(63Hz)/10)+…+10(Lp(8kHz)/10))*
r is distance measurement was taken, Q is directivity index

								SPL (dB)										PWL (dB)									
File Name	Source ID	Total Measurement Distance (m)	Measurement Directionality (deg)	Source To Receptor Directionality (deg)	Directivity Factor (Q)	Quasi Steady (Yes/No)	Tonal (Yes/No)	63	125	250	500	1000	2000	4000	8000	Total (dB)	Total (dBA)	63	125	250	500	1000	2000	4000	8000	Total (dB)	Total (dBA)
20210910003	BL_01	85	N/A	N/A	2	No	No	46	41	40	35	35	31	18	9	**49**	39	93	88	86	82	82	78	65	56	**95**	86
Library_3	AH_01	0	N/A	N/A	2	No	No	5	5	5	5	5	5	5	5	**14**	12	0	92	88	87	83	80	74	67	**95**	89
L_00047	LD_01	5	N/A	N/A	2	No	No	74	70	68	69	64	64	57	47	**78**	70	96	92	90	90	86	86	79	69	**100**	92
L_00001	TR_01	7	N/A	N/A	2	No	No	86	75	69	66	67	64	57	48	**87**	71	111	100	94	91	92	89	82	73	**112**	96
L_00002	TR_02	5.25	N/A	N/A	2	No	No	77	72	68	69	69	67	63	53	**80**	74	99	95	91	91	91	90	85	75	**102**	96
20180305024	DC_01	5.59	N/A	N/A	2	No	0	82	78	76	66	60	54	50	51	**84**	70	105	101	99	88	83	77	73	74	**107**	93