

## ROADWAY TRAFFIC NOISE ASSESSMENT

Brightwater Block P, U, Q  
Mississauga, Ontario

REPORT: 17-112 - Traffic Noise Block P, U, Q



June 4, 2025

### PREPARED FOR

**Port Credit West Village Partners Inc.**

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## EXECUTIVE SUMMARY

This report describes a roadway traffic noise assessment for Blocks P, U and Q of the planned mixed-use, multi-building development, referred to as “Brightwater”, located at Block 11, Block 13, and Block 17 on Plan 43M-2118 in Mississauga, Ontario (hereinafter referred to as “subject site”). The primary sources of roadway traffic noise include Lakeshore Road West, and Mississauga Road as well as proposed internal roadways The Brightwater Boulevard, Missinnihe Way, River Run Way, Shoreside Drive, and Pierview Way.

Gradient Wind previously performed environmental noise studies for Blocks C and H, as well as Block I, K and L. The former (*ref. Gradient Wind Report #17-112 – Environmental Noise R2, dated November 26, 2020*), addressed both transportation and stationary noise sources influencing the site and surroundings. The latter (*ref. Gradient Wind Report #17-112 – Traffic Noise, dated July 8, 2020*) addressed transportation noise influencing the site and surroundings in addition to providing commentary regarding stationary noise impacts.

The environmental noise assessment is based on (i) theoretical noise prediction methods that conform to the Ministry of the Environment, Conservation and Parks (MECP) requirements; (ii) future vehicular traffic volumes based on the City of Mississauga’s Official Plan roadway classifications and roadway data obtained from the City of Mississauga in May 2020; and (iii) site plan drawings provided by Giannone Petricone Associates in February 2024.

The results of the roadway traffic noise calculations are summarized in Table 3 below. The results indicate that noise levels will range between 26 and 58 dBA during the daytime period (07:00-23:00) and between 19 and 51 dBA during the nighttime period (23:00-07:00). The highest noise level (59 dBA) occurs along the north facade of building U, which is nearest and most exposed to Shoreside Drive Boulevard and Mississauga Road. Since noise levels are less than 65 dBA at all building façades, standard building components in compliance with Ontario Building Code standards will be sufficient to attenuate noise levels indoors when windows are closed.

Results of the calculations also indicate that standard building components will be sufficient, however buildings will require forced air heating with provisions for central air conditioning, which will allow



occupants to keep windows closed and maintain a comfortable living environment. The Warning Clauses included in the Subdivision Agreement will be applied, as summarized in Section 6.

Noise levels at roof top terraces were found to be below 55 dBA, as such no mitigation is required around the outdoor living areas.

Gradient Wind previously investigated the potential impacts from nearby existing stationary noise sources, such as rooftop mechanical equipment, onto the study site as part of the Block C and H Environmental Noise Assessment. Potential stationary noise impacts of the proposed townhome development (Block I) were also previously investigated. The results of these investigations concluded that noise levels due to mechanical equipment from individual properties are not expected to exceed ambient noise levels produced from other adjacent properties and roadway sources. As the proposed blocks are further away from the development and as such noise impacts on the proposed buildings are expected to be minimal.

The buildings will be designed to meet NPC-300 sound level limits at surrounding noise sensitive land uses, and on the development itself, including previously approved blocks. This will be achieved through judicious selections and location of the mechanical equipment, and where necessary installing silencers or screens around the equipment.

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## 1. INTRODUCTION

Gradient Wind Engineering Inc. (Gradient Wind) was retained by Port Credit West Village Partners Inc. to undertake a roadway traffic noise assessment for Blocks P, U and Q of the planned mixed-use, multi-building development, referred to as “Brightwater”, located at Block 11, Block 13, and Block 17 on Plan 43M-2118 in Mississauga, Ontario (hereinafter referred to as “subject site”). The primary sources of roadway traffic noise include Lakeshore Road West, and Mississauga Road as well as proposed internal roadways The Brightwater Boulevard, Missinnihe Way, Shoreside Drive, and Pierview Way.

This report summarizes the methodology, results, and recommendations related to the assessment of exterior and interior noise levels generated by local transportation sources. Figure 1 illustrates a complete site plan with surrounding context.

Our work is based on theoretical noise calculation methods conforming to the Ministry of the Environment, Conservation and Parks (MECP)<sup>1</sup> NPC-300 guidelines. Noise calculations were based on site plan drawings provided by Giannone Petricone Associates in February 2024, with future vehicular traffic volumes corresponding to the City of Mississauga’s Official Plan (OP) roadway classifications and roadway data obtained from the City of Mississauga in May 2020.

## 2. TERMS OF REFERENCE

The focus of this roadway traffic noise assessment is a proposed mixed-use, multi-building development, referred to as “Brightwater” comprising Blocks P, U and Q of the planned mixed-use, multi-building development, referred to as “Brightwater”, located at Block 11, Block 13, and Block 17 on Plan 43M-2118 in Mississauga, Ontario.

Block Q comprises 3 towers named Q1, Q2 and Q3, and is bounded by Shoreside Drive to the south, Pierview Way to the east, and The Brightwater Boulevard to the west.

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<sup>1</sup> Ontario Ministry of the Environment and Climate Change – Environmental Noise Guidelines, Publication NPC-300, Queens Printer for Ontario, Toronto, 2013

Block P comprises 3 towers named P1, P2 and P3. This Block is bounded by The Brightwater Boulevard, Shoreside Drive, River Runway, and Coveside Drive.

Block U comprises 4 buildings named U1, U2, U3 and U4. This Block is bounded by Shoreside Drive and Mississauga Road. Figure 1 illustrates a complete site plan with surrounding context.

Balconies/terraces less than 4 meters in depth are not considered as noise sensitive areas as per NPC-300 definitions and were therefore excluded from the analysis. The overall development is surrounded by low-rise residential buildings to the northeast and southwest, low-rise residential and commercial buildings to the northwest, and Lake Ontario to the southeast. The primary sources of roadway traffic noise include Lakeshore Road West, and Mississauga Road as well as proposed internal roadways The Brightwater Boulevard, Missinnihe Way, Coveside Drive, River Run Way, and Pierview Way.

Gradient Wind previously investigated the potential impacts from nearby existing stationary noise sources, such as rooftop mechanical equipment, onto the study site. The results of these investigations concluded that noise levels due to mechanical equipment from individual properties are not expected to exceed ambient noise levels produced from other adjacent properties and roadway sources. As a result, the proposed development is expected to be compatible with the future proposed noise sensitive land uses.

### **3. OBJECTIVES**

The principal objectives of this study are to (i) calculate the future noise levels on the study buildings produced by local roadway traffic, and (ii) ensure that interior and exterior noise levels do not exceed the allowable limits specified by the Ministry of Environment, Conservation and Parks (MECP) NPC-300 guidelines, as outlined in Section 4.2 of this report.

## **4. METHODOLOGY**

### **4.1 Background**

Noise can be defined as any obtrusive sound. It is created at a source, transmitted through a medium, such as air, and intercepted by a receiver. Noise may be characterized in terms of the power of the source or the sound pressure at a specific distance. While the power of a source is characteristic of that particular



source, the sound pressure depends on the location of the receiver and the path that the noise takes to reach the receiver. Measurement of noise is based on the decibel unit, dBA, which is a logarithmic ratio referenced to a standard noise level ( $2 \times 10^{-5}$  Pascals). The 'A' suffix refers to a weighting scale, which better represents how the noise is perceived by the human ear. With this scale, a doubling of power results in a 3 dBA increase in measured noise levels and is just perceptible to most people. An increase of 10 dBA is often perceived to be twice as loud.

## 4.2 Transportation Noise

### 4.2.1 Criteria for Roadway Traffic Noise

For vehicle traffic noise, the equivalent sound energy level,  $L_{eq}$ , provides a measure of the time varying noise levels, which is well correlated with the annoyance of sound. It is defined as the continuous sound level, which has the same energy as a time varying noise level over a period of time. For roadways, the  $L_{eq}$  is commonly calculated on the basis of a 16-hour ( $L_{eq16}$ ) daytime (07:00-23:00) / 8-hour ( $L_{eq8}$ ) nighttime (23:00-07:00) split to assess its impact on residential buildings. The NPC-300 guidelines specify that the recommended indoor noise limit range (that is relevant to this study) is 50, 45, and 40 dBA for retail/reception areas, living rooms, and sleeping quarters respectively, as listed in Table 1.

**TABLE 1: INDOOR SOUND LEVEL CRITERIA (ROAD)<sup>2</sup>**

Type of Space	Time Period	$L_{eq}$ (dBA)
General offices, <b>reception areas</b> , <b>retail stores</b> , etc.	07:00 – 23:00	50
Living/dining/den areas of <b>residences</b> , hospitals, schools, nursing/retirement homes, day-care centres, theatres, places of worship, libraries, individual or semi-private offices, conference rooms, etc.	07:00 – 23:00	45
Sleeping quarters of hotels/motels	23:00 – 07:00	45
Sleeping quarters of <b>residences</b> , hospitals, nursing/retirement homes, etc.	23:00 – 07:00	40

<sup>2</sup> Adapted from Table C-2, Part C, Section 3.2.3 of NPC-300



Predicted noise levels at the plane of window (POW) dictate the action required to achieve the recommended sound levels. An open window is considered to provide a 10 dBA reduction in noise, while a standard closed window is capable of providing a minimum 20 dBA noise reduction<sup>3</sup>. A closed window due to a ventilation requirement will bring noise levels down to achieve an acceptable indoor environment<sup>4</sup>. Therefore, where noise levels exceed 55 dBA daytime and 50 dBA nighttime, the ventilation for the building should consider the need for having windows and doors closed, which triggers the need for forced air heating with provision for central air conditioning. Where noise levels exceed 65 dBA daytime and 60 dBA nighttime, air conditioning will be required and building components will require higher levels of sound attenuation<sup>5</sup>.

For designated Outdoor Living Areas (OLAs), the sound level limit is 55 dBA during the daytime period. An excess above the limit is acceptable only in cases where the required noise control measures are not feasible for technical, economic, or administrative reasons.

#### **4.2.2 Theoretical Roadway Noise Predictions**

Roadway traffic noise calculations were performed by treating each roadway segment as a separate line source of noise, and by using proposed and existing building locations as noise barriers. In addition to the traffic volumes summarized in Table 2, theoretical noise predictions were based on the following parameters:

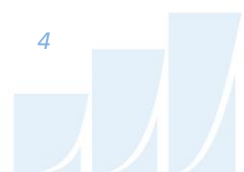
- Truck traffic on Lakeshore Road West was taken to comprise 2.75% medium trucks and 2.25% heavy trucks as per the roadway traffic data provided by the City of Mississauga (see Appendix A).
- Truck traffic on remaining roadways were taken to comprise 1.1% medium trucks and 0.9% heavy trucks as per the roadway traffic data provided by the City of Mississauga (see Appendix A).
- The day/night split for all streets was taken to be 90%/10%, respectively, as per the roadway traffic data provided by the City of Mississauga (see Appendix A).
- Default ground surfaces were modelled as reflective due to the presence of hard (paved) ground.
- Topography was assumed to be a flat/gentle slope surrounding the study buildings.

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<sup>3</sup> Burberry, P.B. (2014). Mitchell's Environment and Services. Routledge, Page 125

<sup>4</sup> MOECP, Environmental Noise Guidelines, NPC 300 – Part C, Section 7.8

<sup>5</sup> MOECP, Environmental Noise Guidelines, NPC 300 – Part C, Section 7.1.3





- Noise receptors were strategically placed at 15 POW Receptors and 9 OLA Receptors around the study area (see Figure 2).
- Receptor distances and exposure angles are illustrated in Figures B1-B5.

### 4.2.3 Roadway Traffic Volumes

NPC-300 dictates that noise calculations should consider future sound levels based on a roadway's mature state of development. Therefore, ultimate AADT traffic volumes have been considered for the mature state of development based on roadway information obtained from the City of Mississauga Transportation Master Plan<sup>6</sup> and the City of Mississauga (see Appendix A). Roadway traffic volumes for the internal roadways were also based on correspondence with the City of Mississauga Transportation Department. Table 2 (below) summarizes the AADT values used for each roadway included in this assessment. These values also take into consideration the proposed bus circuit that will pass through the development as noise generated from 'medium-sized' vehicles.

**TABLE 2: ROADWAY TRAFFIC DATA**

Segment	Roadway Traffic Data	Speed Limit (km/h)	Traffic Volumes
Lakeshore Road West	4-Lane Urban Arterial Undivided (4-UAU)	50	<b>29,700</b>
Mississauga Road South	2-Lane Collector (2-UCU)	40	<b>4,000</b>
The Brightwater Blvd.	2-Lane Collector (2-UCU)	40	<b>4,000</b>
Coveside Drive	2-Lane Collector (2-UCU)	40	<b>4,000</b>
Pierview Way	2-Lane Collector (2-UCU)	40	<b>4,000</b>
River Run Way	2-Lane Collector (2-UCU)	40	<b>4,000</b>
Shoreside Drive	2-Lane Collector (2-UCU)	40	<b>4,000</b>

<sup>6</sup> City of Mississauga Official Plan, Schedule 5: Long Term Road Network



## **5. RESULTS AND DISCUSSION**

### **5.1 Transportation Noise Levels**

The results of the roadway traffic noise calculations are summarized in Table 3 below. The results indicate that noise levels will range between 26 and 58 dBA during the daytime period (07:00-23:00) and between 19 and 51 dBA during the nighttime period (23:00-07:00). The highest noise level (59 dBA) occurs along the north facade of building U, which is nearest and most exposed to Shoreside Drive Boulevard and Mississauga Road.. Since noise levels are less than 65 dBA at all building façades, standard building components in compliance with Ontario Building Code standards will be sufficient to attenuate noise levels indoors when windows are closed.

Buildings will require forced air heating with provisions for central air conditioning which will allow building occupants to keep windows closed and maintain a comfortable living environment. However, due to the nature of the buildings, forced air heating and air conditioning for the individual dwelling units are expected to be provided.

Noise levels at the outdoor living area are expected to meet or fall below 55 dBA. Therefore, noise mitigation is not required.



**TABLE 3: EXTERIOR NOISE LEVELS DUE TO ROADWAY TRAFFIC SOURCES**

Receptor Number	Receptor Height Above Grade/Roof (m)	Receptor Location	Roadway Noise Level (dBA)	
			Day	Night
BLOCK P				
POW R01	4	P1 – West Façade	49	42
	20		49	42
POW R02	4	P1 – North Façade	56	49
	20		55	48
POW R03	4	P2 – North Façade	57	50
POW R04	4	P2 – North Façade	55	49
	20		55	48
OLA R16	22	P3 SOUTH WEST ROOF	36	28
OLA R24	22	P2 – P3 ROOF CENTER	35	28
BLOCK U				
POW R05	4	U1 – North Façade	53	46
POW R06	4	U1 – North Lower Façade	33	26
POW R07	4	U2 – North Façade	55	48
POW R08	4	U3 – North Façade	31	24
POW R09	4	U3 – West Façade	53	46
POW R10	4	U4 – East Façade	58	51
OLA R17	6	U1 – East	26	19
OLA R18	10	U2 – West	44	36
OLA R19	10	U2 – East	42	35
OLA R20	19	U3 – East	37	30
OLA R21	9	U4 – South	38	31



**TABLE 3 CONTINUATION: EXTERIOR NOISE LEVELS DUE TO ROADWAY TRAFFIC SOURCES**

Receptor Number	Receptor Height Above Grade/Roof (m)	Receptor Location	Roadway Noise Level (dBA)	
			Day	Night
BLOCK Q				
POW R11	4	Q3 – South Façade	53	46
POW R12	4	Q3 – East Façade	54	47
	20		54	47
POW R13	4	Q3 – North Façade	45	38
	20		47	40
POW R14	4	Q2 – North Façade	45	38
POW R15	4	Q2 – Q1 – West Center Façade	51	44
	20		51	44
OLA R22	22	Q3 – South	37	30
OLA R23	93	Q1 – Top Roof	34	27

## 6. CONCLUSIONS AND RECOMMENDATIONS

The results of the roadway traffic noise calculations are summarized in Table 3 below. The results indicate that noise levels will range between 26 and 58 dBA during the daytime period (07:00-23:00) and between 19 and 51 dBA during the nighttime period (23:00-07:00). The highest noise level (59 dBA) occurs along the north facade of building U, which is nearest and most exposed to Shoreside Drive Boulevard and Mississauga Road. Since noise levels are less than 65 dBA at all building façades, standard building components in compliance with Ontario Building Code standards will be sufficient to attenuate noise levels indoors when windows are closed.

Results of the calculations also indicate that standard building components will be sufficient, however forced air heating with provisions for central air conditioning will be required, which will allow occupants to keep windows closed and maintain a comfortable living environment. The Warning Clauses included in the Subdivision Agreement will be applied.



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The buildings will be designed to meet NPC-300 sound level limits at surrounding noise sensitive land uses, and on the development itself, including previously approved blocks. This will be achieved through judicious selections and location of the mechanical equipment, and where necessary installing silencers or screens around the equipment.



This concludes our roadway traffic noise assessment and report. If you have any questions or wish to discuss our findings, please advise us. In the interim, we thank you for the opportunity to be of service.

Sincerely,

***Gradient Wind Engineering Inc.***

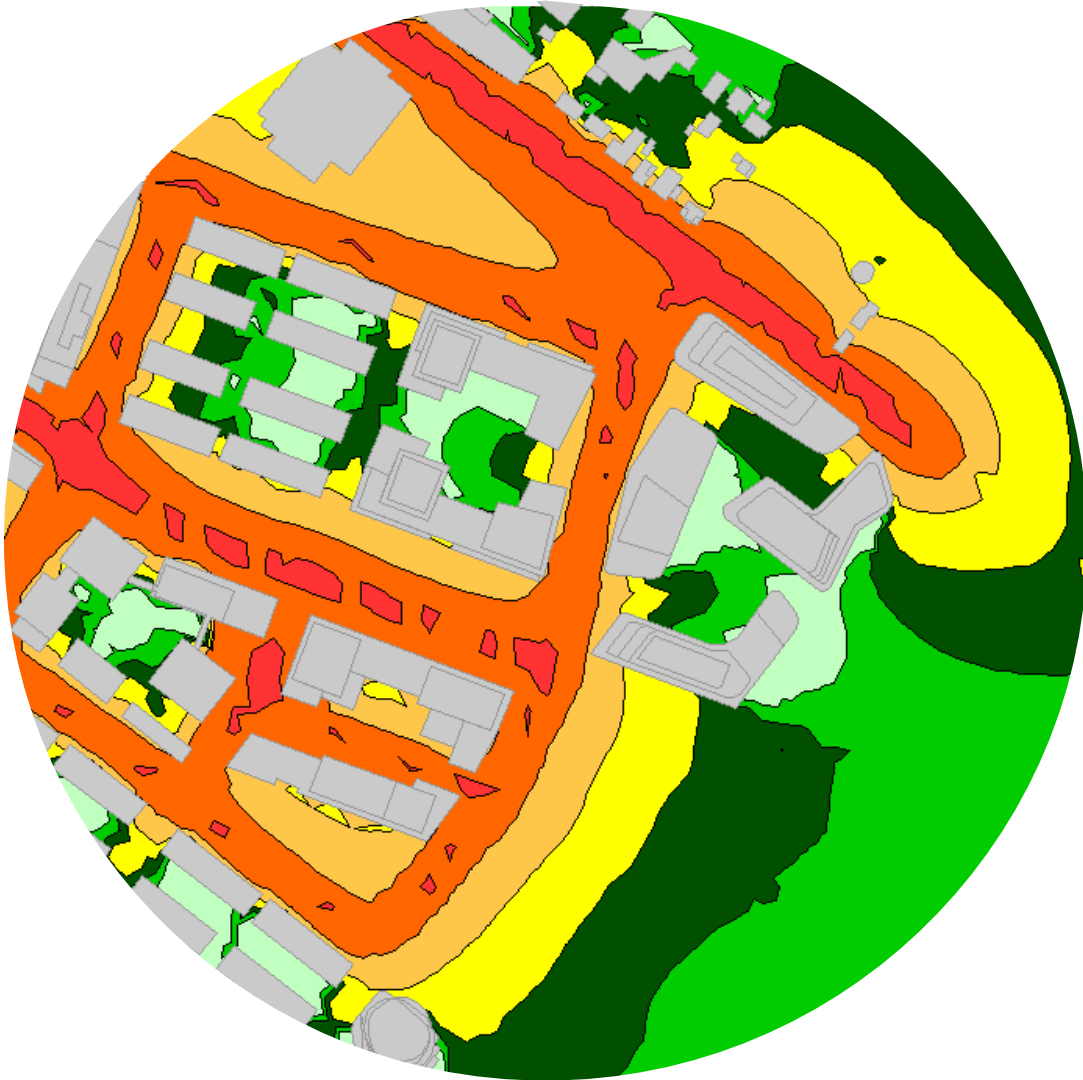
*Sergio Nunez Andres*

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Junior Environmental Scientist

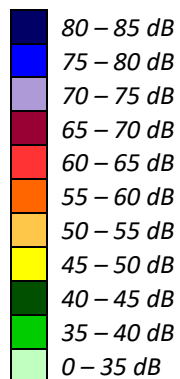
Joshua Foster, P.Eng.  
Lead Engineer

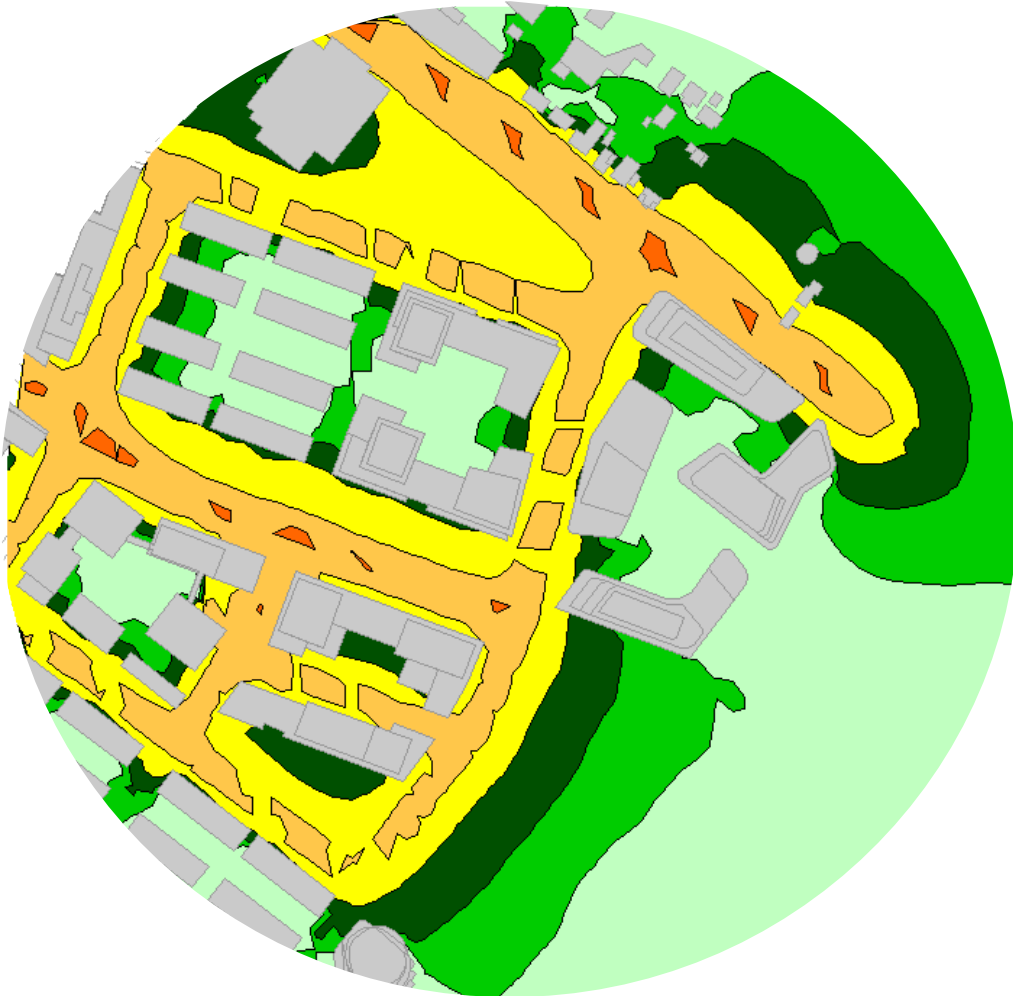
*Gradient Wind File #17-112 – Traffic Noise Block P, U, Q*





**FIGURE 3: DAYTIME NOISE CONTOURS (4.5 M ABOVE GRADE)**





**FIGURE 4: NIGHTTIME NOISE CONTOURS (4.5 M ABOVE GRADE)**

