



COMHAIRLE | CLARE
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County Clare Noise Action Plan 2024-2028

18th July 2024

Executive Summary

Environmental noise remains a major problem in Europe with at least 20% of the EU population reported by the European Environment Agency in 2020 to be living in areas where noise levels are considered harmful to human health. The long-term exposure to environmental noise significantly affects the physical and mental health of citizens (e.g. annoyance, stress reactions, sleep disturbance, poor mental health, and well-being). The major source of noise pollution in both urban and non-urban areas is transportation.

The Environmental Noise Directive (“END”) (2002/49/EC) is the main European instrument which has been put in place to manage environmental noise and engage with the public. The END was transposed into Irish Law by the European Communities (Environmental Noise) Regulations 2006, being revised in 2018 and amended in 2021. The Regulations provide a common approach for Action Planning Authorities to avoid, prevent and reduce environmental noise and its harmful effects on a prioritised basis.

This is the fourth round of noise action planning, and this Noise Action Plan (2024-2028) reports the findings of the Strategic Noise Mapping for sections of major roads, above a flow threshold of 3 million vehicles per annum, in County Clare outside of the Agglomeration of Limerick (**Figure 1**), prepared in consultation with Transport Infrastructure Ireland and the Environmental Protection Agency (EPA) in respect of the calendar year 2021.

The Noise Action Plan has been prepared in accordance with the Regulations and is aimed at the strategic long-term management of environmental noise from traffic-related sources. The proposed measures are based on the results of Strategic Noise Maps which have been assessed to estimate the population exposure and harmful effects of noise in the County. The results of the assessment have been used to identify areas that shall be subject to noise management activities during the implementation of the Plan. These areas are referred to as Priority Important Areas. Clare County Council is committed to reviewing the requirement for noise mitigation in the Priority Important Areas within the lifecycle of the Noise Action Plan, including cost-benefit analysis where necessary and determining the reduction in harmful effects where practicable.

This Noise Action Plan is supported by a four-year programme for implementation, with progress reported to the EPA on an annual basis.

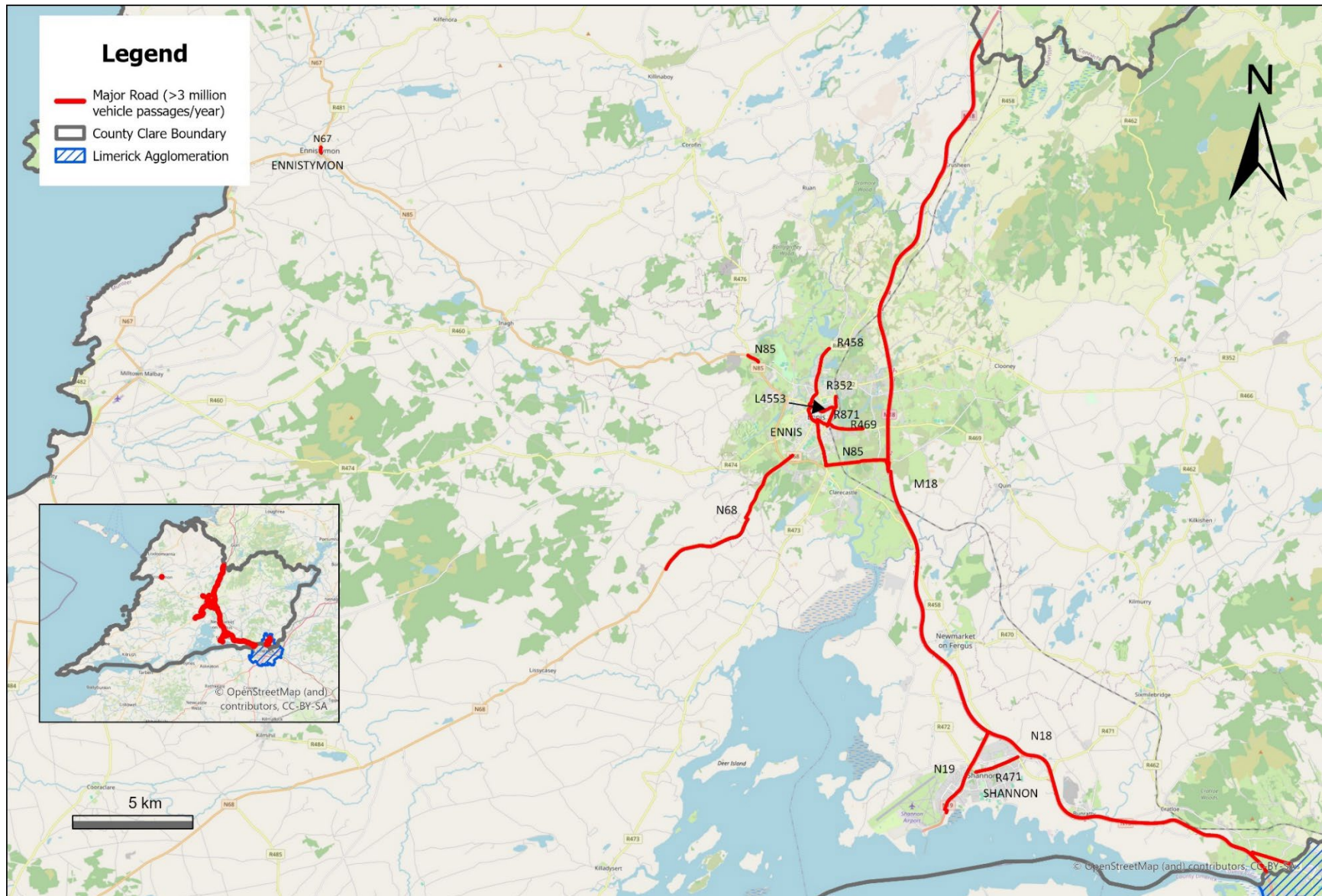


Figure 1. Sections of major roads in County Clare that qualified for the Round 4 Noise Action Plan 2024-2028.

The Plan is underpinned by a set of overarching noise policy principles outlined in the **Noise Policy Statement**.

Noise Policy Statement

Clare County Council will adopt a strategic approach to managing environmental noise, within its administrative area, and will aim to:

- **Mitigation** – identify appropriate mitigation measures to reduce noise levels where they are potentially harmful to the health of communities.
- **Prevention** - prevent additional members of the community being exposed to undesirable noise levels where it is likely to have a significant adverse impact on health and quality of life, and where practicable, improve or maintain the quality of sound in the public realm.
- **Protection** - protect areas which are desirably quiet, or which offer a sense of tranquillity through a process of identification and validation followed by formal designation of “Quiet Areas”.



Contents

1. Introduction	1
1.1 Purpose of the County Clare Noise Action Plan	1
1.1.1 Roles and Responsibilities	2
1.1.2 Scope of the END	9
1.1.3 Strategic Environmental Assessment (SEA) Screening	9
1.1.4 Appropriate Screening Assessment	10
1.2 Scope of the County Clare NAP	10
1.3 Noise Indicators	11
1.4 Structure of the NAP	11
1.5 Round 4 Timelines	11
1.6 Public Consultation	12
1.7 Acknowledgements	12
2. Existing Noise Management Legislation and Guidance	15
2.1 Introduction	15
2.2 Noise and Human Health	15
2.3 Noise and the Environment	16
2.4 Noise and Statutory Provisions	17
2.5 Noise and Transportation	17
2.6 Noise and Residential Development	20
3. Review of Noise Action Plan 2018-2023	25
3.1 Introduction	25
3.2 Mitigation Measures	25
3.2.1 Planning Applications	25
3.2.2 Active Travel	25
3.2.3 Traffic Density Reduction Measures	26
3.2.4 Traffic Calming	27
3.2.5 Road Resurfacing	27
3.2.6 Design Projects	28
3.2.7 ORIS Outdoor Recreation Scheme	30
3.2.8 Electric Vehicle Charging Points	30
4. Description of the Planning Area for Action Planning	33
4.1 Area of Coverage	33
4.2 General Population Exposed to Traffic Noise	33
4.3 Location of Noise Sensitive Buildings	26
4.4 Role and Responsibilities	34
5. Summary of the Results of the Strategic Noise Mapping Process	35

5.1	CNOSSOS-EU:2020	35
5.2	Model Calculation Scenarios	35
5.3	Regulatory Background to Noise Exposure and Harmful Effects	35
5.4	Strategic Noise Mapping Figures	36
5.5	Noise Exposure Assessment for County Clare	39
5.6	Harmful Effects Assessment for County Clare	41
6.	<i>Approach to Areas to be Subject to Noise Mitigation Activities</i>	43
6.1	Regulatory Background	43
6.2	Overview of Process	43
6.3	Identified Most Important Areas (MIAs) and Selected Priority Important Areas (PIAs)	44
7.	<i>Mitigation, Prevention and Protection Measures</i>	49
7.1	Introduction	49
7.2	Mitigation	49
7.2.1	Management of Priority Important Areas (PIAs)	49
7.2.2	Noise Sensitive Buildings	53
7.2.3	Other Relevant Measures	54
7.2.4	National Speed Limit Review (2023)	54
7.2.5	ReGAIN	54
7.3	Prevention	54
7.3.1	Introduction	54
7.3.2	Professional Practice Guidance on Planning and Noise: New Residential Developments	54
7.3.2.1	Stage 1: Initial Site Noise Risk assessment	55
7.3.2.2	Stage 2: Full Assessment	56
7.3.3	Noise and Public Realm	57
7.4	Protection	58
7.4.1	EPA Criteria for Quiet Areas	59
7.4.2	Citizen Science and Soundscape Approach to Designating Quiet Areas	60
7.4.3	Quiet Area Designation and Other Work Programmes	60
8.	<i>Public Consultation</i>	63
9.	<i>Long-term Strategy</i>	70
9.1	Noise Action Plan Commitments	70
9.2	Noise Policy Statement	70
9.3	Implementation Actions	70
	<i>Appendix A: Glossary</i>	74
	<i>Appendix B: Strategic Noise Maps</i>	77
	<i>Appendix C: Round 4 NAP Implementation Measures and Actions</i>	94
C.1	General – Noise Management Measures	94
C.2	Mitigation – Noise Management Measures	95

C.3	Prevention – Noise Management Measures	96
C.4	Protection – Noise Management Measures	97



1. Introduction

1.1 Purpose of the County Clare Noise Action Plan

The Environmental Noise Directive (“END”) (2002/49/EC) is a European Union legal instrument vital for protecting public health and the environment by addressing the adverse effects of environmental noise. The Directive’s main aim is to put in place a European-wide system for identifying sources of environmental noise pollution, informing the public about relevant noise data, and then taking the necessary steps to avoid, prevent or reduce noise exposure. The basic principles and requirements of the END can be summarised as discussed below. A glossary of terms can be found in **Appendix A**.

The END was transposed into Irish Law by the European Communities (Environmental Noise) Regulations 2006 (S.I. 140/2006)¹ (the “Regulations”). The Regulations were revised by the European Communities (Environmental Noise) Regulations 2018² (S.I. 549/2018) and amended through the European Communities (Environmental Noise) (Amendment) Regulations 2021 (S.I. 663/2021). These regulations are commonly referred to as the Environmental Noise Regulations.

The END does not set any limit values or prescribe noise management measures to fulfil its aims. Through the establishment of noise regulations, the preparation of Strategic Noise Maps and implementation of Noise Action Plans (herein termed “NAPs”), the END strives to raise public awareness, prevent, and reduce environmental noise, and preserve environmental noise quality in areas where it is good.

In Ireland, it is recommended that the NAPs support Policy Objective 65 (NPO 65) from the National Planning Framework 2040³, which states:

“Promote the pro-active management of noise where it is likely to have significant adverse impacts on health and quality of life and support the aims of the Environmental Noise Regulations through national planning guidance and Noise Action Plans.”

The County Clare NAP, and its subsequent implementation, is critical to ensuring that Clare County Council (herein termed the “Council”) achieves the aims and objectives of the END, compliance with national policy and to address local environmental noise issues.

¹ <https://www.irishstatutebook.ie/eli/2006/si/140/made/en/print> [Accessed March 2024]

² <https://www.irishstatutebook.ie/eli/2018/si/549/made/en/print> [Accessed March 2024]

³ National Planning Framework 2040: <http://www.gov.ie/en/project-ireland-2040/> [Accessed March 2024]

1.1.1 Roles and Responsibilities

The Environmental Noise Regulations designate the Environmental Protection Agency (EPA) as the national authority responsible for overseeing the implementation of the Regulations and for reporting information relating to strategic noise mapping and noise action planning to the European Commission in accordance with Article 10(2) of the END.

The EPA provides guidance (“EPA Guidance”⁴) on the required activities to be undertaken during the implementation of the Regulations.

Under the Environmental Noise Regulations, 2018, the following organisations are designated as noise mapping bodies for, County Clare, outside the Agglomeration of Limerick (herein termed the Limerick Agglomeration) for the areas identified in **Appendix B**:

- for major railways (sections with a flow above a threshold of 30,000 train passages per year), Iarnród Éireann or the National Roads Authority (now Transport Infrastructure Ireland), as appropriate, on behalf of the action planning authority or authorities concerned.
- for major roads (sections of road with a flow above a threshold of 3,000,000 vehicle passages per year), Transport Infrastructure Ireland is the Noise Mapping Body for national roads ; Clare County Council is the Noise Mapping Body for non-national roads.
- for major airports, the relevant airport authority, on behalf of the action planning authority or authorities concerned (airports with more than 50,000 movements, take-offs, or landings, per year)

There are no major railways or major airports (annual aircraft movement figures fall below the threshold that would define Shannon as a ‘major airport’) in County Clare and so this NAP is only concerned with environmental noise from major roads.

The geographic extent of the County Clare boundary, outside the Limerick Agglomeration, and the sections of major roads that qualified for Round 4 strategic noise mapping and noise action planning are presented in **Figure 1.1**.

CCC is a designated Action Planning Authority in accordance with the Regulations responsible for making and approving the County Clare NAP in consultation with the EPA and other Noise Mapping Bodies - Transport Infrastructure Ireland (TII) and Irish Rail - responsible for strategic noise mapping in Ireland. The Regulations do not explicitly assign sole responsibility to the Action Planning Authorities for owning or implementing the measures outlined in the NAPs.

The Action Planning Authorities recognise that the competencies and responsibilities required for successful implementation of NAPs extend beyond their sole jurisdiction. Therefore,

⁴ EPA Noise Action Planning Guidelines, 2024

collaboration and consultation are essential for the development and implementation of noise mitigation measures, where necessary. The Action Planning Authorities view on the roles and responsibilities necessary to ensure the successful implementation of NAPs are set out in **Table 1.1**

The Action Planning Authorities involved in preparing NAPs are committed to identifying noise mitigation measures in collaboration and consultation with the Noise Mapping Bodies, that offer benefits to public health and that are cost effective, contingent upon available resources and funding.

Acknowledging the current funding shortfall for dedicated noise mitigation measures under the Regulations, the Action Planning Authorities will explore all future opportunities for support with delivery partners and other relevant sources until any specific arrangements through the Regulations are established.

Table 1.1. The Action Planning Authorities (APAs) view on the roles and responsibilities required for the successful implementation of the NAP

Organisation	Strategic Noise-Mapping Body (NMB) Responsibility	Noise Action Plan Preparation - Responsibility	Noise Action Plan Implementation - Responsibility
Clare County Council (CCC)	NMB responsible for making and approving strategic noise maps for County Clare	APA responsible for making and approving action plans, in consultation with NMBs, for County Clare	Detailed evaluation of priority important areas, in consultation with NMBs, including identification of noise mitigation measures and implementation of those measures within the local authority's areas of competence and responsibility, subject to resources, timelines and budget.

Organisation	Strategic Noise-Mapping Body (NMB) Responsibility	Noise Action Plan Preparation - Responsibility	Noise Action Plan Implementation - Responsibility
Transport Infrastructure Ireland (TII)	NMB responsible for making and approving strategic noise maps for major roads designated as national roads	Consultee during action planning, with consideration of issues resulting from the strategic noise maps within their area of responsibility including identification of priority important areas to be included within the Noise Action Plan	As part of the detailed evaluation of priority important areas conducted by the APAs; consult and collaborate with the APAs to agree noise mitigation measures for locations within TII's areas of competence and responsibility (National Roads) and agree the strategy for implementation of same in respect of resources, timelines and budget

Organisation	Strategic Noise-Mapping Body (NMB) Responsibility	Noise Action Plan Preparation - Responsibility	Noise Action Plan Implementation - Responsibility
Irish Rail	NMB responsible for making and approving strategic noise maps for major railways	Consultee during action planning, with consideration of issues resulting from the strategic noise maps within their area of responsibility including identification of priority important areas to be included within the Noise Action Plan	As part of the detailed evaluation of priority important areas conducted by the APAs; consult and collaborate with the APAs to agree noise mitigation measures for locations within Iarnród Éireann's area of competence and responsibility (National Rail) and agree with the APAs the strategy for implementation of same in respect of resources, timelines and budget.

1.1.2 Scope of the END

The END is aimed at establishing harmonised EU measures to reduce noise emitted by the major sources, in particular road and rail vehicles and infrastructure, aircraft, outdoor industrial equipment and at providing a basis for developing and complementing the existing set of community measures concerning environmental noise.

The END applies to environmental noise to which humans are exposed, in particular in built-up areas, in public parks or other quiet areas in an agglomeration, in quiet areas in open country, near schools, hospitals and other noise sensitive buildings and areas.

The END does not apply to noise that is caused by the exposed person themselves, noise from domestic activities, neighbourhood noise, noise at workplaces or noise inside means of transport or due to military activities in military areas.

Noise maps are strategic tools and should not be used for the assessment of local noise nuisances.

1.1.3 Strategic Environmental Assessment (SEA) Screening

Strategic Environmental Assessment (SEA) is a formal and systematic process designed to assess the potential significant environmental impacts of implementing a plan or program before deciding to adopt it.

The requirement for SEA for plans and programs is outlined in European Directive 2001/42/EC (“SEA Directive”). In the context of specific land-use plans, this directive is implemented in Irish law through the Planning and Development (Strategic Environmental Assessment) Regulations, 2004⁵ (S. I. 436/2006). This legislation has been amended by the Planning and Development (Strategic Environmental Assessment) (Amendment) Regulations 2011⁶ (S.I. 201/ 2011).

For all other sectorial plans, the SEA Directive is transposed into Irish law by European Communities (Environmental Assessment of Certain Plans and Programmes) Regulations 2004⁷ (S. I. 435/2004), as amended by European Communities (Environmental Assessment of Certain Plans and Programmes) (Amendment) Regulations 2011⁸ (S. I. 200/2011).

The SEA screening has concluded that no SEA is required.

⁵ <https://www.irishstatutebook.ie/eli/2004/si/436/made/en/print> [Accessed March 2024]

⁶ <https://www.irishstatutebook.ie/eli/2011/si/201/made/en/pdf> [Accessed March 2024]

⁷ S.I. No. 435/2004 - European Communities (Environmental Assessment of Certain Plans and Programmes) Regulations 2004 (irishstatutebook.ie) [Accessed March 2024]

⁸ S.I. No. 200/2011 - European Communities (Environmental Assessment of Certain Plans and Programmes) (Amendment) Regulations 2011. (irishstatutebook.ie) [Accessed March 2024]

1.1.4 Appropriate Screening Assessment

The primary purpose of the Directive 92/43/EEC (“Habitats Directive”) is to promote the conservation of natural habitats and wild fauna and flora across the European Union. The Habitats Directive is transposed into Irish law by the European Communities (Birds and Natural Habitats) Regulations, 2011⁹ (S. I. 477/2011) (“Habitats Regulations”).

The European Environment Agency has designated a network of protected areas (“Natura 2000” sites) covering Europe’s most valuable and threatened species and habitats.

The County Clare NAP has been assessed to determine if it is required to be subject to an ‘Appropriate Assessment’ (“AA”) under the Habitats Directive. The screening assessment has determined that there is no likelihood of a significant impact on a Natura 2000 site. Consequently, there is no need to conduct a 'Stage 2 AA' for the purposes outlined in Article 6(3) of the Habitat Regulations.

1.2 Scope of the County Clare Noise Action Plan

The Council is responsible for the making and approval of this NAP, in consultation with the EPA and TII. NAPs must satisfy the minimum requirements set out in the Fourth Schedule of the Environmental Noise Regulations 2018.

The Environmental Noise Regulations require the strategic noise mapping to be based upon the assessment year of 2021. However, due to COVID-19 related travel restrictions and the operational impacts of the pandemic, noise contour results for 2021 may not be fully representative. Due to the nature of the decibel scale, a halving of road or rail traffic would result in a three-decibel decrease in noise levels, which would not normally be a perceivable reduction in noise. As rail and road traffic travel reductions did not generally reduce by these magnitudes, the use of the 2021 assessment year is deemed representative for the purpose of the Round 4 action planning.

The previous three rounds of strategic road noise mapping for Clare has used an ‘interim’ assessment method, CRTN 1988¹⁰. For the fourth round of noise mapping a common noise assessment method has been implemented (Common Noise Assessment Methods in Europe, CNOSSOS-EU¹¹) in line with Annex II of the Directive which was revised by the mandatory EU Directive 2015/996 and brought into effect through the Environmental Noise Regulations, 2018. This change in methodology makes any direct comparison of the Round 4 noise exposure statistics with the previous three rounds methodologically complex and inaccurate.

⁹<https://www.irishstatutebook.ie/eli/2011/si/477/made/en/print> [Accessed March 2024]

¹⁰ Department of Transport (UK), Calculation of Road Traffic Noise (CRTN), HMSO, 1988

¹¹ <https://op.europa.eu/en/publication-detail/-/publication/80bca144-bd3a-46fb-8beb-47e16ab603db> [Accessed March 2024]

For the noise action planning process, the Environmental Noise Regulations require that each NAP shall address priorities which “*may be identified on the basis of any noise limit value or criteria established by the EPA*” and “*in the first instance, address the most important area or areas, as the case may be, established by strategic noise mapping*”¹².

This NAP therefore includes the identification of existing noise emissions, the identification of priority important areas based on an assessment of harmful effects and details of noise management measures for consideration and evaluation at implementation stage. Consideration will also be given to the identification of Candidate Quiet Areas during the implementation of this NAP.

1.3 Noise Indicators

The Environmental Noise Regulations specify two main noise indicators which must be used in the preparation of the Strategic Noise Maps:

- L_{den} – the annual average noise level for the day, evening and night periods and is designed to indicate overall annoyance; and
- L_{night} – the annual average noise level for the night-time periods, from 23:00 – 07:00 hours, and is designed to indicate sleep disturbance.

1.4 Structure of the NAP

The first part of the NAP covers the overarching principles of the noise action planning process, including the legal context, and a review of the measures relevant to County Clare under the Round 3 NAP (2018-2023). This is followed by a summary of the strategic noise mapping with an evaluation of the estimated number of people exposed to environmental noise above levels required to be reported under the END and an assessment of the harmful effects.

Progress of implementation of the NAP will be tracked through annual reporting to the EPA.

1.5 Round 4 Timelines

A timetable of the key activities for the development and implementation of the NAPs for Round 4, and delivery to the European Environment Agency (EEA) by the Authority, is set out below:

- Q1 2024: Prepare draft NAPs.
- 10 May to 21 June 2024: Public consultation for County Clare (6 weeks).
- 18 July 2024: Deadline for submission to the EPA.

¹² Section 12(2) of the Environmental Noise Regulations 2018.

- 18 August 2024: Deadline for publishing NAPs.
- 18 August 2024: A summary of the NAPs to be submitted to the EPA.
- 18 January 2025: NAPs to be reported to the EEA by the EPA.

1.6 Public Consultation

As part of the consultation process noise action planning authorities are required to ensure that:

- the public are consulted on proposals included in the NAPs.
- the public are given early and effective opportunities to participate in the preparation and review of NAPs.
- the results of public participation are considered in finalising or reviews of the NAPs.
- the public are informed of the decisions taken in relation to the NAPs. and
- reasonable timeframes are adopted to allow sufficient time for each stage of public participation.

1.7 Acknowledgements

The background mapping used in the figures presented in this report are taken from OpenStreetMap (©OpenStreetMap contributors).

See: <https://www.openstreetmap.org/copyright>).

2. Noise Management Legislation and Guidance

2.1 Introduction

EPA Guidance provides support to the Action Planning Authorities for the preparation of NAPs. This guidance takes cognisance of existing international, European and national legislation and is reviewed below along with regional and local strategies, policies and objectives that support the development of the Round 4 NAPs (**Figure 2.1**).

2.2 Noise and Human Health

The World Health Organization (WHO) in its publication 'Environmental Noise Guidelines for the European Region 2018'¹³ (ENG) has presented several key adverse health outcomes from environmental noise including:

- Noise annoyance.
- Sleep disturbance.
- Cardiovascular health.
- Mental health and well-being.
- Cognitive impairment.

These negative health outcomes have been summarised by the European Environment Agency (EEA) in the Environmental Noise in Europe – 2020 report. The EEA outline significant public health impacts with the long-term exposure to environmental noise estimated to cause 22 million people suffering chronic high annoyance, 6.5 million people suffering from chronic high sleep disturbance, 48,000 new cases of ischaemic heart disease per year and 12,000 premature deaths in Europe¹⁴.

The ENG provide recommendations for protecting human health from exposure to noise originating from various sources including road traffic, railway and aircraft. The recommendations include guideline values using L_{den} and L_{night} metrics in terms of the onset of health effects. However, no single noise metric best correlates with all adverse health outcomes associated with environmental noise effects, and health effects can be correlated with more than one metric. The noise metrics which are generally considered to best

¹³ Environmental Noise Guidelines for the European Region, World Health Organisation, 2018

¹⁴ Environmental Noise in Europe – 2020, EEA Report 22/2019

correlate with the different health effects, and are the subject of this NAP, are set out in **Table 2.1**.

Table 2.1. Noise metrics and the associated health effects.

Noise Metric	Health Effects
L _{den}	Cardiovascular disease, Cognitive impairment, and Annoyance
L _{night}	Sleep Disturbance

The values recommended not to be exceeded in the ENG regarding road noise, above which the onset of health effects is observed in the population and which the WHO strongly recommend that policy-makers reduce the populations exposure below are:

- 53 dB L_{den} and 45 dB L_{night} for road noise

The basis of these recommendations has informed the required methods for the assessment of health effects of noise (ischaemic heart disease, high annoyance and high sleep disturbance) in the Environmental Noise (Amendment) Regulations 2021 for noise action planning.

Subsequently, the European Commission (EC) has adopted the Zero Pollution Action Plan (ZPAP)¹⁵ (2021). ‘Vision for 2050’ under the ZPAP includes key targets for noise by 2030 - that is reducing the share of people chronically disturbed by transport noise by 30%. This is a target that may be introduced into Irish legislation in the future and need to be considered in future iterations of NAPs.

2.3 Noise and the Environment

The Strategic Environmental Assessment (SEA) Directive requires that an environmental assessment is carried out of certain plans and programmes which are likely to have significant effects on the environment, including noise. For certain public and private projects, the Environmental Impact Assessment (EIA) Directive mandates that where there is the potential for significant environmental noise effects then they must undergo a thorough evaluation and while the Habitats Directive does not have explicit requirements in relation to noise there is an underlying goal of conserving biodiversity and protecting ecosystems from the adverse effects of noise pollution. The Planning and Development (Strategic Environmental Assessment) Regulations, 2004 (S. I. 436/2006)¹⁶, EC (Environmental Assessment of Certain Plans and Programmes) Regulations 2004 (S. I. 435/2004)¹⁷ and EC (Birds and Natural

¹⁵ EU Action Plan: Towards a Zero Pollution for Air, Water and Soil, 2021

¹⁶ <https://www.irishstatutebook.ie/eli/2004/si/436/made/en/print> [Accessed March 2024]

¹⁷ <https://www.irishstatutebook.ie/eli/2004/si/435/made/en/print> [Accessed March 2024]

Habitats) Regulations 2011 (S. I. 477/2011)¹⁸ implement the relevant environmental Directives into Irish law.

2.4 Noise and Statutory Provisions

The Environmental Protection Agency Act, 1992¹⁹, is not related to the making of NAPs but includes national legislation regarding environmental noise with statutory provisions relating to the control of environmental noise which may give rise to nuisance or loss of private amenity, constitute a danger to health, or damage property.

With regards to noise, Section 106 to 108 are most relevant:

- Section 106 gives the relevant Minister certain powers to regulate noise that may give rise to a nuisance or be harmful to health or property.
- Section 107 gives power to local authorities or the Agency to serve notice requiring measures to be taken to prevent or limit noise from any premises, processes or works; and
- Section 108 sets out a process whereby noise issues may be taken to District County, which may make any order requiring that the person or body responsible for the noise to take measures for the prevention or limitation of the noise in question.

The Act also requires that certain bodies must limit environmental pollution caused by industrial activities to obtain a license to operate (Integrated Pollution Prevention Control (IPPC) Licensing). The activities to which a licence applies are provided in First Schedule of the Act (as amended).

2.5 Noise and Transportation

The EC Phenomena Project, 2021²⁰ has reviewed the potential impact of measures capable of delivering significant reductions of health burden (20% to 50%) arising from environmental noise related to roads, railways, and aircraft, and to assess how relevant noise related legislation could increase the implementation of the most effective measures. For road noise, the measures considered in the project included low noise road pavements, low noise zones (speed reductions) and new legislation at an EU level for a low noise tyre fleet. The analysis found that a combination of all road noise abatement measures can achieve a health burden reduction by 2030 in the range 18% to 24%.

¹⁸ <https://www.irishstatutebook.ie/eli/2011/si/477/made/en/print> [Accessed March 2024]

¹⁹ <https://www.irishstatutebook.ie/eli/1992/act/7/enacted/en/print> [Accessed March 2024]

²⁰ European Commission Assessment of Potential Health Benefits of Noise Abatement Measures in the EU (Phenomena Project), 2021

In Ireland the Roads Act, 1993²¹ (revised 2023²²), outlines the responsibilities of the road's authorities for the maintenance and construction of public roads. Under section 77 of the Roads Act 1993, power had been given to the Minister to make regulations requiring relevant road authorities to take measures to mitigate the effects of road traffic noise and to specify limits for road traffic noise which, if exceeded, would require mitigating action from the road authorities. However, Section 77 was repealed under the Public Transport Regulation Act, 2009²³. There are no Irish statutory noise limits or standards governing road traffic noise for new or existing roads.

The National Roads Authority (NRA) published the 'Guidelines for the Treatment of Noise and Vibration in National Road Schemes' (2004²⁴, expanded on by TII in 2014²⁵). The guidelines provide design goals for noise related to both the construction and operational stages of new road schemes. For the operational stage there is a recommended design goal of L_{den} less than, or equal to, 60 dB (free-field value). Any proposed new road scheme must consider the design goal for any existing dwellings likely to be affected. The TII guidelines present an approach to mitigating the adverse effects of noise from national road schemes in so far as practicable using measures such as alignment changes, barriers, use of low noise road pavements. The responsibility for developing noise mitigation policies relating to any proposed new noise sensitive developments near existing or planned road schemes lies with the relevant planning authority.

National Roads 2040²⁶ (NR2040) is TII's long-term strategy for planning, operating, and maintaining the National Roads network. The strategy has been developed to support the delivery of National Planning Framework 2040²⁷ objectives and to align with the Department of Transport's National Investment Framework for Transport in Ireland. One of the key visions in the strategy is that the national road network should be environmentally sustainable:

"Environmental sustainability is the bedrock for social and economic sustainability in Ireland; avoiding and where unavoidable mitigating environmental impacts including climate change, air quality and noise as well as biodiversity impacts of National Roads."

Many of the issues in the strategy surround decarbonisation and the need to reduce greenhouse gas and carbon emissions, as set out in the Climate Action Plan 2023²⁸ and provide potential opportunities for mutual gains for noise reduction (e.g. through active

²¹ <https://revisedacts.lawreform.ie/eli/1993/act/14/revised/en/html> [Accessed March 2024]

²² <https://revisedacts.lawreform.ie/eli/1993/act/14/revised/en/html> [Accessed March 2024]

²³ <https://www.irishstatutebook.ie/eli/2009/act/37/enacted/en/print> [Accessed March 2024]

²⁴ Guidelines for the Treatment of Noise and Vibration in National Road Schemes, NRA, 2004

²⁵ Good Practice Guidance for the Treatment of Noise during the Planning of National Road Schemes, TII, 2014

²⁶ National Roads 2040, TII, 2023

²⁷ National Planning Framework – Ireland 2040 Our Plan, Department for Housing, Local Government and Heritage, 2018

²⁸ Climate Action Plan 2023, Department of Environment, Climate and Communications, 2022

travel, integrated mobility, maintenance, and improvement works on the national road network, switch towards electric private vehicles). However, while there is general support for the mitigation of transport-related noise in NR2040 there is no national funding mechanism available to implement abatement measures where they might be recommended through NAPs.

The National Speed Limit Review, led by the Department of Transport, was published in September 2023, in accordance with Ireland's Government Road Safety Strategy, 2021 - 2030²⁹. Any introduction of the proposed recommendations - although not its primary goal - might have the effect of reducing road noise levels. The key recommendation is that for built-up and urban areas that a default speed limit of 30 km/h be introduced. A 30 km/h limit should apply, for all urban centres, residential roads and locations where there is a significant presence of vulnerable/active road users. There are exceptions to the recommendation (e.g. pedestrian zones and shared spaces/zones where a speed limit of 20 km/h would apply, 50 km/h for national, regional, arterial roads and key public transport routes etc.). It is recommended that default speed limits remain the same on the rural road network except for National Secondary Roads where it is recommended that the default Speed Limit be reduced from 100 km/h to 80 km/h and local roads where it is recommended that the default speed limit be reduced from 80 km/h to 60 km/h. There are a number of specific recommendations on the applications of speed limits for particular circumstances such as Cycle Streets (Urban), School Speed Zones, Urban Shared Spaces/Zones, Pedestrian Zones, Slow Zones, Quiet Lanes etc. Work has commenced by the Department of Transport to review the existing guidelines for managing and setting speed limits and it is envisaged that legislation to implement recommendations shall be introduced in 2024.

The Mid-West Area Strategic Plan 2012-2030³⁰ seeks to reduce car dependency and supports the provision of high-quality active travel routes linking residential, commercial and employment areas throughout Clare and the Mid-West Region. Similarly, the Limerick Shannon Metropolitan Area Transport Strategy³¹ (LSMATS), prepared by the National Transport Authority (NTA), focuses on reducing car dependency within the region thereby alleviating issues such as poor public health and reduced air quality, with mutual gains for noise reduction.

An objective of the Clare County Development Plan 2023-2029 (CDP)³² is to facilitate the implementation of the LSMATS (CDP4.2, CDP4.4 and CDP11.3 respectively). The LSMATS combines land use and transport planning to discourage private vehicle use and prioritise walking, cycling and public transport. The CDP also has supporting objectives to provide park

²⁹ Ireland's Government Road Safety Strategy (2021 - 2030) - Our Journey Towards Vision Zero

³⁰ Mid-West Area Strategic Plan 2012-2030: Planning, Land Use and Transportation Strategy, Mid-West Regional Authority, 2013

³¹ Limerick Shannon Metropolitan Area Transport Strategy, NTA, 2023

³² Clare County Development Plan 2023-2029

and ride ('and stride') facilities (CDP11.2), support delivery of a cycle network across the county (CDP11.5) and review the existing feasibility study on Shannon Rail Link (CDP11.7).

The CDP recognises that green corridors and greenways have an important role in supporting and promoting active travel such as walking and cycling (CDP9.23, CDP9.8, CDP 10.11 and CDP15.30 respectively) and the CDP supports objectives contained in Our Rural Future: Government's Blueprint to Transport in Rural Ireland with the potential for walking and cycling within and between rural towns and villages. The CDP also supports the need for an improved public transport service in rural areas and to facilitate the ongoing review and enhancements to inter-city, regional and commuter services in conjunction with the NTA (CDP8.6, CDP11.2, CDP11.7, CDP11.8, CDP11.9, CDP18.3) Transitioning towards sustainable modes of travel is also a key objective in the Clare Climate Action Plan³³.

2.6 Noise and Residential Development

The National Planning Framework 2040 recognises the importance of noise management where there is a potential impact on human health and implements aims through NPO 65 (see **Section 1.1**).

Where there are proposals for new residential buildings near major transportation routes then it is the responsibility of the relevant planning authorities to ensure consideration is given to the potential impact of environmental noise for future residents. However, there is no national noise planning guidance to support planning authorities in decision-making. Siting large residential developments beside major transportation routes has the potential to allow a large number of residents to be exposed to the potential harmful effects of noise.

Technical Guidance Document Part E (2014) of the Building Regulations³⁴ does not provide any requirements for the type and location of new buildings besides existing major noise sources i.e. bringing people to noise. The guidance only relates to the mitigation of sound transfer between dwellings and rooms within a building. Additionally, while the Building Regulations (Part F Amendment, 2019³⁵) provide details on the ventilation requirements for new residential developments their implementation will not necessarily ensure thermal comfort for occupants and prevent overheating, particularly where closed windows are proposed for new developments in order to achieve target internal noise levels.

Relevant standards and guidance for the consideration of noise where there is proposed new residential development near major transportation sources (roads and railways) include the

³³ Clare Climate Action Plan 2024-2029

³⁴ <https://www.gov.ie/en/publication/1d2af-building-regulations/> [Accessed March 2024]

³⁵ <https://www.irishstatutebook.ie/eli/2019/si/263/made/en/print> [Accessed March 2024]

Professional Planning Guidance on Planning & Noise: New Residential Development³⁶ (ProPG, 2017), Acoustic Ventilation and Overheating, Residential Design Guide³⁷ (AVO, 2021), BS 8233:2014 Guidance on sound Insulation and Noise Reduction for Buildings³⁸ and ISO 19488:2021 Acoustics: Acoustic classification of dwellings³⁹.

ProPG was published by the Acoustics and Noise Consultants (ANC), Chartered Institute of Environmental Health (CIEH) and UK Institute of Acoustics (IOA). Its primary goal is to aid in planning to deliver sustainable development by promoting good health and well-being in relation to noise. It encourages the use of good acoustic design process in and around proposed new residential development and provides opportunities to incorporate effective design interventions that will enable residential development to proceed in areas that might otherwise have been considered unsuitable. ProPG is referred to as being used by many local authorities in Ireland in the *Association of Acoustic Consultants of Ireland (AACI)* guidance document, Environmental Noise Guidance for Local Authority Planning and Enforcement Departments (2021).

The AVO guidelines provide an approach as to how the competing aspects of thermal and acoustic comfort can be managed, which is particularly important in situations where acoustic requirement may call for closed windows. BS 8233:2014 provides recommendations for the control of noise in and around buildings. The standard provides suitable internal noise levels within different types of buildings including residential dwellings for steady external noise sources. BS 8233:2014 recommends maximum ambient noise levels, as summarised in **Table 2.2**.

Table 2.2. BS 8233:2014 recommended internal L_{Aeq} target levels for overall noise in the design of a residential building. *See BS 8233:2014 for caveats and notes.

Location	$L_{Aeq, 16hr}$ (0700-2300 hrs) *	$L_{Aeq, 8hr}$ (2300-0700 hrs) *
Living Rooms	35 dB	-
Dining Rooms	40 dB	-
Bedrooms	35 dB	30 dB

In the absence of Irish planning guidance local authorities in 2021 prepared Draft Interim National Guidance for the Consideration of Transportation Noise in the Design of New Residential Development⁴⁰ under a subgroup of the NIECE National Local Authority Noise

³⁶ Professional Planning Guidance on Planning & Noise: New Residential Development, IOA, ANC, CIEH, 2017

³⁷ Acoustic Ventilation and Overheating, Residential Design Guide, IOA, ANC, 2020

³⁸ BS 8233:2014 Guidance on Sound Insulation and Noise Reduction for Buildings, British Standards Institution, 2014

³⁹ ISO 19488:2021 Acoustics: Acoustic Classification of Dwellings, Organization for International Standardization, 2021

⁴⁰ Draft Interim National Guidance for the Consideration of Transportation Noise in the Design of New Residential Development, NIECE Local Authority Noise Subgroup, 2021

Working Group. This draft guidance includes an overarching aspiration that good acoustic design should be implemented from the outset of the design of new residential developments and recommends the use of the ProPG approach to bringing people to noise and cognisance of BS 8233:2014 and the AVO guidelines.

The aim of NPO 65 feeds into regional and local strategies and plans to support the development of strategic noise mapping and pro-active management of noise through noise action planning, including highlighting the importance of quiet areas for communities^{41,42}

The CDP promotes the proactive management of noise where it is likely to have significant adverse impacts on health and the environment (CDP11.40). The dominant source of noise in Clare is identified as being road traffic related.

Traffic related noise objectives include consideration of the requirement to identify appropriate mitigation measures to reduce traffic noise where levels are potentially harmful to human health and that proposed noise sensitive developments near major roads should be designed and constructed to minimise noise disturbance following good acoustic design process in accordance with ProPG and based on recommendations of the WHO.

These points highlight some of the main steps which Clare County Council has taken to provide a framework for taking consideration of noise pollution process in order to protect the general population from the effects of noise exposure.

⁴¹ Regional Spatial and Economic Strategy for the Southern Region, 2020

⁴² Mid-West Area Strategic Plan: Planning, Land Use and Transportation, Mid-West Regional Authority, 2012-2030

International	WHO Environmental Noise Guidelines for the European Union 2018			
European Union	Directive 2002-49/EC (Environmental Noise Directive)		Directive 2015/996	
	Directive 2020/367		Directive 2001/42/EC (SEA Directive)	
	Directive 85/337/EEC (EIA Directive)	Directive 92/43/EEC (Habitats Directive)	EC Zero Pollution Action Plan, 2021	
	EC Phenomena Project, 2021		EEA Environmental Noise in Europe-2020	
National	Environmental Protection Agency Act, 1992	Irish Roads Act, 1993 (Revised 2023)	Building Regulations, 1997 (as amended)	
	EC(Environmental Assessment of Certain Plans and Programmes) (Amendment) Regulations, S.I. 200/2011	Planning and Development (Strategic Environmental Assessments) (Amendment Act) Regulations, S.I. 201/2011	EC(Birds and Natural Habitats) Regulations S.I. 477/2011	
	EC (Environmental Noise) Regulations, S.I. 549/2018		EC (Environmental Noise) (Amendment) Regulations, S.I. 663 /2021	
	Project Ireland 2040-NPF, 2017	National Development Plan (NDP) 2021-2030	Climate Action Plan,2023	National Roads 2040
	TII Guidelines, 2014	EPA Noise Action Planning Guidance, 2023		Draft Interim National Guidance for the Consideration of Transportation Noise in the Design of New Residential Development, 2021
Regional	Mid-West Area Strategic Plan 2012-2030	RSES for the Southern Region, 2020		LSMATS, 2022
Local	County Clare Corporate Plan 2019-2024	Clare Development Plan 2023-2029		Local Area Plans Clare Climate Action Plan 2024-2029



Figure 2.1. Existing international, European, national, regional and local noise management legislation, guidance and evidence base.

3. Review of Noise Action Plan 2018-2023

3.1 Introduction

The Clare Noise Action Plan 2018-2023 was concerned with noise from major roads alone because the Limerick Agglomeration had not been defined in the Environmental Noise Regulations, at the time the plan was prepared.

3.2 Mitigation Measures

The following locations were identified as hotspots in the NAP 2018-2023 (Round 3):

The Clare County Council Action Plan addresses road noise from

- the M18 motorway from Smithstown Interchange to Galway border
- the N18 from Limerick border to Smithstown Interchange
- the N19 from Smithstown Interchange to Shannon Airport entrance
- the N68 from Ennis to Kilrush
- A section of the N85 from Killow Interchange via Lehinch Road Roundabout, Ennis to the N85 junction with the R476
- R445 - from Limerick border to N18 junction (old N18)
- R463 - from Limerick border to R463/R465 junction
- R471 - Shannon Town Centre Roundabout to Ballycasey Roundabout (old N19)
- R458 - R458/N85 Clareabbey Roundabout to Ballycorey Junction through Ennis (old N18)
- R352 - R352/N85 Claureen Roundabout to R352/R458 Maid of Erin Roundabout
- R352 - R352/R871 Junction to Ballymacahill Cross
- R469 - Ennis Cathedral to Junction to Quin Road Industrial Estate

Lands adjacent to these roads were considered to be located within the action planning area where noise mapping had indicated that the environmental noise levels may be 55dB_{Lden} or greater.

The following is further consideration of the work described above that is relevant to the County Clare NAP and formed part of the annual reporting to the EPA under Round 3.

3.2.1 Planning Applications

The Road Design Office reviewed planning applications in relation to noise exposure from public roads.

3.2.2 Active Travel

The following active travel projects to support modal shift were undertaken or commenced during the implementation of the NAP 2018-2023:

- R352 Tulla Road, Ennis - Design process commenced to incorporate a 2 km segregated cycle/pedestrian path. Currently at detailed design stage.
- R458 Limerick Road, Ennis - Design process commenced to incorporate a segregated cycle/pedestrian path from Clareabbey Roundabout to L-4506 Flannans College Roundabout.
- R458 Clonmoney National School - Design process commenced to deliver traffic calming measures incorporating carriageway tightening, speed ramps and raised pedestrian crossings under Safe Routes to School Program.
- R458 Drumline to Clonmoney – 1.6 km shared cyclist/pedestrian path upgraded incorporating new linemarking and signage.
- R458 Clonmoney to Hurlers Cross – New pedestrian crossing and upgrading of existing N18 underpass facilitating improved cyclist/pedestrian link between Clonmoney and Hurlers Cross.
- R469 Station Road, Ennis - Design process commenced to deliver traffic calming measures incorporating carriageway tightening, speed ramps and raised pedestrian crossings under Safe Routes to School Program.
- L4506 Flannans Drive - Segregated cycle path incorporating traffic calming measures completed linking R458 Limerick Road to N68.
- N67/N85 Ennistymon - Inner Relief Road (Blakes Corner) Scheme has been approved to address the serious traffic congestion issues through Ennistymon town.
- Ennis Co Creating Project delivered enhanced pedestrian measures on R-871 Clonroadmore and other locations in Ennis.

3.2.3 Traffic Density Reduction Measures

Clare County Council supported Transport for Ireland (TFI) in the delivery of three new TFI Local link bus routes in the county:

- Ennis to Limerick via Quin
- Ennis to Flagmount
- Ennis to Whitegate

In addition, Clare County Council (CCC) supported the NTA regarding increasing the frequency of bus services on existing local link bus routes and the finalisation of routes for Ennis Town Bus Service. Fifteen no. bus shelters have also been installed in the County by the NTA with CCC carrying out civil enabling works.

3.2.4 Traffic Calming

The Council each year invests in significant traffic calming measures such as speed cushions, speed ramps, tabletop junctions, segregated pedestrian and cyclist facilities, driver feed-back signage, general signage and pedestrian crossings that aim to reduce traffic speeds in residential neighborhoods thus making them safer for pedestrians and cyclists. Reduced speeds also potentially reduce road noise. The following traffic calming measures have been delivered:

- N67 Ennistymon - New raised pedestrian crossing installed on main street. Further public realm works planned which will deliver enhanced traffic calming measures.
- R458/Junction of Old Mill Street, Ennis - One way traffic system, road and junction tightening installed.
- R352/St. Senans Rd - New roundabout and raised pedestrian crossing installed.

3.2.5 Road Resurfacing

Each year the Council carries out a significant amount of road resurfacing primarily on the roads in the City and County. The Council uses SMA surfacing materials in urban areas and on national and regional roads as the preferred wearing course. These surfaces produce less road noise (specifically tyre/rolling noise) at low traffic speeds than the traditional ones thus leading to less local noise pollution. However, HRA is still used at locations where there are significant heavy goods vehicles turning movements.

Since the last NAP the following locations were resurfaced with Clause 942 SMA which gives a quieter section of road:

- R469 Quin Road. Station Road roundabout to Bruach na hAbhainn. Length 900 m.
- R463 Corbally United FC to O' Connors Cross. Overlay Length 830 m
- R458 Flannans to Clareabbey. Overlay Length 808 m.
- R458 Clareabbey Roundabout to Clarecastle Overlay. Length 1022 m.
- R458 Carmody Street. Overlay completed.
- R458 Clare / Limerick Road. Overlay completed.
- N19 resurfaced with SMA by TII between N18 Bunratty to Junction 4 Cratloemoye.



Figure 3.1: R469 Quin Road Resurfacing Complete

3.2.6 Design Projects

In addition to the Active Travel projects detailed in **Section 3.2.2** the following design projects commenced during the implementation of the 2018-2023 County Clare Noise Action Plan.

N19 Shannon Airport Access Road Scheme

Clare County Council is progressing the development of the N19 Shannon Airport Access Road Improvement Scheme in partnership with Transport Infrastructure Ireland and the Department of Transport. The scheme will be progressed through Phases 1 to 4 and is currently at Phase 3 - Design and Environmental Evaluation. The scheme includes a combination of active travel measures for walking and cycling, improvements to public transport, along with new and improved road infrastructure between Drumgeely roundabout and Knockbeagh Point roundabout on approach to Shannon International Airport.



Figure 3.2 : N19 Existing Airport Access Road Shannon

TII HD15 Scheme

N85 Clareabbey Roundabout

Proposed upgrade incorporating enhanced safety and active travel measures. Concept Design completed 2023. Detailed Design progressing.

West Clare Greenway

Clare County Council, with the support of Transport Infrastructure Ireland aims to develop an 85km greenway in County Clare, largely following the route of the old West Clare Railway. The greenway will be delivered in four sections. Currently the option selection, design and assessment phases of the first and second sections between Kilrush and Kilkee and Ennis and Ennistymon are being progressed.

3.2.7 ORIS Outdoor Recreation Infrastructure Scheme

Ennis R469/N85 – New 2 km River Fergus Walkway completed providing pedestrian and cyclist access between N85 and R469.

Newmarket on Fergus – Kilnasoolagh Park. Upgrading and widening footpaths increasing pedestrian capacity, as part of a new looped walking route in the town

3.2.8 Electric Vehicle Charging Points

The Council in association with ESB ecars and other energy providers has facilitated the installation of public electric vehicle charging points at the following locations:

Public EV Chargers

ENNIS	John O'Sullivan Pk, Lees Rd.
ENNIS	Active Ennis - Swimming Pool
ENNIS	Abbey St. Car Park
ENNIS	Daly's Rd.
ENNIS	Clare Co Co HQ, Aras Contae an Chlair
SHANNON	Shannon (Garda Station), Bealach Bri, Shannon, V14 VH27
NEWMARKET ON FERGUS	Ennis Rd.
SIXMILEBRIDGE	The Green, Sixmilebridge
KILLALOE	Playground
KILKEE	Public Car Park - East End
LAHINCH	Seaworld
LAHINCH	Public Car Park, Miltown Rd.

EV chargers provided by the commercial sector are also publicly accessible at the following locations :

ENNIS	Woodstock Hotel
ENNIS	Circle K - Limerick Rd.
ENNIS	Kerry Agri - Quin Rd.
ENNIS	Vanderlust Unit 62 Doora Industrial Estate Ennis
SHANNON	Circle K Service Station, Airport Road, Tullyvaragh, Shannon,
SHANNON	Oakwood Arms
SHANNON	CAFÉ Solo - Drumgeely
SHANNON	Starbucks
SHANNON	Park Inn Hotel, Shannon Aiport
SHANNON	Shannon Airport

DROMOLAND	The Inn @ Dromoland
DROMOLAND	Dromoland Castle
DROMOLAND	Dromoland Castle
MEELICK	Radisson Hotel
LISDOONVARNA	Hydro Hotel
LISDOONVARNA	The Boghill Centre
KILSHANNY	Kilshanny House
ENNISTYMON	Falls Hotel
LAHINCH	Lahinch Castle Course
MILTOWN MALBAY	Supervalu, Ennis Rd.
MILTOWN MALBAY	Vaughan's Service Station, Spanish Pt. Rd.
SPANISH POINT	Armada Hotel, Spanish Point
KILRUSH	Tesco - Ennis Rd.

This will encourage the use of electric cars which emit less road noise at low speeds though urban areas.



Figure 3.3: EV Charger, Shannon Garda Station



4. Description of the Planning Area for Action Planning

4.1 Area of Coverage

In County Clare, outside the Limerick Agglomeration, the Council is responsible for noise action planning relating to sections of major roads passing through its administrative area (**Figure 1.1**).

The sections of relevant roads which qualified for strategic noise mapping and, as such, are subject to consideration for noise action planning are given in **Table 4.1**.

Table 4.1. Sections of Major Roads for Noise Mapping in administrative area of Clare County Council outside of the Limerick Agglomeration.

Road Number	Approximate Length (km)	Location
R352	1.3	Clon Road
L4553	5.9	Francis Street
R469	2.1	Station Rd/Quin Rd
R458	5.5	Gort Road/Mill Road/Clare Road
N19	4.0	Shannon
R471	1.8	Shannon
N68	7.6	Kilrush Road
N85	2.7	Dual Carrigewayway
N85	0.5	Lahinch Road
M18/N18	45	Motorway/Dualcarrigeway
R445	2	Meelick
R465	3.6	Ardnacrusha
N67	0.25	Ennistymon

4.2 General Population Exposed to Traffic Noise

The population of County Clare, outside the Limerick Agglomeration (population 6,560), is approximately 121,378 based on the 2022 census. The main population centres exposed to transportation noise from major sections of roads for this NAP lie within Ennis town and Shannon town outside of the Limerick Agglomeration.

4.3 Location of Noise Sensitive Buildings

Certain locations and non-residential building types are considered to be more sensitive to noise pollution than others. The main priority of the END is to reduce environmental noise exposure in residential areas. It is also recommended that competent authorities designate buildings such as educational and health care facilities as being noise sensitive.

Numbers of non-residential buildings which are viewed as being noise sensitive near the major roads within the administrative area of the Council have been calculated based on a review of the strategic noise maps. See summary **Tables 5.5 to 5.8**

4.4 Role and Responsibilities

The roles and responsibilities of the TII and the Council in County Clare, outside the Limerick Agglomeration, are summarised in **Table 1.1**.

5. Summary of the Results of the Strategic Noise Mapping Process

5.1 CNOSSOS-EU:2020

The European Commission (EC) Directive 2015/996⁴³ established common noise assessment methods meeting the requirements of the END. It replaced Annex II of the END now requires that Member States apply the Common Noise Assessment Methods for Europe (CNOSSOS-EU) for the noise modelling of road, rail, aircraft and industrial sources. The use of the CNOSSOS-EU method has been transposed into Irish Law via the European Communities (Environmental Noise) (Amendment) Regulations 2021 (S.I. 663/2021) and has been used to produce the Strategic Noise Maps and to calculate the noise exposure statistics and harmful effects (**Sections 5.5 and 5.6**) for sections of major roads in the NAP.

5.2 Model Calculation Scenarios

Two result formats have been prepared for the noise indicators specified in the Regulations, L_{den} and L_{night} :

- A 10 metres grid format where the model outputs a result every 10 metres in a uniform grid. These results are used to produce the Strategic Noise Maps; and
- Façade receiver format - where the model outputs a result at receiver points digitised at the façades of residential, school and hospital buildings. These results are used to calculate the exposure statistics and harmful effects.

5.3 Regulatory Background to Noise Exposure and Harmful Effects

The Fifth Schedule of the Environmental Noise Regulations 2018 sets out the data which is to be sent to the European Commission. With respect to exposure statistics, it is required that the number of people are estimated within 5 dB bands between 55 dB to 75 dB L_{den} , 50 dB and 70 dB L_{night} and above 75 dB L_{den} and 70 dB L_{night} , rounded to the nearest one hundred persons, based on the strategic noise maps⁴⁴.

⁴³ <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32015L0996&from=PT> [accessed 9th March 2024]

⁴⁴ Where the noise level is calculated at a 4 metres height above ground level.

The EC Environmental Noise (Amendment) Regulations, 2021, transposes the EC Delegated Directive (EU) 2021/1226⁴⁵ into Irish Law. It sets out the assessment methods for harmful effects, which considers ischaemic heart disease (IHD), high annoyance (HA) and high sleep disturbance (HSD).

The exposure and harmful effects statistics are summarised in **Sections 5.5** and **5.6**, respectively.

5.4 Strategic Noise Mapping Figures

The strategic noise maps are consistent with the requirements of the Environmental Noise Regulations, 2018.

The maps are noise contour maps and a graphical representation illustrating the distribution of noise levels over a geographical area. The colours of the noise exposure bands are indicated in the legend, with darker colours representative of higher noise levels.

The Regulations do not set out noise limits which are permissible or not permissible in relation to environmental noise, however, do set the noise exposure bands to be reported, which are reflected in the strategic noise maps. In the absence of noise limits, it could be assumed that the closer the calculated noise level is to the highest noise exposure band set out in the Regulations the more undesirable it may be. Conversely, the closer the calculated noise is to the lowest noise exposure band the more desirable it may be.

The Round 4 strategic noise maps for County Clare, outside the Limerick Agglomeration, are shown for the County in **Figures 4.1** and **4.2** for the two noise indicators specified in the Regulations, L_{den} and L_{night} , respectively. The strategic noise maps are presented at a more detailed local scale in Appendix C. The Round 4 strategic noise mapping is also available online, on a national basis, at the following website:

Interactive online mapping to review the strategic noise maps presented in **Figures 5.1** to **5.8** at a local level is available at the following weblink:

<https://gis.epa.ie/EPAMaps/>.

⁴⁵ <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32021L1226> [accessed March 2024]

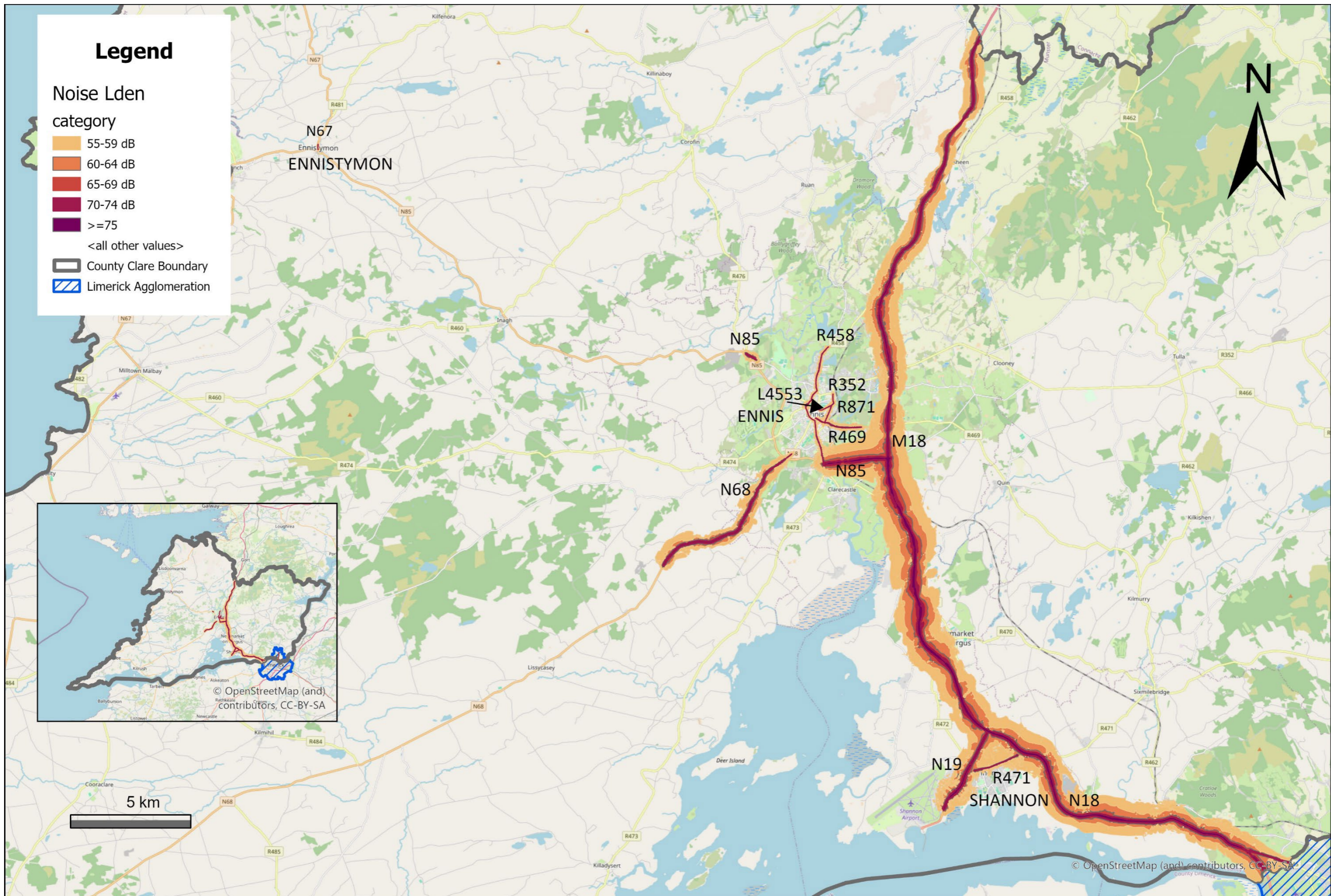


Figure 4.1 The Round 4 (R4) Lden strategic noise map for County Clare (outside the Limerick Agglomeration)

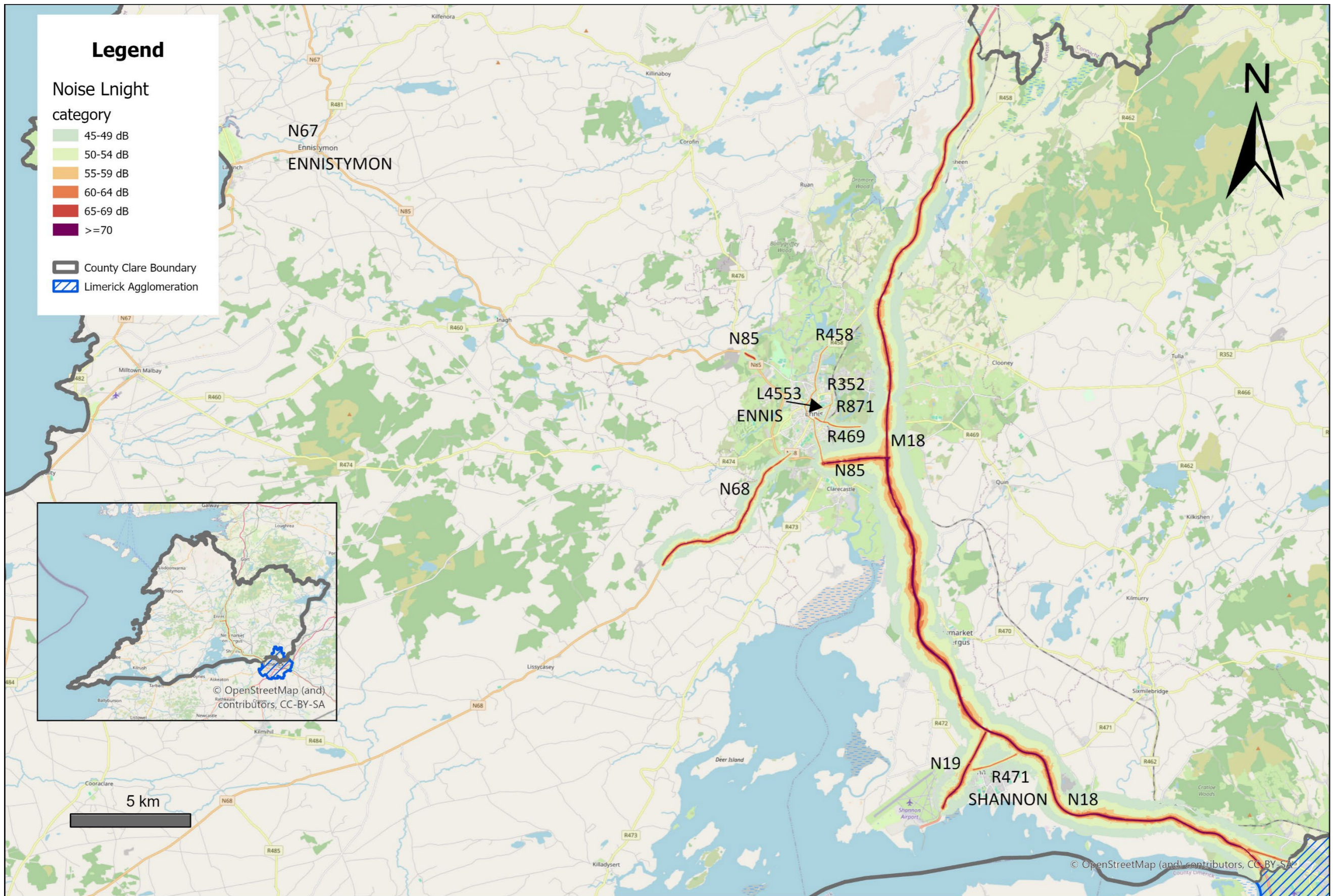


Figure 4.2 The Round 4 (R4) L_{night} strategic noise map for County Clare (outside the Limerick Agglomeration)

5.5 Noise Exposure Assessment for County Clare

A direct comparison of the Round 4 noise exposure statistics with the previous three rounds has not been undertaken because it is methodologically complex and will be inaccurate. This is because the computational methodology between the first three rounds of strategic noise mapping (CRTN 1988) and Round 4 (CNOSSOS-EU:2020) has changed, the geographical area of Clare has been separated under the Environmental Noise Regulations, 2018, between the Limerick Agglomeration and County Clare (outside the Agglomeration) and the lengths of roads qualifying for strategic noise mapping between the first three NAPs and the Round 4 NAP are not the same.

The Round 4 noise exposure statistics for the County Clare, outside of the agglomeration are presented in **Tables 5.1 to 5.8** and rounded to the nearest 100 as required under the regulations.

Table 5.1 Number of people in dwellings exposed to L_{den} from major roads.

Noise Exposure (dB)	Major Roads
55-59	6300
60-64	2500
65-69	1200
70-74	600
>75	100

Table 5.2 Number of people in dwellings exposed to L_{night} from major roads.

Noise Exposure (dB)	Major Roads
45-49	7900
50-54	3300
55-59	1400
60-64	700
65-69	100
>70	18

Table 5.3 Percentage of population exposed to L_{den} from major roads.

Noise Exposure (dB)	Major Roads
55-59	5%

60-64	2%
65-69	1%
70-74	0.5%
>75	0.06%

Table 5.4 Percentage of people in dwellings exposed to L_{night} from major roads.

Noise Exposure (dB)	Major Roads
45-49	6%
50-54	3%
55-59	1%
60-64	0.5%
65-69	0.09%
>70	0.01%

Table 5.5 Number of school buildings exposed to L_{den} from major roads

Noise Exposure (dB)	Major Roads
55-59	8
60-64	3
65-69	2
70-74	1
>75	0

Table 5.6 Number of school buildings buildings exposed to L_{night} from major roads

Noise Exposure (dB)	Major Roads
45-49	5
50-54	5
55-59	3
60-64	1
65-69	0
>70	0

Table 5.7 Number of hospital buildings exposed to L_{den} from major roads

Noise Exposure (dB)	Major Roads
---------------------	-------------

55-59	0
60-64	0
65-69	1
70-74	0
>75	0

Table 5.8 Number of hospital buildings buildings exposed to L_{night} from major roads

Noise Exposure (dB)	Major Roads
45-49	0
50-54	0
55-59	1
60-64	0
65-69	0
>70	0

5.6 Harmful Effects Assessment for County Clare

The Environmental Noise (Amendment) Regulations, 2021, set out the equations to be used for calculating harmful effects and noise thresholds above which health effects should be calculated and reported in noise action plans. For road traffic noise the calculations for harmful effects should be undertaken in 1 dB assessment bands and should be undertaken above the following thresholds:

- 53 dB L_{den} .
- 45 dB L_{night} .

Table 5.9 presents the calculated harmful effects from high annoyance (HA), high sleep disturbance (HSD) and ischaemic heart disease (IHD) in the case of traffic-related noise in County Clare from the major roads qualifying for strategic noise mapping outside of the Limerick Agglomeration.

Table 5.9 Number and percentage of the population in County Clare, outside the Limerick Agglomeration exposed to harmful effects of noise from major roads.

Total number of cases of IHD	2
% of population with IHD	0.00%
Total number of people HA	2,165
% of population HA	1.7%

Total number of people HSD	636
% of population HSD	0.5%
Total population for County Clare, outside the Limerick Agglomeration = 121,378	

It is important to note that the numbers presented do not represent the actual number of people suffering from harmful effects, but estimated numbers based on the equations set out in the Environmental Noise (Amendment) Regulations.

The results indicate that the greatest impact of traffic-related noise from major roads on the population in County Clare is high annoyance, followed by high sleep disturbance. The impact of traffic-related noise from major roads on the population causing ischaemic heart disease is considered to be very low.

The implementation of measures to reduce the populations exposure to noise from major roads aims to reduce the associated health effects.

6. Approach to Areas to be Subject to Noise Mitigation Activities

6.1 Regulatory Background

The Environmental Noise Regulations require that the Action Planning Authorities address “priorities” and “the most important area or areas” with a view to identifying “measures” that will help “avoid, prevent or reduce” the “harmful effects, including annoyance, due to exposure to environmental noise”. The EPA Guidance provides further guidance on these concepts, and sets out a recommended approach following a three-step approach to identifying priorities:

1. **Important Areas (IAs)** – these are locations exposed to environmental noise which may be harmful to human health, as indicated by international guidance.
2. **Most Important Areas (MIAs)** – these locations are a subset of the IAs where the health effects are highest, typically through a product of noise exposure levels and the number of people exposed to noise; and
3. **Priority Important Areas (PIAs)** – between 5 and 10 MIAs or group of similarly affected MIAs, identified as those which will be addressed during the implementation of the NAP.

6.2 Overview of Process

The process of identifying Important Areas (IAs), Most Important Areas (MIAs) and Priority Important Areas (PIAs) within County Clare is Stage 1 of a two-stage process for the identification of areas to be subject to noise management activities.

The process of identifying IAs within County Clare involves using the results of the strategic noise mapping to identify noise sensitive residential buildings⁴⁶ and the estimated number of people exposed to L_{den} levels above the guideline values set by the EPA Guidance which are in line with the 2018 WHO *Environmental Noise Guidelines for the European Region* (WHO ENG 2018)⁴⁷. This is followed by an automated process within Geographic Information System (GIS) software to identify areas with the highest concentrations of people highly annoyed, referred to as the MIAs. The MIAs that are to be addressed during the implementation of the NAP 2024-2028 are referred to as PIAs.

⁴⁶ The assignment of population to the calculated noise levels is set out within Annex II of the END (CNOSSOS-EU).

⁴⁷ Environmental noise guidelines for the European Region, WHO 2019. Available at: <https://www.who.int/europe/publications/i/item/9789289053563> [Accessed March 2024]

It is important to emphasise that the approach to identifying MIAs is of a statistical nature and pertains to the entire population encompassed by the noise maps. It should not be construed as a precise assessment of harmful effects for specific buildings, nor are the extents of the MIAs definitive. Instead, they are indicative for the identification of areas with a relatively high number of people highly annoyed due to noise.

Stage 2 of the process takes place during the implementation of the NAP, focussing on undertaking an assessment of noise mitigation measures for each of the identified Priority Important Areas.

6.3 Identified Most Important Areas (MIAs) and Selected Priority Important Areas (PIAs)

Three PIAs have been identified along major roads for the towns of Ennis, Shannon and Ennistymon based on a criterion of 10 or more people expected to be highly annoyed per 100 m² (**Figures 5.1 to 5.3**). These towns have been selected as PIAs for the NAP 2024-2028, with actions to be identified to reduce noise from the major roads that pass through or adjacent to them. The PIAs represent where the harmful effects on the population are likely to be most concentrated and not where there is likely to be the most harmful effects caused.

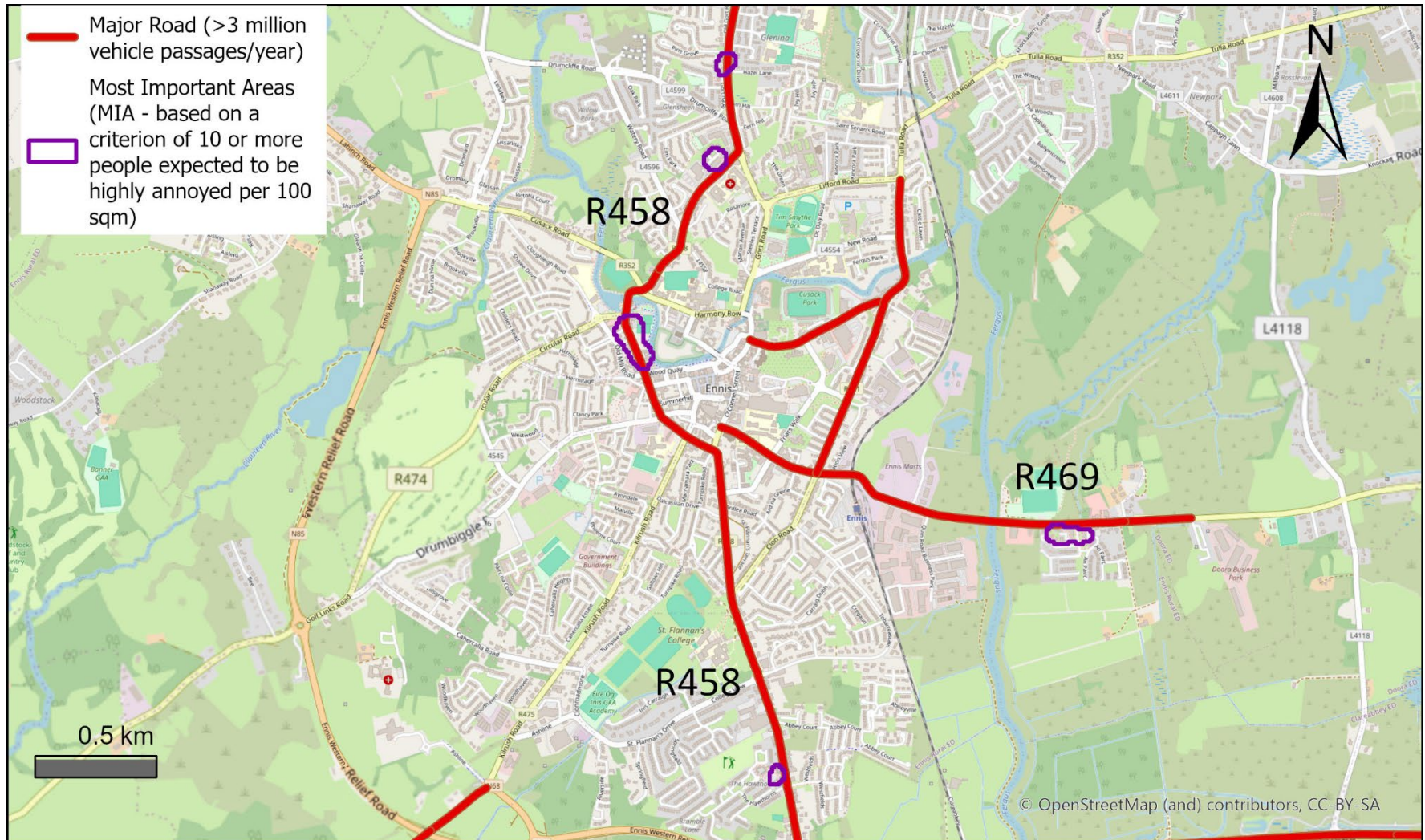


Figure 5.1 : The Ennis PIA with MIAs identified along two major roads qualifying for strategic noise mapping (R458 & R469)



Figure 5.2 : The Shannon PIA with MIAs identified along major road qualifying for strategic noise mapping (N19)

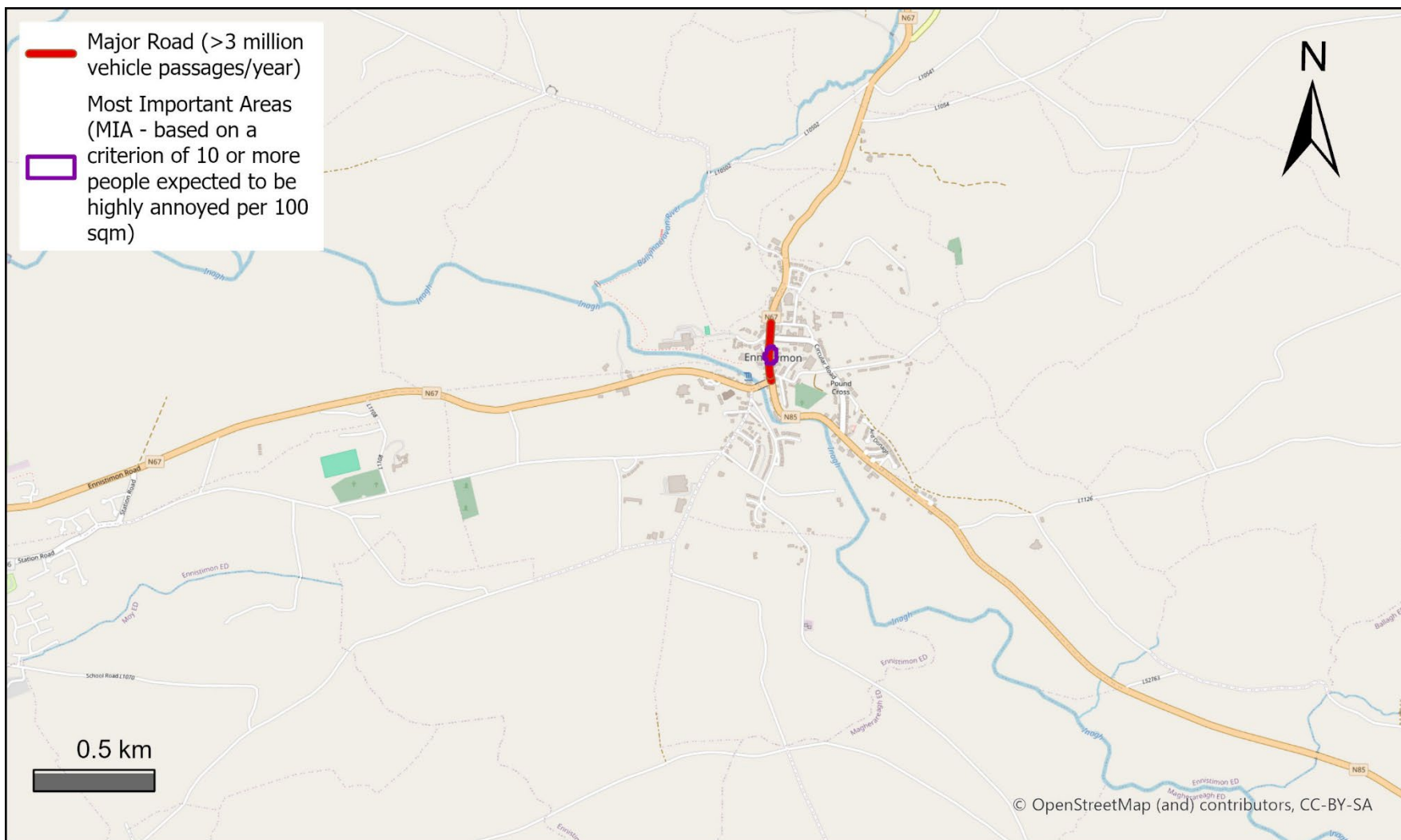


Figure 5.3 : The Ennistymon PIA with an MIA identified on a major road qualifying for strategic noise mapping

7. Mitigation, Prevention and Protection Measures

7.1 Introduction

There are three types of approach in the NAP 2024-2028 for reducing exposure of the existing and future populations of County Clare to undesirably high noise levels: mitigation, prevention, and protection.

Mitigation refers to taking measures to reduce noise levels where members of the public are exposed to environmental noise levels that have the potential to be harmful to health and quality of life. Where noise levels are confirmed to be undesirably high in the selected PIAs (identified in **Section 5.3**) the Council will attempt to identify and evaluate measures to reduce the effects of noise exposure.

There is no dedicated national funding mechanism available for the implementation of measures that solely target noise mitigation through the noise action planning process. All future opportunities for support with delivery partners and other relevant sources for noise mitigation measures shall be explored until any specific arrangements through the Regulations are established.

Prevention measures aim to avoid additional members of the population being exposed to undesirable noise conditions. In County Clare, these will primarily take the form of planning policy in respect of proposed residential developments and other noise sensitive buildings (e.g. schools, hospitals) in potentially noisy environments, in particular adjacent to major roads, and also the consideration of noise where it might be excessive in the development of new public realm.

Protection measures relate to the preservation of favorably low environmental noise levels in publicly accessible areas, or areas that provide tranquility, for citizens and communities through the identification, investigation and designation of “Quiet Areas”.

7.2 Mitigation

7.2.1 Management of Priority Important Areas (PIAs)

Where members of the population are exposed to long-term undesirable environmental noise levels, mitigation measures can be effective to some extent.

Measures that may be considered along major roads generally will include alternative lower noise road surfaces (e.g. porous pavements), the construction of noise barriers and changes in traffic flows and speeds.

Three PIAs have been identified in County Clare (**Figures 5.1 to 5.3**) for the investigation of potential noise mitigation measures:

1. Ennis (R352 / N85);
2. Shannon (N19);
3. Ennistymon (N67);

The variety of measures available are presented in the Road Traffic Noise Management Framework (**Figure 7.1**). The selection of the noise mitigation measure/s requires consideration of both its/their potential effectiveness in reducing noise exposure and harmful effects, and cost. The general steps in this process, which will be undertaken by the Council in consultation with the relevant authorities during the implementation of the NAP 2024-2028, are:

- Review of the assumptions used to identify the PIAs – a review of the basis upon which the PIAs were selected. This will likely include a review of the strategic noise modelling and model assumptions, such as road-surfacing type, and vehicle flows.
- Re-evaluation of PIAs – where the assumptions in the strategic noise modelling differ from those existing during the implementation of the NAP, appropriate re-evaluations will be undertaken. This may include noise modelling and/or noise measurements.
- Identification of practical noise mitigation options – the Council, in consultation with the relevant authorities will identify and agree on practical noise mitigation measures in relation to the PIAs. This engagement will include consideration of aspects such as planning, land-use and available technology.
- Appraisal of noise mitigation options by estimating the expected reduction in harmful health effects of noise exposure⁴⁸ and where appropriate estimating the monetised benefits to health to support the appraisal of mitigation measures – an assessment of the identified practical noise mitigation options, likely including detailed computational noise modelling. The estimation of monetised benefits to health may include the use of the UK WebTAG⁴⁹

⁴⁸ As required under the Environmental Noise (Amendment) Regulations 2021 (Section 5 - Amendment of Regulation 9 of the Environmental Regulations 2018, “Assessment Methods” of the Principal Regulations).

⁴⁹ <https://www.gov.uk/government/publications/tag-unit-a3-environmental-impact-appraisal> [accessed 9th February 2024]

workbooks. This process requires modelling of scenarios both for a year during the implementation of the NAP and a future year, typically 15 years ahead.

- Financial assessment of noise mitigation options where appropriate to support the appraisal of mitigation measures – determination of the estimated costs of implementing mitigation measures, taking into consideration costs over the lifetime of any measure, including construction and maintenance.
- Cost-benefit analysis where appropriate to support the appraisal of mitigation measures – a comparison of benefits to health versus the cost to implement the noise mitigation measure, presented as a cost-benefit ratio; and
- Recommendation of noise mitigation measure(s) – the Council in consultation with the relevant authorities and subject to resources and funding, will seek to implement the most appropriate noise mitigation measure(s).



Figure 7.1. Road Traffic Noise Management Framework for noise mitigation measures.

7.2.2 Noise Sensitive Buildings

Total numbers of noise sensitive buildings that qualified for strategic noise mapping and to be included in the NAP are listed in **Tables 5.5** and **5.6** including the long-term L_{den} and L_{night} levels they are expected to be exposed to at their most exposed façade from road noise.

The Environmental Noise Regulations, 2018, require that in the first instance that priorities shall address the most important areas. As discussed in **Section 6.1**, the EPA Guidance recommends that the identification of Most Important Areas (MIAs) is based on where adverse health effects on the population are potentially highest. Also, priorities may be identified based on the basis of exceedances of any relevant limit value or other relevant criteria. However, the equations set out in the Environmental Noise (Amendment) Regulations, 2021, are only appropriate to estimate potential adverse health effects at a community scale, not for individual noise sensitive buildings and no limit values exist. All that can be concluded is that the higher the outdoor long-term noise level a noise sensitive building is exposed to, the more undesirable that is⁵⁰. The maximum noise level at the most exposed building façade may not be representative of noise levels around the entire building and that noise at that façade may not influence the long-term health of persons occupying the building. For example, the most exposed facade may not transmit sound into a noise sensitive room (the room may not be noise sensitive) or the sound insulation provided by the façade might be appropriate to provide a comfortable indoor acoustic environment⁵¹.

In relation to reducing environmental noise at noise sensitive buildings the Council will support the implementation of plans, projects and strategies that will reduce traffic volumes along major roads through towns and settlements. Where any proposed new road project may have a negative influence, potentially increasing the exposure of noise sensitive buildings to environmental noise then Clare County Council will engage with the relevant authorities and appraise noise mitigation options where feasible and recommend appropriate noise mitigation measure(s) if necessary. The variety of measures available are presented in the Road Traffic Noise Management Framework (**Figure 7.1**). The framework presented in **Figure 7.1** is indicative of the variety of measures available when considering the management of noise and a suite of options within this framework will need to be considered as part of a detailed acoustic assessment at the time of any appraisal.

⁵⁰ L_{night} is not a relevant noise parameter to consider for schools because they are noise sensitive buildings that are generally occupied during the day-time.

⁵¹ Recommended target indoor noise levels for noise sensitive buildings are set out in the WHO Community Noise Guidelines 1999 and the UK Department of Health Technical Memorandum 08-01: Acoustics).

7.2.3 Other Relevant Measures

There are other measures being considered at a national level which could affect the acoustic environment in County Clare and support the Council in the implementation of the NAP.

7.2.4 National Speed Limit Review (2023)

The Council will consider the adoption of any recommendations arising from the National Speed Limit Review and implement any changes required by legislation. Guidance is awaited from the Department of Transport.

7.2.5. ReGAIN

In light of continued concerns regarding the appropriate enforcement and resourcing of air and noise matters at a Local Authority level, the Programme for Government gives a commitment to “Develop a regional approach to air quality and noise enforcement”, termed ReGAIN (Regional Expert Groups for Air and Noise).

7.3 Prevention

Below are the approaches being taken by Clare County Council to prevent future communities being exposed to the harmful effects of road-traffic related noise.

7.3.1 Introduction

In order to give effect to National Policy Objective 65 in respect of the management of noise and to prevent members of the community being exposed to undesirable noise levels, the Council takes a strategic approach to managing environmental noise within its administrative area.

All new applications for residential developments shall be assessed in accordance with and where there is the likelihood of an adverse noise impact near major roads. Guidance on Acoustic Design Statements can be accessed in ‘Professional Practice Guidance on Planning and Noise: New Residential Developments’ (ProPG) .

7.3.2 Professional Practice Guidance on Planning and Noise: New Residential Developments

ProPG provides a recommended approach in the development process in relation to noise affecting new residential developments and is guidance to be directed at acoustic practitioners.

There are two key stages in the approach:

Stage 1 - an initial noise risk assessment of the proposed site.

Stage 2 - a methodical consideration of four key elements.

An Acoustic Design Statement should be prepared to demonstrate that all facets of the guidance have been followed and to provide clarity for decision makers in the planning process. A summary of the overall ProPG approach is provided in **Figure 7.2**.

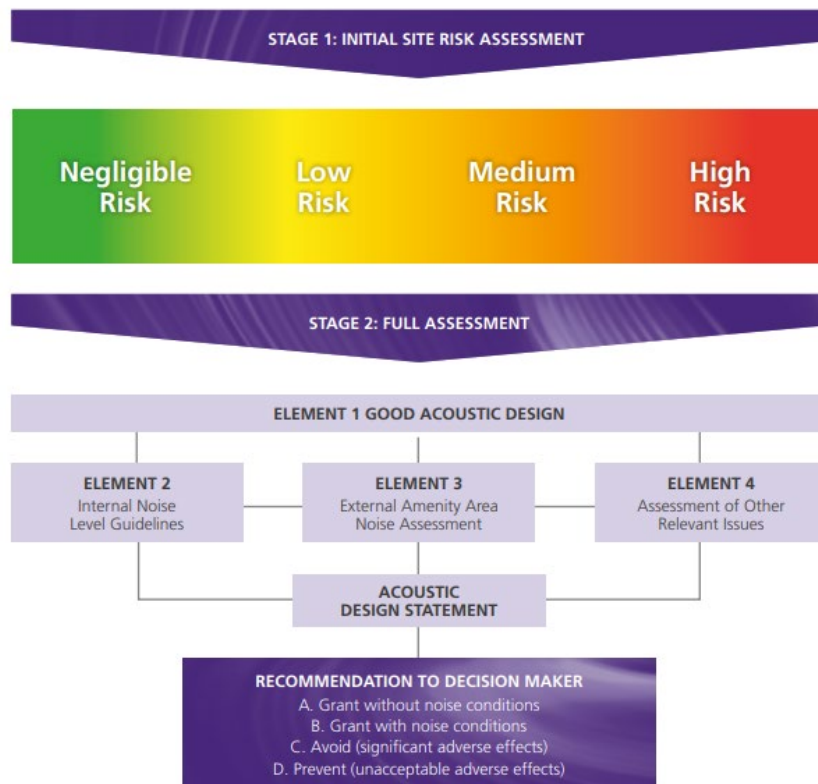


Figure 7.2. Summary of the overall ProPG approach.

The two stages of assessment are described below.

7.3.2.1 Stage 1: Initial Site Noise Risk assessment

The initial noise risk assessment should provide an indication of likely risk of adverse noise conditions on-site, not including any potential mitigation measures. The assessment should include only existing site features and those that are proposed to remain. It should be based on measurement and/or prediction and should assess free-field noise levels from the transport source (and potentially industrial or commercial sources) over a “24 hour” period for the worst-case scenario of a particular site. **Figure 7.3** summarises the Initial Site Noise Risk Assessment.

The assessment is not the basis for an eventual planning recommendation, rather to provide an early indication of the suitability of the site. The approach allows noise issues to be identified that need to be addressed by the application of good acoustic design principles.

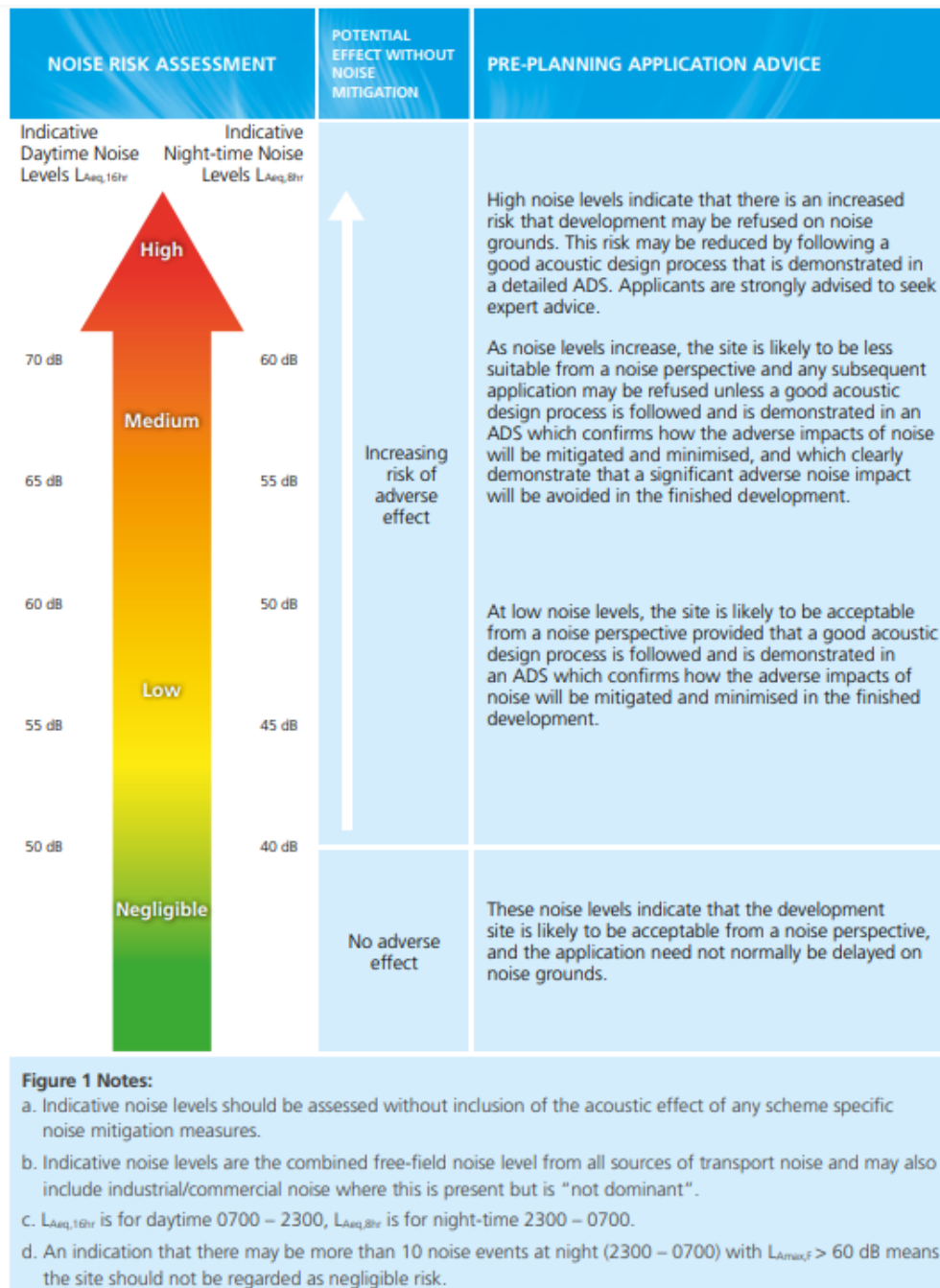


Figure 7.3. Stage 1 – Initial Site Noise Risk Assessment.

7.3.2.2 Stage 2: Full Assessment

The four key elements to be undertaken are described below:

Element 1 – Good Acoustic Design Process

Good acoustic design needs to be considered at the earliest stage of the development design and planning process. The feasibility of relocating or reducing noise levels caused by transport sources should be considered where identified by the Stage 1 noise risk assessment. Good acoustics design takes an integrated approach to achieve optimal internal and external acoustic conditions e.g. by site layout or building

orientations. A key is to avoid “unreasonable” acoustic conditions where compromises in design will adversely affect the quality of life for residents.

Element 2 – Internal Noise Levels

Suitable guidance on internal noise levels is provided in “BS 8233:2014: Guidance on sound Insulation and Noise Reduction for Buildings”. Target internal noise levels are given in the standard and are summarised in **Table 7.4**.

Table 7.4. ProPG Internal Noise Level Guidelines (additions to BS8233:2014 shown in blue).

ACTIVITY	LOCATION	07:00 – 23:00 HRS	23:00 – 07:00 HRS
Resting	Living room	35 dB $L_{Aeq,16hr}$	-
Dining	Dining room/area	40 dB $L_{Aeq,16hr}$	-
Sleeping (daytime resting)	Bedroom	35 dB $L_{Aeq,16hr}$	30 dB $L_{Aeq,8hr}$ 45 dB $L_{Amax,F}$ (Note 4)

The target levels are long-term averages, having cognisance that acoustic conditions can change from day-to-day.

Element 3 – Noise Assessment of External Amenity

BS 8233:2014 requires that internal noise levels should not be considered in isolation. ProPG indicates that where external amenity spaces are an intrinsic part of the overall design of a development then those spaces should be enjoyed as intended. In general, this means limiting external noise levels to $L_{Aeq,16hr} \leq 50dB$.

Element 4 – Other Relevant Issues

Relevant national, regional, and planning and noise policies should be assessed on deciding on the suitability of the acoustic conditions of the development. This assessment may involve looking at the likely occupants of the proposed development, potential future occupancy changes, and their vulnerability and sensitivity to noise. Additionally, design measures might have unintended adverse effects, such as sealed up balconies that result in a lack of connection with the external environment. The guidance requires that unintended adverse effects should be avoided.

7.3.3 Noise and Public Realm

Early input in the design of public spaces by considering the acoustic environment (and air quality because the emission source is often the same) offers the opportunity to maximise the benefits of taking an integrated approach to design.

In designing public spaces to maximise the contribution in terms of reducing environmental noise and improving the quality of sound (and improving air quality), then consideration should be given to measures including:

- using novel environmentally friendly methods (e.g. HOSANNA: European Union Seventh Framework Programme, FP7/2007–2013) such as barrier designs, the appropriate planting of trees, shrubs, or bushes, ground and road surface treatments, and greening of building façades and roofs. The success of any proposed options will need to be based on verifiable measurements;
- pedestrianising streets and the use of green infrastructure to reduce the likelihood of citizens being present in locations where air and noise pollution are highest, and creating attractive, accessible places where pollution levels are lower.
- providing options for active travel along routes other than beside busy roads, making walking and cycling increasingly attractive alternatives to private vehicle use. This will reduce citizens exposure to air and noise pollution, and potentially vehicular emissions.
- providing and protecting tranquil outdoor environments and positive acoustic environments. This may reduce annoyance for citizens living in close proximity to busy roads and ensure people have options other than being indoors when they want to enjoy respite from noise.
- encouraging exercise and other outdoor recreation to improve citizens health and well-being due to health risks posed by air and noise pollution.
- providing alternative acoustic interventions to create new positive types of sounds that mask environmental noise.

The level of effort in respect of creating appropriate acoustic environments shall be proportionate to the level of opportunity presented by a proposed development to result in better place-making. This will depend on the nature and scale of the proposed development and on the local context.

7.4 Protection

The Council will consider designation of “Quiet Areas” during the period of the NAP, as recommended under the Environmental Noise Regulations and collect evidence to submit to the EPA for consideration in consultation with the Minister.

At present there is no universally accepted definition by EU Member States⁵² of what constitutes a Quiet Area. However, they are regarded as areas where environmental

⁵²European Parliament, Towards a comprehensive noise strategy, Directorate General for Internal Policies, Policy Department A: Economic and Scientific Policy, 2012

noise levels are deemed to be low and should therefore be protected from the potential impacts of new developments.

In acknowledgement of the lack of standard approach for the identification of Quiet Areas across Member States, the identification and evaluation of Quiet Areas in Ireland have been shaped by the national policy approach, definitions, and EPA research.

The EPA Research Program is a Government of Ireland initiative funded by the Department of the Environment, Climate and Communications, with aims of improving the health and well-being of the Irish population. The EPA research identified evidence for direct positive relationships between the presence of green and blue spaces with health indicators including self-reported health, mortality and disability. The EPA Guidance defines 'green spaces' in the context of the identification of areas which could be considered a Candidate Quiet Area (a candidate for an application for Quiet Area designation by the Minister).

7.4.1 EPA Criteria for Quiet Areas

The EPA describe Candidate Quiet Areas (CQAs) for the application of formal Quiet Areas as one of two categories:

- **Absolute quiet areas:** where environmental noise levels are low and should be preserved; or
- **Relative quiet areas:** where environmental noise levels are relatively low in comparison to community noise exposure outside of the quiet area.

The traditional criteria used in Ireland has been to identify Absolute Quiet Areas as areas with environmental noise levels below 55 dB L_{den}^{53} . However, the L_{den} parameter has the potential to be dominated by the weighted night-time noise level when the communities use of those areas is likely to occur in the daytime. Absolute CQAs are described by the EPA to now have a representative noise level less than 50 dB $L_{Aeq,16hr}$.

Relative Candidate Quiet Areas are areas with a noise level which is more than 10 dB⁵⁴ lower than the noise exposure experienced by more than 25% of the population living within 1,000 metres.

⁵³EEA Report No 14/2016, Quiet Areas in Europe – The environment unaffected by noise pollution.

⁵⁴ A difference of 10 dB have been used because it represents a 10-fold decrease in sound intensity and an approximate halving in perceived loudness, therefore a contributing factor to relative perceived quiet.

A desktop exercise to review expected environmental noise levels across **publicly** accessible green and blue spaces in County Clare because the Strategic Noise Maps only relate to major roads and many of these areas are away from heavily trafficked transportation routes.

7.4.2 Citizen Science and Soundscape Approach to Designating Quiet Areas

It is acknowledged that the soundscape (people's perceived response to the acoustic environment) of green and open spaces can benefit people's mental health. These are areas that facilitate walks, child play and other leisure activities that promote social interaction and positive emotions.

Areas that provide calm and tranquillity do not necessarily have low measured sound pressure levels though. For example, water flowing in a river might cause high sound pressure levels. There is a need at a European policy level for guidance on how to integrate the subjective nature of quietness in public places with the environmental noise management approach (based on measured sound pressure levels).

Engaging with communities to assess quiet public locations using a soundscape approach offers an opportunity to involve the public in the decision-making process for identifying, evaluating, and potentially designating Quiet Areas and to provide evidence to support an application for Quiet Area designation where the criteria in the EPA Guidance might not be met.

7.4.3 Quiet Area Designation and Other Work Programmes

Where an appropriate benefit is determined from investigations of the PCQAs then applications will be forwarded to the EPA for consideration in consultation with the Minister, with successful applications resulting in a delimitation of Quiet Areas.

Engagement with the public will also be used where appropriate to raise awareness within the Council to feed into work programmes and strategies such as:

- **recreation and public realm** – local designation of “everyday quiet areas” as well as targeting infrastructural improvements based on demographics to provide social and environmental justice.
- **green and blue infrastructure** – aid the design of quiet spaces based on novel green solutions.
- **active travel** – identifying and raising awareness of low noise routes and demonstrate their benefit in comparison to more noisy (busily trafficked) routes to promote and allow the public to make educated decisions on their active travel journeys around the City.

- **tourism** – identifying and raising awareness of low noise destinations in County Clare.

The benefit to the public using a citizen science and soundscape approach is that they can share with the local authority their experiences, perceptions and preferences which can aid the Council in decision-making from the earliest stages of projects.



8. Public Consultation

The Draft County Clare Noise Action Plan (NAP) 2024-2028 and environmental reports were made available for public consultation for a six-week period, from 10th May until 21st June 2024. Notice of the public consultation was advertised in the Clare Champion for two consecutive weeks and hard copies of the documents were placed on display at:

- Clare County Council, Áras Contae an Chláir, New Road, Ennis, County Clare.
- West Clare Municipal District Office, Town Hall, Kilrush.
- Shannon Municipal District Office, Town Hall, Shannon, Co. Clare.
- Ennistymon Area Office, Ennis Road, Ennistymon.
- Killaloe Municipal District Office, Mountshannon Rd, Scarriff.
- Public Libraries in Ennis, Kilrush, Shannon, Ennistymon and Killaloe during opening hours

In addition, the draft NAP and environmental reports were available through the Clare County Council online consultation hub <https://yoursay.clarecoco.ie/>. The statutory authorities were notified of the draft NAP and environmental reports as well as other relevant stakeholders including:

- An Taisce;
- Department of Environment, Climate and Communications, Department of Health;
- Department of Housing, Local Government and Heritage;
- Department of Transport;
- Department of Tourism, Culture, Arts, Gaeltacht, Sport and Media;
- Environmental Protection Agency;
- Health Service Executive (including the local Limerick office);
- Iarnród Éireann;
- National Transport Authority;
- Office of Public Works.

The Physical Development Strategic Policy Committee of Clare County Council (CCC) was given a presentation making members aware of the preparation of the draft NAP. Monthly management reports notified all elected members of the draft NAP and elected members were notified directly by email of the intended public consultation date.

8.1 Submissions

Six submissions were received on the Draft County Clare Noise Action Plan on behalf of the following:

- Transport Infrastructure Ireland
- Department of Transport
- Clare County Council Planning Department
- Health Service Executive
- A resident in Ennis living near train tracks /Quin Road Industrial Estate
- A resident living in the Ballaghboy area, Ennis.

Item No.	Observation	Response	Observer
1.1	Indicated that while it will consult and liaise with the Council on the evaluation and implementation of noise mitigation measures for the priority areas it has no remit to execute them	CCC acknowledge, under the Environmental Noise Regulations, that they are responsible for making and approving the County Clare NAP and that this must be done in consultation with the Noise Mapping Bodies of which TII is the body responsible for major National Roads. The Regulations do not explicitly state that measures contained within the NAP, and the implementation of same, are exclusively the responsibility of the Action Planning Authorities (APAs). It is suggested that the requirement to consult with the Noise Mapping Bodies recognises that input from infrastructure owners outside the	TII

		competence of the local authorities, may be required to ensure a holistic set of mitigation measures are developed. The view of CCC in the preparation of this NAP regarding the roles and responsibilities is that consultation and collaboration is necessary between all parties to ensure the successful implementation of the County Clare NAP. Any reference to TII consulting, co-ordinating and collaborating as set out in Table 1.1 of the NAP is made in that context and as part of the co-ordination driven by the APAs, while recognising that there is also a shortfall in funding for the implementation of dedicated noise mitigation measures under the Regulations.	
1.2	Indicated that there was a contradiction in Section 7.1 of the Draft County Clare NAP, that <i>any mitigation would be via proposed or scheduled road improvement works and there would be no additional mitigation beyond what is already planned.</i>	The text in Section 7.1 is amended in the final NAP for clarification.	TII
1.3	Highlighted various typographic errors	All typographic errors have been rectified in the final NAP	TII
1.4	Highlighted the significance of drafting NAPs in line with the prevailing Climate Action Plan, the Local Authority’s own	CCC acknowledges the important of the policies, detailed in supporting the achievement of Irelands transport emissions targets.	Department of Transport

	Climate Action Plan, and relevant sectoral policies such as the Sustainable Mobility Policy		
1.5	Suggested that there could be greater emphasis placed on public engagement and consultation in the preparation of the Draft Noise Action Plan.	The Draft County Clare Noise Action Plan (NAP) 2024-2028 and environmental reports were made available for public consultation for a six-week period, from 10 th May until 21 st June 2024. Notice of the public consultation was advertised in the Clare Champion for two consecutive weeks and hard copies of the documents were placed on display in Municipal District Offices and several public libraries in the County. In addition, the draft NAP and environmental reports were available through the Clare County Council online consultation hub https://yoursay.clarecoco.ie/ .	HSE
1.6	Reference was made to the requirement for annual reporting to the EPA and there was no reference to that in the draft plan, that the outcome of the Round 3 reports should inform actions in Round 4 plan.	A reference has been included in the final plan that CCC annual reporting to the EPA has informed the work reported in Chapter 3 (Review of Round 3). While the annual reports under Round 3 have informed actions in the round 4 plan, the plan has primarily been prepared in accordance with the EPA noise action planning guidance.	HSE

1.7	Highlighted the absence of areas which were considered for 'quiet area' designation.	Consideration will be given to the identification of Candidate Quiet Areas by CCC Environment Section during the implementation of this NAP	HSE
1.8	Highlighted that the Clare County Development Plan 2023-2029 promotes the proactive management of noise where it is likely to have significant adverse impacts on health, the environment and ensure that all proposals for development with regard to transportation infrastructure shall comply with the provisions of the Clare Noise Action Plan as stated in CDP Development Objective 11.40	Acknowledged by CCC	Clare County Council Planning Department
1.9	Complained of noise levels due to overnight deliveries adjacent to the Quin Road Industrial Estate/railway tracks.	Acknowledged by CCC	Resident

<p>2.0</p>	<p>Complained of high noise levels and Environmental impact adjacent to the M18 at Ballaghboy.</p>	<p>For the noise action planning process, the Environmental Noise Regulations require that each Noise Action Plan (NAP) shall address priorities which <i>“may be identified on the basis of any noise limit value or criteria established by the EPA”</i> and <i>“in the first instance, address the most important area or areas, as the case may be, established by strategic noise mapping.”</i></p> <p>Transport Infrastructure Ireland (TII) are the designated Noise Mapping Body (NMB) for National Roads. Current strategic noise mapping has been prepared by TII using computer modelling in-line with a common noise assessment methodology (CNOSSOS-EU) adopted by the European Commission in line with Article 6.2 of the EC Directive 2002/49/EC and brought into effect through Commission Directive (EU) 2015/996.</p> <p>The noise modelling process did not identify any MIA for Hogans Way, Quin Road.</p> <p>Please also note the NRA ‘Good Practice Guidance for the Treatment of Noise during the Planning of National Road Schemes March 2014’, Section 5.45 advises the following ‘... that trees and shrubs, in normal depth and density, provide no significant noise reduction’.</p>	<p>Resident at Ballaghboy</p>
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	<p>Indicated that outdated and incomplete data was used in the preparation of Noise Maps.</p> <p>a) Queried whether a noise and environmental health and safety analysis was conducted prior to tree removal and raised Planning and Health and Safety concerns.</p> <p>b) Complained in relation to impact on Residents privacy and Welfare</p> <p>c) Requested verification on compliance with original Planning and planting schedules for the motorway :</p>	<p>TII are the designated Noise Mapping Body (NMB) for National Roads.</p> <p>The current Round 4 Strategic Noise Mapping was prepared in 2022/2023 by a competent expert on behalf of Transport Infrastructure Ireland in line with relevant standards.</p> <p>A direct response was made in relation to items a) to c).</p>	
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9. Long-term Strategy

9.1 Noise Action Plan Commitments

It is the goal of the Council to adopt a strategic approach to the management of environmental noise with a view to preventing and reducing environmental noise where practicable, particularly where exposure levels may induce harmful effects on human health. The Council will also aim to preserve desirable noise environments where these are of amenity value to the public.

The NAP 2024-2028 is supported by a four-year programme for implementation (2024-2028), with progress reported to the EPA on an annual basis.

9.2 Noise Policy Statement

Clare County Council will adopt a strategic approach to managing environmental noise, within its administrative area, and will aim to:

- **Mitigation** – identify appropriate mitigation measures to reduce noise levels where they are potentially harmful to the health of communities.
- **Prevention** - prevent additional members of the community being exposed to undesirable noise levels where it is likely to have a significant adverse impact on health and quality of life, and where practicable, improve or maintain the quality of sound in the public realm.
- **Protection** - protect areas which are desirably quiet, or which offer a sense of tranquillity through a process of identification and validation followed by formal designation of “Quiet Areas”.

9.3 Implementation Actions

The implementation of the NAP spans a four-year time frame, beginning in 2024. Clare County Council (CCC) commits to a series of Implementation Actions during current and future noise action planning. The environmental noise management measures within the framework are presented across the three policy principal categories covered by the Noise Policy Statement, together with a fourth supporting ‘General’ category as follows:

- General – Noise Management Measures.
- Mitigation – Noise Management Measures

- Prevention – Noise Management Measures.
- Protection – Noise Management Measures.

The General noise management measures cover a range of activities to support the implementation of the NAP including other measures across the three policy principal categories. Mitigation measures relate to activities to support the investigation of noise abatement measures in the Priority Important Areas and engagement with the relevant stakeholders with influence to implement them. Prevention measures relate to activities to support planning where there may be proposals to bring people to noise from major road sources or there is a material consideration of environmental noise required in the development of plans, strategies, policies and objectives. They also relate to maintaining or improving the acoustic environment for new public realm where feasible. Protection measures relate to the protecting the acoustic environment where environmental noise does not dominate.

In some instances, measures do not necessarily stand in isolation and may be relevant, or overlap, with other categories. When considering the broader framework of measures and actions aimed at mitigating exposure to environmental noise from the roads, it is important to emphasise that Clare County Council, in some instances, does not have exclusive ownership or influence over certain noise sources, areas, and the measures presented in this NAP. Many of the measures and actions will require input and collaboration with other authorities with responsibility for infrastructure, along with support from government departments and bodies through relevant legislation and funding.

In addition to third-party collaboration, the successful implementation of this NAP will also depend on the availability of adequate resources to execute the proposed measures and actions.

The measures across each of the four categories are summarised in **Table 9.1** with further detail presented in **Appendix E**.

Table 9.1. Noise Management Framework – Summary of measures.

Measures	Summary Actions	Time Scale	
Noise Action Plan 2024-2028 Preparation			
	Noise Action Plan Finalised	18 th July 2024	
General - Noise Management Measures			
CCC1.1	Noise Action Plan Working Group(s) – Action Planning Authorities and Noise Mapping Bodies	Support the establishment, terms of reference and membership for a Noise Action Plan Implementation Working Group. Hold meetings twice yearly or more frequently as matters require.	Short-term
CCC1.2	Support the development of national and other related policy and guidance	Support the Department of Environment, Climate and Communications and other government departments and bodies in the development of national noise and other related policies and guidance and assist in their implementation once in place.	Short-term
CCC1.3	Report to the Environmental Protection Agency (EPA)	Prepare an annual progress report regarding the implementation of the NAP and submit it to the EPA.	Annual
CCC1.4	Continued investigation and management of complaints	Review and investigate all noise complaints received in line with Clare County Council Customer Charter and in accordance with national and international best practice.	Ongoing
CCC1.5	Stakeholder collaboration	Liaise and collaborate with a range of key stakeholders to address noise-related issues to ensure the effective management of noise from related infrastructure.	Ongoing
CCC1.6	Community engagement	Publish the final NAP and provide updates on the progress made with its implementation.	Ongoing

Table 9.1. Noise Management Framework – Summary of measures.

Measures	Summary of Actions	Time Scale	
Mitigation - Noise Management Measures			
CCC2.1	Existing plans, projects and strategies	Collaborate with relevant internal CCC sections and third-party organisations to support the implementation of the following: <ul style="list-style-type: none"> • Active Travel Programmes. • LSMATS. • Climate Action Plans. 	Short- to Long-term
CCC2.2	Noise sensitive buildings	For relevant plans, projects and strategies liaise with appropriate internal Council Sections and/or third-party organisations to ensure consideration given to good acoustic design principles to mitigate noise at noise sensitive buildings	Medium- to Long-term
CCC2.3	Review assumptions used for Priority	Undertake a review of the Strategic Noise Maps for the PIAs and the assumptions used in the calculation models.	Short-term

	Important Areas (PIAs)		
CCC2.4	Appraise noise mitigation measures for PIAs	Where the PIA relates to infrastructure that is exclusively the responsibility of and managed by CCC, then the evaluation will be completed by CCC. Where the PIAs relate to infrastructure for which a third-party organisation has overall responsibility, then the evaluation will require liaising and collaborating with the relevant infrastructure owner. Appraisals should review the potential reduction in harmful effects (as required under the Environmental Noise Regulations, 2018)	Short- to Long-term
CCC2.5	Implementation of recommended noise mitigation measures	Liaise with relevant internal CCC Sections, third-party organisations, and government departments to explore all funding opportunities for noise mitigation measures. Implement the measures for which CCC has responsibility and where infrastructure is the responsibility of a third-party organisation, liaise and collaborate with that organisation to identify opportunities to implement an appropriate measure/s.	Short- to Long-term
Prevention – Noise Management Measures			
CCC3.1	Planning referrals	Report on planning applications and enforcement of planning conditions in relation to noise emissions in the context of Strategic Noise Maps and the NAP.	Ongoing
CCC3.2	Support the development of local authority policies and objectives	In preparation of plans, strategies, local policies and objectives give due consideration to the NAP to support them.	Ongoing
CCC3.3	Support the development of new public realm and green and blue infrastructure	Support the implementation of new public realm and green and blue infrastructure where feasible to provide appropriate acoustic environments for citizens health and well-being.	Short- to Long-term

Table 9.1. (Continued). Noise Management Framework – Summary of measures.

Measures		Summary of Actions	Time Scale
Protection - Noise Management Measures			
CCC4.1	Evaluation of Potential Candidate Quiet Areas (PCQAs)	For each PCQA carry out an investigation of the area and make a recommendation on whether to designate each area as a Quiet Area or not.	Ongoing
CCC4.2	Proposal for Quiet Areas(s) designation	For all CQAs recommended for designation, prepare proposal for EPA consultation and Ministerial Approval.	Annual

Appendix A: Glossary

Noise is defined as unwanted sound. Human hearing is able to respond to sound in the frequency range 20 Hz (deep bass) to 20,000 Hz (high treble) and over the audible range of 0 dB (the threshold of perception) to 140 dB (the threshold of pain). The ear does not respond equally to different frequencies of the same magnitude but is more responsive to mid-frequencies than to lower or higher frequencies. To quantify noise in a manner that approximates the response of the human ear, a weighting mechanism is used, which reduces the importance of lower and higher frequencies in a similar manner to human hearing.

The weighting mechanism that best corresponds to the response of the human ear is the 'A'-weighting scale. This is widely used for environmental noise measurement, and the levels are denoted as dB(A) according to the parameter being measured. The Glossary explains the acoustic terminology that is used in this Report. The decibel scale is logarithmic rather than linear, and hence a 3 dB increase in sound level represents a doubling of the sound energy present. Judgement of sound is subjective, but as a general guide a 10 dB(A) increase can be taken to represent a doubling of loudness, whilst an increase in the order of 3 dB(A) is generally regarded as the minimum difference needed to perceive a change under normal listening conditions. An indication of the range of sound levels found commonly in the environment is given in **Table A.1**.

Table A.1. Typical sound levels found in the environment.

Sound Pressure Level, dB(A)	Location
0	Threshold of hearing
20 to 30	Quiet bedroom at night
30 to 40	Living room during the day
40 to 50	Typical office
50 to 60	Inside a car
60 to 70	Typical high street
70 to 90	Inside factory
100 to 110	Burglar alarm at 1m away
110 to 130	Jet aircraft on take off
140	Threshold of pain

The subjective response to a noise is dependent not only upon the sound pressure level and its frequency, but also its intermittency. Various indices have been developed to try and correlate annoyances with the noise level and its fluctuations. The indices and parameters used in this report are defined below:

A-weighting A frequency weighting applied to measured or predicted sound levels in order to compensate for the non-linearity of human hearing.

Acoustic environment Sound at the receiver from all sources of sound as modified by the environment, as defined in ISO 12913-1:2014.

CNOSSOS-EU: 2020	The common noise assessment method according to the END.
CRTN 1988	The noise calculation method Calculation of Road Traffic Noise 1988.
CQA	Candidate Quiet Area.
dB (decibel)	The unit of sound pressure level, calculated as a logarithm of the intensity of sound. 0 dB is the threshold of hearing, 120 dB is the threshold of pain. Under normal circumstances, a change in sound level of 3 dB is just perceptible. A change of 1 or 2 dB is detectable only under laboratory conditions. A change of 10 dB corresponds approximately to halving or doubling the loudness of sound.
Design Goal	A target limit for noise or vibration adopted during the early design stages of a project, not necessarily having a statutory basis but based on current best practice and the particular circumstances of a given scheme.
Do Minimum	Describes a scenario under which a road scheme that is under consideration does not proceed (sometimes referred to as "Do Nothing").
Do Something	Describes a scenario under which a road scheme that is under consideration proceeds.
EEA	European Environment Agency.
END	Environmental Noise Directive.
EPA	Environmental Protection Agency.
Free Field	Free field noise levels are measured or predicted such that there is no contribution made up of reflections from nearby building façades.
L_{eq,T}	The equivalent continuous sound level - the sound level of a steady sound having the same energy as a fluctuating sound over a specified measuring period T.
L_{den}	The day-evening-night composite noise indicator adopted by the EU for the purposes of assessing overall annoyance. Equation below. $L_{den} = 10 \lg \frac{1}{24} \left(12 * 10^{\frac{L_{day}}{10}} + 4 * 10^{\frac{L_{evening}+5}{10}} + 8 * 10^{\frac{L_{night}+10}{10}} \right)$
L_{day}	The A-weighted long term average sound level as defined in ISO1996-2: 2007, determined over all the day periods over a long-term period (e.g. a year).

Levening	The A-weighted long term average sound level as defined in ISO1996-2: 2007, determined over all the evening periods over a long-term period (e.g. a year).
Lnight	The A-weighted long term average sound level as defined in ISO1996-2: 2007, determined over all the night periods over a long-term period (e.g. a year).
CDP	County Clare Development Plan.
LSMATS	Limerick Shannon Metropolitan Area Transport Strategy.
NAP	Noise Action Plan.
NPO	National Policy Objective in the National Development Plan.
NRA	National Roads Authority.
NTA	National Transport Authority.
PCQA	Potential Candidate Quiet Area.
Soundscape	The acoustic environment as perceived or experienced and/or understood by a person or people, in context, as defined in ISO 12913-1:2014.
TII	Transport Infrastructure Ireland.
1. WebTAG	Transport analysis guidance tool for the proposal of policies and interventions to ensure a consistent approach in transport appraisal

Appendix B: Strategic Noise Maps

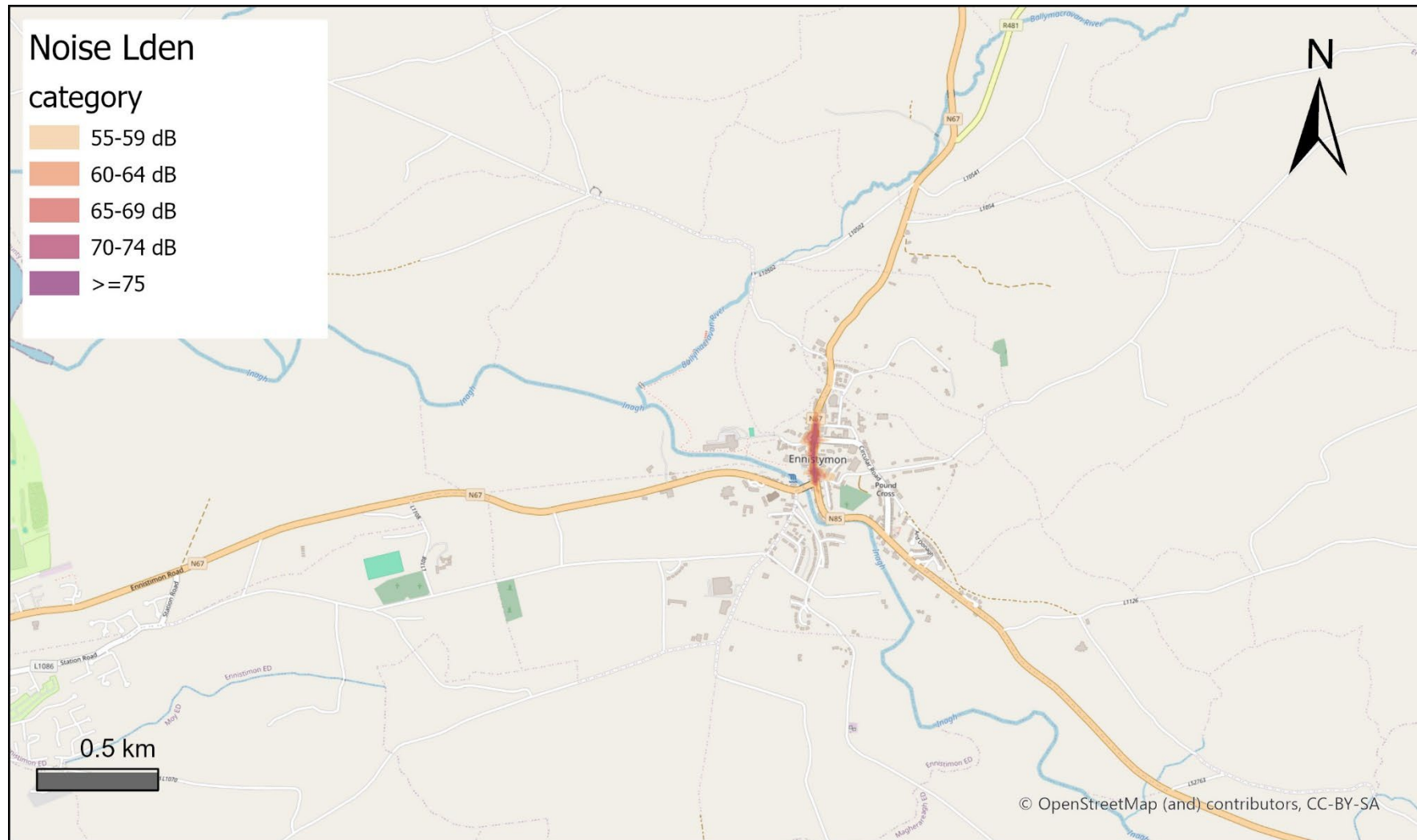


Figure B.1. L_{den} (dB) – N67, Ennistymon

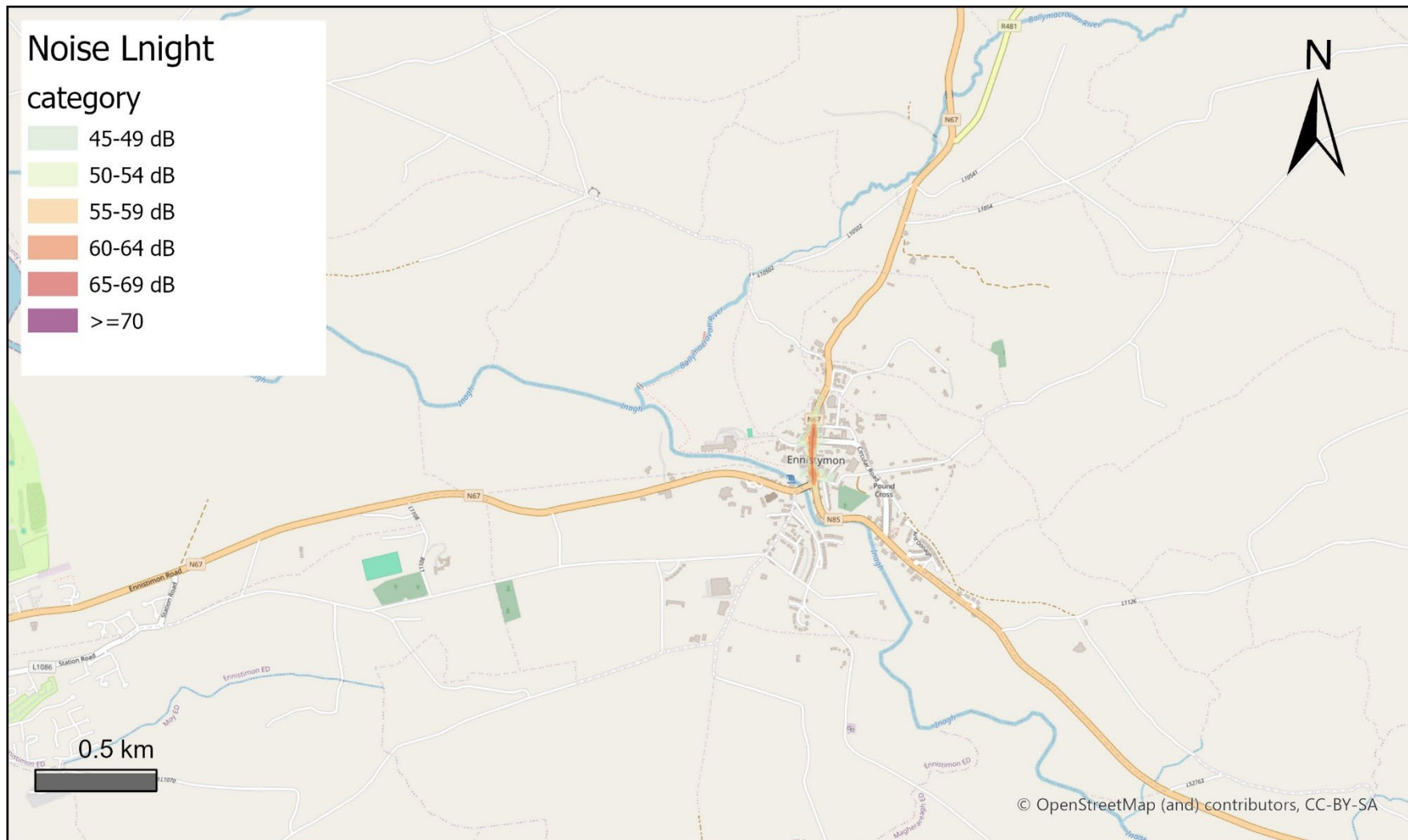


Figure B.2. L_{night} (dB) – N67, Ennistymon

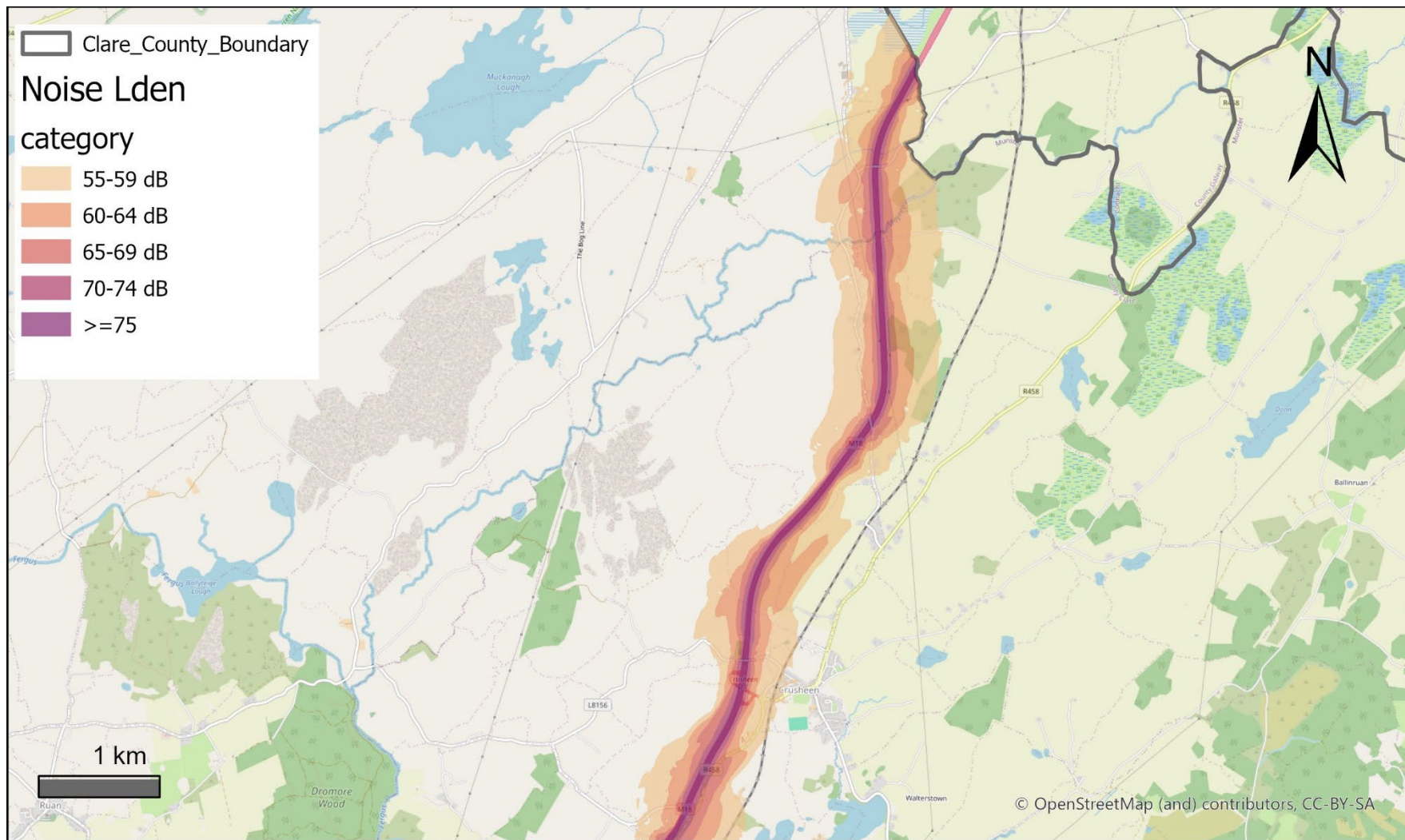


Figure B.3. Lden (dB) – M18 Clare/Galway Boundary Area

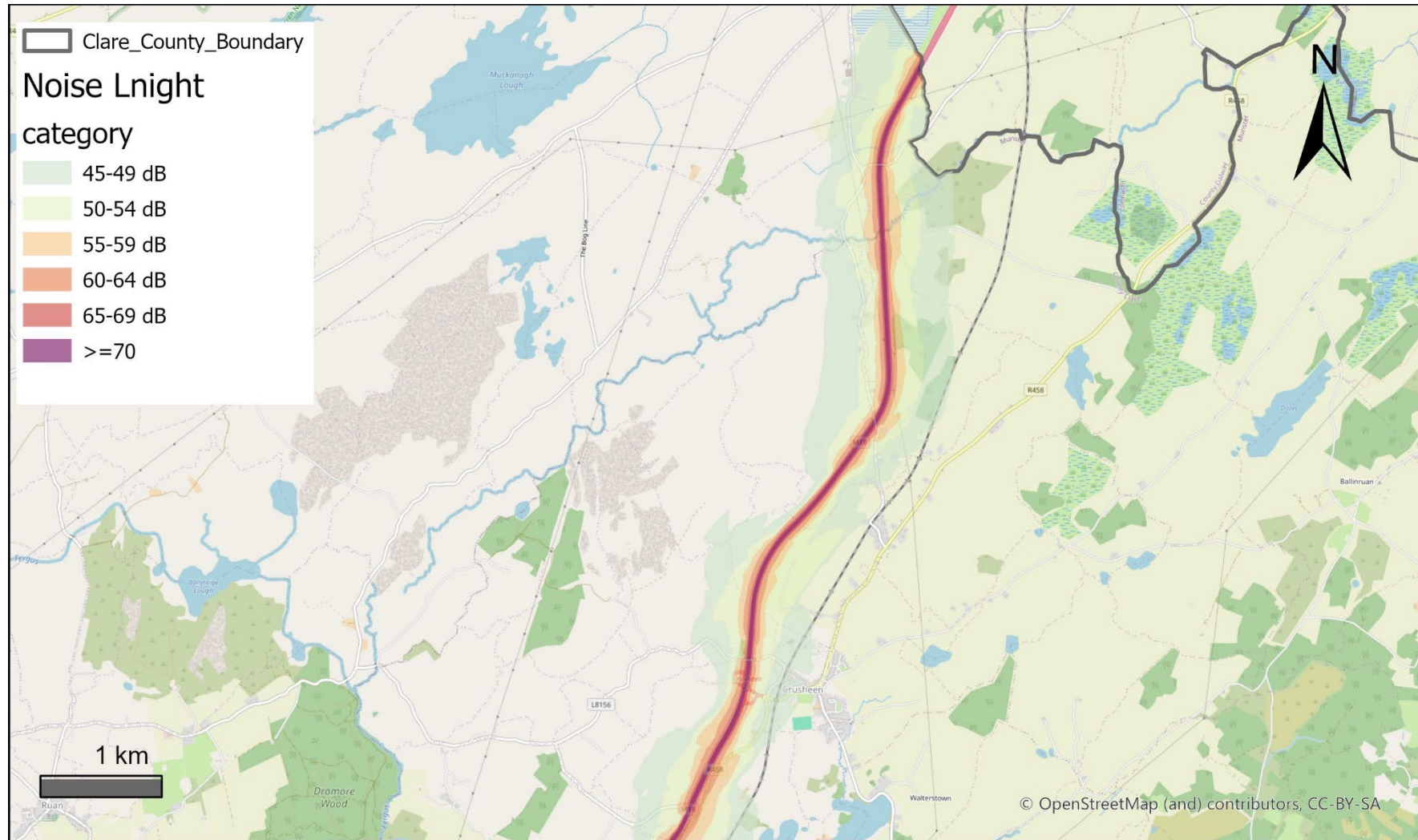


Figure B.4. L_{night} (dB) – M18 Clare/Galway Boundary Area

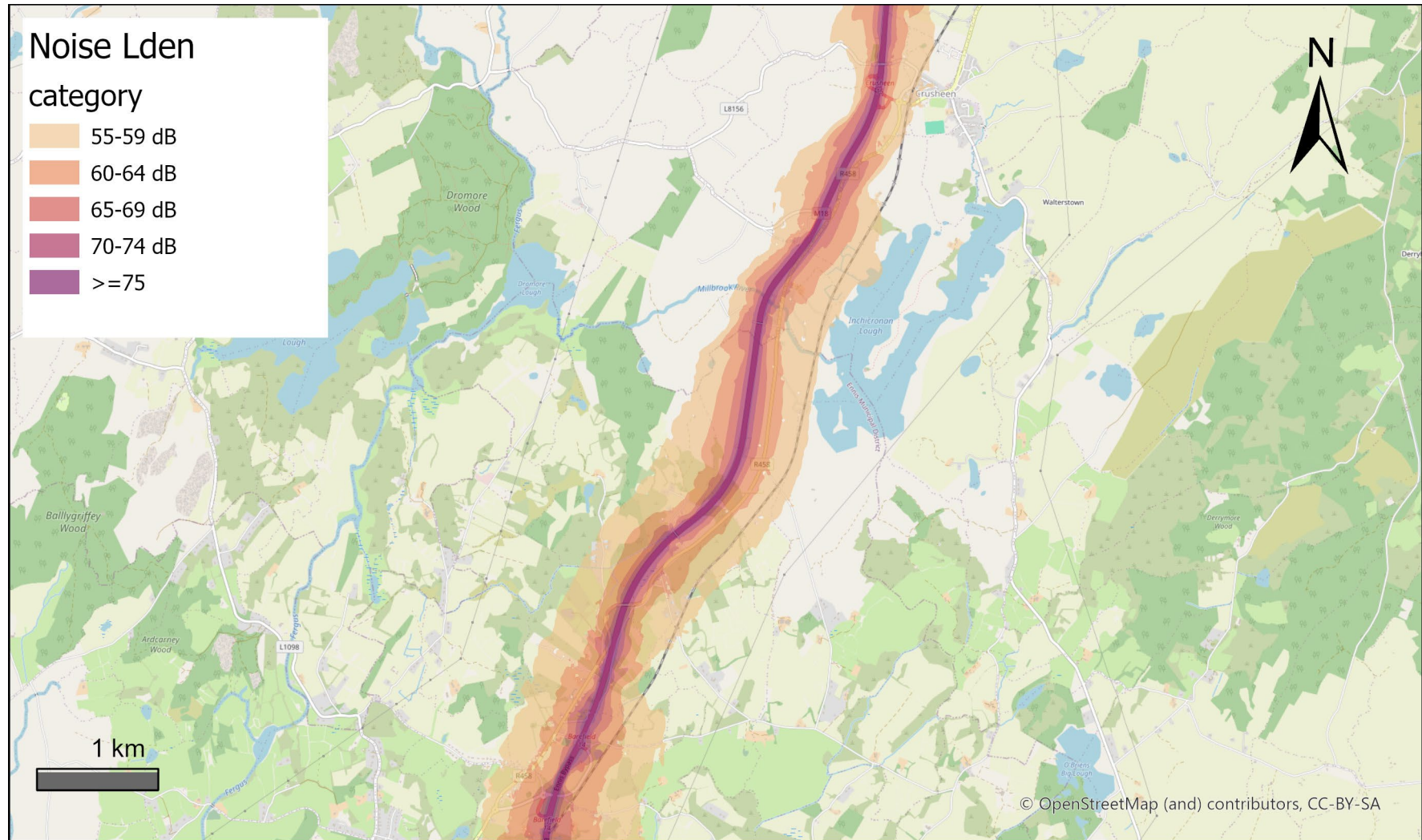


Figure B.5. L_{den} (dB) – M18 Crusheen Area

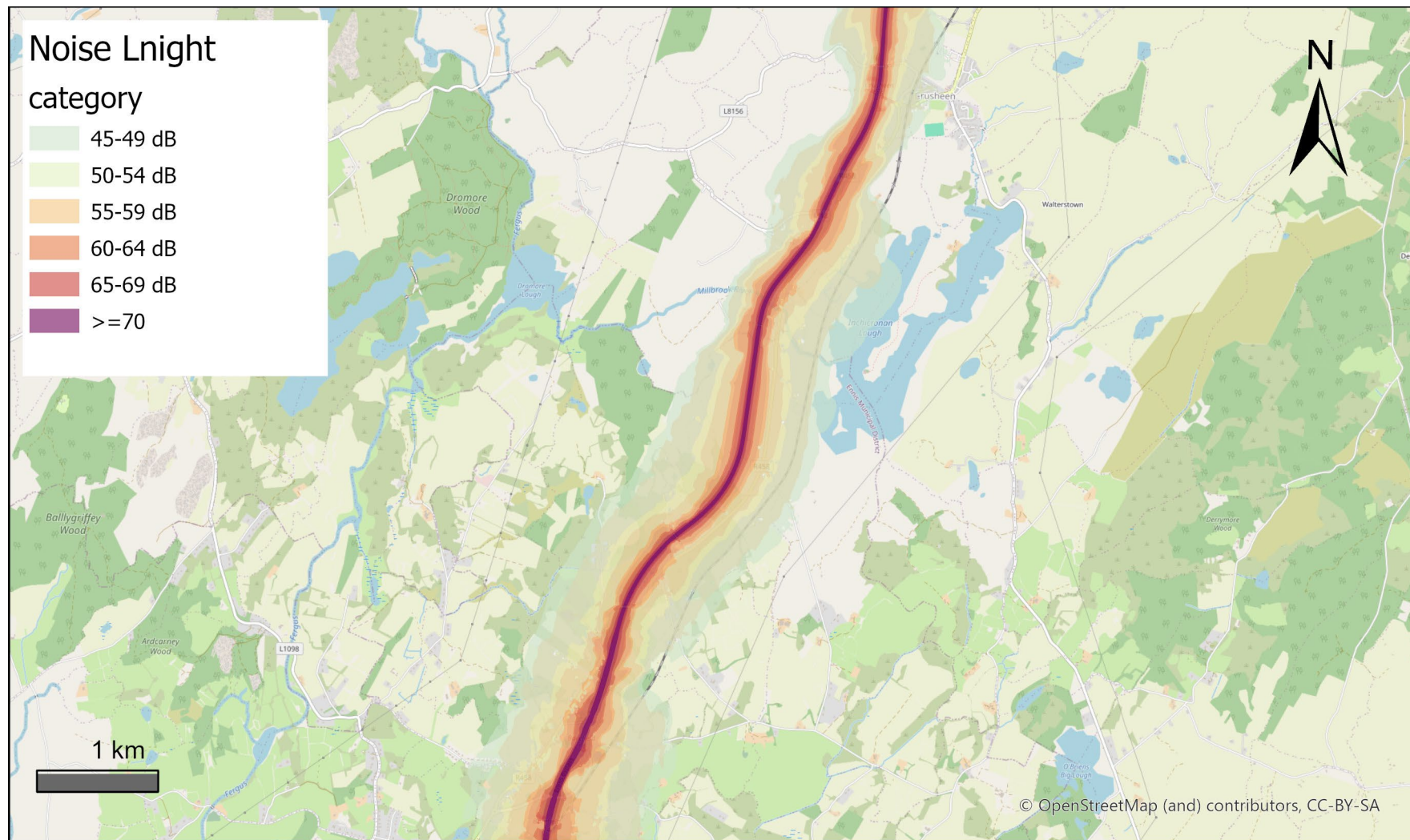


Figure B.6. L_{night} (dB) – M18 Crusheen Area

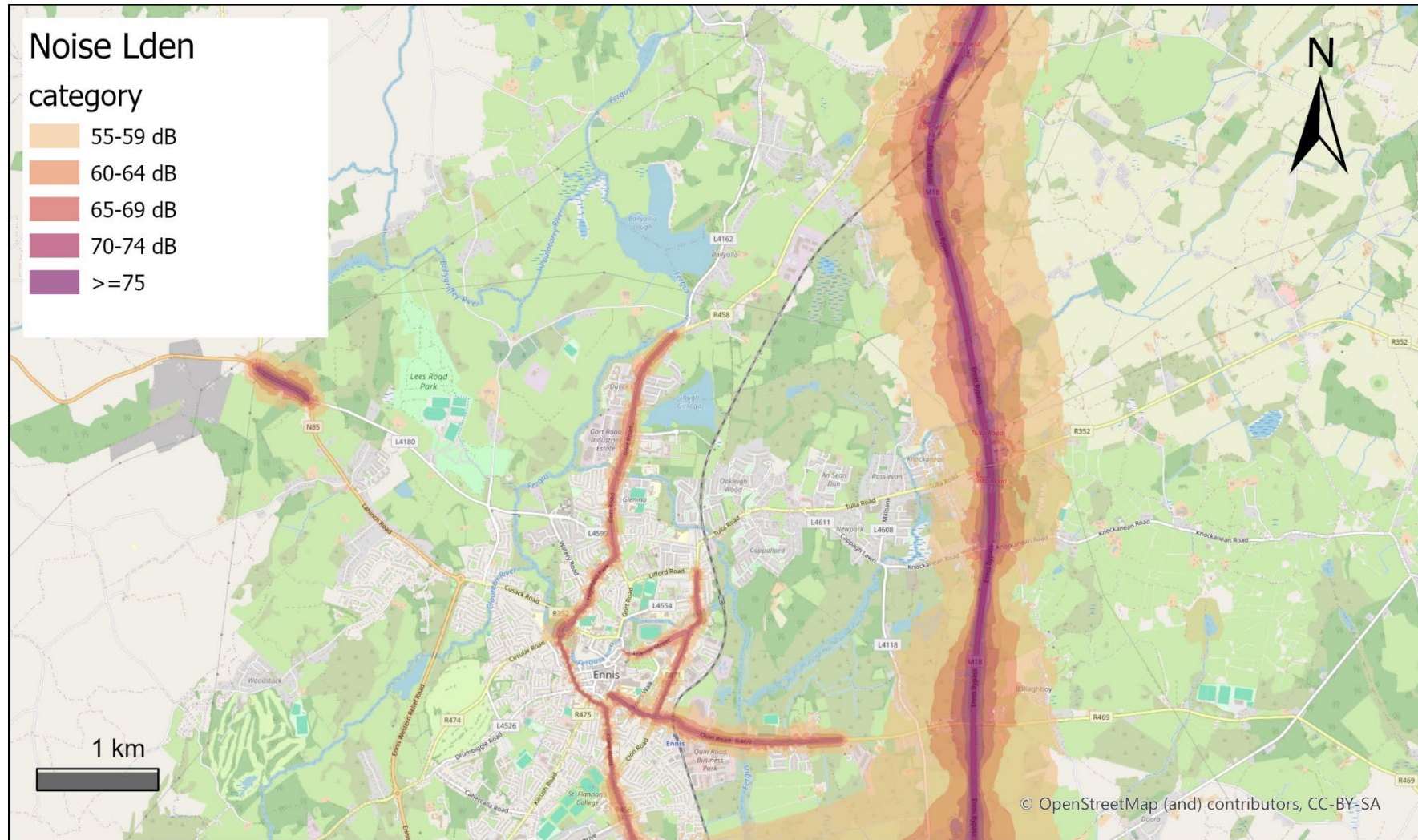


Figure B.7. Lden (dB) – Ennis North Area

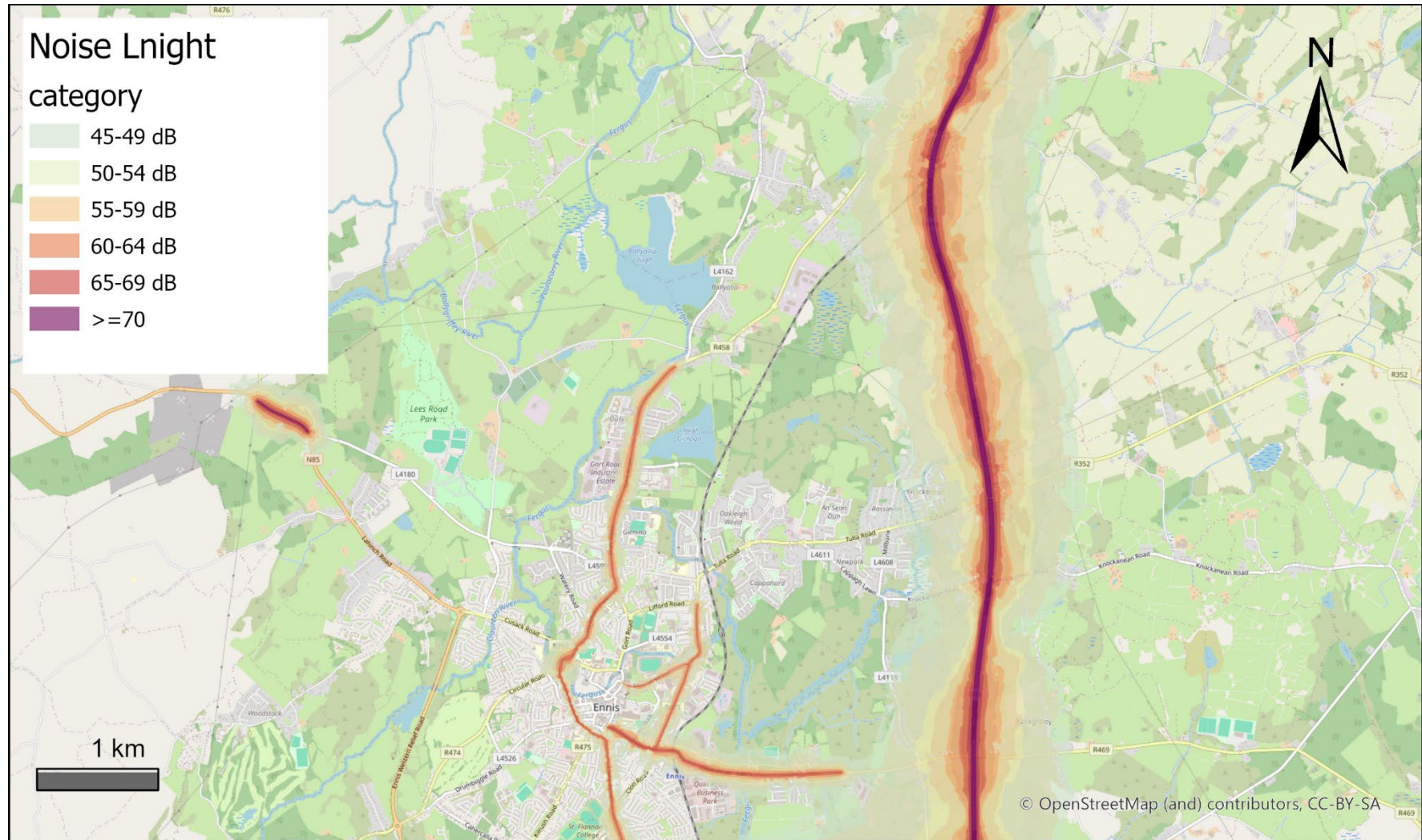


Figure B.8. L_{night} (dB) – Ennis North Area

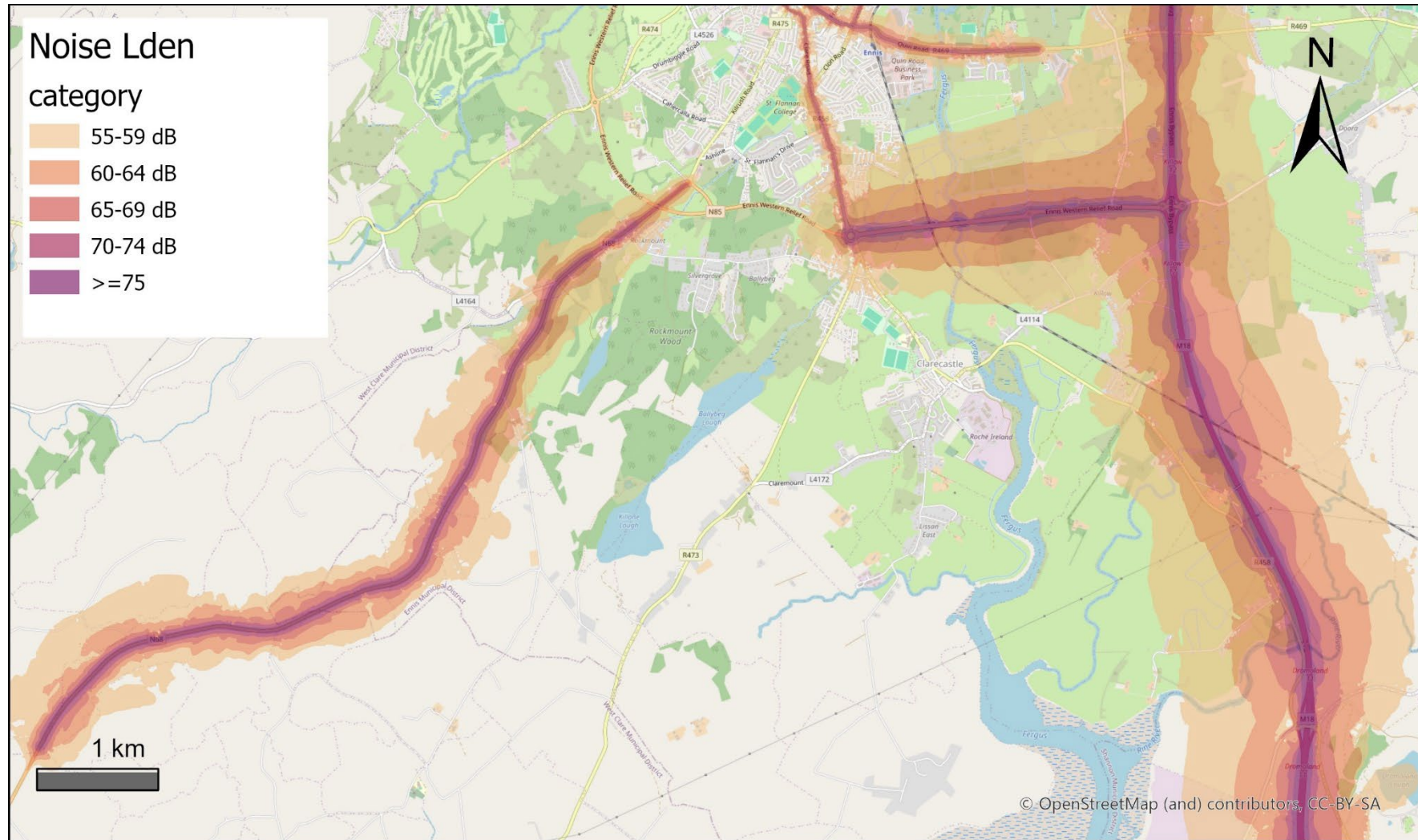


Figure B.9. L_{den} (dB) – Ennis South Area

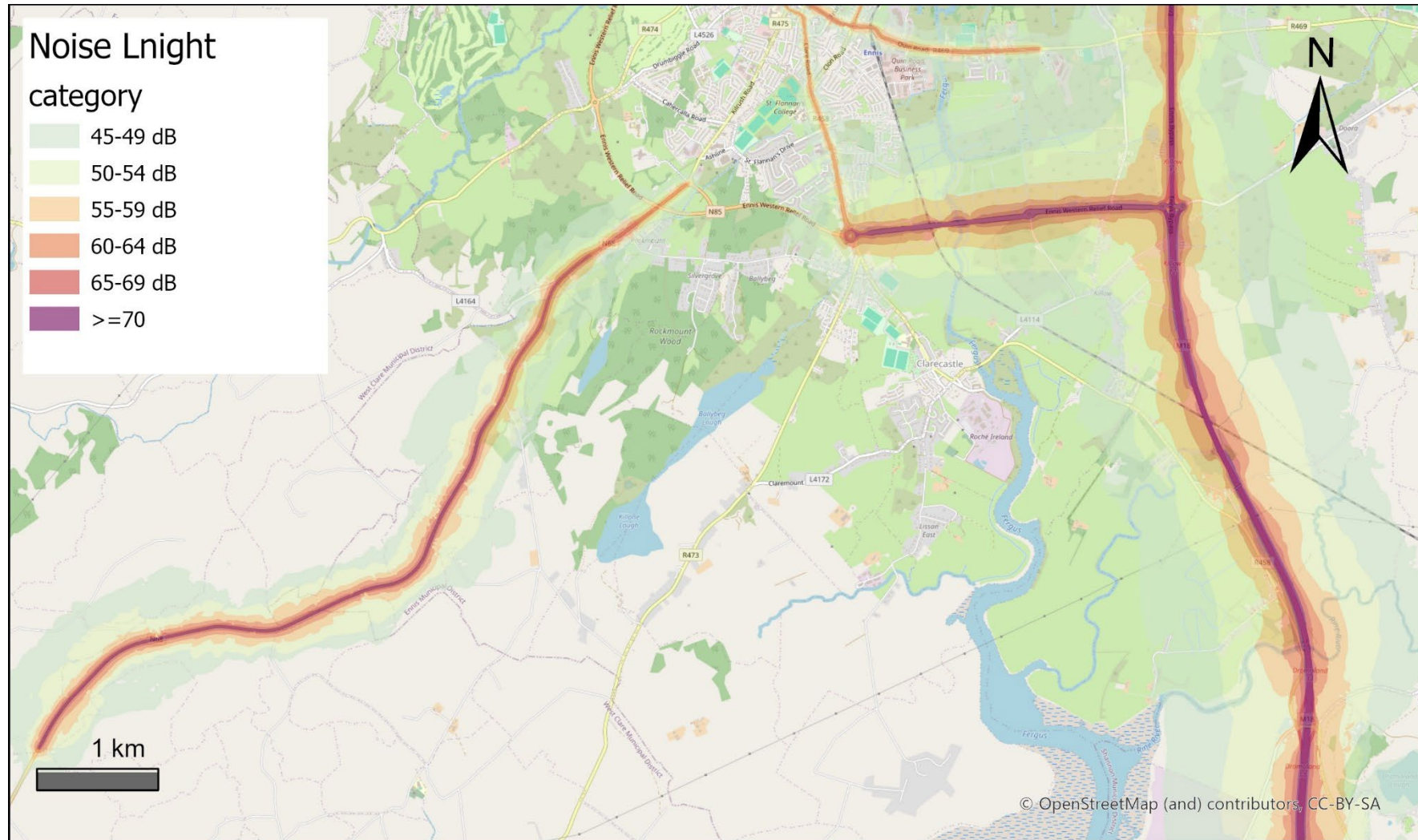


Figure B.10. L_{night} (dB) – Ennis South Area

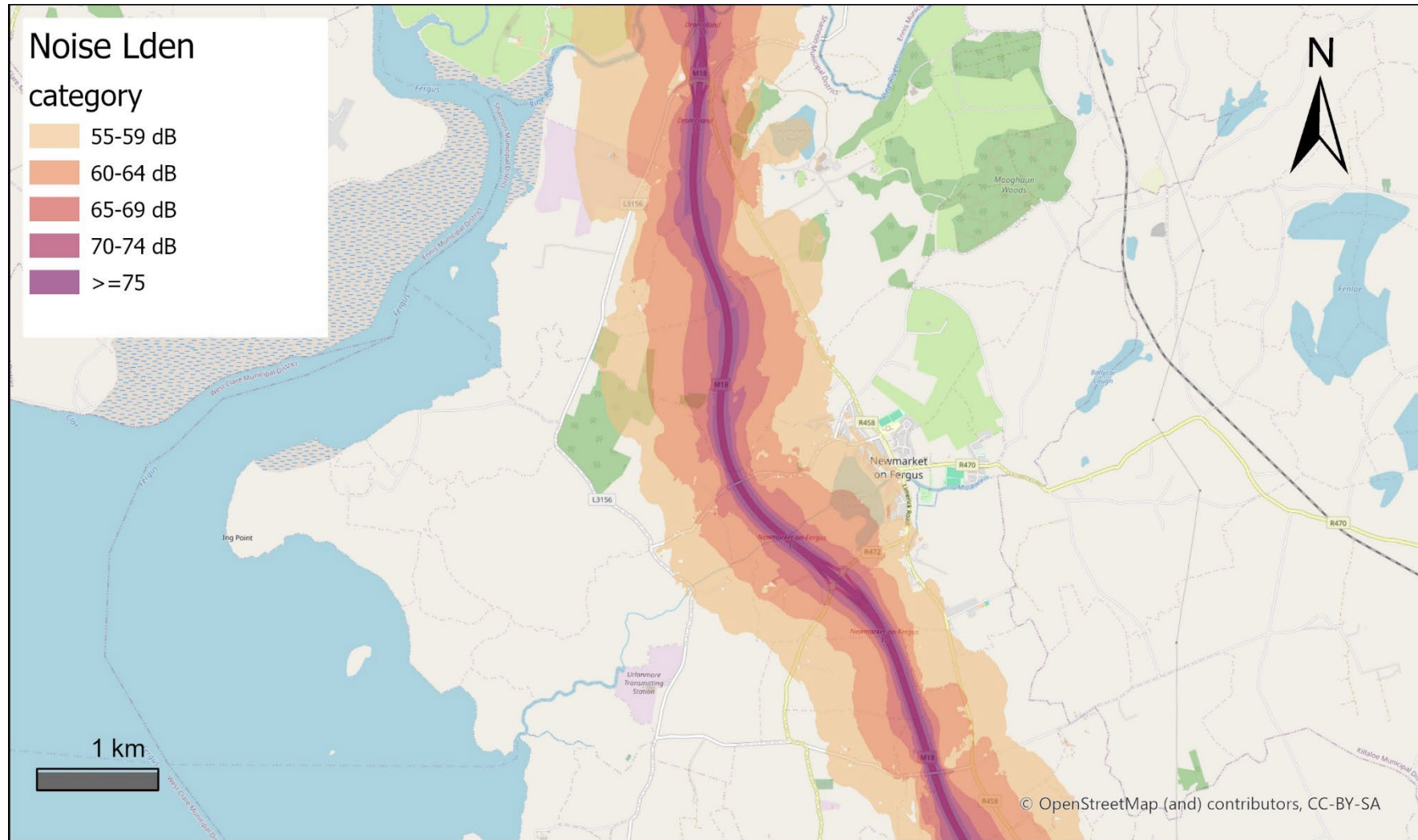


Figure B.11. Lden (dB) – Newmarket on Fergus Area

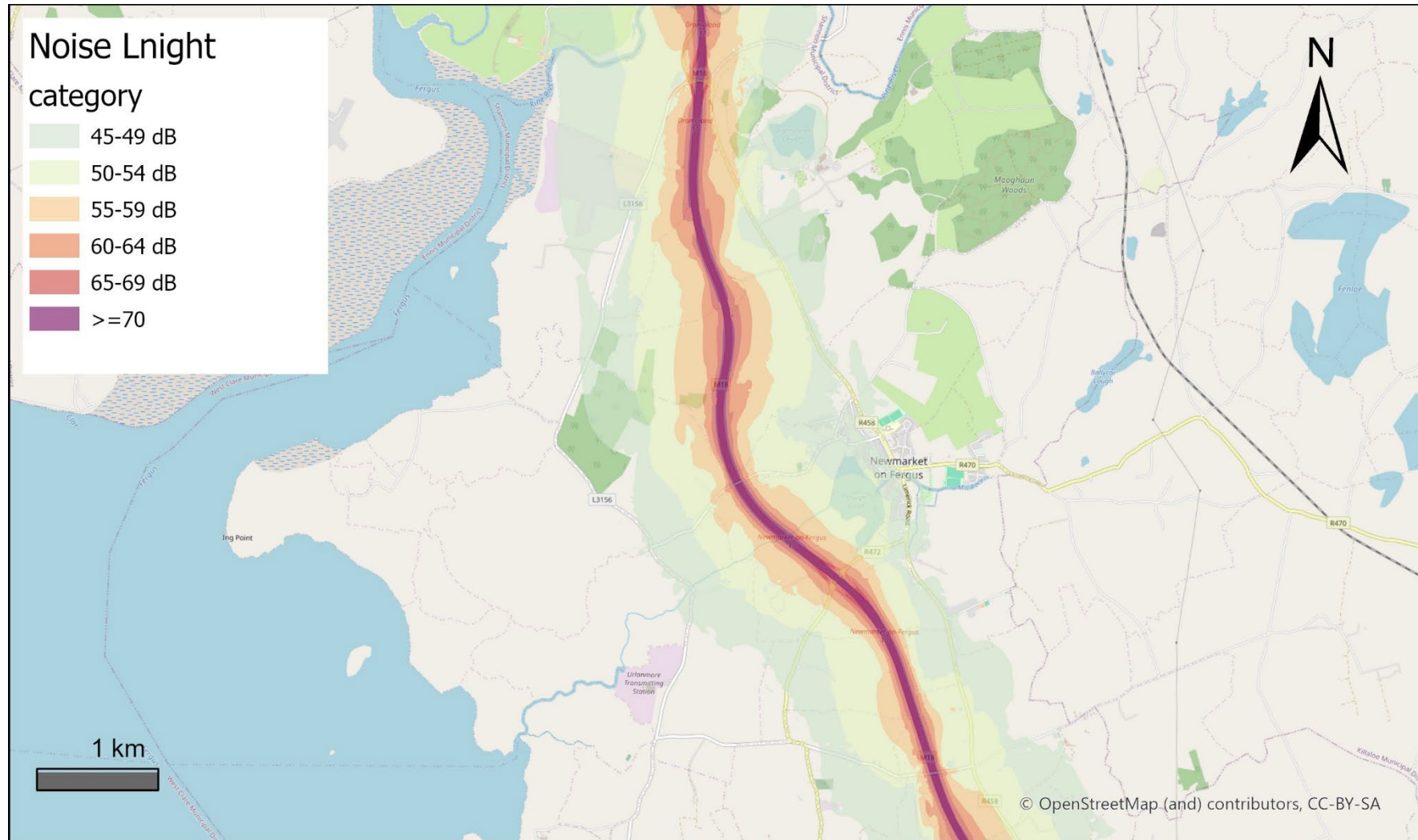


Figure B.12. Lnight (dB) – Newmarket on Fergus Area

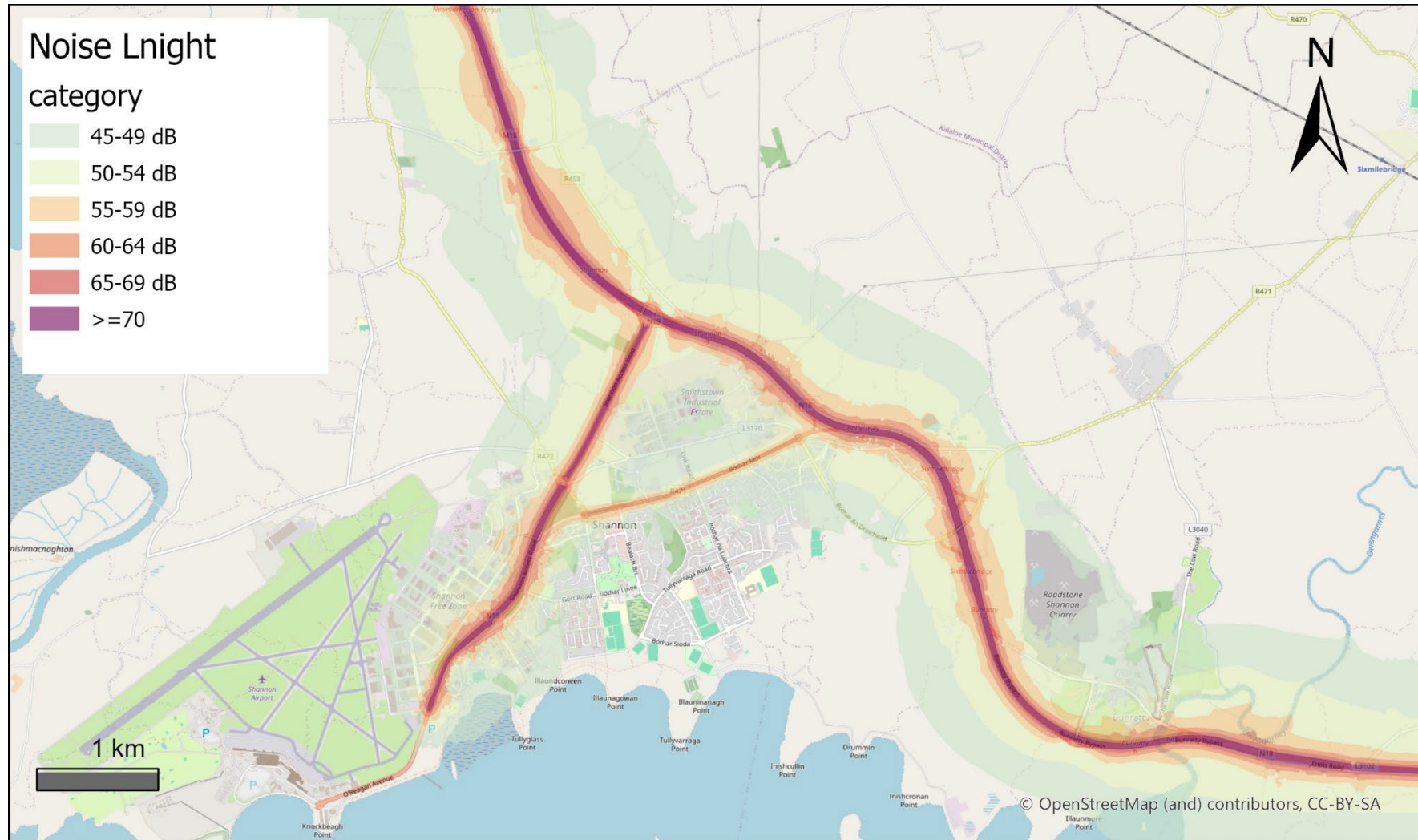


Figure B.14. L_{night} (dB) – Shannon Area

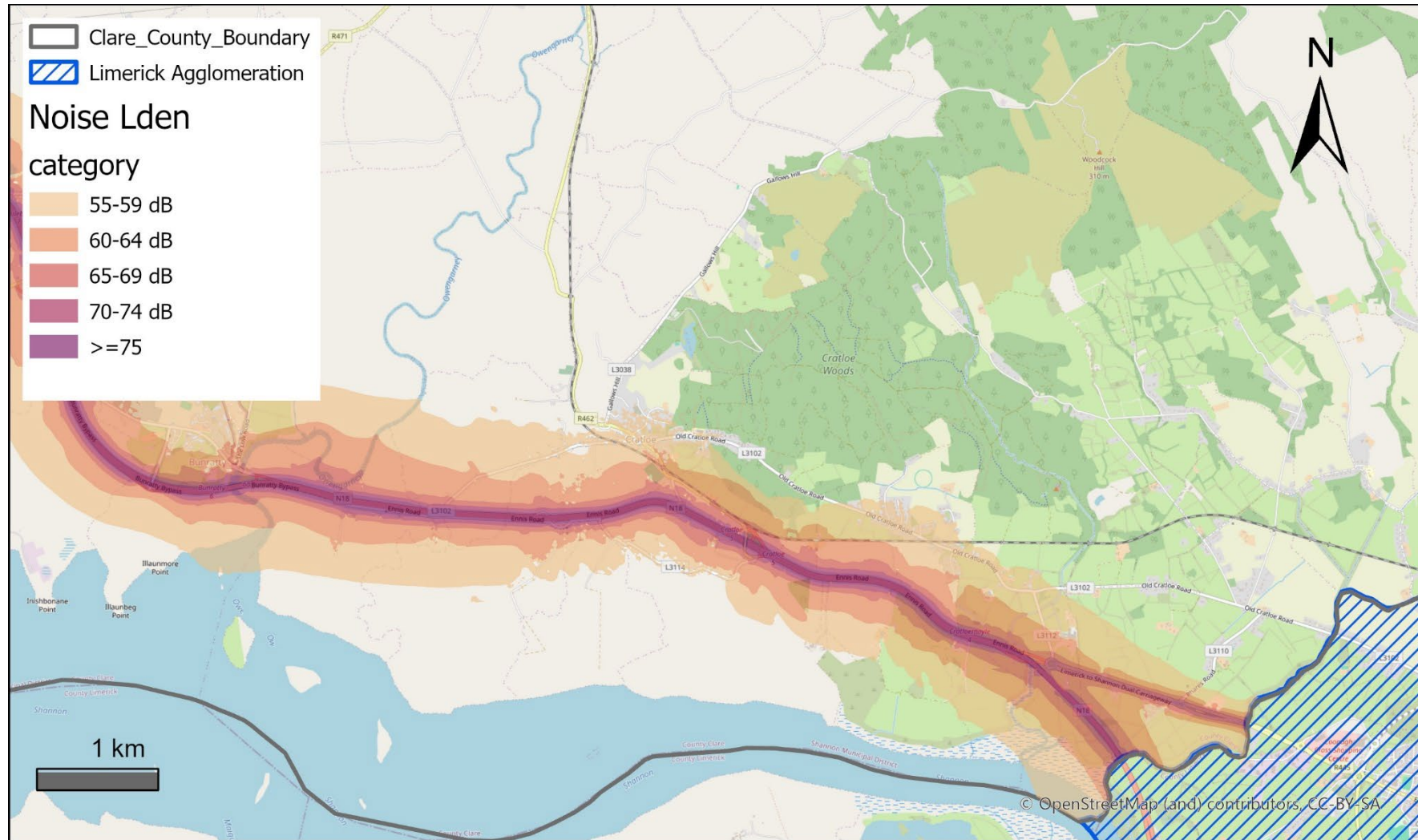


Figure B.15. L_{den} (dB) – Limerick Boundary Area

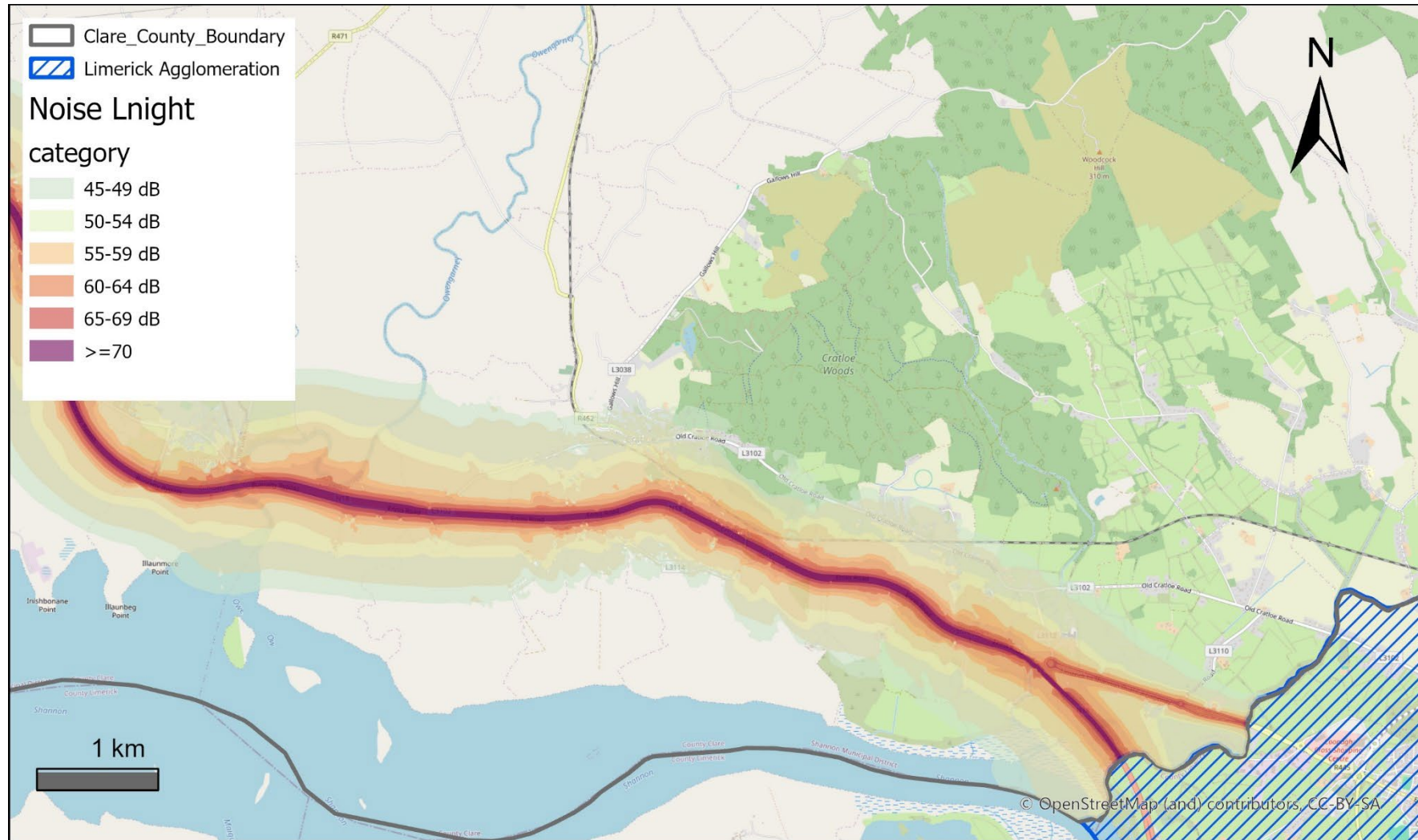


Figure B.16. L_{night} (dB) – Limerick Boundary Area

Appendix C: Round 4 NAP Implementation Measures and Actions

C.1 General – Noise Management Measures

General noise management measures cover a range of activities to support the implementation of the Noise Action Plan including other measures across the three policy principal categories.

Measures CCC1.1: Noise Action Plan Working Group(s) - Action Planning Authorities and Noise Mapping Bodies

CCC will support the establishment of relevant noise working groups to co-ordinate and collaborate with other Action Planning Authorities and the relevant Noise Mapping Bodies (e.g. TII, Irish Rail) in respect of noise management issues in general as they may arise and mitigation measures at a Priority Important Area level. CCC will support the establishment of a National NAP Implementation Working Group.

Measures CCC1.2: Support the Development of National Noise and Other Related Policy and Guidance

At present there is no national policy relating specifically to environmental noise other than the specific objective set out within National Policy Objective 65 from the National Planning Framework 2040.

CCC will actively support and engage with the development of national policy and guidance on the subject of environmental noise and all related policy.

Measures CCC1.3: Report to the Environment Protection Agency (EPA)

CCC will prepare an annual report for the EPA setting out progress made in respect of the implementation of the NAP including the investigations of Priority Important Areas and implementation of noise mitigation measures for those areas and other general areas.

In addition, progress with respect to the assessment of the Potential Candidate Quiet Areas will be presented together with any recommendations for referring any of these areas to the EPA and the Minister for designating as a Quiet Area. CCC will liaise with relevant third-party infrastructure owners in respect of progress made by them with implementing actions that may be relevant to them and their infrastructure.

Measures CCC1.4: Continued Investigation and Management of Complaints

CCC will investigate complaints under the provisions of the Environmental Protection Agency Act 1992 (Noise) Regulations 1994. CCC will have regard to international best practice, guidelines and standards.

Measures CCC1.5: Stakeholder Collaboration

CCC will actively collaborate with a number of stakeholders in relation to managing environmental noise in County Clare, particularly in identifying and reviewing potential mitigation measures for Priority Important Areas and the investigation of Candidate Quiet Areas.

Measures CCC1.6: Community Engagement

To date the strategic noise maps, together with background information, has been published on the Councils websites and a period of formal public consultation held on the draft NAP.

C.2 Mitigation – Noise Management Measures

Mitigation noise mitigation measures relate to activities to support the investigation of noise mitigation measures in the Priority Important Areas and engagement with the relevant stakeholders with influence to implement them.

Measures CCC2.1: Existing Plans, Projects and Strategies

There are a number of existing plans, projects and strategies which aim to deliver more sustainable infrastructure and services for County Clare. The successful implementation of these will bring indirect benefits for noise reduction through encouraging more sustainable modes of transport in combination with reduced traffic volumes. Key examples with noise benefit synergies include the;

- the Active Travel Programme.
- the Limerick Shannon Metropolitan Area Transport Strategy.
- the Clare County Council Climate Action Plan.

This measure aims to work collaboratively with each of these to support their implementation and engage on aspects for noise management and benefits.

Measures CCC2.2: Noise Sensitive Buildings

CCC will support the implementation of plans, projects and strategies that will reduce noise at noise sensitive buildings. Where any proposed projects may have a negative influence on the acoustic environment CCC will engage with relevant authorities and appraise noise mitigation options where feasible and recommend the most appropriate noise mitigation measure(s) if necessary.

Measure CCC2.3: Review the Assumptions used for the Priority Important Areas (PIAs)

CCC will undertake a review of the Strategic Noise Maps for the PIAs, and the assumptions used in the calculation models (e.g. road surfaces, traffic volumes etc.).

Measure CCC2.4: Appraise Noise Mitigation Measures for PIAs

CCC will complete an evaluation of the PIAs identified in the NAP. Where the PIA relates to infrastructure that is exclusively the responsibility of and managed by CCC, then the evaluation will be completed exclusively by CCC. Where the PIAs relate to infrastructure for which a third party has overall responsibility, then the evaluation will require collaboration and liaising with the relevant infrastructure owner. The investigation of potential noise mitigation measures for the PIAs will include assessments where feasible of the potential reduction in harmful health effects (as required under the Environmental Noise Regulations 2018) and/or cost benefit assessments, as appropriate.

Measure CCC2.5: Implementation of Recommended Noise Mitigation Measures

Subject to the outcome of CCC2.4, CCC will implement measures deemed technically, economically, and environmentally justified as part of this round of the NAP or future rounds, contingent upon resources and funding.

Implementation will involve reviewing the effectiveness of the measures through monitoring where appropriate. The implementation of measures related to infrastructure not under CCC's responsibility will require collaboration with the relevant third parties.

Consideration will be given to funding sources and will include liaising with relevant internal CCC sections and projects as well as third parties and government departments with a view to exploring funding opportunities for relevant measures or ensuring noise measures are incorporated within existing funding streams for existing projects.

C.3 Prevention – Noise Management Measures

Prevention noise mitigation measures relate to activities to support planning where there may be proposals to bring people to noise from major transportation sources or there is a material consideration of environmental noise required in local area plans and development plans. Prevention measures also relate to maintaining or improving the acoustic environment for new public realm where feasible.

Measures CCC3.1: Planning Referrals

Relevant Sections in CCC will report on planning applications and enforcement of planning conditions in relation to noise emissions. In reviewing and advising on planning applications where there is new proposed residential development near

major roads the relevant Sections will give due consideration to the existing strategic noise maps and the NAP.

Measures CCC3.2: Support the development of local authority policies and objectives.

CCC will give due consideration to the NAP in the development of relevant plans (e.g. Local Area Plans, Development Plans), strategies, policies and objectives will be prepared to support them.

Measures CCC3.3: Support the development of new public realm and green and blue infrastructure.

CCC may have existing plans and projects which aim to deliver new public realm and green and blue infrastructure. This measure aims to work collaboratively with the relevant Sections in CCC to support their implementation and engage on aspects for noise management and benefits, and to provide appropriate acoustic environments for citizens health and well-being.

C.4 Protection – Noise Management Measures

Measures CCC4.1: Evaluation of Potential Candidate Quiet Areas (PCQAs)

CCC will identify and complete an evaluation of each of the PCQAs during the implementation period of this NAP. The objective of the evaluation process will be to confirm the validity of the PCQA for delimiting as a Quiet Area.

The results of the evaluation will be used to make a recommendation on whether to designate the site as a Quiet Area or not. The public, the EPA and relevant Stakeholders will then be consulted on the outcome before a final proposal for each area is made to the EPA and the Minister.

Measures CCC4.2: Proposal for Quiet Area(s) Designation

For each of the Candidate Quiet Areas that are recommended for designation as a Quiet Area, a proposal will be prepared setting out the findings of the investigations and the feedback from the consultation process to support the recommendation for the area being designated as a Quiet Area.

This will be consulted with the EPA before being issued to the Minister of the Environment, Climate and Communications to approve the delimitation of the recommended Candidate Quiet Areas as a Quiet Area.