LAYDE CONSULTING
AIR NOISE ODOUR

Noise Impact Assessment

Proposed development comprising of 2No. pitches and supporting building, access road and new foul pumping station.

Lifford Common

March 2022

P568-1

Specialists in Air, Noise, Acoustics & Odour

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1.0 INTRODUCTION

1.1 Report Brief

Layde Consulting was appointed to undertake a Noise Impact Assessment (NIA) in support of a planning application for a site in Lifford Common, and relates to the proposed construction of 2No. pitches and supporting building, a new access road and new foul pumping station. Given the proximity of the site and development proposals to local receptors, it was therefore considered necessary to undertake noise modelling for the proposed new sources, and to assess the degree of noise impact on existing residential dwellings near to the site. This report presents the findings of the Noise Impact Assessment, along with suitable mitigation measures as required.

1.2 Site Overview & Development Proposals

The site is located approximately ~700m northwest of Lifford town centre and is accessed directly from the Letterkenny Road (N14), as indicted on the planning drawings.

Currently the site comprises of undeveloped green field agricultural land, however, as previously indicated it is proposed to construct 2No. football playing pitches. The larger playing pitch will measure 105m x 70m, and the second smaller playing pitch will measure 60m x 40m when completed. In terms of noise sources, these will effectively be limited to noise generated by on-site players with raised voices and occasional shouting, and similar noise generated by the spectators.

It is also proposed to construct a new building which will be used for storing playing equipment, changing facilities and ancillary services. In terms of noise, it is considered that the proposed new building is effectively benign in nature, with no external plant equipment being proposed. Therefore, no significant noise sources will be attributable to the proposed new building.

The playing pitches and building structure will be accessed from the N14 Letterkenny Road by means of a proposed new access road. As such, noise attributable to traffic moving along the proposed access road has also been considered within this assessment.

It is also proposed to install a new foul pumping station approximately 40m to the south of the new building structure. Generally, noise levels associated with pumping stations are very low, as the pumping units and noise generating plant is located below ground level, and will have steel manhole covers fitted over the access chambers. That said, the noise levels associated with the pumping station have also been considered within this report in order to assess the overall cumulative noise impact of the proposed development.

2.0 NOISE STANDARDS

The following noise standards have been adopted for this assessment, and include supporting guidance information:

- Sport England guidance, '*Artificial Grass Pitch (AGP) Acoustics – Planning Implications – Design Guidance Note*' (2015);
- BS4142:2014+A1:2019 – "*Methods for rating and assessing industrial and commercial sound*";
- BS8233:2014 - "*Guidance on sound insulation and noise reduction for buildings";*
- ISO9613 – "*Acoustics – Attenuation of sound during propagation outdoors";*

2.1 Limitations of BS4142:2014

Commercial and industrial noise is typically assessed using BS4142:2014 and the methods contained therein. This would include the assessment of the proposed new building structure and foul pumping station. However, it should be noted that Section 1.3 of BS4142:2014 specifically states that the following limitations apply to this standard:

- Noise generated by recreational activities (Section 1.3 part A);
- Noise generated by people (Section 1.3 part F); and
- The passage of vehicles on public roads.

Given the limitations outlined above, the use of BS4142:2014 is effectively limited to noise from the proposed new building structure and foul pumping station, however noise from the proposed playing fields are assessed in accordance with the Sports England Guidance.

2.2 Playing Pitches - Noise Guidance

Currently there are no specific standards for the assessment of noise generated by football playing pitches, however the following guidance is considered applicable for the proposed outdoor play pitches:

Sport England, '*Artificial Grass Pitch (AGP) Acoustics – Planning Implications – Design Guidance Note*' (2015);

Although this guidance has been developed for AGP pitches, nevertheless the principles are considered appropriate to use for all outdoor playing fields, given that the noise levels and source types are similar in nature and characteristics to the AGP pitches, i.e. players shouting, talking, spectator noise etc.

3.0 RECEPTORS

Local receptors are considered to be the closest residential dwellings to the site, such that all other receptors would be located at a greater distance from the development and would thus be impacted upon to a lesser degree. A summary of the closest residential dwellings to the site is presented below in Table 1, and their location is illustrated in Figure 1 of this report.

Table 1. Summary of residential receptor locations.

Receptor ID	Address	ITM Coordinates	IG Coordinates	Distance (m)	Comments
R1	The Gables F93 D4EY	632725 / 899097	232779 / 399102	301m SW	Distance between receptor and playing fields
R2	Hazelwood F93 P5DA	632965 / 898837	233020 / 398846	294m S	Distance between receptor and foul pumping station
R3	Brickfield House F93 V3PR	633394 / 899219	233449 / 399226	238m E	Distance between receptor and playing fields
R4	The Bog F93 C6FW	633387 / 899253	233442 / 399260	229m E	Distance between receptor and playing fields

4.0 BACKGROUND NOISE SURVEY

Baseline noise measurements were recorded simultaneously at 2No. noise monitoring locations from the 10th – 14th February 2022. The first monitoring position (M1) was positioned adjacent to The Gables (R1) and experiences a significant contribution from road traffic noise during both daytime and night-time periods. The second noise monitoring position (M2) was positioned adjacent to Brickfield House (R3) which is located at a greater setback distance from the main road traffic sources.

Noise measurements were recorded using BS EN 60651 approved Type 1 Cirrus 171:B 1:3 octave sound level meters with environmental windshield kits, and calibrated in accordance with British standards and manufacturer guidance requirements. Weather conditions were favourable throughout the entire survey period, being predominantly dry with low wind speeds. The noise analyser output results are presented in Appendix 1 and a summary of the monitoring data is presented in Table 2.

Table 2. Summary of modal L_{A90} background noise monitoring levels, dBA.

Monitoring Location	L_{A90} Day Time (07:00 – 23:00hrs), dBA	L_{A90} Night Time (23:00 – 07:00hrs), dBA
M1 – Letterkenny Road	58 dB	40 dB
M2 – Brickfield House	47 dB	38 dB

In summary, road traffic noise dominates the local noise environs and was clearly audible throughout the daytime monitoring period, comprising of cars, HGV goods vehicles and occasional agricultural traffic.

5.0 CADNA NOISE MODELLING

Given that the proposed development comprises of a number of complex elements, then Cadna 3D computer noise modelling software was used to model a range of parameters to include the sound power levels of noise sources, building structures, noise from people and vehicle movements etc. The computer modelling software was used to predict noise levels which are solely attributable to the development proposals at each of the receptor locations (i.e. local residential dwellings), and takes into consideration factors such as transmission losses, spatial distances, and noise characteristics. This section provides an overview of the parameterisation used within the Cadna model.

5.1 Modelled Scenarios

Given the limitations of BS4142:2014, the site was modelled using the following operating scenarios:

- Scenario 1: Noise attributable to the proposed foul pumping station and access road;
- Scenario 2: Noise Attributable to the proposed 2No. playing pitches; and
- Scenario 3: Cumulative noise associated with Model 1 & 2.

5.2 Modelled Noise Sources

The following subsections provide a summary of the source noise levels used with in the Cadna model, along with the rationale used in each case.

5.2.1 Playing Pitches

In accordance with Sport England guidance, 'Artificial Grass Pitch (AGP) Acoustics – Planning Implications – Design Guidance Note' (2015), typical free-field noise levels associated with a playing pitch is stated to be **58dB $L_{Aeq,1hr}$** at a distance of 10 metres from the sideline halfway marking. Although the stated sound pressure level has been published as a guideline value for AGP pitches, in the absence of guidance criteria for non-AGP pitches this level is also considered appropriate for the proposed new playing fields at the site. Based on Equation 1.1 below, a sound pressure level of 58dB at 10m equates to a sound power level of **89dBA** at the sideline, using a directivity factor of Q=1.

Equation 1.1:

$$L_W = L_p + \left|10 \cdot \log\left(\frac{Q}{4\pi \cdot r^2}\right)\right|$$

On this basis a sound power level of 89dBA was modelled for each of the proposed pitches as a continuous area noise source set at 1.5m height above ground level. In order to model worst case scenario, the two pitches were modelled as operating simultaneously, in conjunction with all other noise sources relating to the proposed development, i.e. pumping station, access roads etc.

5.2.2 Industrial Noise Sources

The development is fairly simple in terms of industrial noise sources, with the only significant industrial or commercial noise source being the proposed foul pumping station ~40m to the south of the new playing fields and building structure. Given that the site is still within the planning phase, the exact make / model and specific design of the proposed foul pumping station is unknown. However, for the purpose of this report it is assumed that the foul pumping station will be a large industrial grade which can meet the adoptable regulatory standards. Therefore, an example of such pumping systems has been incorporated into the Cadna model using the 1:3 octave frequency of the pumps, and the subsequent noise breakout from the pumping station was modelled thereafter. The modelled specification is presented below in Table 3.

Table 3. Example specification of pumping system incorporated into the Cadna model.

Liquid Handled	Foul Water
Number of Pumps	2
Control Philosophy	Duty / Standby
Capacity per Pump (l/s)	6.1
Head Generated (m)	7.80
Pump Manufacturer	Xylem
Pump Type	NP3085MT
Impeller Type / Reference	N / 460
Solids Handling (mm)	N/A
Hazardous Area Rating of Pump	EXP
Motor Rating (kw)	2
Speed (rpm)	1405
Electric Supply	230/400V 50Hz, 3 Phase
Full Load Current (Amps)	4.8
Method of Starting	Direct On Line
Length of Cables	20
Level Controls	Siemens Hydroranger 200 Ultrasonic plus high level and back up float switches
Wet Well Diameter (mm)	2400
Wet Well Depth (m)	4.80
Station Pipes and Valves (mm)	100
Station Final Discharge Pipe (mm)	100
Pump Station Pipe Material	Ductile Iron
Rising Main	125mm OD PE100 SDR11 (101.3mm Bore)
Access Covers (Supply Only)	Manufacturer: Technocover Rating: Class B125 Inlet Manhole 1000x 1000mm Wet Well 1500 x 900mm Valve Chamber 1800 x 1000mm
Inlet Diameter (mm)	150
Penstock (Supply Only)	150mm stainless steel penstock
General Arrangement Drawings	PR10012-001 to 004

The 1:3 octave frequency sound power levels of the pumping station are presented below in Table 4.

Table 4. Summary of 1:3 octave frequency noise levels for example pumping units, dBA.

Pumping Facility	31Hz	63Hz	125Hz	250Hz	500Hz	1000Hz	2000Hz	4000Hz	8000Hz
Xylem - NP3085MT 2KW	75.0	75.0	73.0	71.0	70.0	68.0	69.0	63.0	56.0
Direct + Rev. Lp at Cover	75.7	75.7	73.7	71.7	70.7	68.7	69.7	63.7	56.7

As an adoptable industrial example which has been incorporated into the model, it has been assumed that the foul pumping station will comprise of 2No. wet well chambers and pumping units, with the chambers covered by means of a steel manhole cover. The example uses a concrete valve chamber fitted with a 1200 x 900 double hinged C250 Grade cover over each well section. On this basis, the transmission loss from the 18G Steel cover was incorporated into the Cadna noise model, as summarised below in Table 5.

Table 5. Summary of 1:3 octave frequency noise levels for the sound reduction of steel covers, dBA.

Pumping Facility	31Hz	63Hz	125Hz	250Hz	500Hz	1000Hz	2000Hz	4000Hz	8000Hz
Sound Reduction index of Cover 18G Steel	14.0	25.0	30.0	20.0	22.0	30.0	28.0	31.0	31.0

5.2.3 Vehicle Noise

Noise levels were modelled along the proposed new access road, which extends from the N14 Letterkenny Road to the proposed new playing pitches, along with the second length of access road. In terms of modelled noise levels, the model assumes the maximum permissible noise level of 74dB for passenger cars and light goods vehicles, as per Regulation (EU) No 540/2014 cited by UK Vehicle Certification Agency.

Vehicle movements were modelled as moving point sources, and the model assumes up to 100No. vehicle movements per hour during matches traveling at a speed of 30kph.

5.3 Rating Level & Tonality

1:3 octave tonal frequency analysis was carried out on the pump specifications, and the results were compared against the objective method outlined in Annex C of BS4142:2014 in order to determine if a tonal component is present. In accordance with the objective method outlined in BS4142:2014, the level differences between adjacent one-third-octave bands that identify a tone are:

- 15 dB in the low-frequency one-third-octave bands (25 Hz to 125 Hz);
- 8 dB in the middle-frequency one-third-octave bands (160 Hz to 400 Hz); and
- 5 dB in the high-frequency one-third-octave bands (500 Hz to 10 000 Hz).

Based on the adopted noise frequencies for the pumping units, which are a considered as typical examples of pumping units used within a foul pumping station, the resultant frequencies demonstrate that no tonal component is present. As the modelled specific noise levels will not be audible above background levels at any receptor, then no other sound characteristic penalties have been applied.

5.4 Internal Road Traffic

As previously mentioned, BS4142:2014 is used to specifically assess the commercial and industrial noise elements of the proposed development. In this case, these are effectively limited to noise generated by the proposed new foul pumping station and ancillary building. In addition, although vehicle noise from public roads is beyond the scope of BS4142:2014, the assessment does however include the road traffic associated within the access road which is inside the site boundary.

6.0 MODEL RESULTS

6.1 Scenario No. 1: Foul Pumping Station & Access Road

A summary of the Cadna noise model results for the proposed foul pumping station and access road is presented in Table 6 below, and the delineated noise map is presented in Figure 2 of this report.

Table 6. Summary of CadnaA Model results (Scenario 1), dBA.

ID	Address / Location	Coordinate (Irish Grid)		Modelled Results, dB
		X (m)	Y (m)	
R1	The Gables F93 D4EY	232779	399102	14.6 dB
R2	Hazelwood F93 P5DA	233020	398846	5.3 dB
R3	Brickfield House F93 V3PR	233449	399226	0.9 dB
R4	The Bog F93 C6FW	233442	399260	0.8 dB

The results demonstrate that noise attributable to the proposed foul pumping station and new access road will be indiscernible above the background levels at all receptor locations.

6.2 Scenario No. 2: Playing Pitches

A summary of the Cadna noise model results for the proposed 2No. playing pitches is presented in Table 7 below, and the delineated noise map is presented in Figure 3 of this report.

Table 7. Summary of CadnaA Model results (Scenario 2), dBA.

ID	Address / Location	Coordinate (Irish Grid)		Modelled Results, dB
		X (m)	Y (m)	
R1	The Gables F93 D4EY	232779	399102	21.3 dB
R2	Hazelwood F93 P5DA	233020	398846	20.2 dB
R3	Brickfield House F93 V3PR	233449	399226	23.4 dB
R4	The Bog F93 C6FW	233442	399260	23.7 dB

The results demonstrate that noise attributable to the proposed 2No. playing pitches will be indiscernible above the background levels at all receptor locations.

6.3 Scenario No. 3: Cumulative Model (All Sources)

A summary of the Cadna noise model results for the cumulative model, which includes all sources attributable to the proposed development, is presented in Table 8 below. The delineated noise map is presented in Figure 4 of this report.

Table 8. Summary of Cumulative CadnaA Model results (Scenario 3), dBA.

ID	Address / Location	Coordinate (Irish Grid)		Modelled Results, dB
		X (m)	Y (m)	
R1	The Gables F93 D4EY	232779	399102	22.2 dB
R2	Hazelwood F93 P5DA	233020	398846	20.3 dB
R3	Brickfield House F93 V3PR	233449	399226	23.4 dB
R4	The Bog F93 C6FW	233442	399260	23.7 dB

The results demonstrate that for the most part, noise attributable to the proposed foul pumping station and new access road will be indiscernible above the background levels at all receptor locations.

7.0 BS4142:2014 NOISE ASSESSMENT – INDUSTRIAL SOURCES

As previously stated, BS4142:2014 is used to assess noise from industrial sources, and not from noise generated by people, recreational activities and sports. Therefore, this section assesses the potential noise impact from the proposed foul pumping station and access road. The results of predicted noise levels were compared against the existing background noise levels recorded for each respective receptor location, as summarised below in Table 9 & 10, and the degree of impact was determined thereafter. It should be noted that the cumulative impact of the playing pitches is assessed within later sections of this report.

For the purpose of this report, it is assumed that the proposed foul pumping station and access road will operational during both the daytime and night-time hours.

Table 9. Comparison of Cadna model results against daytime background levels, dBA.

ID	Address / Location	Predicted rating levels, dB	Measured LA90 Background Level	Difference
R1	The Gables F93 D4EY	14.6 dB	58 dB	**-43.4 dB**
R2	Hazelwood F93 P5DA	5.3 dB	58 dB	**-52.7 dB**
R3	Brickfield House F93 V3PR	0.9 dB	47 dB	**-46.1 dB**
R13	The Bog F93 C6FW	0.8 dB	47 dB	**-46.2 dB**

Note: a '-' minus sign indicates no possible impact

Table 10. Comparison of Cadna model results against night-time background levels, dBA.

ID	Address / Location	Predicted rating levels, dB	Measured LA90 Background Level	Difference
R1	The Gables F93 D4EY	14.6 dB	40 dB	**-25.4 dB**
R2	Hazelwood F93 P5DA	5.3 dB	40 dB	**-34.7 dB**
R3	Brickfield House F93 V3PR	0.9 dB	38 dB	**-37.1 dB**
R13	The Bog F93 C6FW	0.8 dB	38 dB	**-37.2 dB**

Note: a '-' minus sign indicates no possible impact

In accordance with BS4142:2014, the impact of specific sound can be assessed by subtracting the measured background sound level from the rating level, and using the following criteria:

a) Typically, the greater the difference between the rating and the background level, then the greater the magnitude of the impact;
b) A difference of around +10 dB or more is likely to be an indication of a significant adverse impact, depending on the context;
c) A difference of around +5 dB is likely to be an indication of an adverse impact, depending on the context;
d) The lower the rating level is relative to the measured background sound level, the less likely it is that the specific sound source will have an adverse impact or a significant adverse impact;
e) Where the rating level does not exceed the background sound level, this is an indication of the specific sound source having a low impact, depending on the context.

The results clearly indicate that predicted future noise levels associated with the proposed foul pumping station and access road will be well below the existing background level. Therefore, this is an indication that noise impact from these sources will be **negligible**.

8.0 NOISE ASSESSMENT – PLAYING FIELDS

This section assesses noise levels which will be attributable to the proposed 2No. playing pitches, and uses the Sport England guidance, 'Artificial Grass Pitch (AGP) Acoustics – Planning Implications – Design Guidance Note' (2015).

The Sports England guidance document provides criteria to avoid moderate noise disturbance, and is based on The World Health Organisation's 'Guidelines for Community Noise' noise recommendations of **50 dB $L_{Aeq,1hr}$** for external noise, wherever practical or feasible. Although the WHO criteria is based on a 16hr (daytime) period, the 1hr criteria is considered more appropriate to adopt due to the relatively short term usage of an AGP.

On this basis, the predicted noise levels calculated for the playing pitches (Scenario No.2) were compared against the recommended WHO guidance level of 50 dB $L_{Aeq,1hr}$ at each receptor, and the degree of impact was determined thereafter. It should be noted that the playing pitches will only be operated during daytime hours (07:00 – 23:00hrs), and the comparison of results is summarised below in Table 11.

Table 11. Comparison of Cadna model results against Guidance levels, dBA.

ID	Address / Location	Predicted rating levels, dBA	Guidance Level, dBA	Difference, dBA
R1	The Gables F93 D4EY	21.3 dB	50 dB	**-28.7 dB**
R2	Hazelwood F93 P5DA	20.2 dB	50 dB	**-29.8 dB**
R3	Brickfield House F93 V3PR	23.4 dB	50 dB	**-26.6 dB**
R13	The Bog F93 C6FW	23.7 dB	50 dB	**-26.3 dB**

Note: a '-' minus sign indicates low impact potential

The results outlined above clearly demonstrate that noise levels attributable to the proposed playing pitches will be well below the recommended guidance level of 50 dB $L_{Aeq,1hr}$ at each receptor, and will also be well below the existing background levels for each receptor location. On this basis it is concluded that noise associated with the playing pitches will have **LOW** impact potential.

9.0 NOISE ASSESSMENT – CUMULATIVE (ALL SOURCES)

This section provides a cumulative assessment of all the new noise sources associated with the proposed development scheme, and assumes that all sources are operating simultaneously. The modelled noise sources include: the proposed foul pumping station, access road and 2No. playing pitches. Although the cumulative noise includes components that are not dealt with by BS4142:2014, nevertheless, in the absence of specific criteria for cumulative noise then the principles outlined in BS4142:2014 have been adopted within this report as a conservative means of assessing the potential cumulative impacts.

The results of the predicted cumulative noise levels were compared against the existing background noise levels recorded for each respective receptor location, and the degree of impact was determined thereafter as summarised below in Table 12. It should be noted that cumulative scenario will only occur during daytime hours (07:00 – 23:00hrs), as this is the only period when the playing pitches will be operating at the same time as the foul pumping station.

Table 12. Comparison of Cumulative noise against daytime background levels, dBA.

ID	Address / Location	Cumulative Noise, dBA	Measured LA90 Background Level	Difference, dBA
R1	The Gables F93 D4EY	22.2 dB	58 dB	**-35.8 dB**
R2	Hazelwood F93 P5DA	20.3 dB	58 dB	**-37.7 dB**
R3	Brickfield House F93 V3PR	23.4 dB	47 dB	**-23.6 dB**
R13	The Bog F93 C6FW	23.7 dB	47 dB	**-23.3 dB**

Note: a '-' minus sign indicates low impact potential

In accordance with BS4142:2014, the impact of specific sound can be assessed by subtracting the measured background sound level from the rating level, and using the following criteria:

a) Typically, the greater the difference between the rating and the background level, then the greater the magnitude of the impact;
b) A difference of around +10 dB or more is likely to be an indication of a significant adverse impact, depending on the context;
c) A difference of around +5 dB is likely to be an indication of an adverse impact, depending on the context;
d) The lower the rating level is relative to the measured background sound level, the less likely it is that the specific sound source will have an adverse impact or a significant adverse impact;
e) Where the rating level does not exceed the background sound level, this is an indication of the specific sound source having a low impact, depending on the context.

The results clearly demonstrate that cumulative noise levels for all sources will be well below the existing background levels at each of the receptor locations. Therefore, this is an indication that cumulative noise impact from these sources is anticipated to be **LOW**.

10.0 NOISE MITIGATION

Given that the modelled noise levels for the proposed foul pumping station and access road are predicted to be well below the existing background level, then no specific noise mitigation measures are required for these sources. The predicted noise levels associated with the 2No. playing pitches were also found to be well within the recommended guidance level, therefore no specific noise mitigation is required for the playing pitches.

In addition, as the cumulative noise levels were modelled to be well below the existing background levels at all receptors, then no further mitigation measures have been proposed for the cumulative sources.

11.0 CONCLUSIONS

Layde Consulting was appointed to undertake a Noise Impact Assessment (NIA) in support of a planning application for a site in Lifford Common, and relates to the proposed construction of 2No. pitches and supporting building, a new access road and new foul pumping station. Given the proximity of the site and development proposals to local receptors, it was therefore considered necessary to undertake noise modelling for the proposed new sources, and to assess the degree of noise impact on existing residential dwellings near to the site.

Baseline noise measurements were recorded simultaneously at 2No. noise monitoring locations from the 10th – 14th February 2022. The first monitoring position was located adjacent to The Gables and along the N14 road which experiences a significant contribution from road traffic noise during daytime and night-time periods. The second noise monitoring position was positioned adjacent to Brickfield House on the Brickfield Road, and which is located at a greater setback distance from the main road traffic sources.

Future predicted noise levels at the closest residential receptors were modelled using Cadna computer noise modelling software, and based on three modelling scenarios. The first scenario involved modelling industrial noise sources which included the proposed foul pumping station, in addition to the access road. The second scenario modelled the noise levels of the 2No. playing pitches operating simultaneously, and the third scenario incorporated all noise sources attributable to the proposed development in order to assess the cumulative impacts of all sources.

The results demonstrated that predicted future noise levels associated with the proposed foul pumping station and access road will be well below the existing background level. Therefore, in accordance with BS4142:2014, this is an indication that noise impact from these sources will be negligible.

The results for the second modelled scenario clearly demonstrated that noise levels attributable to the proposed playing pitches will be well below the recommended guidance level of 50 dB $L_{Aeq,1hr}$ at each receptor, and will also be well below the existing background levels for each receptor location. On this basis it is concluded that noise associated with the playing pitches will have low impact potential.

Finally, the third noise model incorporated a cumulative assessment of all the new noise sources associated with the proposed development scheme, and assumed that all sources were operating simultaneously. The cumulative modelled noise sources included: the proposed foul pumping station, access road and 2No. playing pitches. Although the cumulative noise levels include components that are not specifically dealt with by BS4142:2014, nevertheless, in the absence of specific criteria for cumulative noise then the principles outlined in BS4142:2014 have been adopted within this report as a conservative means of assessing the potential cumulative impacts. The results clearly demonstrated that cumulative noise levels for all sources will be well below the existing background levels at each of the receptor locations. Therefore, this is an indication that cumulative noise impact from these sources is anticipated to be low.

In summary, as all three modelled scenarios demonstrate that noise impact is anticipated to be low at all receptors, then no further mitigation measures have been recommended.

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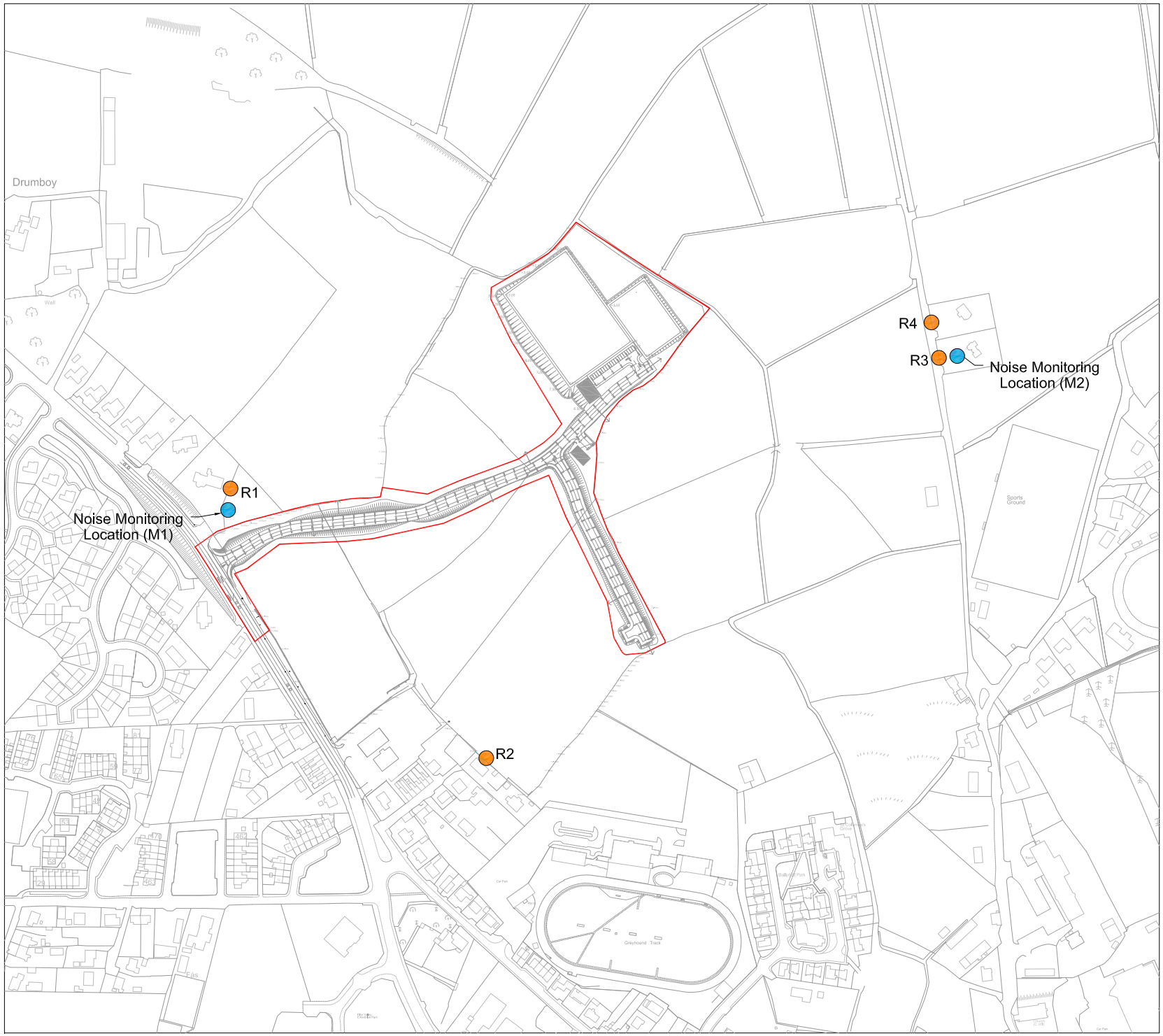
FIGURES



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Project: Lifford Common

Drawing: Receptor Location Map

Dwg by: | Scale: 1:5000 @A4

Drawing No. Figure 1 | REV. 1.1

THIS PRINT IS NOT TO BE USED FOR CONSTRUCTION UNLESS SIGNED OFF FOR CONSTRUCTION PURPOSES

- Modelled Receptor Location
- Noise Monitoring Location

Figure 2 - Noise Delineation Map (Scenario 1): Proposed Foul Pumping Station & Road

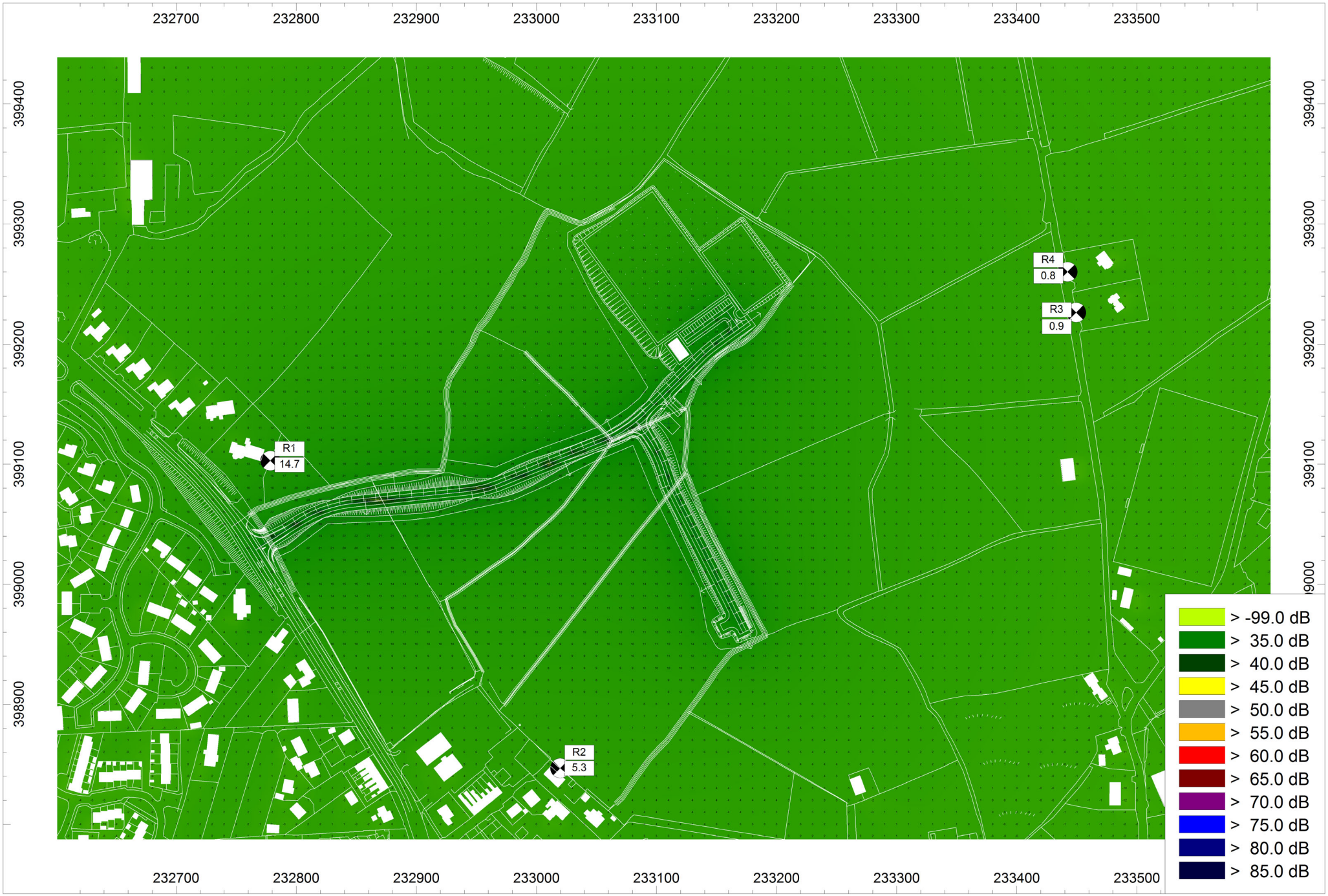


Figure 3 - Noise Delineation Map (Scenario 2): Playing Pitch

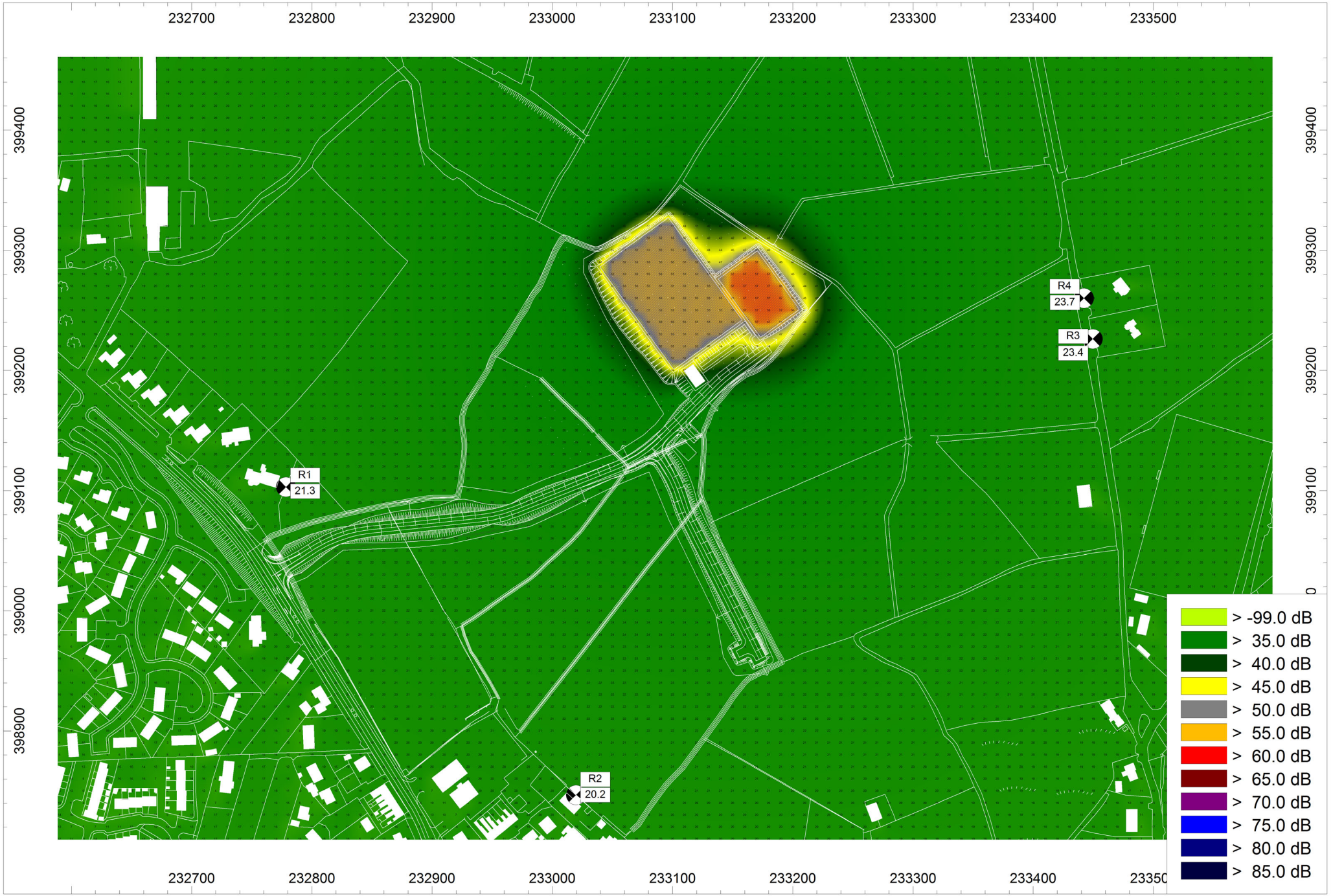
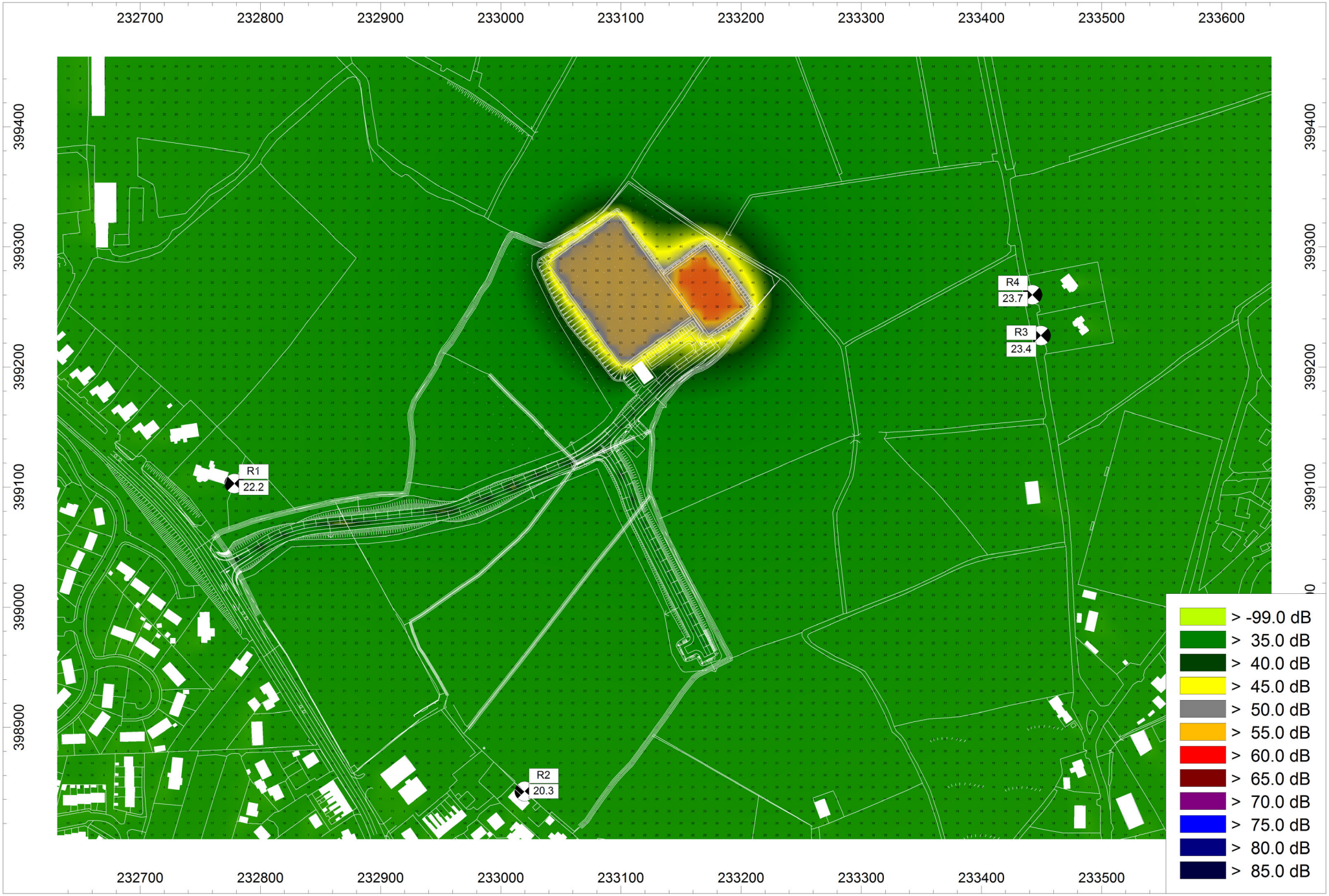


Figure 4 - Noise Delineation Map (Scenario 3): Cumulative Noise - All Sources



Appendix 1

M1 - Letterkenny Road - Daytime (07:00 - 23:00hrs)

Date / Start Time	Duration	LAeq	LAFMax	LA90	Comments
10/02/2022 13:00	01:00:00	68.3	80.0	55.9	Road traffic noise clearly audible
10/02/2022 14:00	01:00:00	68.9	83.3	58.2	throughout monitoring period
10/02/2022 15:00	01:00:00	69.2	84.9	57.8	
10/02/2022 16:00	01:00:00	69.6	85.5	58.9	
10/02/2022 17:00	01:00:00	69.9	84.4	59.8	
10/02/2022 18:00	01:00:00	69.2	80.6	58.0	
10/02/2022 19:00	01:00:00	68.3	83.4	55.6	
10/02/2022 20:00	01:00:00	67.0	82.2	53.3	
10/02/2022 21:00	01:00:00	65.4	80.4	48.0	
10/02/2022 22:00	01:00:00	63.9	78.8	40.0	
11/02/2022 07:00	01:00:00	67.2	79.7	53.5	
11/02/2022 08:00	01:00:00	69.2	81.1	58.2	
11/02/2022 09:00	01:00:00	69.2	80.2	58.6	
11/02/2022 10:00	01:00:00	68.0	83.7	57.2	
11/02/2022 11:00	01:00:00	68.3	81.9	58.4	
11/02/2022 12:00	01:00:00	68.1	82.3	57.9	
11/02/2022 13:00	01:00:00	68.3	83.1	59.5	
11/02/2022 14:00	01:00:00	68.6	80.7	60.6	
11/02/2022 15:00	01:00:00	69.0	82.1	61.5	
11/02/2022 16:00	01:00:00	69.3	80.3	61.7	
11/02/2022 17:00	01:00:00	70.7	80.2	63.3	
11/02/2022 18:00	01:00:00	70.2	80.7	61.8	
11/02/2022 19:00	01:00:00	69.8	82.2	59.4	
11/02/2022 20:00	01:00:00	68.4	79.7	57.8	
11/02/2022 21:00	01:00:00	66.9	79.6	55.8	
11/02/2022 22:00	01:00:00	65.6	80.9	53.7	
12/02/2022 07:00	01:00:00	64.2	80.4	47.5	
12/02/2022 08:00	01:00:00	66.5	80.3	51.7	
12/02/2022 09:00	01:00:00	68.2	80.7	55.1	
12/02/2022 10:00	01:00:00	68.8	82.8	57.8	
12/02/2022 11:00	01:00:00	68.2	79.5	57.4	
12/02/2022 12:00	01:00:00	68.4	82.2	58.8	
12/02/2022 13:00	01:00:00	68.1	82.0	58.7	
12/02/2022 14:00	01:00:00	69.4	85.6	58.6	
12/02/2022 15:00	01:00:00	69.7	78.8	59.6	
12/02/2022 16:00	01:00:00	68.5	82.5	56.9	
12/02/2022 17:00	01:00:00	67.9	78.9	57.3	
12/02/2022 18:00	01:00:00	66.7	78.8	54.0	
12/02/2022 19:00	01:00:00	66.2	83.7	53.4	
12/02/2022 20:00	01:00:00	65.2	82.8	51.0	
12/02/2022 21:00	01:00:00	63.6	78.3	48.9	
12/02/2022 22:00	01:00:00	62.3	80.6	44.9	
13/02/2022 07:00	01:00:00	62.6	86.5	44.3	
13/02/2022 08:00	01:00:00	64.1	80.6	48.2	
13/02/2022 09:00	01:00:00	65.8	81.8	50.2	
13/02/2022 10:00	01:00:00	66.8	78.6	50.0	
13/02/2022 11:00	01:00:00	67.9	77.7	52.6	
13/02/2022 12:00	01:00:00	69.2	79.7	56.1	
13/02/2022 13:00	01:00:00	69.6	82.4	57.5	
13/02/2022 14:00	01:00:00	69.2	78.6	58.1	

Date / Start Time	Duration	LAeq	LAFMax	LA90	Comments
13/02/2022 15:00	01:00:00	68.9	79.7	57.3	
13/02/2022 16:00	01:00:00	69.1	81.2	56.1	
13/02/2022 17:00	01:00:00	69.7	80.3	56.4	
13/02/2022 18:00	01:00:00	68.6	81.1	54.6	
13/02/2022 19:00	01:00:00	67.7	81.2	50.8	
13/02/2022 20:00	01:00:00	66.5	78.2	48.2	
13/02/2022 21:00	01:00:00	64.2	77.8	44.3	
13/02/2022 22:00	01:00:00	63.3	79.1	37.9	
14/02/2022 07:00	01:00:00	68.2	81.1	50.6	
14/02/2022 08:00	01:00:00	69.7	80.4	57.8	
14/02/2022 09:00	01:00:00	69.7	82.0	59.8	

M1 - Letterkenny Road, Night Time (23:00 - 07:00)

Date	Time Started	Duration	LAeq	LA90	LAFmax	Comments
10/02/2022	23:00:00	00:15:00	61.9	33.0	78.3	Traffic noise clearly audible
10/02/2022	23:15:00	00:15:00	61.7	33.0	78.8	throughout monitoring period
10/02/2022	23:30:00	00:15:00	61.2	33.2	78.8	
10/02/2022	23:45:00	00:15:00	58.3	28.9	77.3	
11/02/2022	00:00:00	00:15:00	59.8	32.9	82.5	
11/02/2022	00:15:00	00:15:00	61.1	33.3	77.7	
11/02/2022	00:30:00	00:15:00	57.0	32.8	73.9	
11/02/2022	00:45:00	00:15:00	58.8	32.3	77.3	
11/02/2022	01:00:00	00:15:00	58.2	29.6	78.5	
11/02/2022	01:15:00	00:15:00	60.5	29.1	79.3	
11/02/2022	01:30:00	00:15:00	58.0	26.8	76.7	
11/02/2022	01:45:00	00:15:00	57.2	23.4	78.5	
11/02/2022	02:00:00	00:15:00	57.1	27.6	80.9	
11/02/2022	02:15:00	00:15:00	53.6	27.1	74.4	
11/02/2022	02:30:00	00:15:00	59.4	29.9	81.2	
11/02/2022	02:45:00	00:15:00	56.0	27.6	78.0	
11/02/2022	03:00:00	00:15:00	58.9	30.7	80.0	
11/02/2022	03:15:00	00:15:00	58.9	29.1	79.7	
11/02/2022	03:30:00	00:15:00	60.2	33.7	79.7	
11/02/2022	03:45:00	00:15:00	57.3	31.1	77.5	
11/02/2022	04:00:00	00:15:00	61.7	36.4	80.8	
11/02/2022	04:15:00	00:15:00	60.5	31.3	80.3	
11/02/2022	04:30:00	00:15:00	60.9	37.1	79.6	
11/02/2022	04:45:00	00:15:00	61.7	40.9	79.1	
11/02/2022	05:00:00	00:15:00	60.8	39.8	80.1	
11/02/2022	05:15:00	00:15:00	61.4	39.5	77.8	
11/02/2022	05:30:00	00:15:00	62.7	42.3	79.1	
11/02/2022	05:45:00	00:15:00	63.5	44.3	78.2	
11/02/2022	06:00:00	00:15:00	62.4	45.6	78.0	
11/02/2022	06:15:00	00:15:00	63.2	47.1	77.3	
11/02/2022	06:30:00	00:15:00	63.8	47.9	77.8	
11/02/2022	06:45:00	00:15:00	64.7	49.1	78.5	
11/02/2022	07:00:00	00:15:00	65.2	50.2	78.0	
11/02/2022	23:00:00	00:15:00	62.9	50.1	75.2	
11/02/2022	23:15:00	00:15:00	64.0	53.7	78.3	
11/02/2022	23:30:00	00:15:00	64.1	54.6	77.4	
11/02/2022	23:45:00	00:15:00	63.7	52.0	81.0	
12/02/2022	00:00:00	00:15:00	63.2	53.0	75.4	
12/02/2022	00:15:00	00:15:00	62.0	50.7	76.6	
12/02/2022	00:30:00	00:15:00	61.5	49.0	76.4	
12/02/2022	00:45:00	00:15:00	61.4	48.2	77.1	
12/02/2022	01:00:00	00:15:00	60.9	46.2	76.1	
12/02/2022	01:15:00	00:15:00	61.5	43.9	80.9	
12/02/2022	01:30:00	00:15:00	60.5	42.1	78.3	
12/02/2022	01:45:00	00:15:00	61.0	38.9	78.9	
12/02/2022	02:00:00	00:15:00	59.2	36.9	79.2	
12/02/2022	02:15:00	00:15:00	62.0	39.5	79.7	
12/02/2022	02:30:00	00:15:00	58.3	38.4	75.4	
12/02/2022	02:45:00	00:15:00	60.6	40.1	79.3	
12/02/2022	03:00:00	00:15:00	57.2	36.3	76.4	

M2 -Brickfield House, Daytime (07:00 - 23:00hrs)

Date	Time Started	Duration	LAeq	LA90	LAFmax	Comments
10/02/2022	12:00:01	00:59:59	47.4	45.0	68.7	Traffic noise clearly audible
10/02/2022	13:00:00	01:00:00	47.9	45.3	69.6	throughout monitoring period.
10/02/2022	14:00:00	01:00:00	51.0	45.4	76.3	
10/02/2022	15:00:00	01:00:00	47.6	45.1	68.1	
10/02/2022	16:00:00	01:00:00	47.3	44.9	66.0	
10/02/2022	17:00:00	01:00:00	48.5	45.2	67.0	
10/02/2022	18:00:00	01:00:00	46.4	43.7	68.7	
10/02/2022	19:00:00	01:00:00	47.1	43.6	73.2	
10/02/2022	20:00:00	01:00:00	44.5	41.5	67.6	
10/02/2022	21:00:00	01:00:00	42.8	38.4	60.5	
10/02/2022	22:00:00	01:00:00	41.7	36.8	59.5	
11/02/2022	07:00:00	01:00:00	50.1	47.2	61.6	
11/02/2022	08:00:00	01:00:00	51.3	49.6	62.3	
11/02/2022	09:00:00	01:00:00	50.9	49.1	65.0	
11/02/2022	10:00:00	01:00:00	49.5	47.6	68.8	
11/02/2022	11:00:00	01:00:00	49.1	47.4	62.0	
11/02/2022	12:00:00	01:00:00	50.6	46.8	69.8	
11/02/2022	13:00:00	01:00:00	51.3	46.6	71.2	
11/02/2022	14:00:00	01:00:00	51.1	46.1	73.4	
11/02/2022	15:00:00	01:00:00	51.3	46.4	72.0	
11/02/2022	16:00:00	01:00:00	50.5	47.2	69.3	
11/02/2022	17:00:00	01:00:00	52.4	47.3	71.4	
11/02/2022	18:00:00	01:00:00	54.5	47.2	77.1	
11/02/2022	19:00:00	01:00:00	54.9	47.7	77.6	
11/02/2022	20:00:00	01:00:00	56.2	47.1	76.2	
11/02/2022	21:00:00	01:00:00	57.5	47.3	77.1	
11/02/2022	22:00:00	01:00:00	57.7	47.2	78.3	
12/02/2022	07:00:00	01:00:00	47.5	43.8	63.0	
12/02/2022	08:00:00	01:00:00	48.6	46.0	66.5	
12/02/2022	09:00:00	01:00:00	49.4	46.5	68.1	
12/02/2022	10:00:00	01:00:00	49.8	47.0	68.4	
12/02/2022	11:00:00	01:00:00	49.4	46.8	69.5	
12/02/2022	12:00:00	01:00:00	49.3	46.8	67.3	
12/02/2022	13:00:00	01:00:00	51.3	46.8	74.9	
12/02/2022	14:00:00	01:00:00	49.2	46.6	70.4	
12/02/2022	15:00:00	01:00:00	49.0	47.0	67.2	
12/02/2022	16:00:00	01:00:00	48.9	46.6	75.3	
12/02/2022	17:00:00	01:00:00	48.7	44.6	71.6	
12/02/2022	18:00:00	01:00:00	46.5	45.1	58.4	
12/02/2022	19:00:00	01:00:00	45.9	44.1	62.1	
12/02/2022	20:00:00	01:00:00	45.4	43.5	59.4	
12/02/2022	21:00:00	01:00:00	43.5	40.9	58.2	
12/02/2022	22:00:00	01:00:00	42.9	40.0	63.4	
13/02/2022	07:00:00	01:00:00	45.7	40.7	68.8	
13/02/2022	08:00:00	01:00:00	47.8	41.6	68.5	
13/02/2022	09:00:00	01:00:00	47.1	40.9	65.3	
13/02/2022	10:00:00	01:00:00	43.3	37.0	63.6	
13/02/2022	11:00:00	01:00:00	42.3	37.9	57.0	
13/02/2022	12:00:00	01:00:00	45.4	39.6	72.5	
13/02/2022	13:00:00	01:00:00	60.5	38.4	78.2	

Date	Time Started	Duration	LAeq	LA90	LAFmax	Comments
13/02/2022	14:00:00	01:00:00	51.4	36.7	76.0	
13/02/2022	15:00:00	01:00:00	46.5	37.8	73.5	
13/02/2022	16:00:00	01:00:00	43.2	39.2	58.7	
13/02/2022	17:00:00	01:00:00	46.9	43.2	64.6	
13/02/2022	18:00:00	01:00:00	50.6	40.3	73.7	
13/02/2022	19:00:00	01:00:00	43.2	38.9	72.2	
13/02/2022	20:00:00	01:00:00	42.0	38.7	60.7	
13/02/2022	21:00:00	01:00:00	40.7	37.4	50.4	
13/02/2022	22:00:00	01:00:00	41.2	37.2	58.8	
14/02/2022	07:00:00	01:00:00	48.4	42.8	73.8	
14/02/2022	08:00:00	01:00:00	48.9	44.4	72.4	
14/02/2022	09:00:00	01:00:00	51.0	44.4	75.8	
14/02/2022	10:00:00	01:00:00	47.8	42.9	71.1	
14/02/2022	11:00:00	00:00:01	43.8	43.8	45.3	

M2 -Brickfield House, Night Time (23:00 - 07:00hrs)

Date	Time Started	Duration	LAeq	LA90	LAFmax	Comments
10/02/2022	23:00:00	00:15:00	38.2	31.5	52.5	Traffic noise clearly audible
10/02/2022	23:15:00	00:15:00	40.1	35.1	54.6	throughout monitoring period.
10/02/2022	23:30:00	00:15:00	39.0	35.5	52.9	
10/02/2022	23:45:00	00:15:00	37.0	32.4	51.0	
11/02/2022	00:00:00	00:15:00	38.6	31.2	61.8	
11/02/2022	00:15:00	00:15:00	40.4	34.2	61.6	
11/02/2022	00:30:00	00:15:00	34.5	29.8	46.4	
11/02/2022	00:45:00	00:15:00	38.0	32.1	50.9	
11/02/2022	01:00:00	00:15:00	35.8	30.2	47.5	
11/02/2022	01:15:00	00:15:00	38.5	33.0	52.0	
11/02/2022	01:30:00	00:15:00	38.8	32.5	51.5	
11/02/2022	01:45:00	00:15:00	39.9	26.3	57.1	
11/02/2022	02:00:00	00:15:00	34.9	30.2	56.9	
11/02/2022	02:15:00	00:15:00	32.8	28.4	44.8	
11/02/2022	02:30:00	00:15:00	36.9	30.9	57.1	
11/02/2022	02:45:00	00:15:00	36.2	30.9	47.8	
11/02/2022	03:00:00	00:15:00	36.9	28.1	53.7	
11/02/2022	03:15:00	00:15:00	37.0	29.8	51.9	
11/02/2022	03:30:00	00:15:00	39.9	33.5	61.5	
11/02/2022	03:45:00	00:15:00	39.9	33.5	50.6	
11/02/2022	04:00:00	00:15:00	41.4	36.1	59.5	
11/02/2022	04:15:00	00:15:00	38.9	32.0	54.1	
11/02/2022	04:30:00	00:15:00	41.3	35.7	54.1	
11/02/2022	04:45:00	00:15:00	42.1	37.2	53.2	
11/02/2022	05:00:00	00:15:00	42.5	39.0	54.9	
11/02/2022	05:15:00	00:15:00	43.8	39.0	60.7	
11/02/2022	05:30:00	00:15:00	44.7	40.8	60.0	
11/02/2022	05:45:00	00:15:00	45.9	42.2	60.1	
11/02/2022	06:00:00	00:15:00	44.5	41.6	53.6	
11/02/2022	06:15:00	00:15:00	45.9	43.7	53.1	
11/02/2022	06:30:00	00:15:00	47.5	44.3	56.1	
11/02/2022	06:45:00	00:15:00	47.6	45.6	54.1	
11/02/2022	07:00:00	00:15:00	47.8	46.4	56.9	
11/02/2022	23:00:00	00:15:00	59.5	47.9	75.7	
11/02/2022	23:15:00	00:15:00	61.1	48.8	80.0	
11/02/2022	23:30:00	00:15:00	61.1	48.9	81.1	
11/02/2022	23:45:00	00:15:00	57.0	47.3	75.6	
12/02/2022	00:00:00	00:15:00	59.5	47.6	77.8	
12/02/2022	00:15:00	00:15:00	59.1	47.4	79.1	
12/02/2022	00:30:00	00:15:00	57.6	46.6	77.3	
12/02/2022	00:45:00	00:15:00	55.4	45.9	74.8	
12/02/2022	01:00:00	00:15:00	54.2	45.1	73.6	
12/02/2022	01:15:00	00:15:00	49.1	44.0	67.8	
12/02/2022	01:30:00	00:15:00	46.8	41.5	70.7	
12/02/2022	01:45:00	00:15:00	44.3	40.0	60.7	
12/02/2022	02:00:00	00:15:00	40.8	37.7	54.8	
12/02/2022	02:15:00	00:15:00	41.5	37.7	55.4	
12/02/2022	02:30:00	00:15:00	41.0	37.6	55.3	
12/02/2022	02:45:00	00:15:00	42.6	39.2	55.5	
12/02/2022	03:00:00	00:15:00	44.7	39.5	62.1	

Date	Time Started	Duration	LAeq	LA90	LAFmax	Comments
12/02/2022	03:15:00	00:15:00	44.5	36.9	66.1	
12/02/2022	03:30:00	00:15:00	40.9	34.2	59.7	
12/02/2022	03:45:00	00:15:00	43.6	36.2	68.5	
12/02/2022	04:00:00	00:15:00	44.9	37.7	66.5	
12/02/2022	04:15:00	00:15:00	43.3	38.7	65.2	
12/02/2022	04:30:00	00:15:00	40.3	34.9	55.5	
12/02/2022	04:45:00	00:15:00	41.4	36.1	54.6	
12/02/2022	05:00:00	00:15:00	41.7	36.9	60.3	
12/02/2022	05:15:00	00:15:00	42.3	35.8	62.3	
12/02/2022	05:30:00	00:15:00	41.9	37.1	58.4	
12/02/2022	05:45:00	00:15:00	43.6	39.9	62.3	
12/02/2022	06:00:00	00:15:00	44.6	40.7	60.7	
12/02/2022	06:15:00	00:15:00	45.8	42.1	61.7	
12/02/2022	06:30:00	00:15:00	46.7	42.1	69.1	
12/02/2022	06:45:00	00:15:00	45.8	41.7	64.1	
12/02/2022	07:00:00	00:15:00	46.0	43.1	60.8	
12/02/2022	23:00:00	00:15:00	43.0	40.5	56.6	
12/02/2022	23:15:00	00:15:00	41.4	38.6	52.8	
12/02/2022	23:30:00	00:15:00	41.9	39.5	53.2	
12/02/2022	23:45:00	00:15:00	43.4	38.8	58.7	
13/02/2022	00:00:00	00:15:00	41.3	38.1	53.5	
13/02/2022	00:15:00	00:15:00	40.4	37.5	48.8	
13/02/2022	00:30:00	00:15:00	41.7	37.2	56.4	
13/02/2022	00:45:00	00:15:00	41.6	38.0	54.0	
13/02/2022	01:00:00	00:15:00	40.4	37.4	50.3	
13/02/2022	01:15:00	00:15:00	40.4	37.6	55.2	
13/02/2022	01:30:00	00:15:00	41.3	37.8	57.9	
13/02/2022	01:45:00	00:15:00	41.5	38.6	57.1	
13/02/2022	02:00:00	00:15:00	41.2	38.4	51.2	
13/02/2022	02:15:00	00:15:00	41.5	37.9	51.7	
13/02/2022	02:30:00	00:15:00	40.7	37.8	49.7	
13/02/2022	02:45:00	00:15:00	40.5	36.7	50.2	
13/02/2022	03:00:00	00:15:00	40.4	35.3	52.5	
13/02/2022	03:15:00	00:15:00	37.9	34.7	55.5	
13/02/2022	03:30:00	00:15:00	39.2	35.7	55.6	
13/02/2022	03:45:00	00:15:00	38.0	34.6	48.7	
13/02/2022	04:00:00	00:15:00	40.0	34.9	56.0	
13/02/2022	04:15:00	00:15:00	34.8	30.5	46.3	
13/02/2022	04:30:00	00:15:00	35.1	29.3	48.5	
13/02/2022	04:45:00	00:15:00	36.3	31.1	50.7	
13/02/2022	05:00:00	00:15:00	36.2	30.5	49.9	
13/02/2022	05:15:00	00:15:00	35.0	30.1	45.3	
13/02/2022	05:30:00	00:15:00	36.3	31.8	46.9	
13/02/2022	05:45:00	00:15:00	37.8	34.0	49.4	
13/02/2022	06:00:00	00:15:00	36.8	33.0	47.2	
13/02/2022	06:15:00	00:15:00	38.7	36.4	50.0	
13/02/2022	06:30:00	00:15:00	39.5	36.8	50.2	
13/02/2022	06:45:00	00:15:00	42.2	38.8	58.1	
13/02/2022	07:00:00	00:15:00	42.3	40.3	54.1	
13/02/2022	23:00:00	00:15:00	37.9	34.7	46.2	
13/02/2022	23:15:00	00:15:00	42.1	37.9	52.9	

Date	Time Started	Duration	LAeq	LA90	LAFmax	Comments
13/02/2022	23:30:00	00:15:00	41.3	33.7	58.3	
13/02/2022	23:45:00	00:15:00	36.6	32.0	47.7	
14/02/2022	00:00:00	00:15:00	38.7	32.9	49.8	
14/02/2022	00:15:00	00:15:00	37.1	32.4	52.2	
14/02/2022	00:30:00	00:15:00	37.0	32.3	56.4	
14/02/2022	00:45:00	00:15:00	49.1	33.3	67.8	
14/02/2022	01:00:00	00:15:00	46.5	31.3	62.8	
14/02/2022	01:15:00	00:15:00	34.0	29.3	49.8	
14/02/2022	01:30:00	00:15:00	34.1	28.0	52.2	
14/02/2022	01:45:00	00:15:00	32.5	27.1	55.3	
14/02/2022	02:00:00	00:15:00	35.2	29.7	46.9	
14/02/2022	02:15:00	00:15:00	34.3	26.7	58.9	
14/02/2022	02:30:00	00:15:00	38.4	28.9	57.8	
14/02/2022	02:45:00	00:15:00	37.5	29.1	56.4	
14/02/2022	03:00:00	00:15:00	34.8	28.3	45.7	
14/02/2022	03:15:00	00:15:00	40.6	34.1	62.3	
14/02/2022	03:30:00	00:15:00	39.1	33.3	59.3	
14/02/2022	03:45:00	00:15:00	38.2	33.3	49.9	
14/02/2022	04:00:00	00:15:00	36.3	32.7	48.0	
14/02/2022	04:15:00	00:15:00	40.7	33.4	57.6	
14/02/2022	04:30:00	00:15:00	38.0	31.6	52.9	
14/02/2022	04:45:00	00:15:00	40.4	36.5	51.4	
14/02/2022	05:00:00	00:15:00	41.1	37.6	58.3	
14/02/2022	05:15:00	00:15:00	42.3	36.1	59.5	
14/02/2022	05:30:00	00:15:00	39.6	34.6	51.0	
14/02/2022	05:45:00	00:15:00	45.2	38.9	61.2	
14/02/2022	06:00:00	00:15:00	41.8	37.2	51.6	
14/02/2022	06:15:00	00:15:00	42.8	39.7	58.4	
14/02/2022	06:30:00	00:15:00	41.9	39.0	51.0	
14/02/2022	06:45:00	00:15:00	45.9	43.0	58.3	
14/02/2022	07:00:00	00:15:00	44.9	41.3	59.5	

M1 - Letterkenny Road, Night Time (23:00 - 07:00)

Date	Time Started	Duration	LAeq	LA90	LAFmax	Comments
12/02/2022	03:15:00	00:15:00	55.1	37.0	77.7	
12/02/2022	03:30:00	00:15:00	52.7	33.4	75.1	
12/02/2022	03:45:00	00:15:00	53.0	34.5	74.7	
12/02/2022	04:00:00	00:15:00	60.4	41.5	79.0	
12/02/2022	04:15:00	00:15:00	60.4	37.5	82.2	
12/02/2022	04:30:00	00:15:00	53.8	32.9	75.7	
12/02/2022	04:45:00	00:15:00	57.1	34.2	77.0	
12/02/2022	05:00:00	00:15:00	58.5	35.9	79.7	
12/02/2022	05:15:00	00:15:00	55.3	33.8	74.5	
12/02/2022	05:30:00	00:15:00	58.3	34.2	79.9	
12/02/2022	05:45:00	00:15:00	60.3	37.9	79.7	
12/02/2022	06:00:00	00:15:00	60.9	42.0	77.3	
12/02/2022	06:15:00	00:15:00	63.2	42.7	79.7	
12/02/2022	06:30:00	00:15:00	61.1	39.6	78.9	
12/02/2022	06:45:00	00:15:00	61.0	42.0	78.1	
12/02/2022	07:00:00	00:15:00	62.7	45.0	77.7	
12/02/2022	23:00:00	00:15:00	62.5	44.8	79.0	
12/02/2022	23:15:00	00:15:00	60.3	40.8	76.2	
12/02/2022	23:30:00	00:15:00	61.0	40.0	76.6	
12/02/2022	23:45:00	00:15:00	59.6	37.2	77.1	
13/02/2022	00:00:00	00:15:00	58.6	37.4	76.6	
13/02/2022	00:15:00	00:15:00	58.6	38.0	74.1	
13/02/2022	00:30:00	00:15:00	58.4	37.3	75.6	
13/02/2022	00:45:00	00:15:00	59.7	38.5	76.6	
13/02/2022	01:00:00	00:15:00	60.2	38.2	76.2	
13/02/2022	01:15:00	00:15:00	59.3	39.0	75.6	
13/02/2022	01:30:00	00:15:00	57.5	36.9	76.4	
13/02/2022	01:45:00	00:15:00	61.6	39.8	79.0	
13/02/2022	02:00:00	00:15:00	60.4	39.0	78.5	
13/02/2022	02:15:00	00:15:00	60.2	38.6	79.9	
13/02/2022	02:30:00	00:15:00	60.5	39.7	76.7	
13/02/2022	02:45:00	00:15:00	58.5	38.8	75.3	
13/02/2022	03:00:00	00:15:00	57.1	37.3	76.9	
13/02/2022	03:15:00	00:15:00	57.9	36.5	75.5	
13/02/2022	03:30:00	00:15:00	57.2	35.9	77.9	
13/02/2022	03:45:00	00:15:00	59.0	35.2	78.0	
13/02/2022	04:00:00	00:15:00	58.5	34.4	78.7	
13/02/2022	04:15:00	00:15:00	53.8	30.2	73.8	
13/02/2022	04:30:00	00:15:00	56.2	30.8	76.6	
13/02/2022	04:45:00	00:15:00	56.0	34.2	79.2	
13/02/2022	05:00:00	00:15:00	56.8	32.0	80.2	
13/02/2022	05:15:00	00:15:00	53.1	30.0	76.7	
13/02/2022	05:30:00	00:15:00	55.8	34.3	75.6	
13/02/2022	05:45:00	00:15:00	59.1	35.7	78.6	
13/02/2022	06:00:00	00:15:00	54.6	34.9	77.1	
13/02/2022	06:15:00	00:15:00	57.5	36.6	82.0	
13/02/2022	06:30:00	00:15:00	57.7	37.6	76.6	
13/02/2022	06:45:00	00:15:00	59.5	40.8	76.5	
13/02/2022	07:00:00	00:15:00	62.3	43.0	80.5	
13/02/2022	23:00:00	00:15:00	61.0	30.7	77.1	

M1 - Letterkenny Road, Night Time (23:00 - 07:00)

Date	Time Started	Duration	LAeq	LA90	LAFmax	Comments
13/02/2022	23:15:00	00:15:00	62.7	33.6	78.9	
13/02/2022	23:30:00	00:15:00	61.4	29.0	79.6	
13/02/2022	23:45:00	00:15:00	58.3	28.4	77.6	
14/02/2022	00:00:00	00:15:00	60.4	34.5	77.3	
14/02/2022	00:15:00	00:15:00	61.1	30.2	80.8	
14/02/2022	00:30:00	00:15:00	59.2	28.8	80.0	
14/02/2022	00:45:00	00:15:00	56.2	30.8	78.2	
14/02/2022	01:00:00	00:15:00	58.5	31.9	80.1	
14/02/2022	01:15:00	00:15:00	57.0	29.0	76.4	
14/02/2022	01:30:00	00:15:00	55.3	26.2	75.9	
14/02/2022	01:45:00	00:15:00	55.8	25.6	76.7	
14/02/2022	02:00:00	00:15:00	58.1	27.0	77.5	
14/02/2022	02:15:00	00:15:00	52.4	25.9	73.8	
14/02/2022	02:30:00	00:15:00	55.4	26.1	78.6	
14/02/2022	02:45:00	00:15:00	58.6	32.5	79.9	
14/02/2022	03:00:00	00:15:00	55.8	32.4	76.7	
14/02/2022	03:15:00	00:15:00	59.4	35.1	77.4	
14/02/2022	03:30:00	00:15:00	63.0	35.8	80.1	
14/02/2022	03:45:00	00:15:00	62.0	35.9	81.5	
14/02/2022	04:00:00	00:15:00	63.8	37.7	83.4	
14/02/2022	04:15:00	00:15:00	67.7	40.4	96.3	
14/02/2022	04:30:00	00:15:00	62.5	33.2	79.5	
14/02/2022	04:45:00	00:15:00	64.3	39.5	79.4	
14/02/2022	05:00:00	00:15:00	65.0	42.7	80.6	
14/02/2022	05:15:00	00:15:00	63.4	38.5	78.9	
14/02/2022	05:30:00	00:15:00	63.0	35.4	80.2	
14/02/2022	05:45:00	00:15:00	64.8	40.0	80.6	
14/02/2022	06:00:00	00:15:00	64.5	39.2	80.1	
14/02/2022	06:15:00	00:15:00	65.6	42.9	80.7	
14/02/2022	06:30:00	00:15:00	65.5	41.5	80.5	
14/02/2022	06:45:00	00:15:00	66.3	45.1	80.6	
14/02/2022	07:00:00	00:15:00	67.6	48.4	81.1	