

Mineral Resource Impact Assessment Proposed Industrial Building

3113 Carp Road
Carp, Ontario

Prepared for Canadian Rental Development

Report PG6422-1 dated May 30, 2023

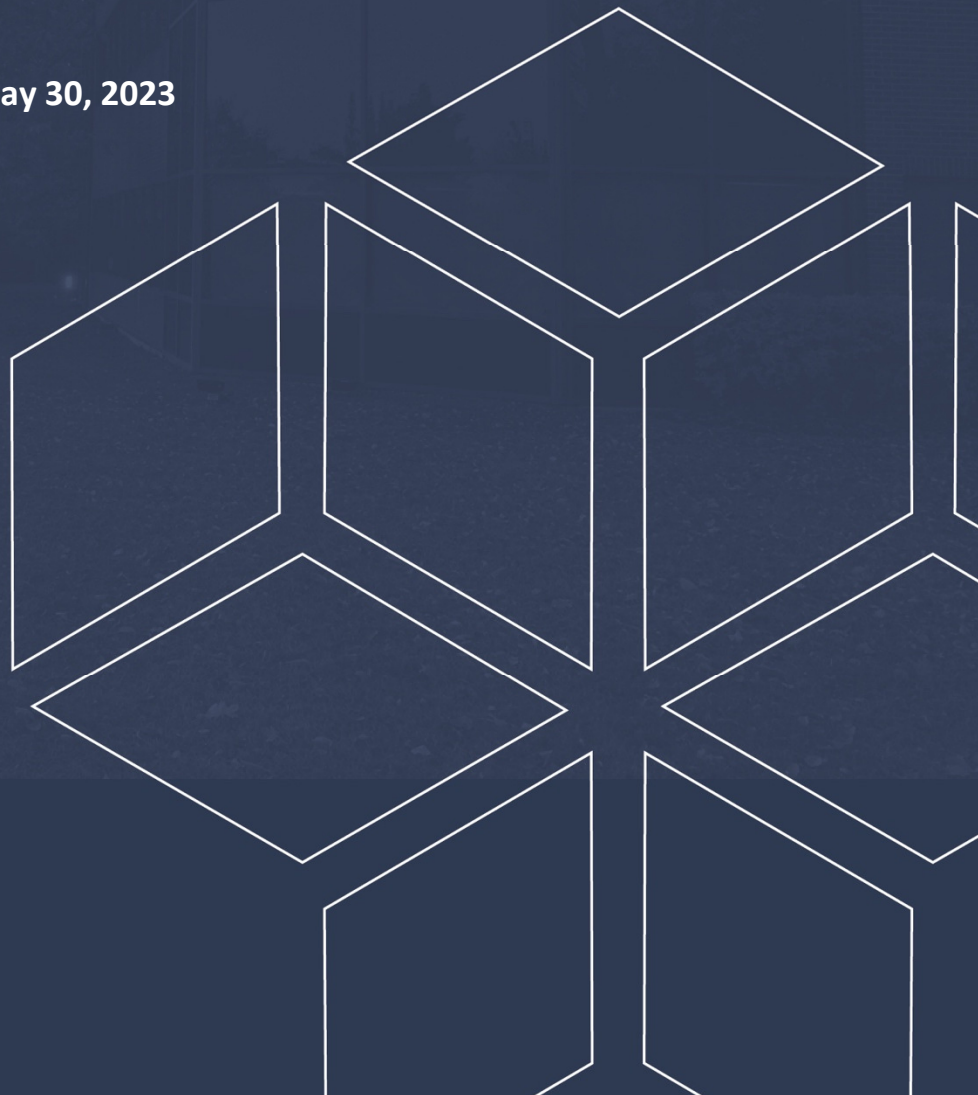


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1.0 Introduction

Paterson Group (Paterson) was commissioned by Canadian Rental Development to conduct a mineral resource impact assessment for the proposed industrial building, located at 3113 Carp Road, Carp, Ontario, and is required by Section 3.7.4 of the City of Ottawa Official Plan.

The objective of the current assessment was to evaluate the potential for land use impacts relating to land use compatibility between the proposed development and the adjacent mineral aggregate resources currently and potentially in operation.

Based on Section 2.5 of the Provincial Policy Statement 2014, mineral aggregate resources shall be protected from long term use and, where provincial information is available, deposits of mineral aggregate resources shall be identified.

2.0 Proposed Development

Based on the available conceptual drawings, it is understood that the proposed industrial development will consist of a single-storey commercial warehouse building of slab-on-grade construction along with associated access lanes, delivery areas, parking areas, and landscaped areas. It is also understood that the proposed building will be serviced by a private sewage system and well.

3.0 Location and Surface Conditions

The subject site consists of an agricultural land. The site is bordered by Carp Road followed by single family dwellings to the east, an agricultural land to south, a vacant lot to the west, and a church with associated landscaped areas to the north. A residential dwelling abuts the northeastern portion of the property, fronting Carp Road.

The ground surface across the subject site is generally flat with elevations ranging from 116 to 118 m. The ground surface is generally at grade with the neighbouring roads and lots. Pit pond, extraction areas, and truck routes were noted at the 4090 Sand and Gravel Pit located south to the subject development. The pit is located slightly beyond the 300 m radius of the subject development, as identified in Drawing PG6422-1 - Site Plan. It is also noted that McGee Pit is located southwest to the subject site, with a distance over 1000 m. Also, McGee Pit cannot expand eastward due to the presence of William Mooney Road. Therefore, McGee Pit is not included in this study.

4.0 Adjacent Sand and Gravel Pit

4.1 Status, Type and Location of Pit Operation

4090 Sand and Gravel Pit

The sand and gravel pit, also known as the 4090 Sand and Gravel Pit on the Mineral of Natural Resources database, is located south of the subject site across the agricultural land. This pit is owned by 2419787 Ontario Incorporation. Details of the pit are provided below and attached to the current report. A series of historical aerial photographs have been attached to the current report to provide an extraction history of the aggregate resource.

The pit consists of approximately 40 acres with a frontage of approximately 530 m along McGee Side Road. Based on the Ministry of Natural Resources and Forestry database, the following information has been provided for the pit:

- ☐ Site ID: 4090
- ☐ Approval Type: Class A Licence
- ☐ Operation Type: Pit
- ☐ Max. Annual Tonnage: 250,000
- ☐ Licenced Area: 15.8 ha
- ☐ Location Name: n/a

4.2 City of Ottawa Official Plan

The subject site is designated as Rural Employment Area on Schedule A - 'Rural Policy Plan' of the City's Official Plan. The properties to the north of subject site is designated as a mix of Rural Employment Area and Carp Airport, to the east as Rural Employment Area, to the south as a mix of Rural Employment Area, General Rural Area, and Sand and Gravel Resource Area, and to the west as a mix of Rural Employment Area, Carp Airport, General Rural Area, and Sand and Gravel Resource Area.

Given the subject site's proximity to a designated Sand and Gravel Resource Area on Schedule A of the City's Official Plan, the proposed industrial building is required to adhere to restrictions outlined in Policies 10, 11, 12 and 13 of Section 3.7.4 of the City's Official Plan - Development Restriction on Adjacent Lands listed below.

Policy 10:

New development will not be approved within 500 metres of a Bedrock Resource Area or within 300 metres of a Sand and Gravel Resource Area, unless it can be demonstrated that such development will not conflict with future mineral aggregate extraction. Examples of conflicting land uses are new sensitive land uses that conflict with mineral aggregate extraction. These include but are not necessarily limited to:

- A. The creation of new lots;
- B. Rezoning to permit dwellings or lodging places (motels, camp grounds, nursing homes, etc.); and
- C. Farming or small-scale business uses where animals, equipment or employees are affected by pit or quarry activities.

Policy 11:

New development may be approved within 500 metres of an existing licensed bedrock quarry or within 300 metres of an existing sand and gravel pit if it can be demonstrated that the existing mineral aggregate operation, and potential future expansion of the operation in depth or extent, will not be affected by the development.

Policy 12:

The Ministry of Natural Resources will be consulted in review of studies necessary.

Policy 13:

Where the City approves the development of land in accordance with policies above, the City may impose conditions to ensure the development provides adequate buffering and/or separation between the new proposed use and the mineral aggregate area/operation.

4.3 Provincial Standards - Aggregate Resources of Ontario

The sand and gravel pit area south of the subject site is currently primarily an undeveloped area with densely populated matured trees at the eastern portion of the area, and a small operational area at the western end of the area. For the purpose of this report, it is understood that the future development of the sand and gravel pit will be on the basis of a licence for a pit to extract resources to an elevation below the water table (Category 1 Licence - Class "A" pit below water).

Based on the Operational Standards Section of the Aggregate Resources of Ontario: Provincial Standards, Version 1.0, excavation setbacks are required for all licenced mineral aggregate operations. Excavation setbacks are defined in **Section 5.10** of the Operational Standards for a Category 1 Licence as the following:

5.10.1 fifteen metres from the boundary of the site;

5.10.2 thirty metres from any part of the boundary of the site that abuts:

5.10.2.1 a highway,

5.10.2.2 land in use for residential purposes at the time the licence was issued, or

5.10.2.3 land restricted to residential use by a zoning by-law when the licence was issued; or

5.10.3 thirty metres from any body of water that is not the result of excavation below the water table

Based on Section 5.10 of the Operational Standards for a Category 1 Licence, a minimum setback of 15 m will be required from the property boundary of the pit operation. Given that the subject site area is separated from the sand and gravel pit by a designated General Rural Area, it is understood that the minimum setback requirement can be fulfilled.

5.0 Compatibility and Mitigation Analysis

Based on our understanding of the 4090 Sand and Gravel Pit, it is understood that the extraction of aggregate resource located at 2355 McGee Side Road is currently in operation and is expected to continue for a while.

Based on our understanding of the 4090 Sand and Gravel Pit, it is understood that majority of the aggregate resource located within 4090 Sand and Gravel Pit has not been extracted. The sand and gravel pit is expected to be fully open and the operation is expected to continue in the years to come.

The land use of areas near to the site area shown in The City of Ottawa Official Plan - Schedule A - Rural Policy Plan is presented in Figure 1. The figure shows that the area southwest to Carp Road is designated as a mix of Rural Employment Area, General Rural Area, and Sand and Gravel Resource Area, while the area northeast to Carp Road is designated as a mix of Rural Employment Area and Agricultural Resource Area. The only Sand and Gravel Resource Area of concern is 4090 Sand and Gravel Pit south of the subject site. It is understood that the 4090 Sand and Gravel Pit will continue its operation, and possibly expand its operation, within the sand and gravel resource area. It may be possible for the aggregate extraction operation at 4090 Sand and Gravel Pit to expand to the east in the upcoming years. However, the pit cannot expand past its south property boundary due to the presence of McGee Side Road. It also cannot expand to the north due to the presence of designated General Rural Area.

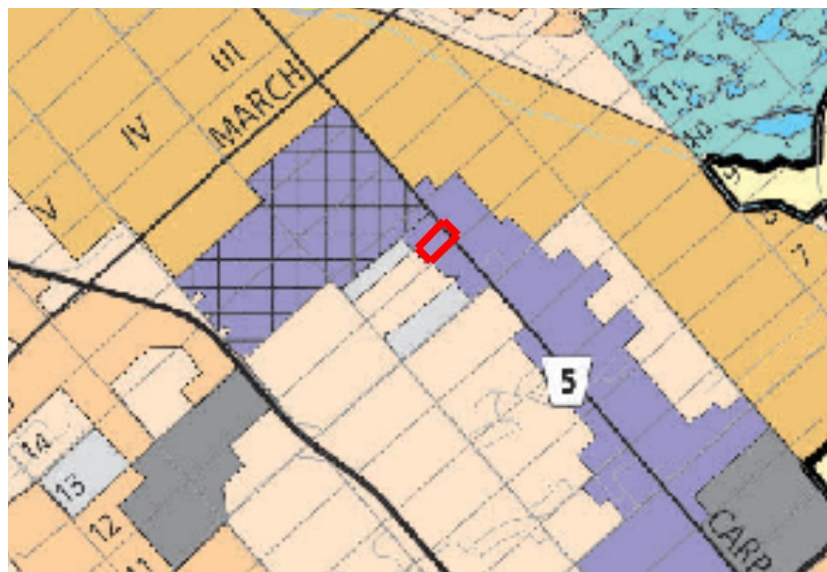


Figure 1 – City of Ottawa Official Plan

5.1 Noise

The proposed development is identified slightly beyond the proximity of 300 m radius to 4090 Sand and Gravel Pit. A stationary noise analysis was completed as per MOECC requirements. The analysis can be found in Appendix 2. In the noise study, a worse case scenario was utilized which included adding additional operating equipment and expanding the boundaries of 4090 Sand and Gravel Pit. Results of the noise study indicate that the existing operations at 4090 Sand and Gravel Pit will not cause noise levels measured at proposed development that will exceed the industry standards. Therefore, the proposed development is not required to undertake noise mitigation measures to protect it from the 4090 Sand and Gravel Pit. An alternative application to this information is that the proposed industrial building will not require any modifications to the 4090 Sand and Gravel Pit to reduce the proposed noise levels as the noise levels at the anticipated proposed development are within acceptable limits.

5.2 Traffic

It is understood that the current truck route for the operation at the 4090 Sand and Gravel Pit is McGee Side Road and the truck route will continue utilizing the road for future operations. It is further understood that the proposed industrial building will be accessed primarily from Carp Road. The proposed industrial building consists of a single-storey commercial warehouse building with private sewage system and well. Therefore the traffic volume generated by the proposed industrial building is expected to be low and should not interfere with the trucking route for the neighbouring sand and gravel pit. As such, the additional traffic generated by the proposed development will not preclude or hinder future pit operations, nor will truck traffic generated by the pit operation interfere with the proposed development. Therefore, no potential compatibility impacts are anticipated between the proposed industrial building and the current and future operation of the 4090 Sand and Gravel Pit.

5.3 Dust

Under Section 3.1, 3.2 and 3.3 of the Operational Standards of the Aggregate Resources of Ontario: Provincial Standards, Version 1.0, all operations are responsible for maintaining dust emissions. Based on recent discussions with the Owner of the 4090 Sand and Gravel Pit, dust control on the haul roads and processing areas at the operation is done regularly using water as a suppressant. There may be additional stockpiles of extracted sand and gravel within the pit for future operations. However, these stockpiles should not result in additional dust emissions. Additional dust mitigation measures for the current and future operations of the sand and gravel pit will not be required. It is anticipated the proposed development will require water or other approved dust suppressants during the construction stages of the development.

5.4 Vibration

It is understood that current and future operations for the sand and gravel pit will not require blasting for excavation purpose. As a result, sources of vibration from the operation are limited to hauling and excavation equipment only and have minimal impact on the proposed development. Similarly, blasting will not be required for excavation purposes during the construction stages of the proposed industrial building, as such, sources of vibrations will be limited to oversized vehicles and construction equipment. Therefore, additional vibration mitigation measures will not be required for the sand and gravel pit or the proposed industrial building as the potential impact of vibrations will be minimal.

5.5 Groundwater

It is understood that the groundwater at subject site will be serviced by the nearby drilled wells as well as any future well. Based on the Ontario Water Well database, thirty six (36) residential wells have been constructed within 500 metres of subject site, with the average depth of 44 metres below existing ground surface or approximately 38 metres into limestone bedrock. A pumping test was conducted on October 24, 2019 under the full-time supervision of Paterson personnel. The pumping test result shows that the average well yield of the nearby drilled wells is 23 L/min, while the maximum well yield required to support the proposed development is expected to be 6 L/min. Therefore, there is an adequate quantity of groundwater to support the proposed development. It is also understood that the long-term groundwater level is expected to be located within the underlying limestone bedrock at a geodetic elevation of approximately 85 m.

It is understood that the sewer services at subject site will be provided by a private sewage system. Based on the subsurface profile, there is approximately 6 metres of overburden material overlying the bedrock surface. With this amount of overburden material, and the neighbouring wells completed at the average depth of 44 metres below existing ground surface into sound bedrock, the potential of septic effluent impacting the underlying bedrock aquifer is considered remote.

Based on recent discussions with the owner of the 4090 Sand and Gravel Pit, excavation work below the groundwater table was completed in select areas of the deposit and may continue in the future. The owner noted that excavation methods below the groundwater table at the sand and gravel pit consists of dredging techniques. Due to dredging techniques implemented at the sand and gravel pit, the operation will not adversely impact the groundwater levels within the proposed development.

6.0 Conclusions

Based on the Paterson's review of the subject site relating to noise, dust, traffic, vibration and groundwater impacts, the proposed industrial building will not impact the existing mineral extraction operations at 4090 Sand and Gravel Pit. The proposed development will consist of a single-storey commercial warehouse building that will not create excessive traffic, dust or noise that would impact the existing 4090 Sand and Gravel Pit.

In addition, a further analysis was completed to determine if the 4090 Sand and Gravel Pit would cause undue hardships on the proposed development through ways of noise, dust, traffic, vibration and groundwater impacts. This review resulted in the conclusion that there would be sufficient separation between the 4090 Sand and Gravel Pit and the proposed industrial building that any impact would be minimal to non-existent.

In conclusion, it is our opinion that the 4090 Sand and Gravel Pit will not have any adverse effects on the proposed development provided the designated General Rural Area remains between the existing mineral extraction pit and the proposed building.

7.0 Statement of Limitations

The recommendations made in this report are in accordance with our present understanding of the project. Our recommendations should be reviewed when the project drawings and specifications are complete.

The present report applies only to the project described in this document. Use of this report for purposes other than those described herein or by person(s) other than Canadian Rental Development or their agent(s) is not authorized without review by this firm for the applicability of our recommendations to the altered use of the report.

Paterson Group Inc.



Yolanda Tang, M.A.Sc.



Stephanie A. Boisvenue, P.Eng.

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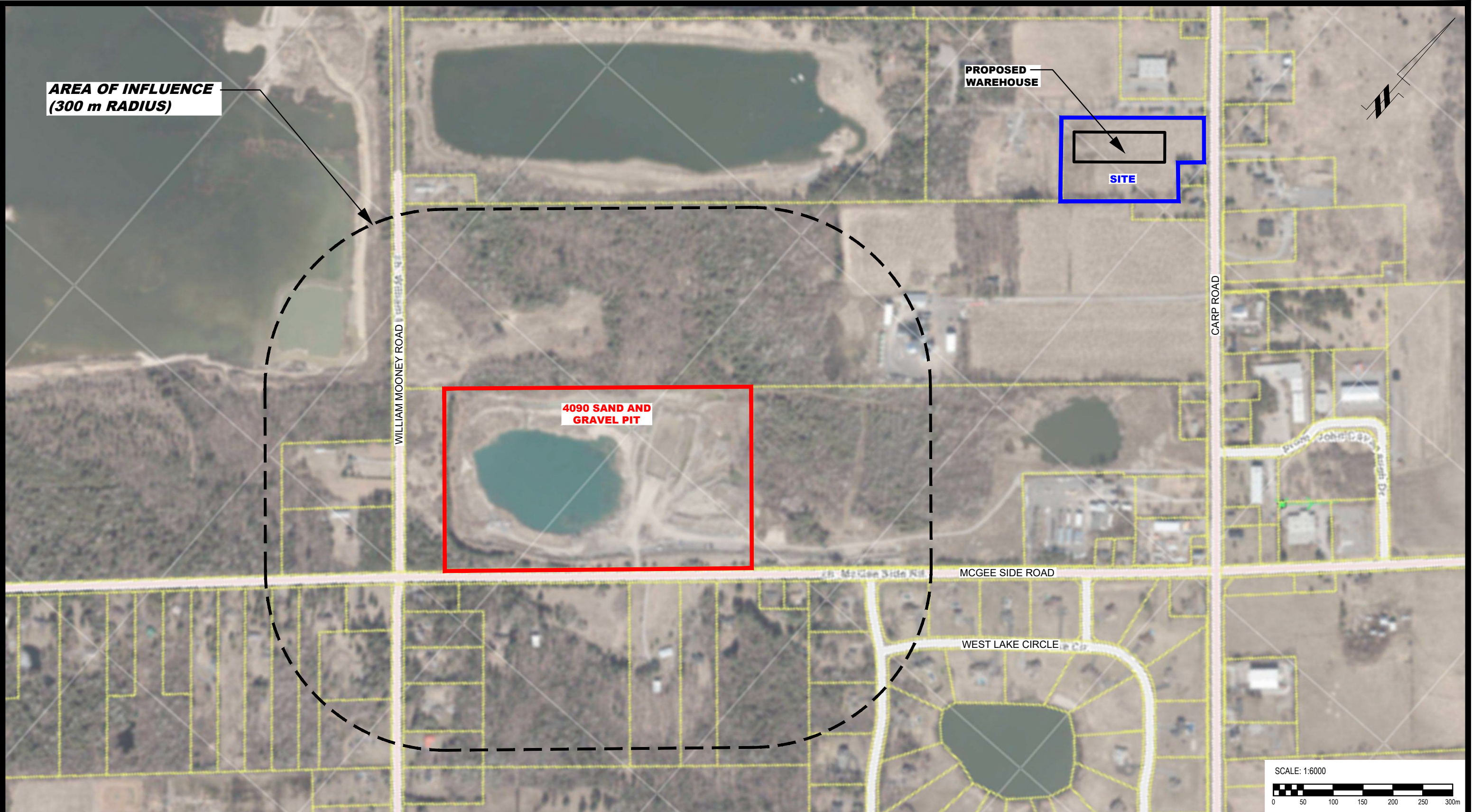
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- ☐ Paterson Group (1 copy)

APPENDIX 1

Drawing PG6422-1 - Site Plan

Historical Aerial Photographs

Aggregate Resource – 4090 Sand and Gravel Pit





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NO.	REVISIONS	DATE	INITIAL

CANADIAN RENTAL DEVELOPMENT
MINERAL RESOURCE IMPACT ASSESSMENT
3113 CARP ROAD

CARP,
Title:ONTARIO

SITE PLAN

Scale:	1:6000	Date:	11/2022
Drawn by:	YA	Report No.:	PG6422-1
Checked by:	YT	Dwg. No.:	PG6422-1
Approved by:	SB	Revision No.:	

N
↑



FIGURE 1
HISTORICAL PHOTOGRAPH - 2004



FIGURE 2
HISTORICAL PHOTOGRAPH - 2014

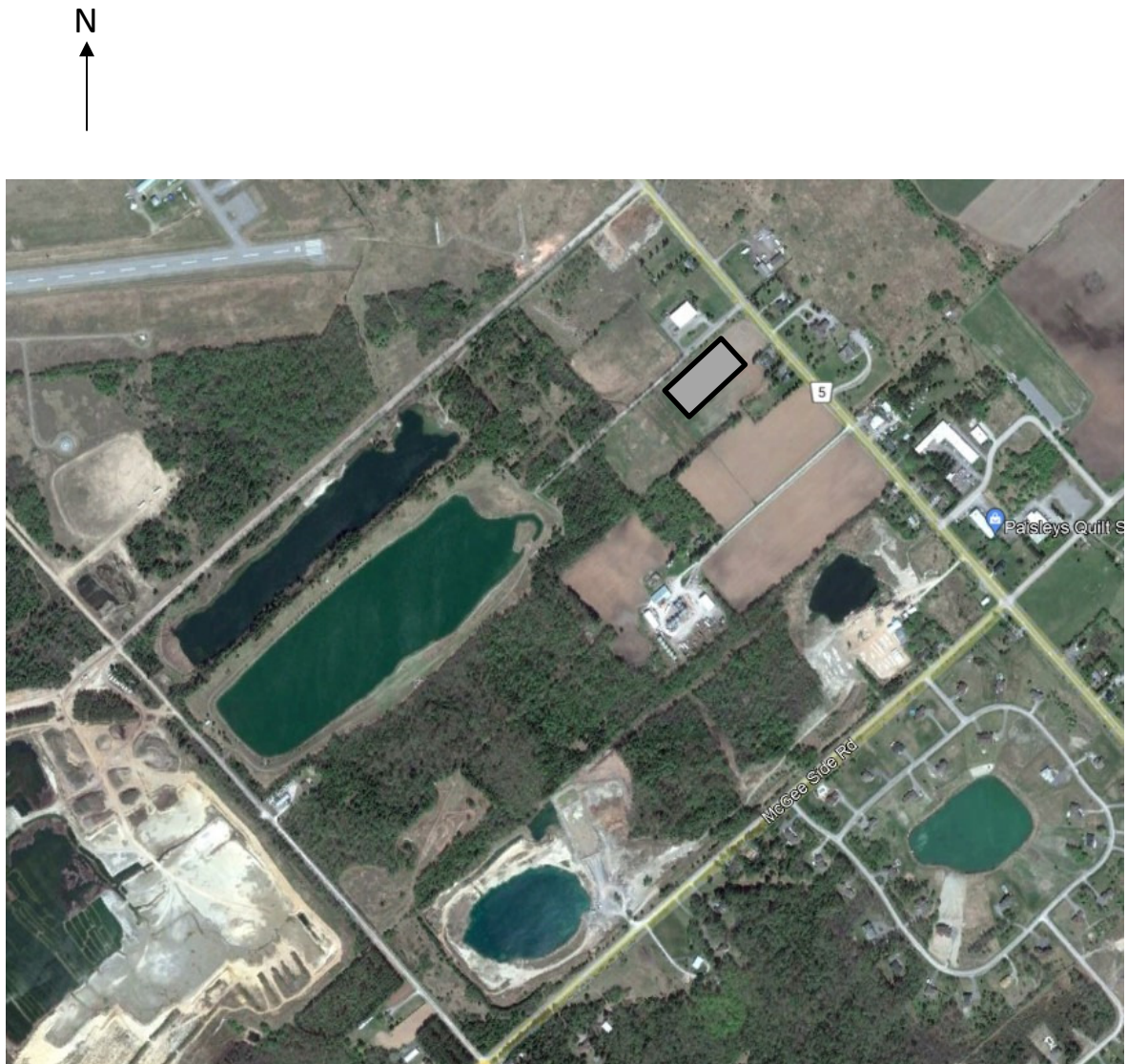


FIGURE 3
HISTORICAL PHOTOGRAPH - 2015



FIGURE 4
HISTORICAL PHOTOGRAPH - 2019



Pits and Quarries Online

Ministry of Northern Development, Mines, Natural Resources and Forestry

Search by company name, address or ALPS ID

français

Tools



Tool Labels



Aggregate Site Authorized (1)

☆ **ALPS ID: 4090**

Client Name:

2419787 Ontario Inc.

Approval Type

CLASS A LICENCE > 20000 TONNES

Operation Type:

Pit

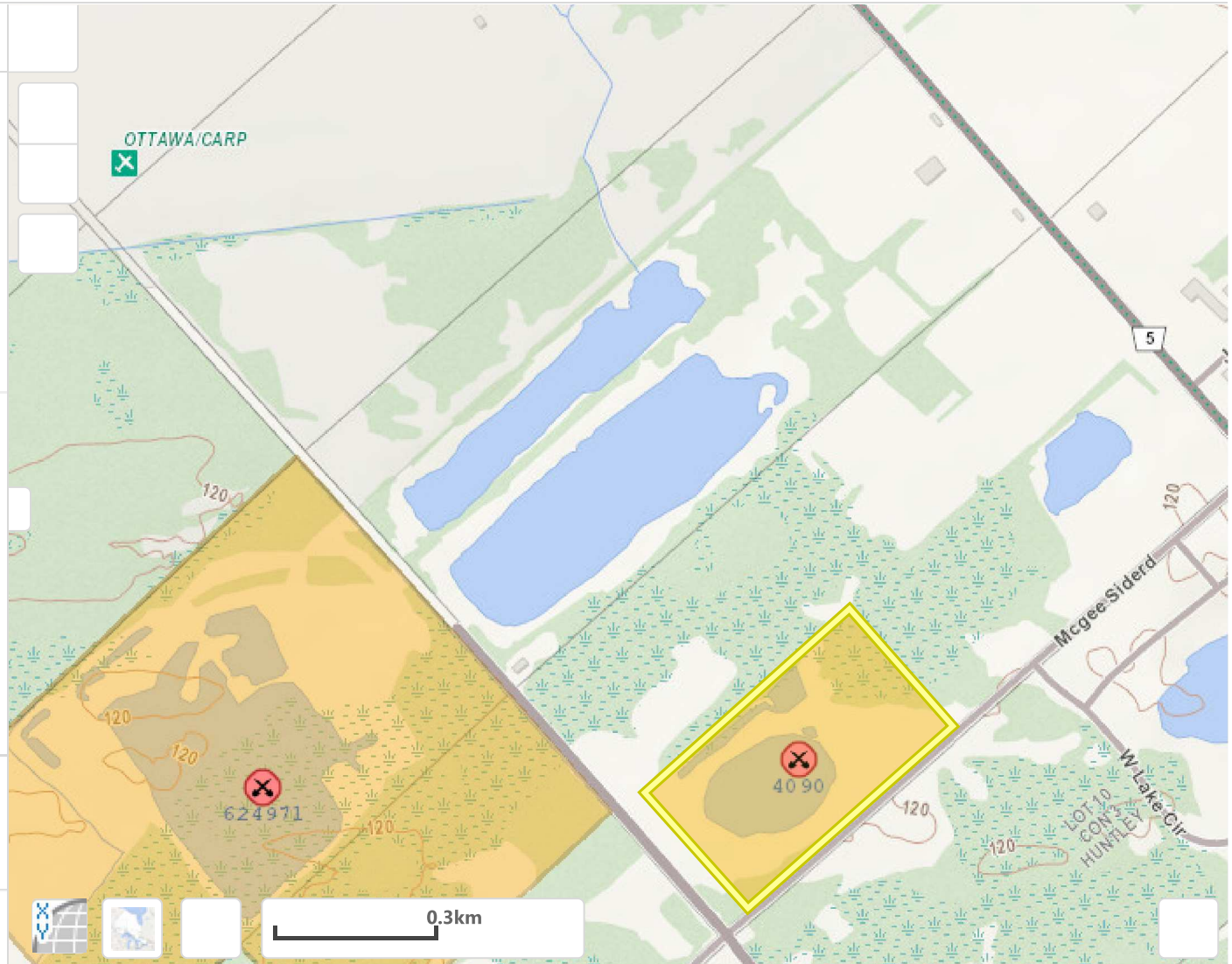
Max. Annual Tonnage

250000

Authorized Area (ha)

15.75

Location Name:



Displaying 1 - 1 (Total: 1)

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APPENDIX 2

**Environmental Noise Control Study - Stationary Noise Component -
Proposed Industrial Building – 4090 Sand and Gravel Pit - Carp -
Prepared by Paterson Group Inc - Report Number PG6422-2 -
dated May 30, 2023**

Environmental Noise Control Study – Stationary Noise Component Proposed Industrial Building

3113 Carp Road
Carp, Ontario

Prepared for Canadian Rental Development

Report PG6422-2 dated May 30, 2023

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	Figure 2 - Initial Analysis (Table of Result)
	Figure 3 - Initial Analysis (Contour Result)
	Item Properties

1.0 Introduction

Paterson Group (Paterson) was commissioned by Canadian Rental Development to conduct a Stationary Noise Review for the proposed industrial building to be located at 3113 Carp Road, in the City of Ottawa. It should be noted that Paterson's report was solely prepared to review the stationary noise source, which is identified as the adjacent properties (4090 Sand and Gravel Pit).

The following report has been prepared specifically and solely for the aforementioned project which is described herein. It contains our findings and includes acoustical recommendations pertaining to the design and construction of the subject development as they are understood at the time of writing this report.

This study has been conducted according to City of Ottawa document - Engineering Noise Control Guidelines (ENCG), dated January 2016, and the Ontario Ministry of the Environment Guideline NPC-300.

2.0 Background

Based on the available conceptual drawings, it is understood that the proposed industrial development will consist of a single-storey commercial warehouse building of slab-on-grade construction along with associated access lanes, delivery areas, parking areas, and landscaped areas. It is further understood that this commercial warehouse will include an office space.

3.0 Methodology and Noise Assessment Criteria

Stationary Noise

Stationary noise sources include sources or facilities that are fixed or mobile and can cause a combination of sound and vibration levels emitted beyond the property line. These sources may include commercial air conditioner units, generators and fans. Facilities that may contribute to stationary noise may include car washes, snow disposal sites, transit stations and manufacturing facilities. In this situation, the stationary noise source consists of an existing sand and gravel pit.

The impact of stationary noise sources is directly related to the location of the subject site within the urban environment. The proposed development can be classified as Class 2 by provincial guidelines and outlined in the ENGC, meaning “a suburban areas of the City outside of the busy core where the urban hum is evident but within the urban boundary”.

Table 1 - Guidelines for Stationary Noise - Class 2		
Time of Day	Outdoor Point of Reception	Pane of Window
7:00-19:00	50	50
19:00-23:00	45	50
23:00-7:00	-	45
Standards taken from Table 3.2a; Guidelines for Stationary Noise - Steady and Varying Sound		

If the sound level limits are exceeded the following Warning Clause may be referenced:

Table 2 – Warning Clauses for Sound Level Exceedances	
Warning Clause	Description
Warning Clause Type E	"Purchasers/tenants are advised that due to the proximity of the adjacent industry (facility) (utility), noise from the industry (facility) (utility) may at times be audible."
Clauses taken from section C8 Warning Clauses; Environmental Noise Guidelines - NPC-300	

4.0 Analysis

The stationary noise source consisting of the 4090 Sand and Gravel Pit was identified out of the 300 m radius from the proposed development.

It is understood that the northern edge of the 4090 Sand and Gravel Pit property is separated from the southern edge of the potential industrial development by approximately 530 metres. It is understood that the 4090 Sand and Gravel Pit has completed the extraction of the western portion of the pit. The working face is currently at about the midpoint of the site, heading east. Based on the City of Ottawa Official Plan, the 4090 Sand and Gravel Pit is located within the designated Sand and Gravel Resource Area. It may be possible for the aggregate extraction operation at 4090 Sand and Gravel Pit to expand to the east in the upcoming years, but it cannot expand past its north property boundary due to the designated General Rural Area and its south property boundary due to the presence of McGee Side Road. This stationary noise source is considered temporary and all analysis and recommendations made with respect to this stationary noise source can be removed from all deeds of sale once the sand and gravel pit is closed.

The noise sources were modelled as the worst case indicator. The equipment utilized in the analysis is representative of the equipment that is used for sand and gravel excavation. At the time of our site visit, the equipment at 4095 Sand and Gravel Pit consisted of two bulldozers, two loaders, two gravel screeners, one compactor, and three dump trucks into and out of the pit. A break down of the frequency's and sound levels of this equipment are included in Appendix 1.

The 4090 Sand and Gravel Pit is the only stationary noise source near to the proposed development, and it is located out of the 300 m proximity. The analysis was completed with specialized noise software: Predictor-Lima Version 2021.1. Two (2) reception points (REC 1 and REC 2) were selected on the southern and western elevations of proposed single-storey commercial warehouse building for our analysis. The reception points were selected at 1.5 m elevation, so that the pane of glass at the first level of the proposed building could be interpolated. The results of these reception points are included in Appendix 1.

5.0 Discussion

Surface Transportation Noise

Results of the analysis can be found in Appendix 1. Reception points were analyzed at 1.5 m elevation.

Proposed Industrial Building

An analysis was completed for the proposed industrial building, taking into consideration the lot layouts and approximate building alignments. An initial analysis was performed with no sound mitigation measures. If the office is to be located on the south or west elevation, the analysis at the exterior of the proposed building resulted in a maximum value of 52 dBA, which slightly exceeds the 50 dBA limit. If the proposed office is to be located on the northern or eastern elevation, than the noise levels will be below the required 50 dBA.

As per the Environmental Noise Guidelines prepared by the City of Ottawa, the following chart outlines the procedures to follow for exceedances to the stationary noise levels.

Table 3 - Noise Control Measures for New Industrial Building in Proximity to The Stationary Noise Sources at the 4090 Sand and Gravel Pit	
Primary Mitigation Measure in order of Preference	Proposed Mitigation Measure
Insertion of noise insensitive land uses between the source and sensitive receptor	A 530-metre noise insensitive land is inserted between the proposed building and the 4090 Sand and Gravel Pit
Orientation of buildings to provide quiet zones in rear yards, interior spaces and amenity areas	Orientation of building is not required to change for noise mitigation
construction techniques, enhanced construction quality	Standard construction techniques are considered acceptable for the proposed building
earth berms	Earth Berms are not required for noise mitigation
acoustic barriers	Acoustic barriers are not required for noise mitigation

If the proposed office is to be located on the southern or eastern elevation, standard construction building materials are anticipated to be sufficient to provide adequate soundproofing from the neighbouring aggregate pit. Therefore, no additional noise mitigation measures will be required. However, the building should have a provision to include the use of a central air conditioner, to ensure that windows will not need to be opened.

6.0 Conclusion

The anticipated noise level at proposed industrial building is considered acceptable while the 4090 Sand and Gravel Pit is in operation and standard construction materials are utilized to construct the proposed building. Therefore, additional noise mitigation measures will not be required for the proposed office area. However, the building should have a provision to include the use of a central air conditioner, to ensure that windows will not need to be opened.

7.0 Statement of Limitations

The recommendations made in this report are in accordance with our present understanding of the project. Our recommendations should be reviewed when the project drawings and specifications are complete.

The present report applies only to the project described in this document. Use of this report for purposes other than those described herein or by person(s) other than Canadian Rental Development or their agent(s) is not authorized without review by this firm for the applicability of our recommendations to the altered use of the report.

Paterson Group Inc.



Yolanda Tang, M.A.Sc.



Stephanie A. Boisvenue, P.Eng.

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- ☐ Paterson Group (1 copy)

APPENDIX 1

Figure 1 - Model of Proposed Commercial Warehouse Building

Figure 2 - Initial Analysis (Table of Result)

Figure 3 - Initial Analysis (Contour Result)

Item Properties

Figure 1 - Model of Proposed Commercial Warehouse Building



Proposed Industrial Building Initial Analysis

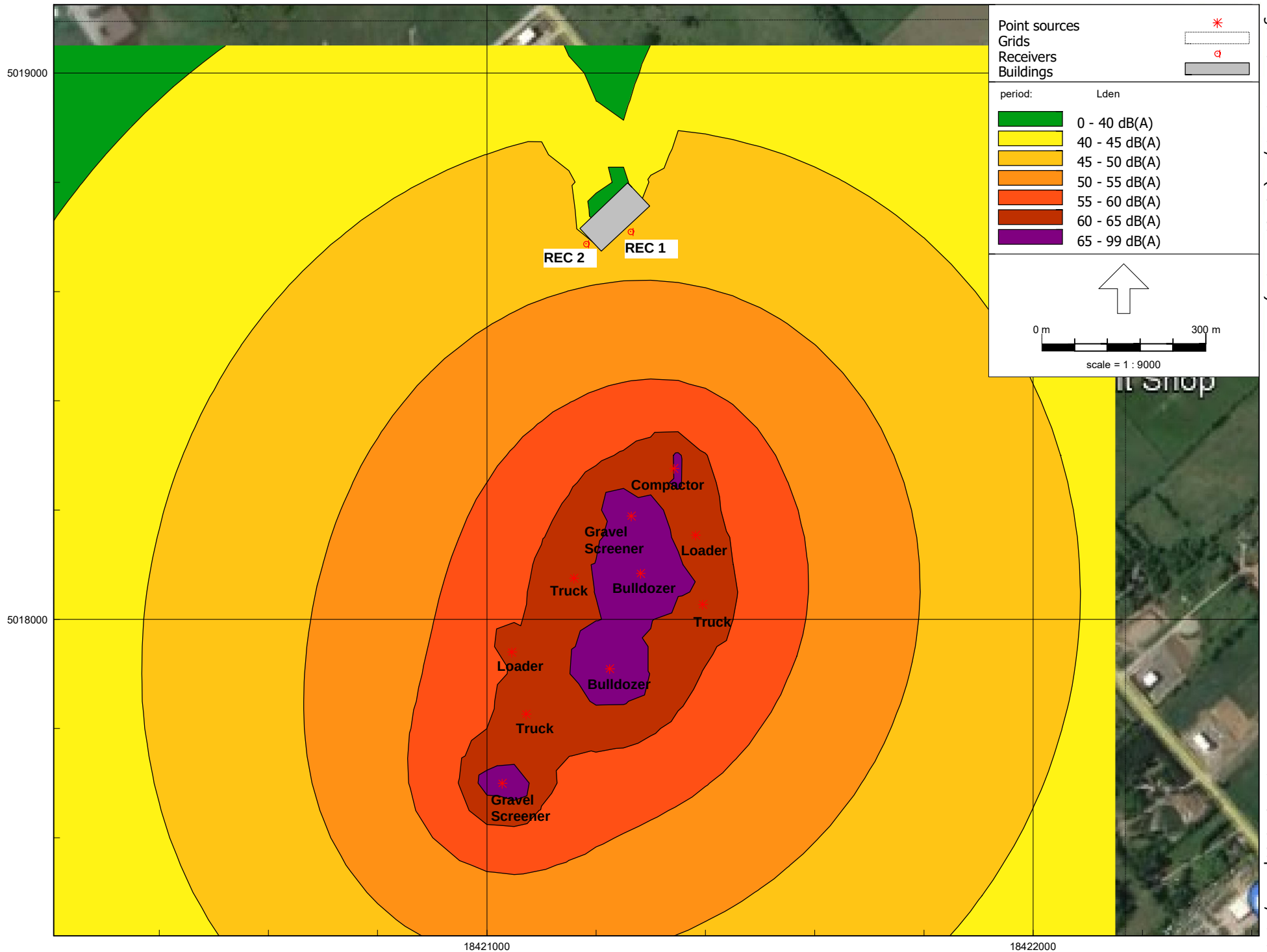
Paterson Group Inc.
Figure 2

Report: Table of Results
Model: initial model
LAeq: total results for receivers
Group: (main group)
Group Reduction: No

Name							
Receiver	Description	X	Y	Height	Day	Evening	Night
REC 1_A	Receptor 1	18421262.92	5018709.85	1.50	51.7	--	--
REC 2_A	Receptor 2	18421181.71	5018687.25	1.50	51.5	--	--

All shown dB values are A-weighted

Figure 3 - Initial Analysis (Contour Results)



Item Properties Initial Analysis

Paterson Group Inc.

Model: initial model
version of Area - Area
Group: (main group)
Listing of: Point sources, for method Industrial noise - ISO 9613.1/2

Desc.	No building	No ind.site	Lw 63	Lw 125	Lw 250	Lw 500	Lw 1k	Lw 2k	Lw 4k	Lw 8k
Gravel Screener	No	No	85.80	93.90	98.40	103.80	102.00	103.20	100.00	90.90
Bulldozer	No	No	78.80	97.90	94.40	99.80	110.00	109.20	102.00	93.90
Wheel Loader	No	No	75.80	77.90	83.40	88.80	91.00	89.20	88.00	76.90
Truck	No	No	81.80	87.90	92.40	94.80	97.00	95.20	92.00	84.90
Compactor	No	No	82.80	87.90	91.40	97.80	100.00	101.20	97.00	89.90
Truck	No	No	81.80	87.90	92.40	94.80	97.00	95.20	92.00	84.90
Bulldozer	No	No	78.80	97.90	94.40	99.80	110.00	109.20	102.00	93.90
Wheel Loader	No	No	75.80	77.90	83.40	88.80	91.00	89.20	88.00	76.90
Truck	No	No	81.80	87.90	92.40	94.80	97.00	95.20	92.00	84.90
Gravel Screener	No	No	85.80	93.90	98.40	103.80	102.00	103.20	100.00	90.90