Longford County Council

Draft Noise Action Plan

2024 to 2028

Executive Summary

Longford County Council has prepared this noise action plan 2024-2028 in accordance with the requirements of EU Directive 2002/49/EC, otherwise recognised as the Environmental Noise Directive or END, which was transposed into Irish Law by the Environmental Noise Regulations 2006, SI No. 140 of 2006. The European Communities have recently superseded these regulations, Environmental Noise Regulations 2018, SI No. 549/2018.

The directive aims to provide for the implementation of a common EC approach to avoid, prevent, or reduce the harmful effects of exposure to environmental noise on a prioritised basis.

Environmental noise remains a major problem in Europe, with at least 20% of the population reported by the European Environment Agency to be living in areas where noise levels are considered harmful to human health. The long-term exposure to environmental noise significantly effects the physical and mental health of the population (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 2018.

This Plan has been prepared to address environmental noise from major roads in Co. Longford, with more than three million vehicles per annum.

Environmental noise is an unwanted or harmful outdoor sound created by human activities, including noise emitted by means of transport (road traffic, rail traffic, air traffic and noise in agglomerations over a specified size). Types of noise not included in the Regulations are noise from domestic activities, noise created by neighbours, noise at workplaces, etc.

Noise mapping bodies and Action Planning Authorities were assigned responsibility under the regulations to draw up noise maps for the third round in 2017. Action plans are required in respect of the following sources of noise:

- Agglomerations with more than 100,000 inhabitants
- Major airports with more than 50,000 movements per year
- Major Railroads with more than 30,000 trains per year
- Major Roads with a flow threshold of 3,000,000 vehicles per year.

The only noise source above that is applicable to Co. Longford, is major roads with a flow threshold of 3,000,000 vehicles per year. The following sections of road in Co. Longford were deemed to be above this threshold.

- N4 from the County Boundary with Westmeath to the County boundary with Leitrim.
- N63 from its junction with the N4 at Lisnamuck, east of Longford Town to its junction with the R397 west of Longford Town
- R198 from its junction with the N63 in Longford Town to Cahanagh Junction
- N55 from junction with R392 in Ballymahon to Ballymahon Mart
- R392 from junction with N55 at Creevagh, Ballymahon to Mercy Secondary School, Main St., Ballymahon

Transport Infrastructure Ireland (TII), the noise mapping authority for major national roads, has prepared strategic noise maps for the national roads located within County Longford that were judged by the benefit of road traffic count data to have more than three million vehicles per year. Transport Infrastructure Ireland (TII), acting on behalf of the local Authority also prepared strategic noise maps for regional roads above the threshold.

Strategic noise mapping was created using computer analysis. Results from this mapping are theoretical and predict the anticipated noise levels in the areas surrounding these roads. Geodirectory data was included in this analysis. From this, the population exposed to environmental noise generated by these roads could be predicted.

The Noise Action Plan 2024, prepared by Longford Co. Council, attempts to control the existing noise environment and protect the future noise climate within the action planning area. The Noise Action Plan has been prepared in accordance with the Regulations and is aimed at strategic long-term management of environmental noise from transport systems. 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 Longford 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. Longford County Council are 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 (2024-2028), with progress reported to the EPA on an annual basis. The Plan is underpinned by a set of overarching noise policy principles outlined in the Longford Noise Policy Statement.

LONGFORD POLICY STATEMENT

Longford County Council will seek to address environmental noise from major roads, as defined in the Environmental Noise Regulations, in the county. Longford Co. Council will endeavour to maintain satisfactory noise environments, where they exist and will have regard to the protection and improvement of the noise environment in the planning process, Longford County Council will endeavour that future developments include provisions to protect the population from the effects of environmental noise in the interests of residential amenity and public health.

Table of Contents

1. Introduction

1.1 Purpose of Environmental Noise Directive

A Directive (2002/49/EC) was issued by the European Union in 2002 related to assessing and managing environmental noise pollution, typically called the Environmental Noise Directive (END). The principal aim of the directive is to implement a European-wide system for identifying sources of environmental noise pollution, informing the public about relevant noise data and taking the necessary steps to avoid, prevent or reduce noise exposure.

Under this directive, Member states are required to:

- Undertake strategic Noise Mapping to determine exposure to environmental noise.
- Ensure information on environmental noise and its effects is available to the public.

Adopt action plans based upon noise mapping results to prevent and reduce environmental noise where necessary, particularly where exposure levels can induce harmful effects on human health and preserve environmental noise quality where it is good.

1.2 Purpose of Environmental Noise Regulations

END was transposed into Irish Law by the Environmental Noise Regulations 2006, SI No. 140 of 2006. In 2018, SI No. 549 of 2018 replaced these. The newest regulations transpose EU directive 2002/49/EC relating to the assessment and management of environmental noise as amended by Commission Directive (EU) 2015/996. The regulations provide for implementing a common approach within the European community intended to avoid, prevent, or reduce on a prioritised basis the harmful effects, including annoyance, due to exposure to environmental noise.

For the purposes of the Directive and Regulations, environmental noise is the unwanted or harmful outdoor sound created by human activities, including noise emitted by transportation sources such as road traffic, rail traffic, air traffic and noise in agglomerations over a specified size. Types of noise not included in the regulations are noise that the exposed person causes, noise from domestic activities, noise created by neighbours, noise at workplaces or noise inside means of transport or due to military activities.

1.3 Legislative Background

European Communities (Environmental Noise) Regulations 2018 - 2021 (S.I. 549/2018 & 663/2021)

- The Regulations give effect to the Environmental Noise Directive (END) 2002/49/EC
- Apply to environmental noise, created by human activities, which people are exposed to; in built-up areas, in public parks/quiet areas, near schools & hospitals and other noise-sensitive buildings /areas.
- The Regulations/END requires two indicators to be applied;

  Lden - annual average day, evening and night noise level and is a measure of 'annoyance' (Reporting threshold 55dB)

  Lnight - annual average night-time noise level and is designed to assess sleep disturbance (Reporting threshold 50dB).

- Regulations require Noise Mapping Bodies (NMBs) to prepare **Strategic Noise Maps** every 5 years for;

  • Agglomerations (>100,000 persons) (road, rail, airports & industry)

  • Major roads (>3,000,000 vehicle passages per year)

  • Major rail (>30,000 train passages per year)

  • Major airport (>50,000 movements per year)

- The Regulations require Action Planning Authorities (APAs) to make **Noise Action Plans** every 5 years for each of the areas covered by the Strategic Noise Maps.
- Member States must report on the numbers of people who are exposed to noise levels above the reporting thresholds for a range of noise sources.
- Noise Mapping Bodies must calculate the harmful effects associated with noise (Ireland only).

1.4 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.

Calculations of supplementary noise indicators have also been undertaken, namely the $L_{Aeq,16hr}$ (the annual average noise level for the daytime/evening periods, from 07:00 – 23:00 hours), which the EPA has approved as the appropriate noise indicator to inform the identification of Candidate Quiet Areas.

1.5 Fourth Schedule of the Regulations

The Fourth Schedule of the Regulations sets out the minimum requirements for Action Plans. These are:

1. An action plan must at least include the following elements:

- a description of the agglomeration, the major roads, the major railways or major airports and other noise sources considered,
- the authority responsible,
- the legal context,
- any statutory limit values in place,
- a summary of the results of the noise mapping,
- an evaluation of the estimated number of people exposed to noise identification of problems and situations that need to be improved,
- a record of the public consultations organised in accordance with Regulation 12(5),
- any noise-reduction measures already in force and any projects in preparation,
- actions which the action planning authorities intend to take in the next five years, including any measures to preserve quiet areas,
- long-term strategy,
- financial information (if available): budgets, cost-effectiveness assessment cost-benefit assessment,
- provisions envisaged for evaluating the implementation and the results of the action plan.

2. The actions which the action planning authorities intend to take in the fields within their competence may for example include:

- traffic planning,
- land-use planning,
- technical measures at noise sources,
- selection of quieter sources,
- reduction of sound transmission,
- regulatory or economic measures or incentives.

3. Each action plan should contain estimates in terms of the reduction of the number of people affected (annoyed, sleep disturbed, or other).

1.6 Aims and Objectives of Action Plans

Environmental noise is the second biggest environmental cause of health problems in the EU, after air pollution (the fine particulate matter in air), according to the World Health Organisation (WHO), and the European Environment Agency (EEA)[1]. Prolonged exposure to noise can lead to serious illnesses including:

- Cardiovascular diseases
- Reduced cognitive performance in children.
- Severe annoyance, which is a form of stress.
- Sleep disturbance.
- Tinnitus.

The END is the main pan-European regulatory framework established to manage environmental noise, through harmonised procedures to assess levels of noise exposure, assess the impact on human health, and prepare noise action plans.

Within the framework of the END, and the context of sustainable development, the overall aim of managing environmental noise is to **avoid, prevent and reduce the harmful effects due to long term exposure to environmental noise**, which would in turn promote good health and a good quality of life.

The aims and objectives of the Directive state that the adoption of action plans should be concerned with: "preventing and reducing environmental noise where necessary and particularly where exposure levels can induce harmful effects on human health and to preserving environmental noise quality where it is good." [2]

This implies two scenarios which are to be addressed by the action plans:

Reduction of existing environmental noise where necessary and protection of the future noise climate.

Additionally, from a national perspective it is recommended that noise action plans support Policy Objective 65 from the National Planning Framework 2040[3], which states:

[1] European Environment Agency, Healthy environment, healthy lives: how the environment influences health and well-being in Europe, EEA Report Healthy environment, healthy lives: how the environment influences health and well-being in Europe — European Environment Agency (europa.eu)

[2] Environmental Noise Directive - European Commission (europa.eu)

[3] National Planning Framework 2040: http://www.gov.ie/en/project-ireland-2040/ [Accessed August 2023]

"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."

Action Planning Authorities are to determine the measures to be included within the noise action plans, and [4]:

"Each action plan or revision of an action plan shall address priorities which—

(i) may be identified based on exceedances of any relevant noise limit value or other relevant criteria established by the Agency in accordance with subparagraph (3), and

(ii) shall, in the first instance, address the most important area or areas established by strategic noise mapping."

The Regulations require that "priorities" and "the most important area or areas" are to be addressed. The guidance develops on these concepts by setting out a recommended approach following a three-step approach to identifying priorities:

1. **Important Areas (IA)** – these are locations exposed to environmental noise which may be harmful to human health, as indicated by international guidance.
2. **Most Important Areas (MIA)** – these locations are a sub-set of Important Areas where the health effects are highest, typically through a product of noise exposure levels and the number of people exposed to noise.
3. **Priority Important Areas (PIA)** – between 5 and 10 MIAs identified as those which will be addressed during the implementation of the Noise Action Plan (NAP).

In May 2021 the EU launched the Zero Pollution Action Plan[5] (ZPAP) with a vision for 2050 that air, water and soil pollution is reduced to levels no longer harmful to health and natural ecosystems. The targets by 2030 include *"reducing the share of people chronically disturbed by transport noise by 30%"*, compared to 2017.

In support of ZPAP, the PHENOMENA[6] project was undertaken to identify cost-effective noise mitigation

[4] Regulation 12(2)

[5] https://environment.ec.europa.eu/strategy/zero-pollution-action-plan_en [accessed October 2022]

[6] European Commission, Directorate-General for Environment, Kantor, E., Klebba, M., Richer, C. et al.,

measures which may help competent authorities to achieve noise reductions across large parts of the exposed population. The previous version of the EPA guidance on noise action planning focused noise mitigation measures on locations exposed to high levels of noise, however in the context of the ZPAP it was determined that a different approach would be required to help support APAs actions to reduce the overall health effects of environmental noise. The aim of the revised approach recommended to identify Priority Important Areas (PIAs), see Section 4, is to support the aspirations of ZPAP by providing noise reductions to larger numbers of exposed residents.

1.7 Historical Noise Action Plans

The Environmental Noise Regulations specify the process to be followed in addressing environmental noise from transport sources, implemented over three phases:

Round One (2007):

Noise Mapping Bodies were required to submit strategic noise maps before 30th July 2007 for the following conditions:

- Major Roads with more than 6,000,000 vehicles per year
- Major Railroads with more than 60,000 trains per year
- Major Airports with more than 50,000 movements per year
- Agglomerations with more than 25,00 inhabitants

Within the constraints above, local authorities submitted Phase One noise action plans. These plans were conveyed to the European Commission in January 2009. Longford Co. Council did not exceed these thresholds in their functional area and did not have to submit a Phase One Noise Action Plan.

Round Two (2013):

This phase provided for noise mapping bodies to make strategic noise maps for the following:

- Major Roads with greater than 3,000,000 vehicles per year
- Major Railroads with greater than 3,000 trains per year
- Major Airports with greater than 50,000 movements per year
- Agglomerations with greater than 1000,000 inhabitants

Timetable

- August 2013/September 2013: Public Consultation Phase
- **November 2013:** Final Version of Noise Action Plan
- **January 2014:** EPA submit Plan to the European Commission

Round Three (2018)

Assessment of potential health benefits of noise abatement measures in the EU: Phenomena project, Publications Office, https://data.europa.eu/doi/10.2779/24566 , 2021. [Accessed October 2023]

This phase provided for noise mapping bodies to make strategic noise maps for the following:

- Major Roads with greater than 3,000,000 vehicles per year
- Major Railroads with greater than 3,000 trains per year
- Major Airports with greater than 50,000 movements per year
- Agglomerations with greater than 1000,000 inhabitants

Timetable

- **December 2018/January 2019:** Draft Noise Action Plan developed by Longford County Council and submitted to EPA for review
- January 2019 / February 2019: Public Consultation Phase
- **March 2019:** The noise Action Plan is to be updated following public consultation and submitted to the EPA for final review.
- **January 2019:** EPA submitted a summary of the Noise Action Plan to the European Commission.

1.8 Round Four Noise Action Plan (2024)

This phase provided for noise mapping bodies to make strategic noise maps for the following:

- Major Roads with greater than 3,000,000 vehicles per year
- Major Railroads with greater than 3,000 trains per year
- Major Airports with greater than 50,000 movements per year
- Agglomerations with greater than 1000,000 inhabitants

Timetable

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:

- January-April 2024: Prepare draft NAPs;
- May 2024: Public consultation for Longford (6 weeks);
- 18 July 2024: Deadline for submission of the NAPs to the EPA;
- 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.

May 2024: Draft Noise Action Plan developed by Longford County Council and submitted to EPA for review

May/June 2024: Public Consultation Phase

XXX 2024: The noise Action Plan is to be updated following public consultation and submitted to the EPA for final review.

XXX 2024: EPA submitted a summary of the Noise Action Plan to the European Commission

2 Roles and Responsibilities of Designated Bodies

2.1 National Authorities

The noise regulations designate noise mapping bodies and action planning authorities for the making of strategic noise maps and noise action plans as follows.

The Environmental Protection Agency (EPA) is the appointed national Authority that manages the execution of the regulations. The EPA are required to provide instruction and guidance to the relevant noise mapping bodies and action planning authorities. The EPA is responsible for reporting to the European Commission the information relating to strategic noise mapping and action planning in accordance with Article 10(2) of the Directive.

2.2 Noise Mapping Bodies

- Transport Infrastructure Ireland (TII) is the noise mapping authority for major national roads on behalf of the action planning authority concerned.
- For major non-national roads, each local Authority is the noise mapping authority concerned.
- For major Railroads, Iarnród Éireann are the mapping bodies on behalf of the action planning authority concerned. On 1st August 2015, Transport Infrastructure Ireland (TII) was established through a merger of the National Roads Authority (NRA) and the Railway Procurement Agency under the Roads Act 2015. TII are now the Noise Mapping Body for Luas.
- The relevant airport authority for major airports is the noise mapping body, on behalf of the concerned action planning Authority.
- For the agglomeration of Cork, both Cork City and County Councils are the noise mapping body responsible. Similarly, for Dublin, Dublin City Council, along with Dun Laoghaire/Rathdown, Fingal, and South Dublin County Council are the authorities concerned.

2.3 Action Planning Authorities

The action planning authorities are the local authorities within the area where any major road, airport, railway, or agglomeration is situated. For the purpose of this Noise Action Plan, Longford County Council are the assigned Action Planning Authority. Contact details are as follows:

Longford County Council

Great Water Street,

Longford,

Co. Longford

Tel – 043 3346231

Email – abrady@longfordcoco.ie

3 Existing Noise Management Legislation and Guidance

3.1 National Noise Legislation and Guidance

3.1.1 Environmental Protection Agency Act 1992

In Ireland, the principal law relating to noise is Sections 106, 107, and 108 of Part VI of the Environmental Protection Agency (EPA) Act 1992.

S106: The Minister for the Environment has power under Section 106 of this Act, after consulting with other concerned Ministers and the EPA, to make regulations for the purpose of the prevention or limitation of any noise which may give rise to a nuisance or disunity, constitute a danger to health or damage property. However, no such regulations have been introduced to date.

S107: Local Authorities have powers under Section 107(1) to serve a notice on any person in charge of premises, processes or works, other than an activity which is licensable under IPC, when they consider that it is necessary to do so to prevent or limit noise. The EPA has the same power in relation to an activity licensable by it.

S108: The (Noise) Regulations 1994 (SI 179) which implemented Section 108 of the EPA Act 1992, were designed to simplify and strengthen the procedures for dealing with noise nuisance. A Local Authority, the EPA or any other affected person may complain to the District Court under Section 108(1) of the EPA Act, where any noise is so loud, so continuous, so repeated, of such duration or pitch or occurring at such times as to give reasonable cause or annoyance to a person in any premises in the neighbourhood, or to a person lawfully using any public place.

3.1.2 IPPC and Waste Licensing

Noise conditions are routinely imposed as part of an IPPC licence. The relevant guidance is set out in the EPA publication *Guidance Note for Noise; License Applications, Surveys and Assessments in relation to scheduled activities* published by EPA in 2012 and recently updated in 2016. This document contains suggested noise limits of 55 dB(A) LAr, T for daytime and 45dB(A) LAeq, T for night- time; with said limits to be applied to "sensitive locations". Whilst these limits have a very specific application, they have appeared in many different contexts and often form the basis for conditions in planning permissions. Similar noise conditions are also imposed on waste-licensed facilities.

3.1.3 Waste Permitting

Longford County Council may impose noise conditions on waste permitted facilities where noise is considered to be a potential issue. These conditions are similar to the EPA waste licence conditions.

3.1.4 National Policy Objective 64

Improve air quality and help prevent people being exposed to unacceptable levels of pollution in our urban and rural areas through integrated land use and spatial planning that supports public transport, walking and cycling as more favourable modes of transport to the private car, the promotion of energy efficient buildings and homes, heating systems with zero local emissions, green infrastructure planning and innovative design solutions.

Noise quality is unwanted sound but is an inevitable consequence of everyday life, arising from environmental noise (created by human activity outdoors such as transport, construction and industry), with different tolerance levels varying from person to person. It becomes a problem when it occurs in the incorrect place or at the incorrect time or on a frequent or recurring basis. As we seek to promote more compact and efficient forms of development within our settlements, it is important to more proactively manage noise.

In addressing these issues, the National Planning Framework will support:

Noise Management and Action Planning Measures - to avoid, mitigate, and minimise or promote the pro-active management of noise, where it is likely to have significant adverse impacts on health and quality of life, through strategic noise mapping, noise action plans and suitable planning conditions.

Noise, Amenity and Privacy, -this includes but is not limited to, good acoustic design in new developments, in particular residential development, through a variety of measures such as setbacks and separation between noise sources and receptors, good acoustic design of buildings, building orientation, layout, building materials and noise barriers and buffer zones between various uses and thoroughfares.

Quiet Areas - the further enjoyment of natural resources, such as our green spaces and sea frontage, through the preservation of low sound levels or a reduction in undesirably high sound levels, is particularly important for providing respite from high levels of urban noise. As part of noise action plans, an extra value placed on these

areas, in terms of environmental quality and the consequential positive impact on quality of life and health, due to low sound levels and the absence of noise, can assist in achieving this.

3.1.5 National Policy Objective 65

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.

3.1.6 Wind Energy Planning Guidelines

With specific regard to wind energy developments, this DEHLG document suggests a "lower fixed limit of 45dB(A) or a maximum increase of 5dB(A) above background noise at nearby noise sensitive locations". The latter requirement may be relaxed in areas with low background levels. A fixed limit of 43dB(A) at night-time is deemed appropriate, as there is no requirement to protect external amenity. These are currently in the process of being revised.

3.1.7 Quarries and Ancillary Activities

Section 261 of the Planning and Development Act, 2000, introduced a new system of one-off registration for all quarries. Only those quarries for which planning permission was obtained in the 5-year period before S261 became operational were excluded. The Department of the Environment published guidelines for Planning Authorities for quarries and ancillary activities in April 2004, including recommended noise conditions for inclusion as part of registration or where a full planning permission was required.

Depending on the complexity of the quarrying operation, noise conditions were included as part of the registration process and as part of the planning process for quarry extension applications.

3.1.8 National Road Guidelines

Transport Infrastructure Ireland (TII, formerly NRA) has published the documents "*Guidelines for the Treatment of Noise and Vibration in National Road Schemes (2004)*" and "*Good Practise Guidance for the Treatment of Noise and Vibration in National Road Schemes (2014)*, which sets out the procedure to be followed in respect of "the planning and design of national road schemes". The TII propose that all National Road Schemes should be designed, where feasible, to meet a day-evening-night sound level of 60 dB, Lden (free field residential façade criterion), to be met both in the year of opening and design year.

This means that the Environmental Impact Statement (EIS) must consider this target for any new road scheme, including any existing sensitive residential property likely to be affected by the scheme.

The guidelines, written from the perspective of road infrastructure construction that may generate environmental noise, present an approach to mitigating the adverse effects of road construction as far as possible using measures such as alignment changes, noise barrier construction, e.g., earth mounds, and the use of low-noise road surfaces.

3.1.9 Building Regulations

The current Irish Building Regulations call for certain constructions to offer “reasonable resistance” to both airborne and impact sound. In the absence of any form of objective criterion, reference is often made to the guidance values put forward in the “Similar Construction” method described in their *Technical Guidance Document E*. It is a recommendation of the EPA Action Planning guidance that for buildings constructed near noise sources, it would be appropriate for specific façade noise insulation n values, based upon a target internal noise level, to be a stated requirement of the construction, potentially with a pre-completion sound insulation test required prior to habitation. This would help to ensure that the design targets of the construction are met in practice. The Building Regulations do not cover the assessment or control of intrusive noise.

3.2 Regional and Local Guidance

3.2.1 Eastern & Midland Regional Assembly Spatial & Economic Strategy 2019 - 2031

Section 7.3 of strategy - A Clean and Healthy Environment - Noise pollution, states that stress from living with noise can have chronic effects on human health including impacts on mental health and sleep disturbance. Excessive noise also has harmful effects on wildlife. The EU Environmental Noise Directive requires that local authorities prepare strategic noise maps and action plans, setting out mitigation measures to reduce the harmful effects, including long term exposure to environmental noise from roads, railways and airport traffic and the protection of ‘quiet areas’, which are shown to bring significant health and wellbeing benefits.

REGIONAL POLICY OBJECTIVE: Noise Pollution 7.8:

Local authorities shall incorporate the objectives of the EU Environmental Noise Directive in the preparation of strategic noise maps and action plans that support proactive measures to avoid, mitigate, and minimise noise, in cases where it is likely to have harmful effects.

3.2.2. Longford Town -Local Transport Plan (October 2023)

Arup was commissioned by Longford County Council (LCC) to complete a Local Transport Plan (LTP) for Longford Town. The purposed of the Transport Strategy is to inform the Local Area Plan (LAP) that is being prepared for Longford Town and Environs as recommended in the Regional Spatial and Economic Strategy (RSES). The aim of the transport plan is to establish a strategic framework for investment in transport in Longford, and it is anticipated to be fully reflected in the Draft LAP. Each of the proposals will be subject to further detailed assessment of their impacts and benefits prior to implementation.

The overall strategy presents a comprehensive analysis of the current transport situation in Longford Town. The opportunities and constraints associated with the transport network are identified and are used to inform potential solutions to improve the transport network for all users.

3.2.3. Longford County Development Plan

The Longford County Development Plan 2021 -2027 addresses the importance of noise in a planning context. Section 12.19 of the Longford County Development Plan 2021 – 2027 refers to pollution prevention within the county.

Noise and Light Pollution: The Environmental Noise Regulations 2006 give effect to EU Directive 2002/49/EC relating to the assessment and management of environmental noise. The impact of noise pollution is an important consideration in assessing all new development proposals, as it can impact people's quality of life and health. Through the Development Management process, the Council will seek to reduce noise and/or vibration at site boundaries or within adjacent sensitive areas, especially residential areas, by measures such as layout, design and/or attenuation mechanisms. The Council will require the submission of Noise Impact Assessments, which proposes introducing noise-creating uses in proximity to noise-sensitive uses, such as residential areas. If permission is granted, it may impose conditions mitigating impact. Similarly, where noise-sensitive uses are proposed within proximity to a noise source, such as national roads, rail lines, etc., proposals shall include noise and/or vibration attenuation measures in any planning application.

3.2.4. Existing Noise Limit Values

At present, there is no existing legislation that limits noise levels to a particular value. To address the lack of legislative measures and unify the approach taken by Action Planning Authorities, the EPA has issued guideline noise levels for the onset of noise exposure assessment and prioritising areas for noise mitigation measures. The proposed onset of assessment levels relating to road traffic noise are given below:

	Lden	**Lnight**
Onset levels for noise mitigation measures	70dB L_{den}	57dB L_{night}
Onset levels for measures to preserve the existing noise situation	55dB L_{den}	45dB L_{night}

Figure 1: EPA Guidance levels for the onset of noise exposure assessment

These levels reflect an annual average 24-hour period. The levels above apply to the Action Planning Process only and should not be used for planning purposes generally.

These values were decided upon after a review of guidance values issued in other countries. These values can be seen as indicative criteria in the decision-making process. Combined with the graphical results of noise mapping, consideration of the number of people exposed and the type of property the guidelines provide a useful framework for assessing noise impact.

3.3 Quiet Areas and Noise Sensitive Areas

3.3.1 Quiet Areas.

A quiet area in open countryside is defined as an area delimited by the action planning authority following consultation with the agency and approval by the minister, that is undisturbed by noise from traffic, industry or recreational activities. At present, there are no such areas identified in County Longford for which noise mapping

has been carried out and as such quiet areas are not relevant to this Plan.

3.3.2 Noise Sensitive Areas.

Current national guidance documents list types of premises/areas considered “noise sensitive” premises as any dwelling house, hotel or hostel, health building, educational establishment, place of worship or entertainment, or any other facility or other area of high amenity which for its proper enjoyment requires the absence of noise at nuisance levels (EPA 2003).

4 Description of Action Plan Area

4.1 Description of Co. Longford

Longford is the fourth smallest county of the 32 counties in Ireland in terms of area. It is a largely rural inland county covering an area of 1091 square kilometres. The majority of the county is flat with the main raised land located in the northern area of the county. The land in county Longford is predominantly used for agriculture. Longford town is the county town.

Longford is bordered by Cavan to the Northeast, Leitrim to the Northwest, Westmeath to the East and Southeast and Roscommon to the West and Southwest. There are many major commercial and industrial developments in the main towns and villages of the county.

4.2 Population Data

According to the most recent census from the Central Statistics Office in 2022, Longford has a population of 46,751 which is an increase of 14% from the 2016 census. Longford is the second smallest county in Ireland in terms of population.

Year	Total Population	Population Change
1981	31,140	
1986	31,496	+ 1.1%
1991	30,296	- 3.8%
1996	30,166	- 0.43%
2002	31,068	+ 3%
2006	34,391	+ 10.7%
2011	39,000	+13.4%
2016	40,873	+4.8%
2022	46,751	+14%

Table 1: Population of County Longford.

4.3 Transport Infrastructure in County Longford

4.3.1 Road Network

The county of Longford has approximately 1585km of roads. They are made up of 48km of National Primary Routes including the N4, N5, N55, N63. 56km is made up of National Secondary Routes consisting of the N55 and N63. Regional Routes make up 151km and the remaining 1331km are Local Routes.

Longford Town lies at the meeting of Ireland's N4 and N5, and N63 National Primary Route roads. The N4 and N5 bypass Longford along the east and west, connecting at the north of the town, forming a ring road around the northern side of the town. The N4 connects Longford with Mullingar and Dublin to the southeast and Sligo to the northwest. The N5 starts at Longford and provides connections to Mayo.

The N63 runs along the town centre, where it includes a series of one-way streets. This road starts at the N4 northeast of the town and connects Roscommon and Galway to the southwest. The national and regional roads outlined are governed by national road policy and design and guidance set out by TII. These standards and guidelines, along with DMURS, should be taken cognisance of as part of the implementation of any proposals which may affect the design or function of these roads.

4.3.2 Public Transport

The Public Transport Strategy is a vital element of the Longford Local Transport Plan aimed at improving the accessibility, reliability, and sustainability of public transport services within the town. The strategy is multifaceted, comprising a range of measures designed to enhance the convenience and attractiveness of public transport options for residents and visitors.

The public transport strategy covers various aspects of public transport provision such as train station facilities, bus stop infrastructure and integration with other modes of transport. It supports the vision of Longford Town as a vibrant, attractive, and inclusive place that offers a high quality of life for all.

It also contributes to the national policy goals of reducing greenhouse gas emissions, improving public health and enhancing social inclusion. The public transport strategy will be implemented through a series of actions and projects that will be prioritised based on their feasibility, impact and cost-effectiveness.

4.3.3 Bus Transport

There are 4 categories of bus transport currently operating in Co. Longford.

- Bus Éireann expressway long distance services
- Bus Éireann School Bus services operated on behalf of the Department of Education
- Private bus/coach service
- Community Bus Routes operated under the Rural Transport Initiative (RTI)

4.3.4 Air Transport

There are no major airports within County Longford so therefore air transport is not considered for this noise action plan.

4.4 Extent of Action Planning Area

Longford Co. Council as the responsible Authority for action planning in the area were required to produce a Noise Action Plan for

'places near a major road which has more than 3 million vehicle passages per year'

This was done in accordance with the Environmental Noise Regulations 2006.

The following roads were proposed for the noise mapping survey as they were deemed to be above the threshold of 3 million vehicles per annum.

- N4 from the county boundary with Westmeath to the county boundary with Leitrim
- N63 from its junction with the N4 at Lisnamuck, east of Longford town with the R397 west of Longford town
- R198 from its junction with the N63 in Longford Town to Cahanagh Junction
- N55 from junction with R392 in Ballymahon to Ballymahon Mart
- R392 from junction with N55 at Creevagh, Ballymahon to Mercy Secondary School, Main St., Ballymahon

The N4 that passes through the county of Longford is a largely rural route. It passes through the village of Newtown Forbes on the west of the county by-passing large towns such as Edgeworthstown and Longford. Some of the N4 lies below the threshold stated in the Environmental Noise Regulations 2006. Land use along the N4 is predominantly agricultural with rural housing. Where the N4 passes through or close to large towns and

villages, land use changes to a mixture of commercial, industrial and residential.

The N63 is another primarily rural road passing through both Kilashee and Lanesboro. It also includes many of the main streets in Longford Town. The AADT of the N63 varies according to location on the route. The AADT on the N63 drops significantly west of the R397. This is a similar trend to the Longford Co. Council Noise Action Plan 2013. The AADT on the N63 from its junction with the N4 at Lisnamuck, east of Longford town to its junction with the R397 west of Longford town is in excess of 10,000 vehicles. The main use for land along rural sections of the N63 is agriculture with rural housing. Land Use in the villages of Lanesboro and Kilashee along with Longford town changes to a mix of residential, commercial and industrial.

The R198 is one of the main regional roads located in Co. Longford. It connects the main town of Longford to Co. Cavan. The only part of the R198 that is being surveyed is from the junction with the N63 in Longford Town to Cahanagh Junction. This is approximately 2.5km long. The rest of the R198 lies beneath the threshold of three million vehicles per annum. The majority of this section of road in this report is an urban type setting with extensive housing development on both sides.

The N55 from junction with R392 in Ballymahon to Ballymahon Mart is located fully in the town of Ballymahon. It comprises Main Street Ballymahon and Mostrim Road Ballymahon. There is on street parking along both sides of the N55 Main Street, Ballymahon. Land use along this section of N55 is associated with its town centre location, retail, commercial and residential.

The R392 from junction with N55 at Creevagh, Ballymahon to Mercy Secondary School, Main St., Ballymahon is also located fully in the town of Ballymahon comprising Main Street Ballymahon. As with previous location, there is on street parking along both sides of the Main Street. Land use is associated with its town centre location, retail, commercial and residential.

5 Results of the Noise Mapping Process

5.1 CNOSSOS-EU:2020

The European Commission (EC) Directive 2015/996 established common noise assessment methods meeting the END requirements. It replaced Annex II of the END, removing the Interim Methods, and 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 CNOSSOS-EU has since been transposed into Irish Law via the Environmental Noise (Amendment) Regulations 2021. It has been used to produce strategic noise maps and to calculate the noise exposure statistics and harmful effects for roads, rail and industry, where applicable.

5.2 Model Calculation Scenarios

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

- 10 metres grid format –the model outputs a result every 10 metres in a uniform grid. These results are used to produce 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 population exposure statistics and harmful effects.

5.3 Noise Exposure and Harmful Effects

5.3.1 Noise Exposure Assessment

The change in computational methodology between the first three rounds of strategic noise mapping and Round 4 (using CNOSSOS-EU) directly compares the Round 4 noise exposure statistics with the previous three rounds, which are methodologically complex and inaccurate.

In addition, this is the first round of strategic noise mapping and noise action planning for Longford. All roads, rail, and major industries were not considered in the previous three rounds, so a direct comparison of noise exposure cannot be undertaken.

The Round 4 noise exposure statistics for Longford are presented in the following section of this document.

5.3.2 Harmful Effects Assessment

The Environmental Noise (Amendment) Regulations 2021 set out the assessment methods for harmful effects, which consider ischaemic heart disease (IHD), high annoyance (HA) and high sleep disturbance (HSD).

Ischaemic heart disease must be calculated for road traffic noise only, whereas high annoyance and high sleep disturbance are calculated for road traffic, railway and aircraft noise.

The harmful effects assessment has been undertaken independently for each source. Where the same people are simultaneously exposed to different noise sources, the harmful effects may not, in general, be cumulated, however can be compared to identify proportional significance.

The method determines harmful effects on the population within an assessment area rather than an accurate assessment of possible health effects at any specific building or location.

Whilst the regulations set out the equations to be used for calculating harmful effects, it does not define noise thresholds above which health effects should be calculated, nor does it stipulate the assessment bands that should be used (0.1 dB, 1 dB or 5 dB), these have been provided by the EPA, and are as follows:

- The calculations for harmful effects should be undertaken in 1 dB assessment bands
- The assessment of harmful effects should be undertaken above the following thresholds:
  - **Road traffic noise:** 53 dB L_{den}, 45 dB L_{night};
  - **Railway noise:** 54 dB L_{den}, 44 dB L_{night}.

Figure 1 presents the list of PIAs, the number of people who are highly annoyed, highly sleep disturbed and the number who contract Ischaemic Heart Disease. In addition, this Figure sets out the number of people above the Important Area Guideline level for Roads and Railways.

Indicative List of Priority Important Area (PIA) Summary – Longford County Council

PIA	Total Population in PIA	Source	MIA Criterion (people HA per 100m²)	Area (m²)	Number of People			Number of People Above IA Guideline Level			
					HA	HSD	IHD	Road 53dB L_{den}	Road 45dB L_{night}	Railway 54dB L_{den}	Railway 44dB L_{night}
LDC_1	103.62	ROAD	10	9,200	13.76	4.42	0.01	103.62	103.62	-	-
LDC_2	98.3	ROAD	10	8,600	18.17	5.95	0.02	98.3	98.3	-	-
LDC_3	95.47	ROAD	10	6,800	17.04	5.51	0.02	95.47	95.47	-	-
LDC_4	20.36	ROAD	10	2,100	3.87	1.03	0	20.36	20.36	-	-
LDC_5	20.15	ROAD	10	2,400	2.59	0.83	0	20.15	20.15	-	-
LDC_6	18.23	ROAD	10	4,200	3.39	1.23	0	18.23	18.23	-	-
LDC_7	15.62	ROAD	10	4,900	4.71	1.61	0.01	15.62	15.62	-	-
LDC_8	2.14	ROAD	10	700	0.33	0.1	0	2.14	2.14	-	-
LDC_9	101.62	ROAD	7.5	14,800	12.43	3.77	0.01	101.62	98.98	-	-
LDC_10	32.44	ROAD	7.5	6,500	10.14	3.53	0.01	32.44	32.44	-	-

IA – Important Area, PIA – Priority Important Area, HA – Highly Annoyed, HSD – Highly Sleep Disturbed, IHD – Ischaemic Heart Disease

Figure 1: An indicative list of the Priority Important Area (PIA) summary for Longford County Council.

5.3.3 Strategic Noise Mapping Figures

The strategic noise maps are consistent with the requirements of the EPA Guidance and EEA Reportnet, the mechanism by which the noise mapping results are issued to the European Commission.

The strategic noise maps are noise contour maps, 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 representing higher noise levels.

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

The following figures show the strategic noise maps for the two noise indicators specified in the Regulations, L_{den} and L_{night}.

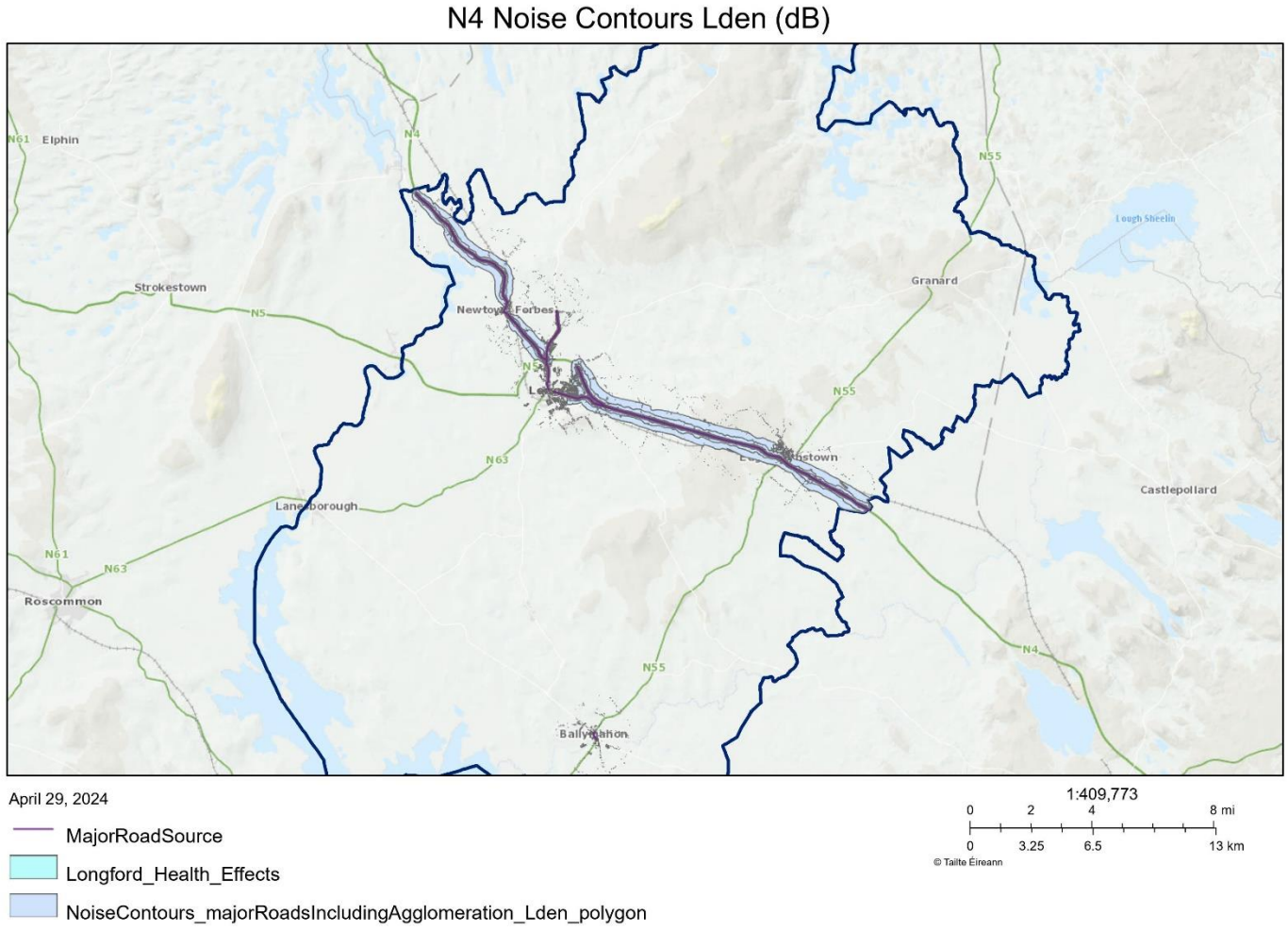


Figure 2: N4 Noise Contours, expressed as Lden (dB) values.

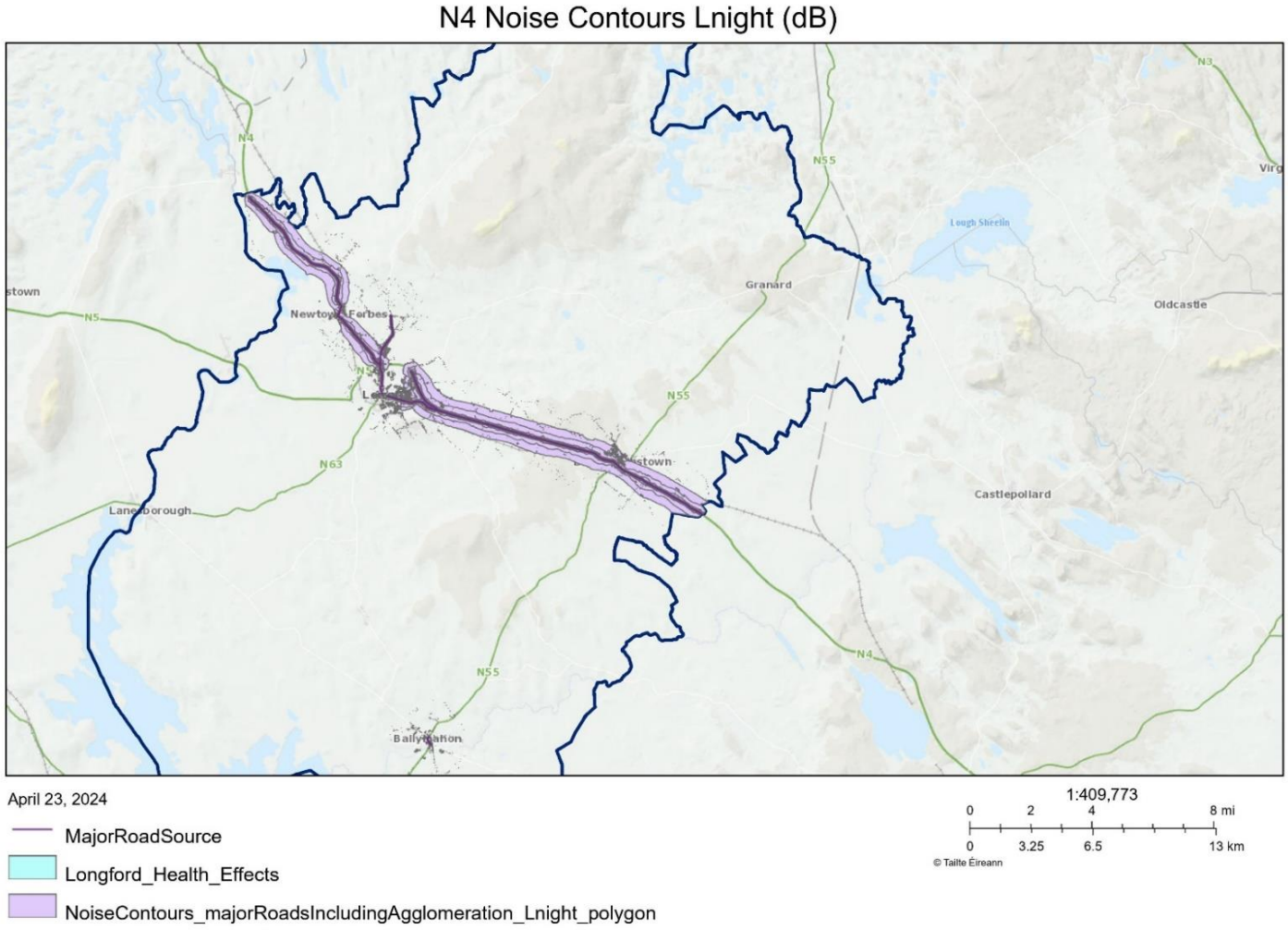


Figure 3: N4 Noise Contours, expressed as Lnight (dB) values.

5.4 Key Insights from Strategic Noise Mapping

This section outlines the key insights from the results of the Round 4 strategic noise mapping. It should be noted that the insights are based on the results of the strategic noise maps, rather than measurements.

5.4.1 Population Exposure to Noise

The most prevalent source of environmental noise within Longford is road traffic. The number of people above the Important Area guidelines (rounded to the nearest 100) is 500 people in dwellings exposed to road traffic noise greater than, or equal to, 53 dB $L_{den.}$ This trend is also reflected in the total population exposed to night-time environmental noise levels greater than or equal to 45 dB L_{night}.

5.4.2 Harmful effects

Predictions show that 84.4 people are at risk of being 'Highly Annoyed' by road traffic noise, with no risk of the population being 'Highly Annoyed' by Railway Noise.

Predictions show that 27.9 people are at risk of being 'Highly Sleep Disturbed' by road traffic noise, with no risk of the population being 'Highly Annoyed' by Railway Noise.

The number of people at risk from 'ischemic heart disease' is only calculated for road traffic noise. The percentage of the population at risk of each harmful effect indicates that the impact of traffic-related noise from major roads on the population causing ischemic heart disease is very low (0.08 persons).

6 Approach to Identification of areas to be subject to Noise Management 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 IAs where the health effects are highest, determined through a consideration 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, through a prioritisation process, as those which will be evaluated and addressed during the implementation of the NAP.

6.2 Scope

The recommended approach above has been used for Longford County with respect to noise from roads and railways.

The EPA holds the authority to grant licenses for specified industrial establishments in accordance with the IED/IPPC Regulations. In cases where strategic noise mapping reveals a potential need for a noise reduction from industrial areas then the Action Planning Authorities are advised to collaborate with the EPA Office of Environmental Enforcement concerning existing license conditions and the facility's noise management strategies.

6.3 Overview of Process

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

The process of identifying IAs within the County involves using the results of the strategic noise mapping to identify the noise-sensitive residential buildings 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* (ENG). This is followed by an automated process within Geographic Information System (GIS) software to identify the 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.

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, focusing on assessment of noise mitigation measures for each of the identified PIAs.

6.4 Important Areas (IAs)

A summary of the number of people in the county of Longford which experience environmental noise above the guideline levels in the Environmental Noise Guidelines is summarised in **Table 1.**

Table 1 Important Areas - number of people in dwellings.

Noise Source	Guideline Level	Number of People in Dwellings Exposed to Levels Above Guideline Level
Road Traffic	53 dB L_{den} 45 dB L_{night}	507.9 505.3
Railway	54 dB L_{den} 44 dB L_{night}	None None

Annex II of the END (CNOSSOS-EU) sets out how the population is assigned to the calculated noise levels.

EPA Guidance sets a density criterion of 15 or more people per 100m^2 as being the most appropriate for MIAs in main urban areas, with lower criterions of 10 and 7.5 people per 100m^2 appropriate on the edge of urban or in rural areas.

6.5 Most Important Areas (MIAs)

A summary of the MIAs identified within the County of Longford using the EPA Guidance density criterion of 15 or more people highly annoyed per 100m^2, for the urban area, and 7.5 or more people highly annoyed per 100m·

6.6 Priority Important Areas (PIAs)

A process has been undertaken to identify which MIAs should be considered a priority (PIAs), with a commitment to assess noise mitigation measures within the life cycle of the NAP. The PIAs selected by Longford County Council are identified in sub-chapters below. The locations selected by Longford County Council are based upon those MIAs or groups of MIAs with the highest concentration of people expected to be harmfully affected.

6.6.1 PIA Location #1

PIA Location	**Oaklands Court, Oaklands Dale, Longford Town**
Source of environmental noise	N4 Longford Town By-Pass.
Distance from noise source to PIA	Approx 160m
Road Surface	HRA (Hot Rolled Asphalt)
Competent body to carry out any proposed mitigation measures.	Longford County Council
History of complaints	None
Planned road maintenance and	N4 Road resurfaced in 2023 (HRA).

resurfacing programme.	No further maintenance planned in medium term. N4 Longford to Mullingar scheme currently in Planning. Currently no date for construction.
Planned speed or traffic calming measures.	Speed Limit 100KpH. No planned speed or traffic calming measures.
Planned nearby developments.	Adjacent lands are Zoned Residential. No current applications.
Existing noise reduction measures	Landscaping on the N4 By-Pass
Options available for noise reduction measures, if available	Future resurfacing of N4 (Not likely in medium term (10 years) Noise mitigation measures in any development that might be proposed in the adjacent lands.

Table 1: Table showing PIA Location #1.

Figure 4: View from N4 towards PIA during summertime conditions (Source: Google Street View)

Figure 5: View from N4 towards PIA during March 2024 conditions (Source: Google Street View)

Figure 6: Location of PIA relative to N4 (road traffic source of noise).

6.6.2 PIA Location #2

PIA Location	Oaklands Drive, Oaklands Green, Longford Town
Source of Environmental noise	N4 Longford Town By-Pass.
Distance from noise source to PIA	Approx 260m
Road Surface	HRA (Hot Rolled Asphalt)
Competent body to carry out any proposed mitigation measures	Longford County Council
History of complaints	None
Planned road maintenance and resurfacing programme	N4 Road resurfaced in 2023 (HRA). No further maintenance planned in medium term. N4 Longford to Mullingar scheme currently in Planning. Currently no date for construction.
Planned speed or traffic calming measures.	Speed Limit 100KpH. No planned speed or traffic calming measures.
Planned nearby developments.	Adjacent lands are Zoned Residential. No current applications. Previous expansion of old Century homes factory into new Avery Denison factory – This will alter noise path to PIA.
Existing noise reduction measures	Landscaping on the N4 By-Pass
Options available for noise reduction measures, if available	Future resurfacing of N4 (Not likely in medium term (10 years) Noise mitigation measures in any development that might be proposed in the adjacent lands.

Table 2: Table showing PIA Location #2.

Avery Dennison site buildings expanded (PL 18-111) Built approx. 2020. This has the potential to offer building barrier effects and screening of road traffic noise and reducing its level at PIA #1 and PIA#2.

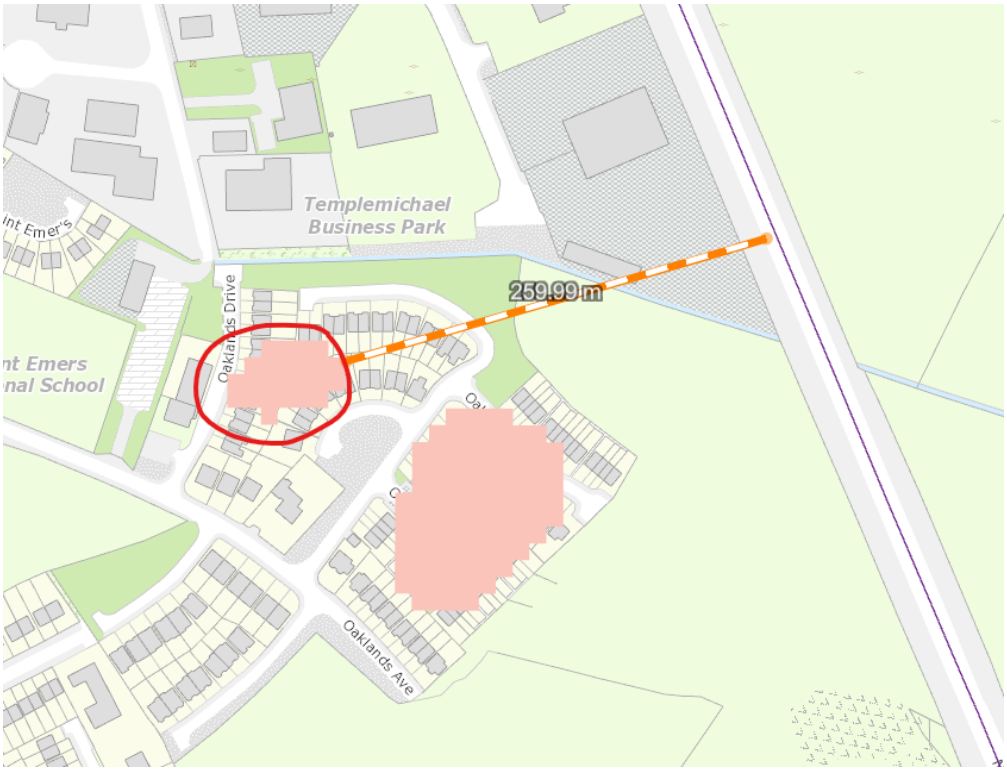


Figure 7: Location of PIA relative to N4 (road traffic source of noise).

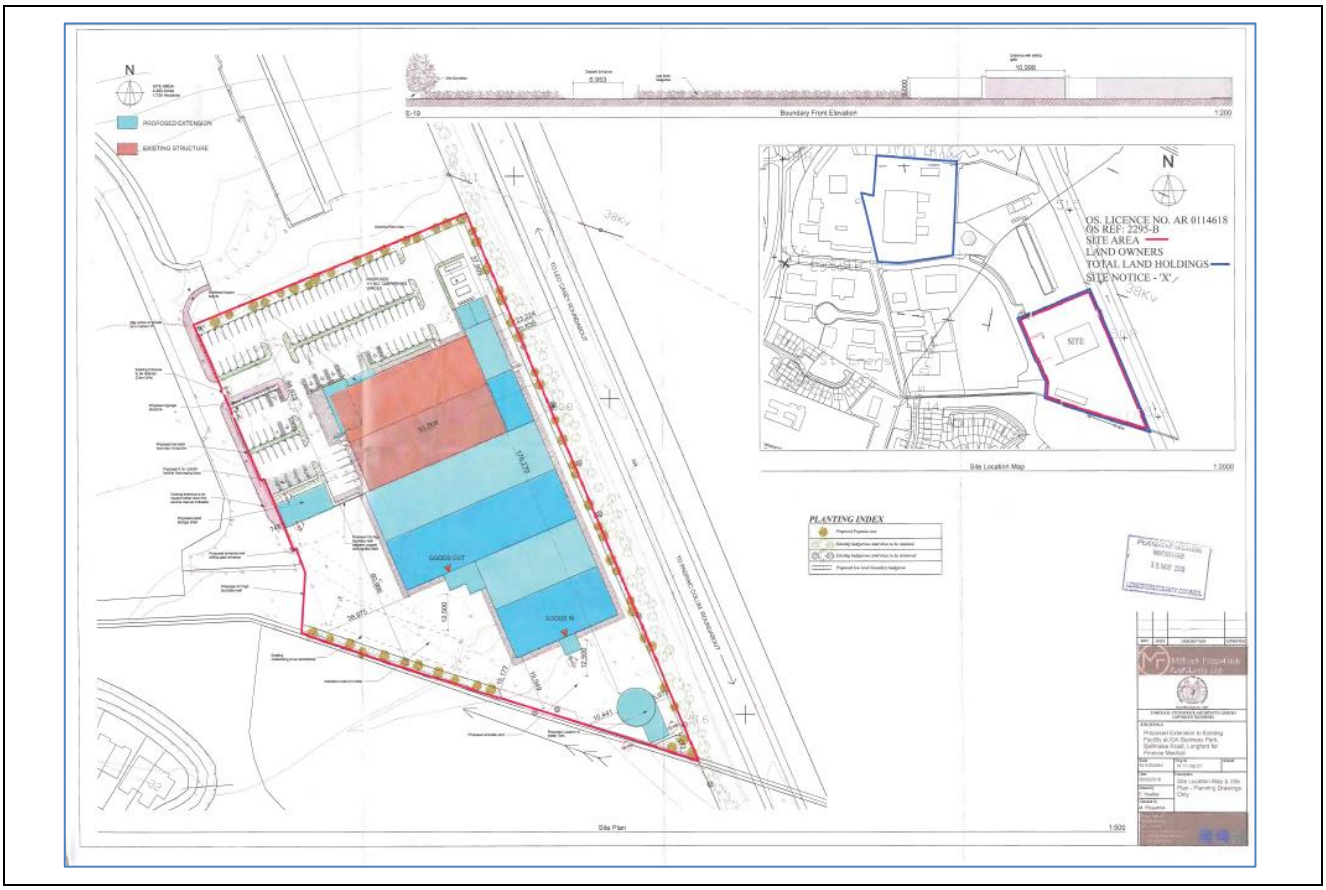


Figure 8: CAD Drawing, showing the new Avery Denison factory between the N4 and Oaklands Drive and Oaklands Green.

6.6.3 PIA Location #3- Dun Darragh, Longford Town.

PIA Location	Dun Darragh, Longford Town
Source of Environmental noise	R393, Dublin Road, Longford Town.
Distance from noise source to PIA	Approx 50m
Road Surface	Part SMA (Stone Mastic Asphalt) part HRA (Hot Rolled Asphalt)
Competent body to carry out any proposed mitigation measures	Longford County Council
History of complaints	None
Planned road maintenance and resurfacing programme	No planned resurfacing of R393.
Planned speed or traffic calming measures.	Speed Limit 50KpH.

	No planned speed or traffic calming measures. Current government considering legislation on speed limits.
Planned nearby developments.	Adjacent lands fully developed. All zoned residential.
Existing noise reduction measures	None. Low railway bridge on R393 reduces HGV traffic along this road. HGV traffic detour route is away from this road. Current road surface part SMA , part HRA Fencing along R393 is not of noise barrier standard.
Options available for noise reduction measures, if available	Future resurfacing of R393 (not currently planned)

Table 3: Table showing PIA Location #3.

Figure 9: Location of PIA relative to the R393 (road traffic source of noise).

Figure 10: View from R393 towards PIA during March 2024 conditions (Source: Google Street View)

6.6.4 PIA Location #4- Lower Main Street, Longford Town.

PIA Location	Lower Main Street, Great Water Street, Longford Town
Source of Environmental noise	R198, Lower Main Street, Longford Town.
Distance from noise source to PIA	0m
Road Surface	Part SMA (Stone Mastic Asphalt) part HRA (Hot Rolled Asphalt)
Competent body to carry out any proposed mitigation measures	Longford County Council
History of complaints	None
Planned road maintenance and resurfacing programme	No planned maintenance for R198 Lower main St / Bridge St.
Planned speed or traffic calming measures.	Speed Limit 50KpH. No planned speed or traffic calming measures. Current government considering legislation on speed limits.
Planned nearby developments	Camlin Quarter development by regeneration section. Adjacent lands zoned town core. Potential redevelopment of certain sites (cinema/shopping centre)
Existing noise reduction measures	None. Current road surface is HRA (Bridge St) and SMA (lower Main St)
Options available for noise reduction measures, if available	Future resurfacing of R198 (not planned currently)

Table 4: Table showing PIA Location #4.

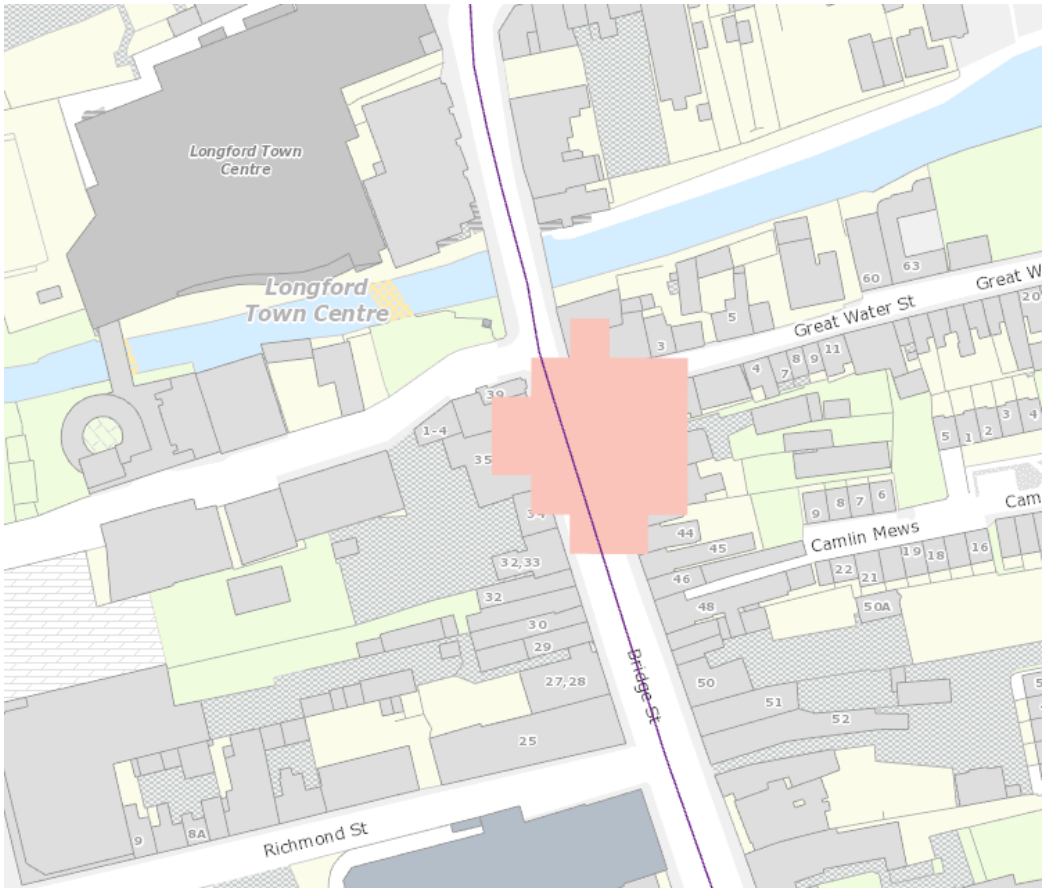


Figure 11: Location of PIA relative to R198 Lower Main Street (source of noise).

Figure 12: Viewpoint from Bridge facing South on Lower Main Street, Longford.

Figure 13: Viewpoint from Main Street facing North towards Bridge Street Longford.

6.6.5 PIA Location #5- Main Street Newtownforbes, Longford.

PIA Location	**Main Street Newtownforbes** (Clonguish Court, Castle Gardens to Smiths shop)
Source of Environmental noise	N4, Main Street, Newtownforbes
Distance from noise source to PIA	0m
Road Surface	SMA (Stone Mastic Asphalt)
Competent body to carry out any proposed mitigation measures	Longford County Council
History of complaints	From resident pre 2022 resurfacing works (noise and vibration). No complaint re noise/vibration since works carried out.
Planned road maintenance and resurfacing programme	Road resurfaced in 2022. SMA surface course laid.
Planned speed or traffic calming measures.	Speed Limit 50KpH. Traffic calming measures – controlled pedestrian crossing at Smiths shop; on street parking, roadway at min width of 6m Current government considering legislation on speed limits.
Planned nearby developments	None Zoning Town Core
Existing noise reduction measures	Current road surface SMA
Options available for noise reduction measures, if available	Future N4 Mullingar to Roosky By-Pass (medium to long term. No date for construction)

Table 5: Table showing PIA Location #5.

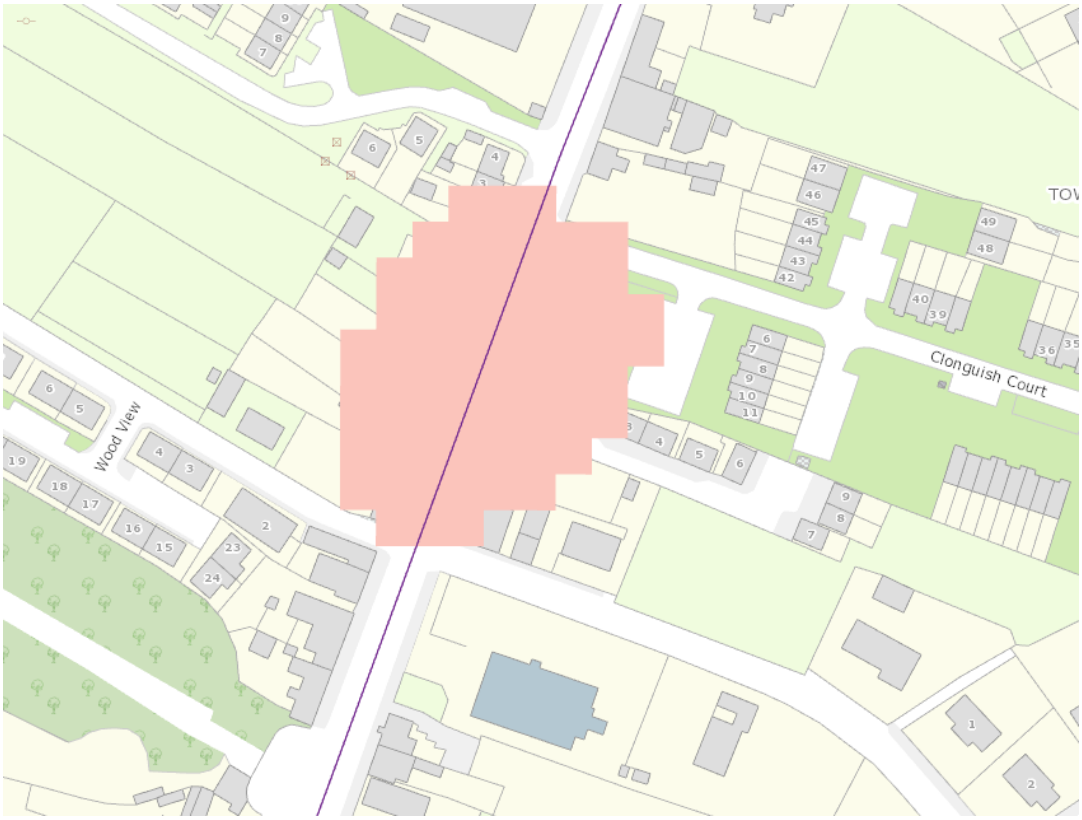


Figure 14: Location of PIA relative to N4 Main Street, Newtownforbes, Longford (Road Traffic Noise).

Figure 15: View of Main St facing North, Newtownforbes, Longford PIA

Figure 16: View of Main St, facing South, Newtownforbes, Longford PIA

6.6.6 PIA Location #6- Courtyard Apartments, Newtownforbes, Longford.

PIA Location	**Courtyard Apartments Newtownforbes (**Old Convent area)
Source of Environmental noise	N4, Main Street, Newtownforbes & N4 west of Newtownforbes
Distance from noise source to PIA	0 m
Road Surface	SMA (Stone Mastic Asphalt)
Competent body to carry out any proposed mitigation measures	Longford County Council
History of complaints	None
Planned road maintenance and resurfacing programme	Road resurfaced in 2022. SMA surface course laid.
Planned speed or traffic calming measures.	Speed Limit 50KpH. Traffic calming measures – continuous centre lines west of Newtownforbes preventing overtaking. Gateway signage Sharp bend on N4 forcing reduced speeds (and braking)
Planned nearby developments	None
Existing noise reduction measures	Current road surface SMA
Options available for noise reduction measures, if available	Future N4 Mullingar to Roosky By-Pass (medium to long term. No date for construction)

Table 6: Table showing PIA Location #6.

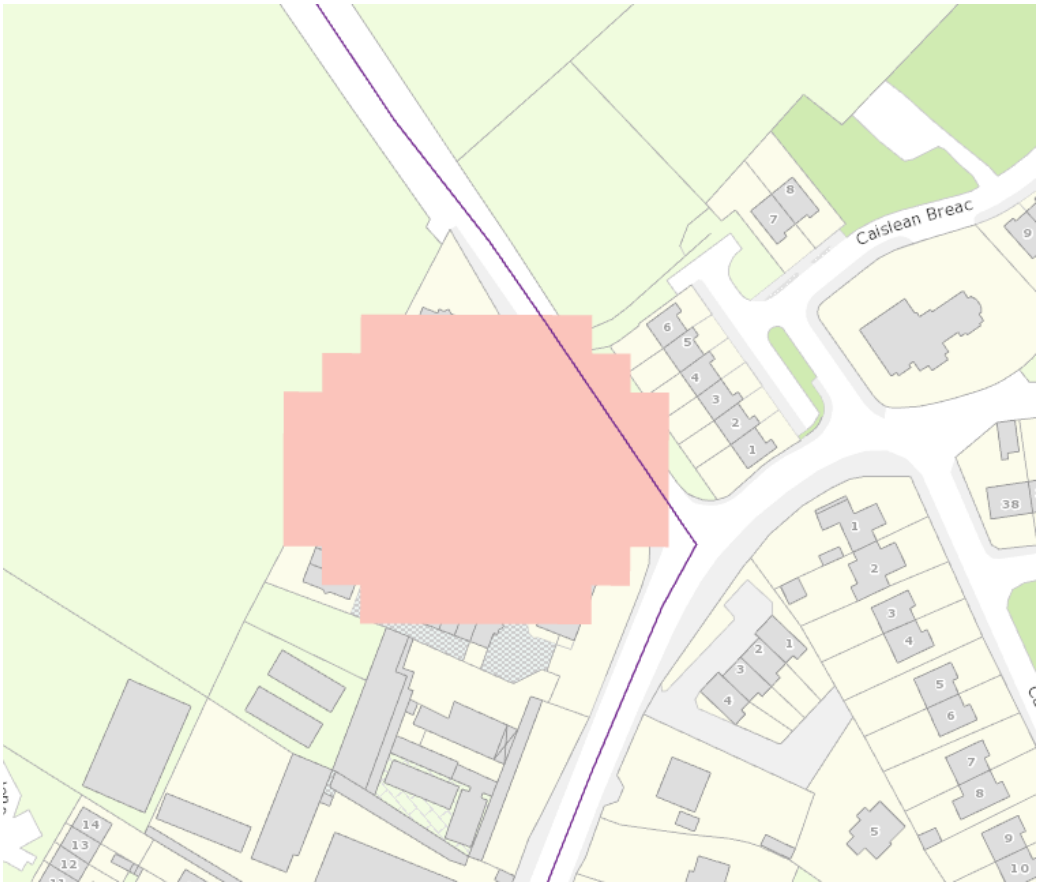


Figure 17: Location of PIA relative to the Main Street & N4 to the West of Newtownforbes, Longford (Road Traffic Noise).

Figure 18: View from N4 towards PIA (Source: Google Streetview).

Figure 19: View from N4 towards PIA (Source: Google Streetview).

6.6.7 PIA Location #7- Mostrim Oaks, Edgeworthstown

PIA Location	Mostrim Oaks, Edgeworthstown
Source of Environmental noise	N4, Edgeworthstown Inner Relief Road
Distance from noise source to PIA	20 m
Road Surface	HRA (Hot Rolled Asphalt)
Competent body to carry out any proposed mitigation measures	Longford County Council
History of complaints	None
Planned road maintenance and resurfacing programme	Road resurfaced in 2016. HRA surface course laid. No maintenance planned
Planned speed or traffic calming measures.	Speed Limit 60KpH. Traffic calming measures – roundabouts at either end of section of road curtailing speed to speed limit
Planned nearby developments	None
Existing noise reduction measures	3m Noise barrier constructed as part of Mostrim Oaks development (PL 04-1060) Existing roadside landscaping
Options available for noise reduction measures, if available	Future N4 Mullingar to Roosky By-Pass (medium to long term. No date for construction)

Table 7: Table showing PIA Location #7.

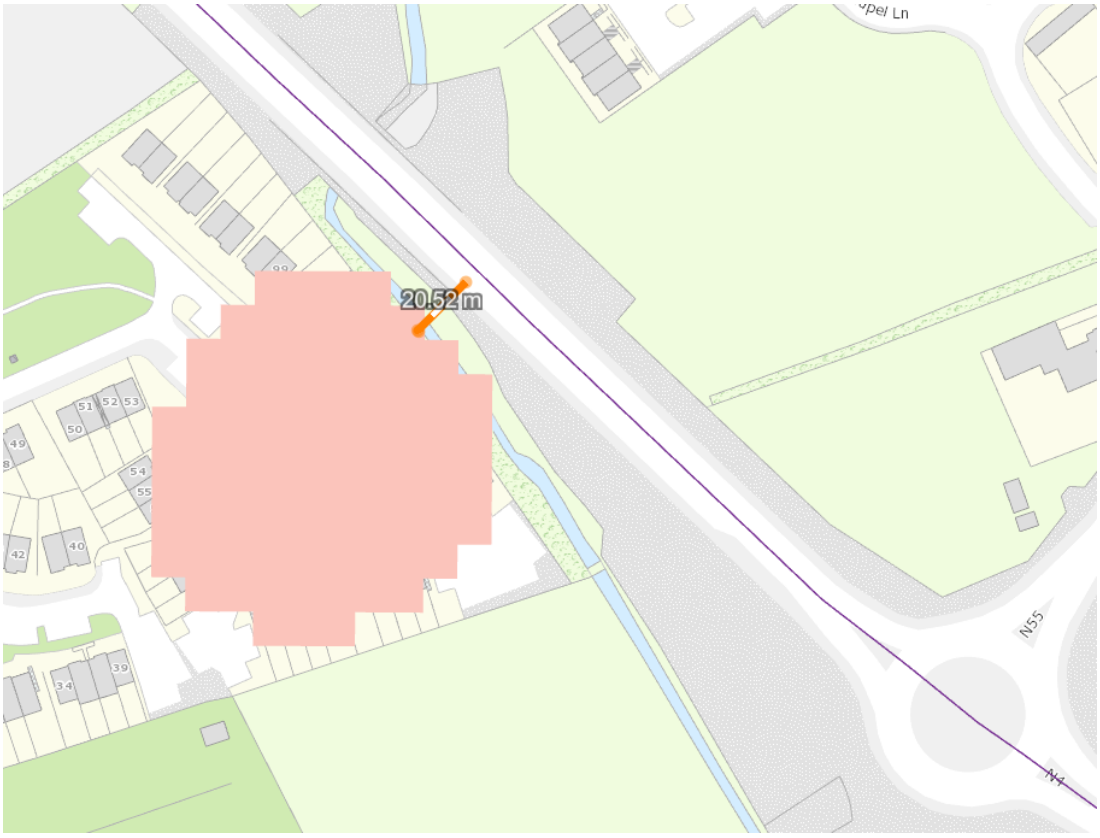


Figure 20: Location of PIA relative to the N4, Edgeworthstown Inner Relief Road (Road Traffic Noise).

Figure 21: View from N4 to PIA (Mostrim Oaks), photograph March 2024. Showing 3m high boundary wall constructed as noise barrier / noise mitigation (condition of planning permission 04-1060)

Figure 22: View of landscaping along N4 between Mostrim Oaks and N4 (Source: Google Street View).

6.6.8 PIA Location #8- Goldsmith Meadows, Edgeworthstown.

PIA Location	Goldsmith Meadows, Edgeworthstown
Source of Environmental noise	N4, Edgeworthstown Inner Relief Road
Distance from noise source to PIA	100m
Road Surface	HRA (Hot Rolled Asphalt)
Competent body to carry out any proposed mitigation measures	Longford County Council
History of complaints	None
Planned road maintenance and resurfacing programme.	(N4) Road resurfaced in 2016. HRA surface course laid. No maintenance planned
Planned speed or traffic calming measures.	Speed Limit 60KpH. Traffic calming measures – roundabouts at either end of section of road curtailing speed to speed limit.
Planned nearby developments.	None
Existing noise reduction measures	Existing roadside landscaping
Options available for noise reduction measures, if available	Future N4 Mullingar to Roosky By-Pass (medium to long term. No date for construction)

Table 8: Table showing PIA Location #8.

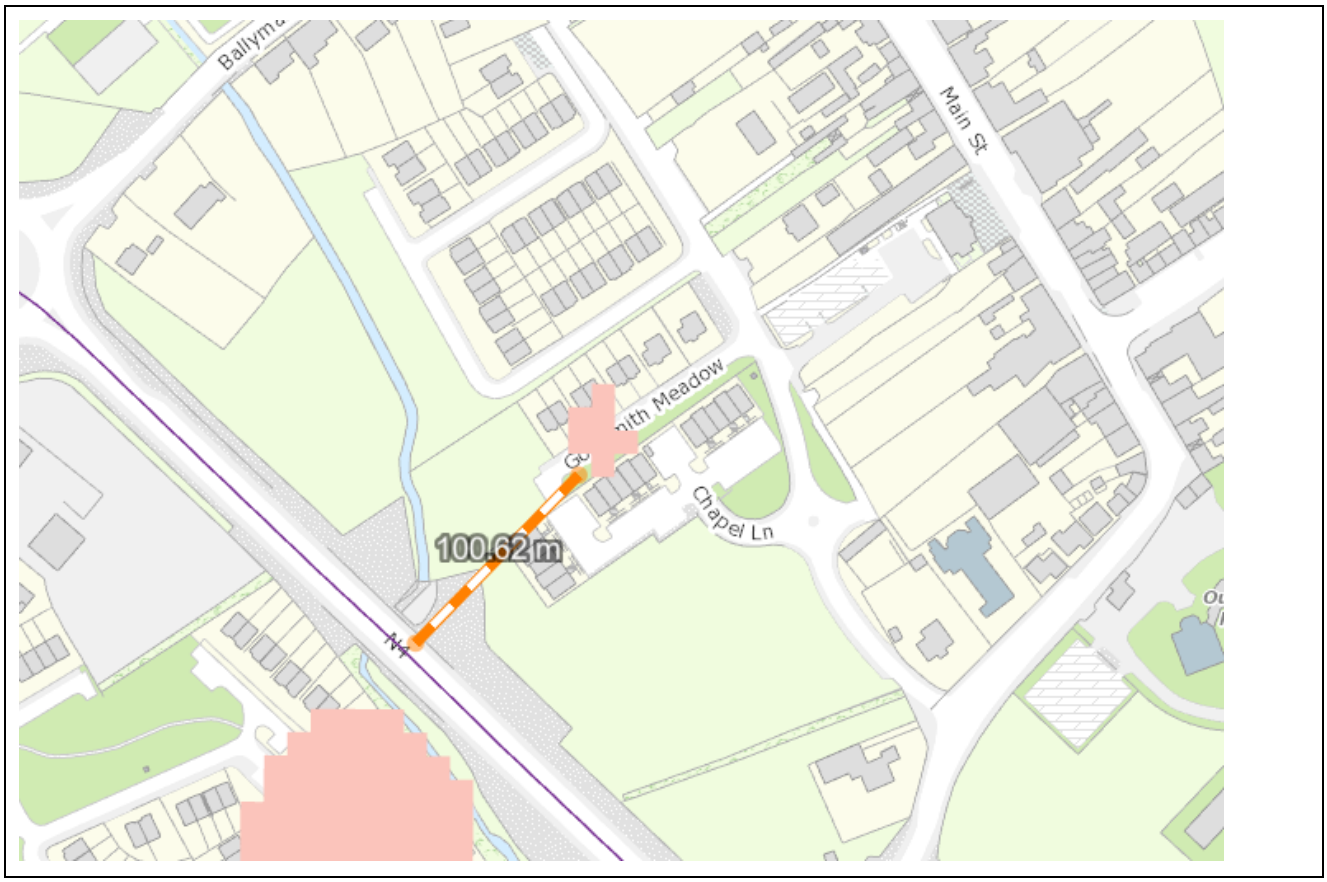


Figure 23: Location of PIA relative to the N4.

Figure 24: View from N4 towards Goldsmith meadows (March 2024)

6.6.9 PIA Location #9- Abhainn Glas, Edgeworthstown.

PIA Location	Abhainn Glas, Edgeworthstown
Source of Environmental noise	N4, Edgeworthstown Inner Relief Road
Distance from noise source to PIA	Approx 425m
Road Surface	HRA (Hot Rolled Asphalt)
Competent body to carry out any proposed mitigation measures	Longford County Council
History of complaints	None
Planned road maintenance and resurfacing programme	Road resurfaced in 2016. HRA surface course laid. No maintenance planned
Planned speed or traffic calming measures.	Speed Limit 100KpH. Traffic calming measures – Goldsmith roundabout at N4 / N55 junction
Planned nearby developments	None
Existing noise reduction measures	Existing roadside landscaping Earthen Noise bund on N4 approx 3m in height.
Options available for noise reduction measures, if available	Future N4 Mullingar to Roosky By-Pass (medium to long term. No date for construction)

Table 9: Table showing PIA Location #9.

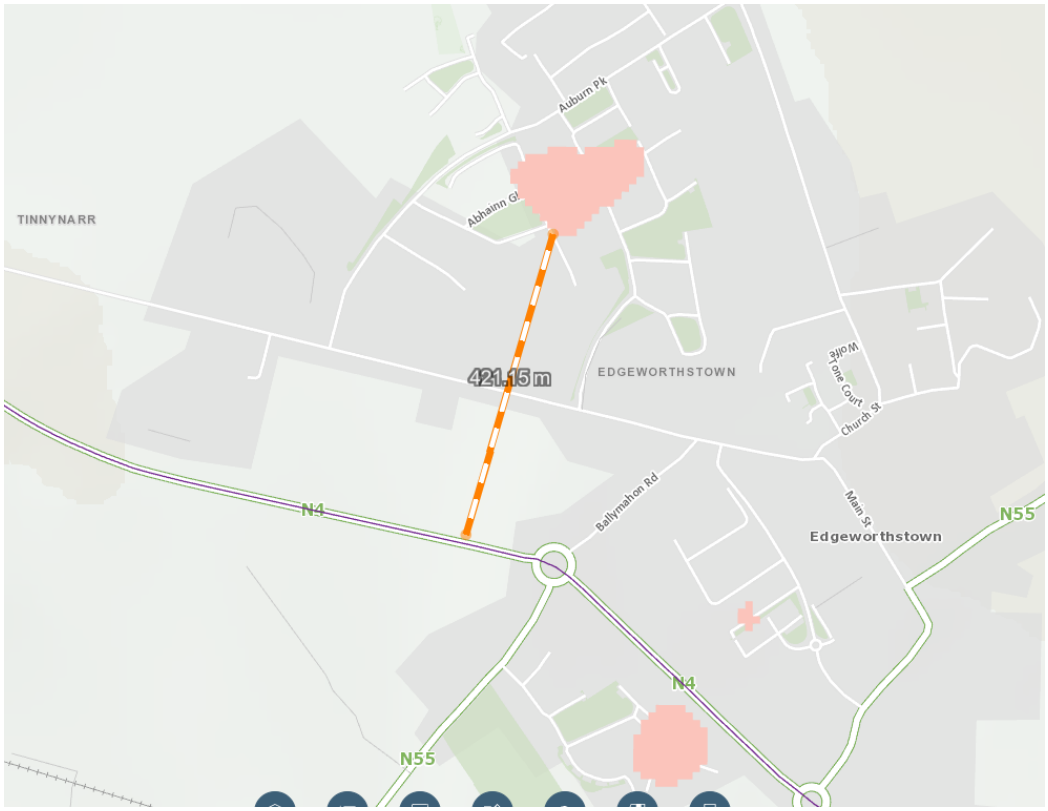


Figure 25: Location of PIA relative to N4 (Road Traffic Noise from the N4)

Figure 26: View from N4 towards PIA (Abhainn Glas). Noise bund/berm, approx. 3m high, constructed along edge of N4.

6.6.10 PIA Location #10- Main St Ballymahon.

PIA Location	**Main St Ballymahon** (adjacent to junction of Willow park with N55 / The River Inn)
Source of Environmental noise	N55, Main Street Ballymahon
Distance from noise source to PIA	Approx 10m
Road Surface	Part HRA (Hot Rolled Asphalt), part Surface Dressings
Competent body to carry out any proposed mitigation measures	Longford County Council
History of complaints	None
Planned road maintenance and resurfacing programme	Plans to resurface N55 Main Street Ballymahon in the short to medium term.
Planned speed or traffic calming measures.	Speed Limit 50KpH. Traffic calming measures – controlled pedestrian crossing at old post office. Planned signalised junction at N55 Athlone Road (subject to planning/approvals/ funding)
Planned nearby developments	Planned signalised junction at N55 Athlone Road (subject to planning/approvals/ funding) Resurfacing of N55 in short to medium term (1 to 5 years)
Existing noise reduction measures	Current road surface – HRA/Surface Dressings None
Options available for noise reduction measures, if available	Resurfacing of N55 in SMA.

Table 10: Table showing PIA Location #10.

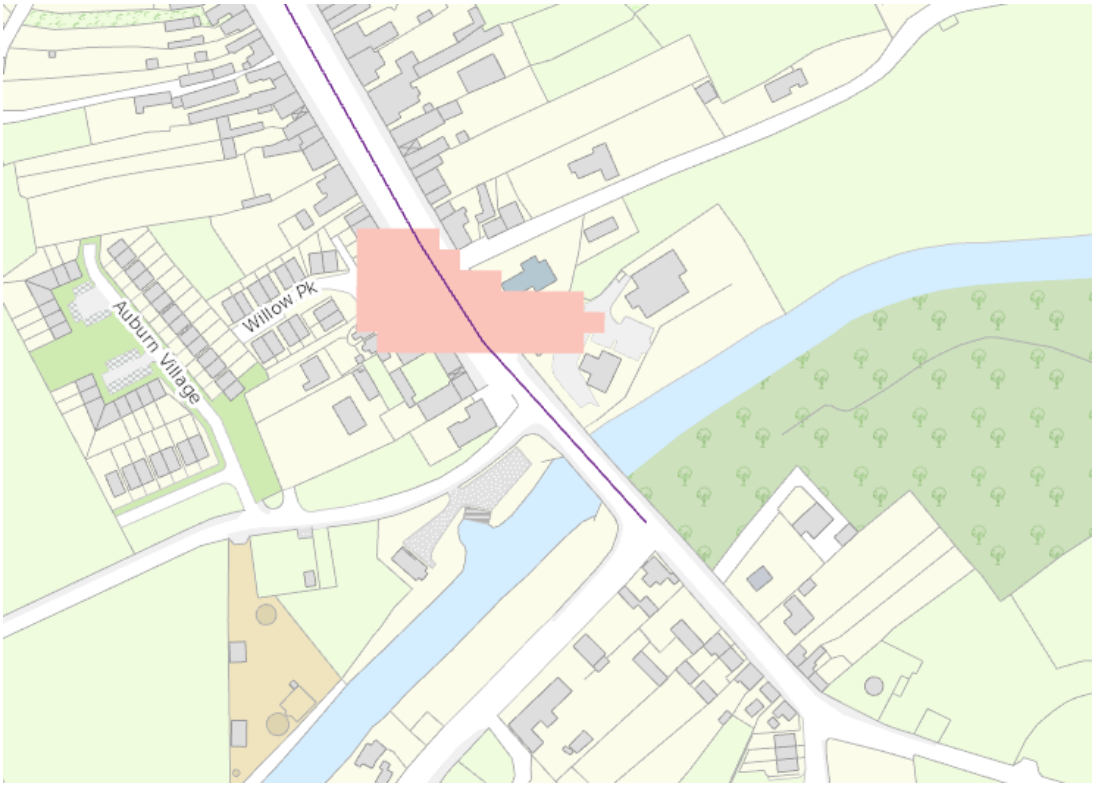


Figure 27: Location of PIA relative to N55 (Road Traffic Noise from N55)

Figure 28: View from N55 to PIA (west of N55)

Figure 29: View from N55 to PIA (east of N55).

Figure 30: View from N55 towards apartments at old Mill buildings. Landscaping present (Source: Google Street View).

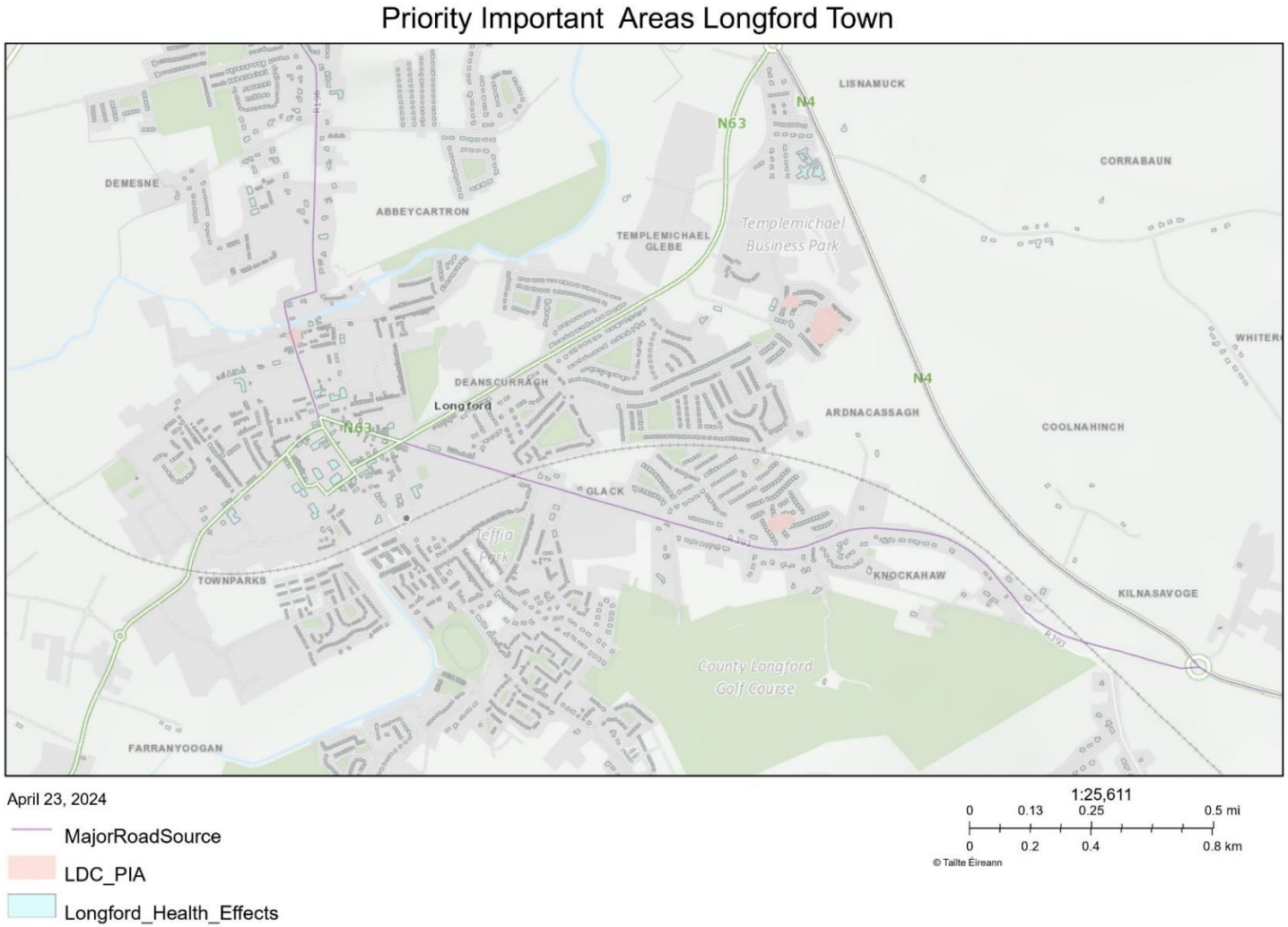


Figure 31: Priority Important Areas (PIA) Longford Town

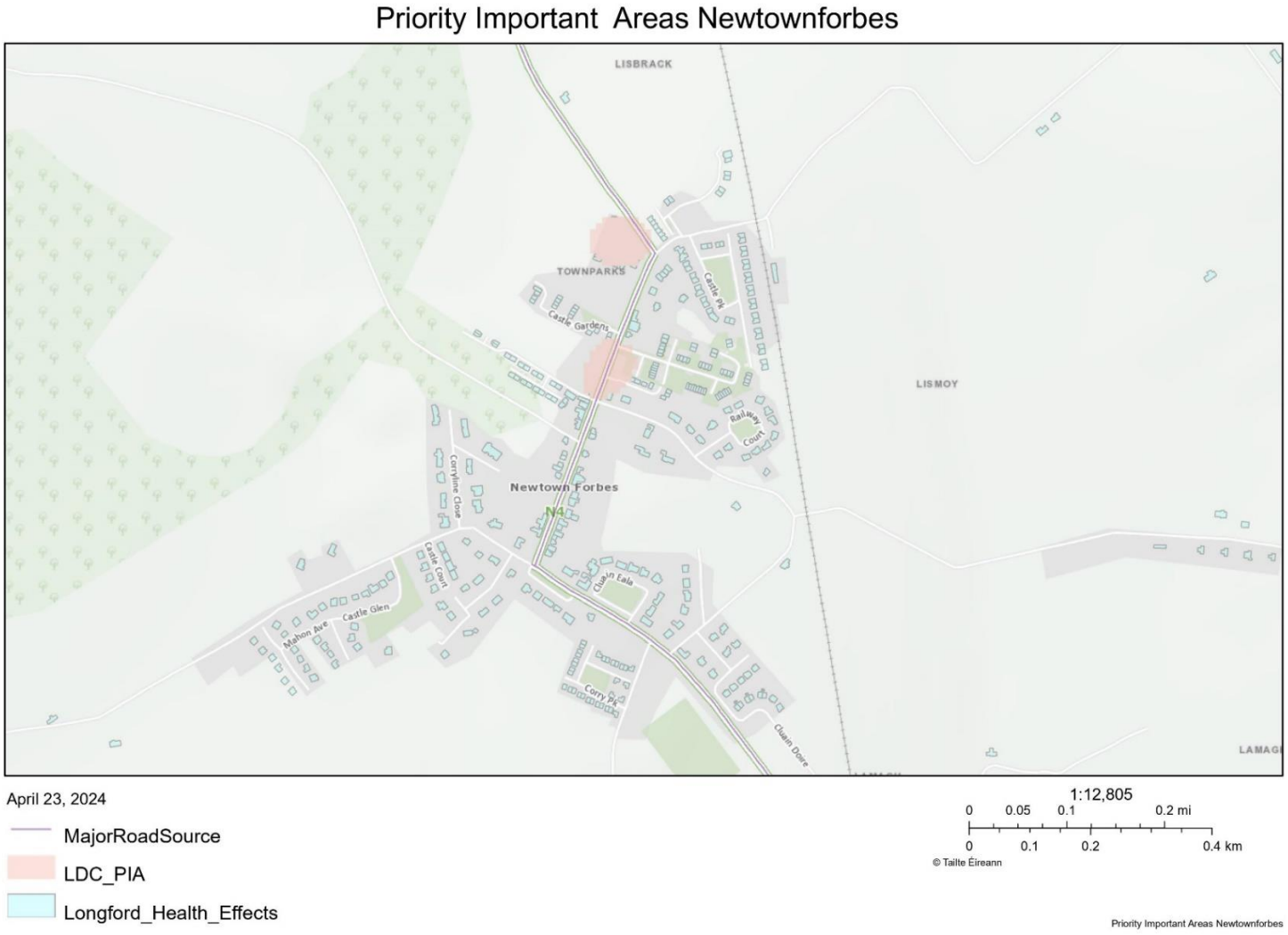


Figure 32: Priority Important Areas (PIA) Newtownforbes

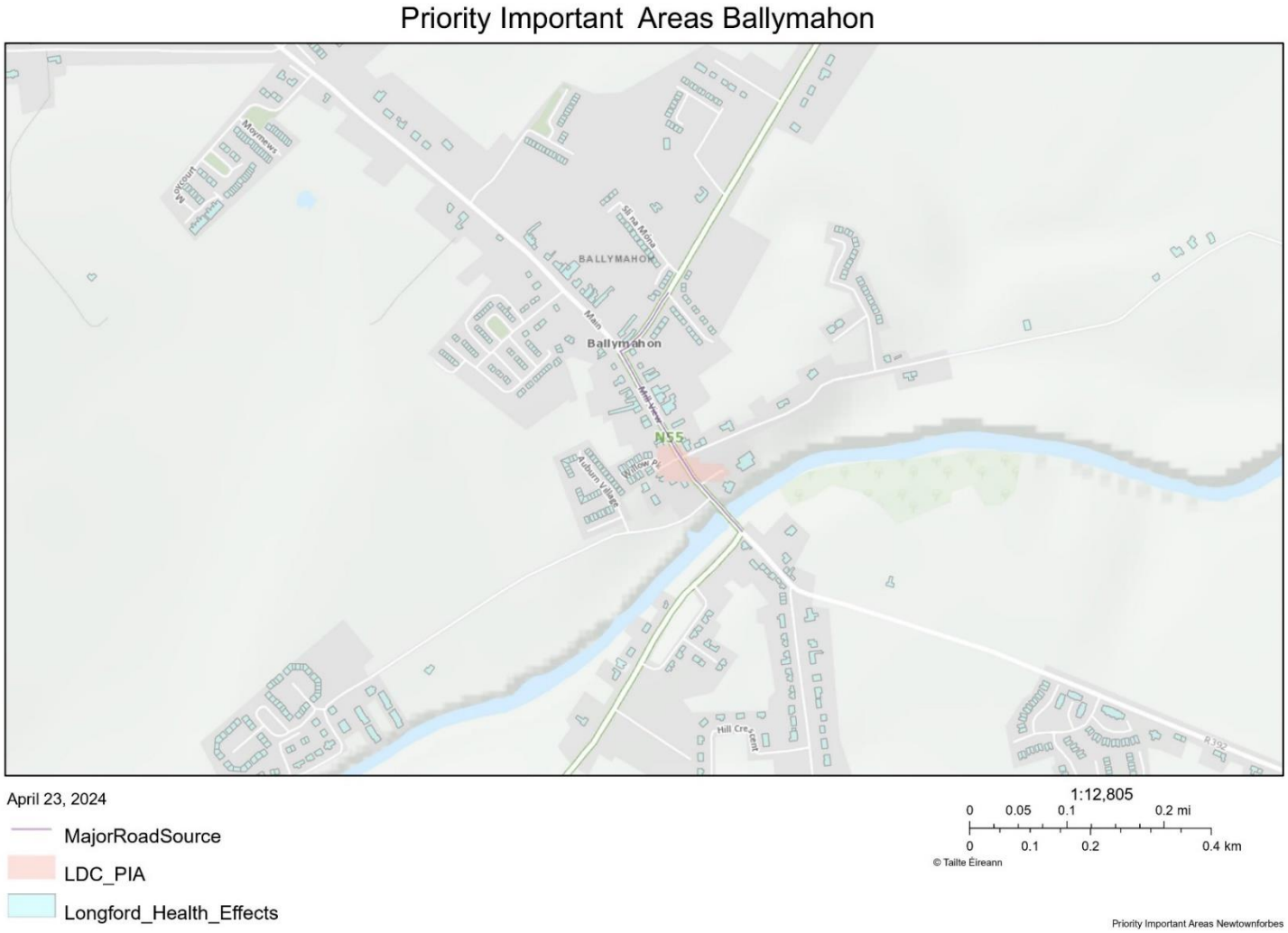


Figure 33: Priority Important Areas (PIA) Ballymahon

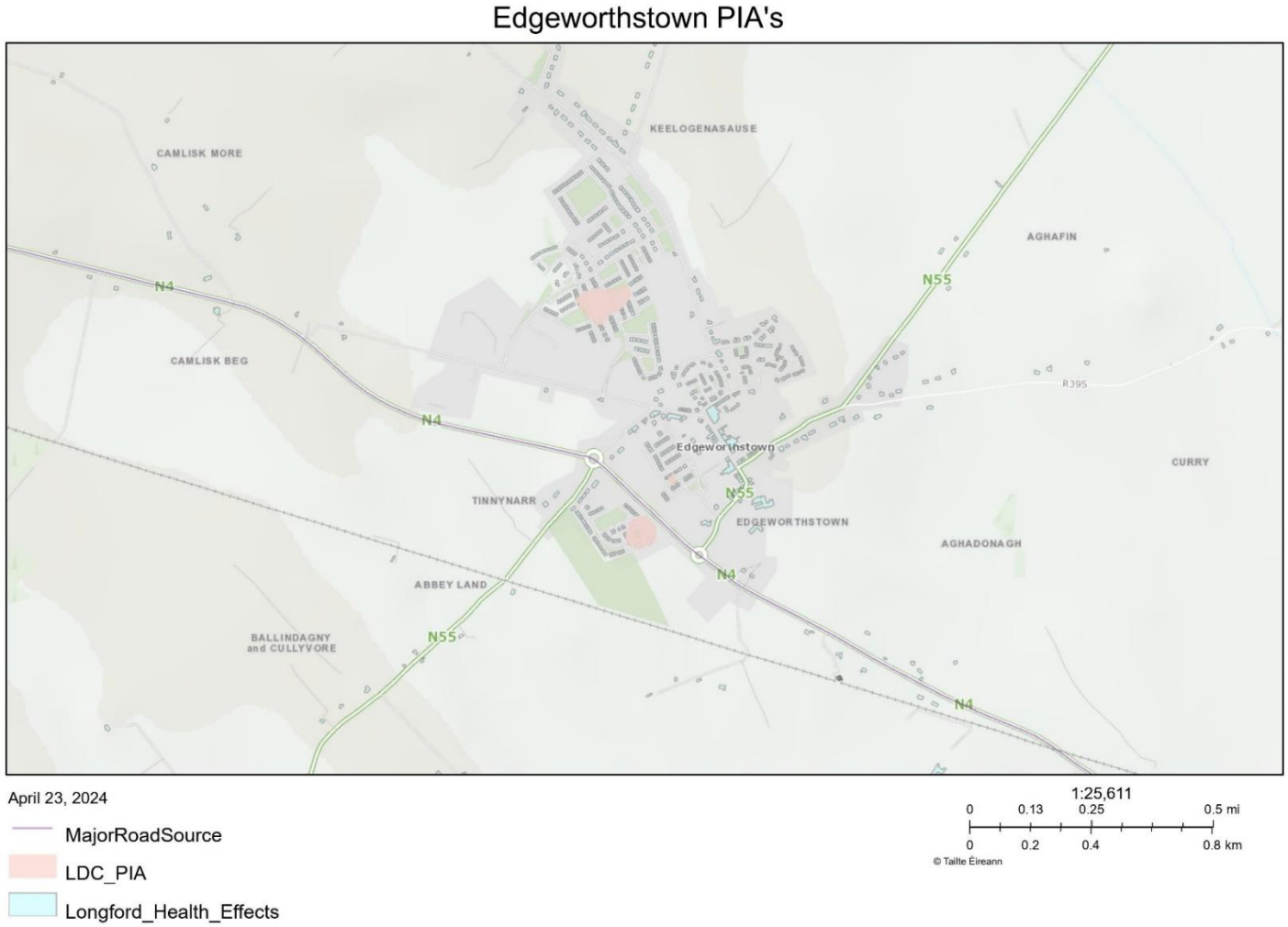


Figure 34: Priority Important Areas (PIA) Edgeworthstown

7 Approach to Identification of Areas to be preserved for Environmental Noise Quality

7.1 Regulatory Background

The Fourth Schedule of the Environmental Noise Regulations, 2018, requires Action Planning Authorities to set out actions in relation to measures to preserve Quiet Areas.

At present, there is no universally accepted definition by EU Member States of what constitutes a Quiet Area. However, they are regarded as areas where environmental noise levels are deemed low and therefore protection should be considered. The process of delimiting an area as a 'Quiet Area' is informed by an investigation by the Action Planning Authority. For those areas where investigation outcomes identify a benefit of delimiting it as a Quiet Area, the evidence is put forward to the EPA for consideration in consultation with the Minister and successful applications resulting in a delimitation of the Quiet Area.

There are currently no Quiet Areas delimited within the Longford area. Longford County Council will consider the designation of 'Quiet Areas' during the life of the NAP and will collect evidence to submit to the EPA for consideration in consultation with the Minister.

7.2 Overview of Process

The process of identifying Potential Candidate Quiet Areas and Candidate Quiet Areas is Stage 1 of a two-stage process using the results of the strategic noise mapping. Stage 1 is detailed below.

7.2.1 Stage 1 - Potential Candidate Quiet Areas (PCQAs)

EU Member States have adopted several methods for defining Quiet Areas within agglomerations[71], including, but not limited to:

- Noise related criteria, based on the results of the strategic noise mapping or measurements;
- Land-use;
- Local amenity value;
- Accessibility;
- User and visitor experience, including soundwalks; and
- Stakeholder engagement, including workshops.

The identification and evaluation of Quiet Areas in Ireland have been shaped by a national policy approach and EPA research, acknowledging the differing approaches across Member States in their identification.

The EPA Research Program is a Government of Ireland initiative funded by the Department of the Environment, Climate and Communications. Its aim is to improve the health and well-being of the Irish population. The EPA's research identified evidence for direct positive relationships between the presence of green and blue spaces and health indicators, including self-reported health, mortality, and disability.

The EPA Guidance provides a list of primary and secondary public open spaces which could be considered as suitable 'green spaces' in the context of the identification of Quiet Areas. These public open spaces include: recreational areas, playing fields, playgrounds, public parks and gardens, beaches, nature reserves, cemeteries, riverbanks, canals, places of worship, hospitals, including nursing and convalescence homes, educational institutions, and childcare/crèche facilities. These green spaces are referred to as Potential Candidate Quiet Areas (PCQAs).

The identification of PCQAs in the County of Longford has involved consideration of the following spatial data sources: Longford County Council dataset, National Land Cover Map for Ireland 2022, OSi Prime2 data, Corine Land Cover and Land Use Data 2020, and the Urban Atlas 2018.

7.2.2 Stage 2 - Potential Candidate Quiet Areas (PCQAs)

At Stage 2, Candidate Quiet Areas will be the subject of investigations by Longford County Council during the implementation of the NAP. The evidence captured from these investigations will be used to inform recommendations for areas to be delimited as Quiet Areas by the Minster.

8 Mitigation, Prevention and Protection Measures

8.1 Introduction

There are three types of approach in the NAP for reducing exposure of the existing and future populations of the Longford County 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 Longford County Council will attempt to identify and evaluate measures to reduce the effects of noise exposure. However, it must be acknowledged that there is no dedicated national funding mechanism available for the implementation of measures that target noise mitigation along major roads. The implementation of measures in PIAs will be based on any proposed or scheduled road improvement works where practicable during the period of the NAP.

Prevention measures aim to avoid additional members of the community being exposed to undesirable noise conditions. In Longford County, these will primarily take the form of planning policy in respect of proposed residential developments and other noise sensitive buildings in potentially noisy environments (e.g. schools, hospitals), in particular adjacent to transportation infrastructure, and the consideration of noise where it might be excessive in the development of new public realm. The Longford Town -Local Transport Plan (October 2023) sets out strategies that are complementary to the objectives of the Noise Action Plan.

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

8.2 Mitigation: Areas to be Subject to Noise Management Activities

Priority Important Areas (PIAs) have been identified within the Longford County as those where noise management activities are to be considered during the implementation of the NAP.

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.

8.2.1 Investigation of Priority Important Areas (PIAs)

Ten PIAs have been identified in the Longford County for investigation of potential noise mitigation measures: The variety of measures available are presented in the Road Traffic Noise Management Framework. 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 Longford County Council in consultation with the relevant authorities during the implementation of the NAP 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 exposure[7] 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 WebTAG[8] 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) – Longford County Council in consultation with the relevant authorities and subject to resources and funding, will seek to implement the most appropriate noise mitigation measure(s).

[7]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).

[8]https://www.gov.uk/government/publications/tag-unit-a3-environmental-impact-appraisal [Accessed March 2024]

8.2.2 Infrastructure Projects

While not their intended purpose there are several infrastructure projects that may influence the acoustic environment for communities in Longford County.

CycleConnects

CycleConnects is intended to form a comprehensive cycle network for all cycle user types across each county in Ireland with a population of over 10,000 inhabitants. An urban cycle network has been developed for Longford town. The urban network is comprised of various primary orbital and radial routes linking key destinations in the town. This also includes a greenway link to the south of the town linking to the Royal Canal Greenway.
In the town centre, an inner orbital route is proposed along Dublin Street, New Street, Market Square, Harbour Row and Killashee Street. To the north of this, a second orbital route is proposed along Main Street, Great Water Street, St. Mel's Road, and Dublin Street.
An outer orbital route is also proposed in the east of the town along Dublin Road, Ardnacassa, Oaklands Avenue and a proposed road link north of the Camlin River. This will then be supplemented by primary radial routes on the edge of the town along streets such as Church Street, Ballinalee Road, Dublin Road, Park Road, Athlone Road and Battery Court. At Battery Court, this also includes a proposed bridge crossing over the Camlin River.

N4 Mullingar to Longford (Roosky)
Westmeath County Council is working in partnership with Longford County Council and in association with Transport Infrastructure Ireland, to develop a scheme along a section of the N4 between Mullingar and Longford (Roosky).
This 52km section of the N4 is a single carriageway road that passes through or close to several settlements, including Ballinalack, Rathowen, Edgeworthstown, Longford and Newtownforbes.
The route is proposed to bypass Longford Town to the North-East, with route options which divert from the current N4 route south of Edgeworthstown and rejoin the current N4 route north of Newtownforbes.

8.3 Prevention

Below are the approaches being taken by Longford County Council to prevent future communities being exposed to the harmful effects of transportation related noise which are considered in the Longford County Transportation Plan (October 2023)

8.3.1 Longford County Council

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 the LDP objective TR O54 (Noise Sensitive Development) and where there is the likelihood of an adverse noise impact near major roads that planning applications should be supplemented by an Acoustic Design Statement carried out by appropriately qualified acousticians and competent persons. The Acoustic Design Statement should demonstrate that all facets of the 'Professional Practice Guidance on Planning and Noise: New Residential Developments' (ProPG) have been followed.

A healthy acoustic environment in the public realm depends on the environment noise level as well as a variety of subjective factors such as the intended use of space, the preferences of people, their expectations and their attitudes and sensitivity to the sounds they hear. The management of environmental noise in the public realm should have a broad focus, where practicable, with a consideration of noise levels as well as the need to create the right acoustic environment for the right time and place.

8.3.2 Professional Practice Guidance on Planning and Noise: New Residential Development (ProPG)

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 35 below.

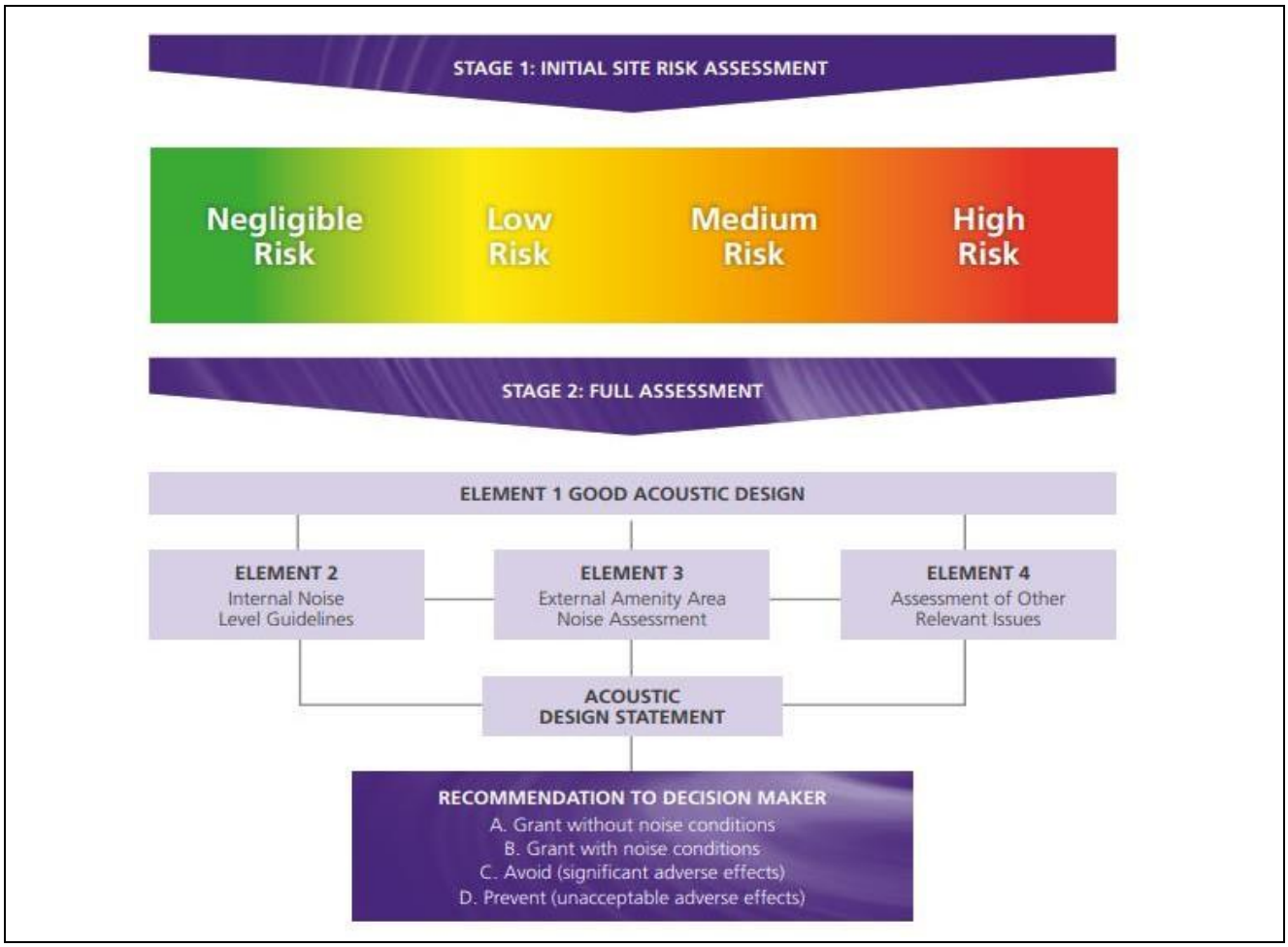


Figure 35: Graphically setting out the two main stages and elements relating to ProPG.

Stage 1 is the initial noise risk assessment which 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 36 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.

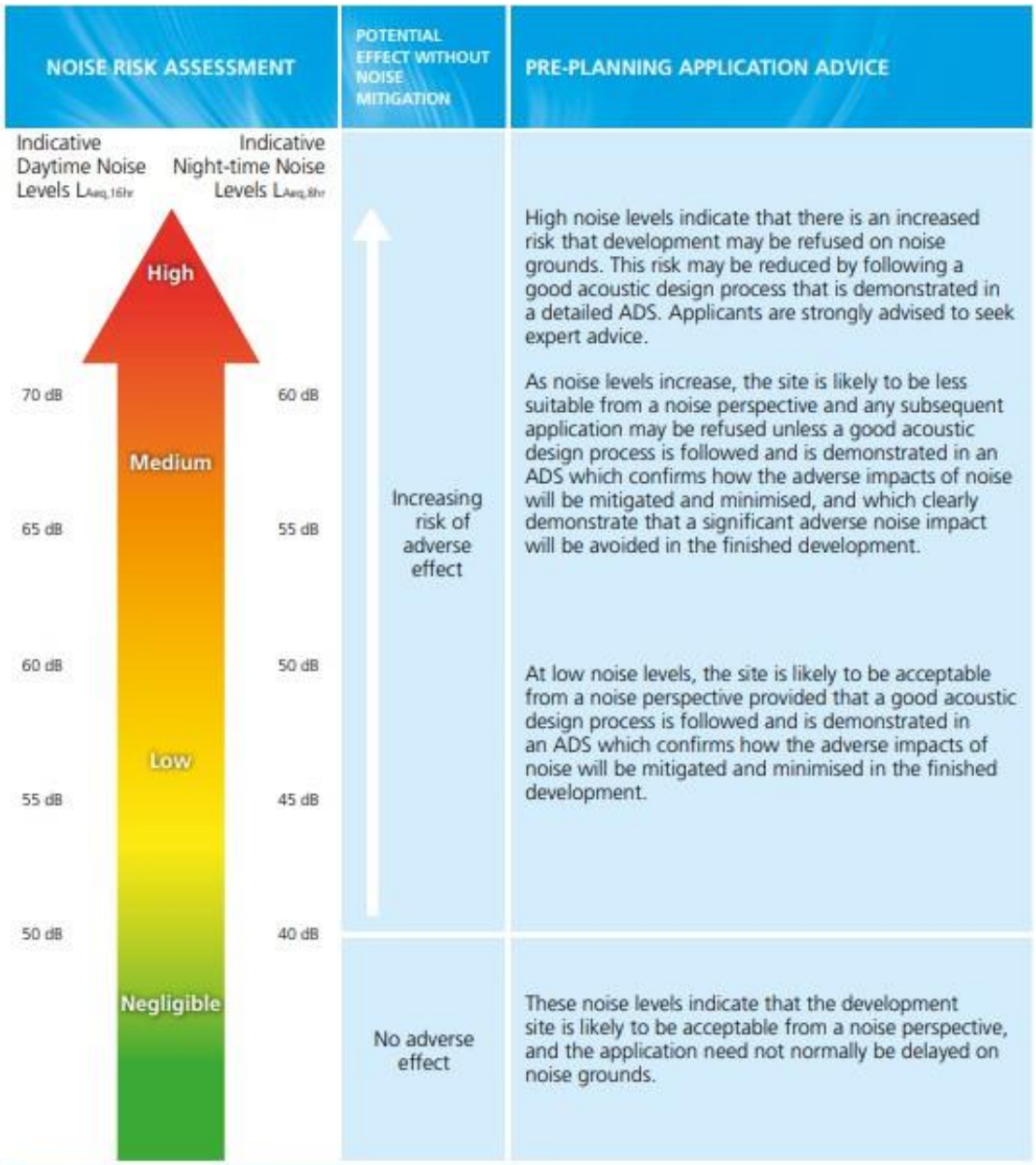


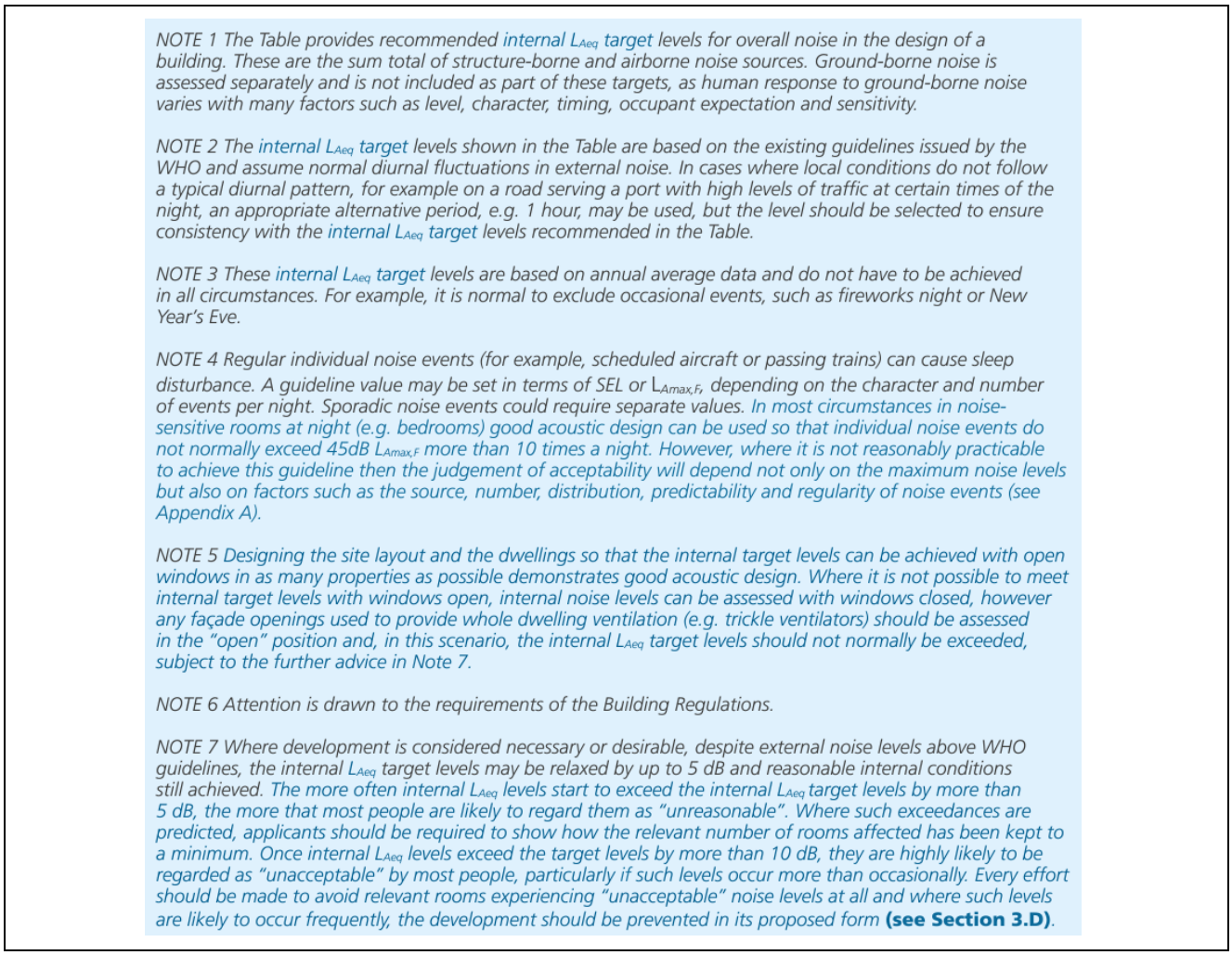
Figure 1 Notes:

a. Indicative noise levels should be assessed without inclusion of the acoustic effect of any scheme specific noise mitigation measures.

b. Indicative noise levels are the combined free-field noise level from all sources of transport noise and may also include industrial/commercial noise where this is present but is "not dominant".

c. $L_{Aeq,16hr}$ is for daytime 0700 – 2300, $L_{Aeq,8hr}$ is for night-time 2300 – 0700.

d. An indication that there may be more than 10 noise events at night (2300 – 0700) with $L_{Amax,F} > 60$ dB means the site should not be regarded as negligible risk.



NOTE 1 The Table provides recommended internal L_{Aeq} target levels for overall noise in the design of a building. These are the sum total of structure-borne and airborne noise sources. Ground-borne noise is assessed separately and is not included as part of these targets, as human response to ground-borne noise varies with many factors such as level, character, timing, occupant expectation and sensitivity.

NOTE 2 The internal L_{Aeq} target levels shown in the Table are based on the existing guidelines issued by the WHO and assume normal diurnal fluctuations in external noise. In cases where local conditions do not follow a typical diurnal pattern, for example on a road serving a port with high levels of traffic at certain times of the night, an appropriate alternative period, e.g. 1 hour, may be used, but the level should be selected to ensure consistency with the internal L_{Aeq} target levels recommended in the Table.

NOTE 3 These internal L_{Aeq} target levels are based on annual average data and do not have to be achieved in all circumstances. For example, it is normal to exclude occasional events, such as fireworks night or New Year's Eve.

NOTE 4 Regular individual noise events (for example, scheduled aircraft or passing trains) can cause sleep disturbance. A guideline value may be set in terms of SEL or $L_{Amax,F}$, depending on the character and number of events per night. Sporadic noise events could require separate values. In most circumstances in noise-sensitive rooms at night (e.g. bedrooms) good acoustic design can be used so that individual noise events do not normally exceed 45dB $L_{Amax,F}$ more than 10 times a night. However, where it is not reasonably practicable to achieve this guideline then the judgement of acceptability will depend not only on the maximum noise levels but also on factors such as the source, number, distribution, predictability and regularity of noise events (see Appendix A).

NOTE 5 Designing the site layout and the dwellings so that the internal target levels can be achieved with open windows in as many properties as possible demonstrates good acoustic design. Where it is not possible to meet internal target levels with windows open, internal noise levels can be assessed with windows closed, however any façade openings used to provide whole dwelling ventilation (e.g. trickle ventilators) should be assessed in the "open" position and, in this scenario, the internal L_{Aeq} target levels should not normally be exceeded, subject to the further advice in Note 7.

NOTE 6 Attention is drawn to the requirements of the Building Regulations.

NOTE 7 Where development is considered necessary or desirable, despite external noise levels above WHO guidelines, the internal L_{Aeq} target levels may be relaxed by up to 5 dB and reasonable internal conditions still achieved. The more often internal L_{Aeq} levels start to exceed the internal L_{Aeq} target levels by more than 5 dB, the more that most people are likely to regard them as "unreasonable". Where such exceedances are predicted, applicants should be required to show how the relevant number of rooms affected has been kept to a minimum. Once internal L_{Aeq} levels exceed the target levels by more than 10 dB, they are highly likely to be regarded as "unacceptable" by most people, particularly if such levels occur more than occasionally. Every effort should be made to avoid relevant rooms experiencing "unacceptable" noise levels at all and where such levels are likely to occur frequently, the development should be prevented in its proposed form **(see Section 3.D)**.

Figure 36: Stage 1-Initial Site Noise Risk Assessment

The four key elements to be undertaken under Stage 2, the Full Assessment, are described below:

8.3.2.1 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 acoustic 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.

8.3.2.2 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 11.

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

Table 11: Extract from ProPG showing Internal Noise Level Guidelines

8.3.2.3 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 less than, or equal to, 50dB LAeq 16hr.

8.3.2.4. 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.

8.3.3 Public Realm and Noise

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.
- 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;

8.4 Protection

8.4.1. Sources of Road Noise

The level of environmental noise generated by a particular road is dependent on a range of factors including the number and type of vehicles, the speed of the vehicles, the road surface and the incline. The extent to which the noise travels from the road is affected mainly by the following parameters: distance, weather, the presence of acoustic barriers, buildings, road width, road incline, nature of the topography and whether the ground is acoustically absorbent or reflective.

The most significant factor in terms of noise generation is the noise produced by the vehicle. Vehicle noise arises from three sources:

- Propulsion noise (engine, exhaust and intake systems).
- Tyre/road contact noise.
- Aerodynamic noise.

Engine noise is the dominant source at lower speeds (under 30kph for passenger cars/ under 50kph for lorries), tyre/road noise dominates above that, and aerodynamic noise becomes louder as a function of the vehicle speed (ref. European federation for transport and environment). Vehicle noise limits are set in EU legislation and address propulsion noise for new vehicles. Noise emissions are determined by means of a vehicle drive-by test, which measures the noise emitted as the vehicle drives by at 50kph and accelerates in front of the microphone position. The current drive by test does not include provision for evaluating noise performance in typical urban stop-start traffic situations at lower speeds, where engine noise is the dominant source. Another failing is that the test parameters are set in such a way that vehicles can be designed to pass the test but are considerably louder when driven on the road. A new type of vehicle test has recently been introduced which corrects for these limitations.

The EU noise limits are a valuable tool for ensuring that noise emissions are minimised for new vehicles. However, they only apply to new vehicles.

As vehicles age, the level of noise produced by the engine increases with wear and tear on the parts but there is presently no requirement in Ireland to assess noise emissions from older vehicles. Another practical limitation to the noise emission limits is that while a newly purchased vehicle may comply with its emission limit, modifications to or removal of the vehicle silencer will result in an excessively noisy vehicle. Installation of a sports exhaust on a vehicle is illegal under EU Regulation 540/2014 and is a major contributor to nuisance noise from road vehicles. Similarly, installation of a sports exhaust on a motorcycle is illegal under EU Regulation 168/2013.

Tyre rolling noise emissions have increased over time, predominantly due to the trend towards wider and heavier tyres. Tyre/road contact begins to dominate the noise emission above 30km/h for passenger cars and above 50km/h for lorries. For this reason, it was deemed necessary to regulate tyre/road noise separately at EU level. The rolling noise emissions of tyres are regulated under the following EU regulations.

Type-approval requirements for the general safety of motor vehicles, their trailers and systems, components and separate technical units intended therefor - Regulation No 661/2009.

Under the framework of Directive 2007/46/EC this regulation establishes new maximum permissible rolling noise limits for tyres available on the market across Europe. This noise limits replace the previous limits set out within Directive 2001/43/EC. The new Regulation requires tyres to comply with more stringent limits on rolling noise emissions. Compliance with these new noise limits is mandated from 1st November 2012 for new types of tyre, from 1st November 2013 for new types of vehicle and from 1st November 2016 for all new tyres and vehicles. The new rolling noise limits are between 3 and 4 dB(A) lower than the previous limits.

Labelling of tyres with respect to fuel efficiency and other essential parameters – regulation 1222/2009

In support of Regulation 661/2009 this Regulation establishes a framework for the provision of harmonised information on tyre parameters through labelling, allowing end-users to make an informed choice when they purchase tyres. From 1st November 2012 the EU energy labels for tyres were made available at point of sale to show information on fuel consumption, wet grip and rolling noise levels.

8.4.2. Quiet Streets

Several ‘Quiet Streets’ schemes have been developed which are intended to compliment the proposed cycle network, and enhance cycling permeability throughout the town, particularly in the orbital links. Quiet streets require minimal infrastructural intervention and can be achieved through the use of traffic calming measures to reduce vehicle speeds, road markings to indicate cycle priority, or filtered permeability to remove through traffic. In all cases, Quiet Streets will likely reduce the traffic volumes through redirection to more suitable road links or by encouraging mode shift to sustainable modes to travel.

No.	Quiet Street Schemes
Q 1	St. Michael's Road (between N5 and N63)
Q 2	Annaly Park (between N5 and N63)
Q 3	College Park (between N63 and Templemichael Terrace)
Q 4	Templemichael Industrial Estate
Q 5	Deanscurragh (between N63 and Dublin Road)
Q 6	Springlawn (between Ardnacassa Ave and Dublin Road)
Q 7	Dún Darrach (between Dublin Road and Ardnacassa)
Q 8	Royal Canal Avenue / Park Villas / Teffia Park
Q 9	Glack / McEoin Park (between Teffia Park and Farnagh Hill)
Q 10	Mastertech Business Park to Royal Canal

Figure 37: Longford Town Quiet Street Schemes.

8.5 Measures to Reduce Noise from Major Roads

8.5.1 Existing Developments

There are a number of approaches that can be undertaken to reduce noise from major roads:

- One such approach would be to relocate the road away from residential areas by the construction of a bypass. This will serve to reduce noise levels for existing residential dwellings. This mitigation measure has been introduced within Co. Longford with the N5 Longford Town By-Pass. This has reduced traffic volumes in Longford Town Centre.

8.5.2 Roadside Noise Barriers

- Some locations may require further assessment; upon this further assessment, these areas may need possible mitigation measures. In this instance, noise barriers may be installed on major roads away from residential areas.
- It is important to recognise that noise barriers need to be sufficiently high and sufficiently long and need to be close to the source or receiver. Roadside noise barriers are typically installed close to the road side in some circumstances.

8.5.3 The use of earth berms

- An earth berm can be an effective and useful way of mitigating road traffic noise. The benefit of using earth berm is that they do not age or rot like timber roadside barriers.
- Unlike wooden noise barriers, an earth berm does require a substantial quantity of roadside space, which is not always available. In addition, there can be maintenance issues, such as difficulty maintaining growth on the firm itself.

8.5.4 Road cuttings on future road schemes

If future road schemes are to be developed within the county of Longford, road-cutting options would be considered where feasible to provide noise screening to residential properties in some cases.

Figure 38: Example of a road cutting, where the cutting provides noise screening, similar to a earth berm (Source: Google Maps, M6 Street View).

8.5.5 Noise Reduction through speed limits

- If a major road passes through a residential area, a reduction in the speed limit within that area could be introduced. This in turn would reduce noise levels from these vehicles.

8.5.6 Sustainable Travel

- Alternative means of transport can also be a successful means of reducing noise emissions. Sustainable means of transport like cycling, walking and public transport can enable declines in traffic capacities thus reducing noise emissions.
- "The council shall promote the use of alternative transport to the private car through encouraging enhanced pedestrian and cycling facilities in accordance with the principles of sustainable development." (Longford County Development plan 2015 – 2021)
- Surfacing material may provide a reduction in noise levels for road surfacing projects.

8.5.7 European Automobile Manufacturer's Association (ACEA)

A July 2022 Position Paper titled 'Vehicle noise: Setting the appropriate limits' was produced by the European Automobile Manufacturer's Association (ACEA). In its review of vehicle noise emissions, its findings are as follows:

1. Sound emissions of all vehicle categories have decreased in the last 10 years. This is due to a range of factors, including emission standards, technology, more representative testing methods, additional sound emission provisions (ASEP), and limit values.
2. A slow improvement in environmental noise is expected in the coming years as a result of EU 540/ 2014 & UN R51.03 Phase 2 and Phase 3 limits (from July 2020 and July 2024 respectively). There will

be a delayed effect due to limited market penetration rates of new vehicles replacing older, louder vehicles (less than 5% per year).

Combined with former regulatory measures, the impact of Phase 2 and Phase 3 limits (Scenario 2) is forecasted to lead to an improvement of 2.1 dB by 2040, without any further improvements to vehicles or tyres.

8.5.8 EU Tyre Noise Labelling

New EU rules on the energy labelling of road tyres, highlighting primarily the fuel efficiency, safety and noise performance of new tyres, start to apply at consumer level from 1 May 2021. Updating the label first introduced for car and van tyres in 2012, the new rules require that tyres for buses and lorries must now be labelled – and offer a new pictogram, where relevant, to highlight tyres suitable for use in snow or in extreme, icy conditions. The label follows the successful colour-coded classification system used for household machines, such as dishwashers and refrigerators, with 5 different classes available for rolling resistance and for braking in the wet (adjusted from the previous scale of 6 classes). It also covers 2 categories for external noise, with an indication of the value in decibels (dB).

The label is aimed at helping consumers to be better informed when buying new tyres. The indication of rolling resistance is an indicator of the tyre's energy efficiency – thereby offering potential benefits in terms of lower fuel consumption and extending the distance that can be covered by e-vehicles between charging points. The wet grip measurement is an obvious measurement of safety, but an element that does not easily go hand in hand with the most efficient rolling resistance.

In order to account for stocks of tyres produced before May 2021, car and van tyres bearing the old label may still be sold until the end of 2021.

Publication date: 29 April 2021
Author Directorate-General for Energy
Location: Brussels

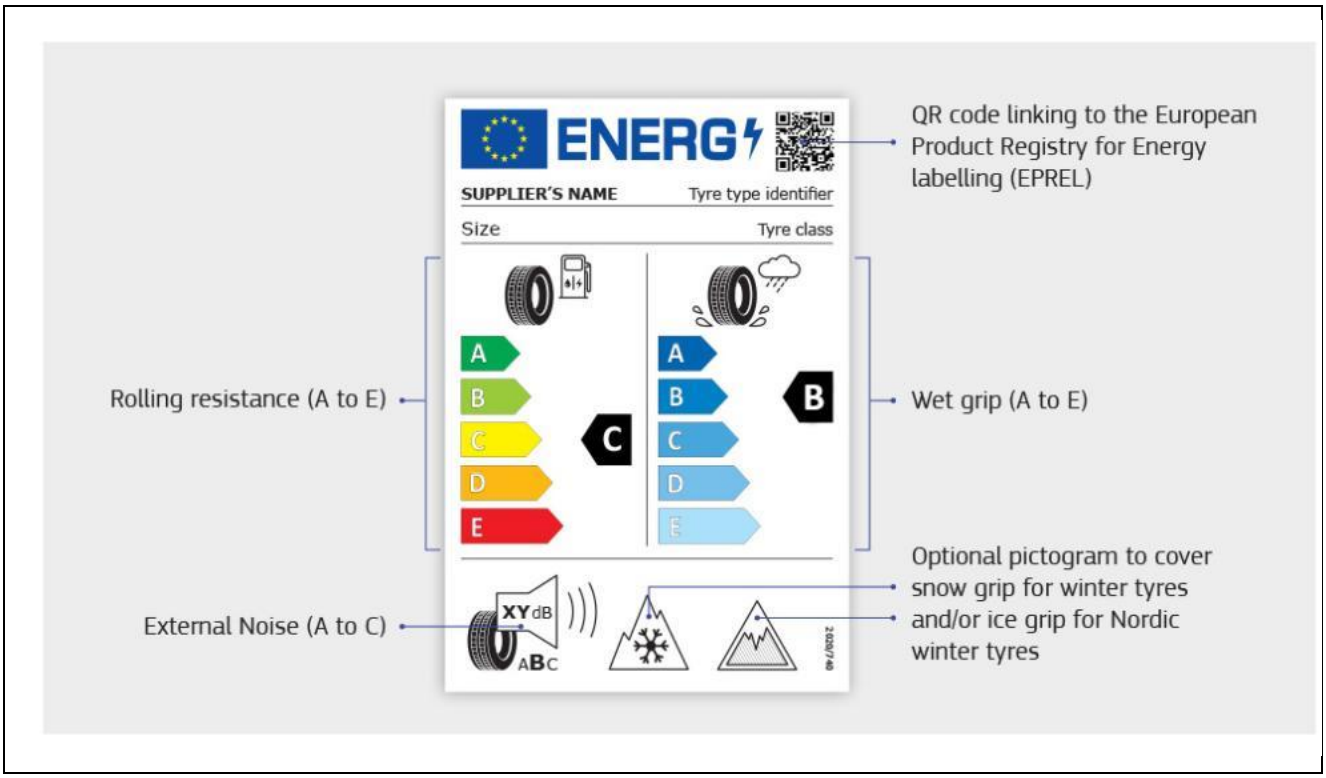


Figure 39: Extract from

8.5.9 Future Developments

Future developments within the county of Longford will need to be protected from excessive exposure to noise. There are a number of measures that can be introduced including acoustical planning measures in land use zoning and development layouts, design and specification. These are as follows:

- Locating Residential developments away from major roads or introduce mitigation measures.
- Encourage the use of land around major roads moving into towns for commercial/industrial developments where practical.
- Incorporating noise issues into the design of housing developments by locating access roads and green areas on the major roadside of the development. This in turn will increase the separation distance between houses and roads.
- Use a higher standard of insulation for new dwellings adjacent to main roads and using higher standards of insulation for exposed facades of new dwellings.

The only disadvantage here is that not all the acoustical measures above are within the control of the planning authority.

8.5.10 ProPG

The guidance is aligned with National Policy Objective 65 of the National Planning Framework 2040 by encouraging the material consideration of environmental noise in the planning process, which is a key aspect of sustainable development. A principal aspiration in the design of new residential development should be the application of good acoustic design so that:

(a) internal noise level guidelines, as outlined in BS 8233:2014, can be achieved with adequate building ventilation and thermal comfort, in all living areas (e.g. living rooms, bedrooms) with openable windows.

(b) private external amenity areas can be enjoyed as intended taking cognisance of environmental noise levels recommended not to be exceeded by the World Health Organization (WHO).

Consideration should be given to the potential impact of transportation noise on new residential development in line with Professional Practice Guidance on Planning and Noise: New Residential Development (ProPG, 2017), which was supported in its preparation by the Acoustics & Noise Consultants, the Institute of Acoustics (UK) and the Chartered Institute of Environmental Health.

8.6 Addressing the Results of Noise Mapping

As previously discussed, there are no statutory limits in relation to environmental noise exposure. For road traffic, environmental noise levels at which assessment is recommended by the EPA are:

70 dB	L_{den}
57 dB	L_{night}

For preserving quiet areas, environmental noise levels where assessment by the EPA is recommended are as follows.

55 dB	L_{den}
45 dB	L_{night}

Decision matrices have been established which enable the Authority to focus resources on areas most in need of improvement. Data obtained from the matrix tool will enable Longford County Council to prioritise areas. A matrix assessment score of 17 or greater will be taken to indicate that threshold levels may have been exceeded and that the location should be included in the shortlist for further assessment.

The following conditions must be considered when developing a priority matrix:

- Location Type – (Whether it is a town centre, residential area or open countryside)
- Noise Source – (for the purposes of this action plan this will be road related only)
- Noise Levels that were calculated by the noise mapping

8.6.1 Location Type

The score here is allocated based on the type of land use in the area and on the receptor. A higher score is

allotted to open countryside on the basis of the exception that dwellings in open countryside will have lower ambient noise levels than commercial area and town centres. A higher score is also assigned to noise sensitive locations because of the obligation for low noise levels for them to function successfully. Schools, churches, funeral homes are examples of these.

8.6.2 Noise Source

The noise source in Co. Longford will be the same for all locations. (Noise from major roads). There was a suggestion in the EPA Noise guidelines that each action planning Authority may impose an additional weighting factor to the matrix to include the number of residents at each address. Longford Co. Council does not propose to impose the additional weighting.

9 Financial Information

Financial Provisions have not been made available at national level to fund any noise assessment measures, mitigation measures or additional noise mapping requirements resulting from the implementation of this Noise Action Plan. Longford County Council is committed to implementing the provisions of this Noise Action Plan in so far as it is practical within existing financial and staff resources. As part of the actions contained within the Plan, any proposed noise mitigation measures shall require detailed estimates prior to formal approval along with a cost benefit analysis to determine the effectiveness of the proposal.

10 Public Consultation

10.1 General

Longford County Council as the Action Planning Authority for the functional area of County Longford are requested under regulations to consult the public when revising and drawing up Action Plans. The public were consulted about proposals in the draft action plan and given early and effective opportunities to participate in the

preparation and review of the Plan. The results of the public consultation were considered in finalising the Plan. The public will be informed of any decisions that are taken. Reasonable time will be provided for each stage of public participation.

10.2 Public Consultation Process

The Draft Noise Action Plan was made available for public display in the offices of Longford County Council on 27th May to 5th July 2024

An advertisement was placed in the Longford Leader, published on the 28th May 2024, publicising the consultation phase. The Draft Noise Action Plan was made available for inspection from the 27th May to 5th July 2024. The public were then invited to make written submissions up to and including the 19th July 2024.

10.3 Outcome of Public Consultation

XXXXXXXX

10.4 Consultation with Statutory and Other Bodies

The following bodies were written to and their comments on the Draft Noise Action Plan were sought:

1. Department of Transport,
2. Department of the Environment, Climate and Communications
3. Transport Infrastructure Ireland (TII)
4. Environmental Protection Agency (EPA)
5. Roscommon County Council
6. Leitrim County Council
7. Cavan County Council
8. Westmeath County Council
9. Iarnrod Éireann

10.5 Outcome of Consultation with Statutory Bodies and Other Bodies

Written submission received during the public consultation period included.

XXXXXXX

Submissions included in appendix VII of this noise action plan.

A summary of the actions taken on foot of submissions is given below:

XXXXXX

Appendix I - Glossary of Acoustic and Technical Terms

Acoustical Planning: Controlling future noise by planned measures such as land-use planning, systems engineering for traffic, traffic planning, abatement by sound-insulation measures and control of noise sources.

Agglomeration: A dense urbanised area having a population greater than 100,000 persons (population greater than 250,000 for the first round of the Environmental Noise Regulations 2006).

Decibel (dB): A unit of measurement of sound. When measuring environmental noise, an "A" weighting network is used (called dB(A)) which filters the frequency of the sound to mimic human hearing, which is most sensitive to frequencies between 500Hz and 5,000Hz. The decibel scale is logarithmic. If two noise sources emit the same sound level e.g. 80dB(A), the combined sound level from the two sources is 83dB(A) and not 160dB(A). The human perception of "loudness" is that a 10dB increase in sound level is perceived as being twice as loud. A 3dB increase, which is a doubling of the sound level, is perceived as a barely perceptible change in loudness. A decibel level of zero represents absolute silence. A level of 140dB(A) would cause ear pain.

The table below gives examples of the relationship between the subjective valuation of noise and the actual objective levels (taken from the END Briefing note of the 07/02/08):

Noise Level dB (A)	Description
120	Threshold of Pain
95	Pneumatic drill (at 7m distance)
83	Heavy diesel lorry (40km/h at 7m distance
81	Modern twin-engine jet (at take-off at 152m distance)
70	Passenger car (60km/h at 7m distance)
60	Office environment
50	Ordinary conversation
40	Library
35	Quiet bedroom
0	Threshold of hearing

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.
CQA	Candidate Quiet Area.
CNOSSOS-EU: 2020	The common noise assessment method according to the END.
CRTN 1988	The noise calculation method Calculation of Road Traffic Noise 1988.
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.
$L_{eq,16hr}$	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 of 16 hours.
L_{den}	The day-evening-night composite noise indicator adopted by the EU for the purposes of assessing overall annoyance. Equation below.

$$L_{den} = 10\lg\frac{1}{24}\left(12*10^{\frac{L_{day}}{10}} + 4*10^{\frac{L_{evening}+5}{10}} + 8*10^{\frac{L_{night}+10}{10}}\right)$$

Lday	The A-weighted long term average sound level as defined in ISO1996-2: 2007, determined over 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).
LCC	Longford County Council.
LDP	Longford Development Plan
MIA	Most Important Area.
NAP	Noise Action Plan.
NPO	National Policy Objective in the National Development Plan.
NRA	National Roads Authority (now TII).
NTA	National Transport Authority.
PIA	Priority Important 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.
Soundwalk	A walk with a focus on the listening environment.
TII	Transport Infrastructure Ireland.
WebTAG	Transport analysis guidance tool for the proposal of policies and interventions to ensure a consistent approach in transport appraisal

Appendix II- Newspaper Advert for Public Consultation

Public Consultation: Draft Noise Action Plan 2024-2028

Draft Noise Action Plan 2024 - 2028
Longford County Council's Draft Noise Action Plan under the
Environmental Noise Regulations, 2006 (Statutory Instrument No. 140 of 2006).

Longford County Council have prepared a Draft Noise Action Plan for sections of major roadways in their functional areas that experience a volume of traffic greater than 3 million vehicle passages per year.

The plan covers environmental noise from major transport sources, as designated by the Environmental Noise Regulations 2006. Details of the sections of roadway referred to above can be viewed in the Draft Noise Action Plan. Please be advised that this plan excludes noise from domestic activities, noise created by neighbours and noise at workplaces.

It should be noted that concurrently an Appropriate Assessment Screening has been undertaken and a report documenting this prepared. The AA Screening considers European Communities (Birds and Natural Habitats Regulations 2011 (S. I. No. 477 of 2011)). A Strategic Environmental Assessment report and determination was also prepared.
Part of this screening stage includes a screening of environmental significance, to assess whether the plan is likely to result in significant effects and therefore taken forward for SEA.
Both are available to view.

The Draft Plan will be available for public inspection at the offices of **Longford County Council, Aras an Chontae, Great Water Street, Longford**, between the hours of 9 a.m. and 1 p.m. and between 2 p.m. and 5 p.m., Monday to Friday from Monday, 10th June to Friday, 19th July 2024 inclusive, and on the Council's website at www.longfordcoco.ie.

Observations and submissions in respect of the proposed Plan should be made in writing and marked **"Submission – Draft Noise Action Plan"**, before 4. pm on 31st July 2024, addressed to: - Environment Department, Longford County Council, Great Water Street, Longford.

Appendix III- Bibliography and References

Legislation

- European Communities (Environmental Noise) (Amendment) Regulations 2021, S.I. No. 663 of 2021.
- Commission Delegated Directive (EU) 2021/1226 of 21.12.2020 amending, for the purpose of adapting to scientific and technical progress, Annex II of Directive 2002/49/EC of the European Parliament and the Council as regards common noise assessment methods, OJ L269/65-142 of 28th July 2021.
- European Communities (Environmental Noise) Regulations 2018, S.I. No. 549 of 2018.
- Corrigendum to Commission Directive (EU) 2015/996, OJ L5/35-46 of 10th January 2018.
- Directive (EU) 2015/996 of 19 May 2015 establishing common noise assessment methods according to Directive 2002/49/EC, OJ L168/1-823 of 1st July 2015.
- European Communities (Access to Information on the Environment) Regulations 2007 (S.I. No. 133 of

2007).

- Directive 2007/2/EC of the European Parliament and of the Council of 14 March 2007 establishing an Infrastructure for Spatial Information in the European Community (INSPIRE).
- Directive 2003/4/EC of the European Parliament and of the Council of 28 January 2003 on public access to environmental information.
- Directive 2002/49/EC of the European Parliament and of the Council of 25 June 2002 relating to the assessment and management of environmental noise, OJ L189/12-25, 18 July 2002.

EPA Publications

- Round 4 Strategic Noise Mapping of Major Roads For the fourth round of the Environmental Noise Regulations 2018, March 2021 (V2).
- Environmental Protection Agency, Guidance Note for Noise Action Planning for the first round of the Environmental Noise Regulations 2006, July 2009.
- Environmental Protection Agency, Advice Notes on Current Practice (in the preparation of Environmental Impact Statements), 2003.

EC Publications

- European Commission Working Group Assessment of Exposure to Noise (WG-AEN), Position Paper, Presenting Noise Mapping Information to the Public, March 2008.
- European Commission Working Group Assessment of Exposure to Noise (WG-AEN), Position Paper, Good Practice Guide for Strategic Noise Mapping and the Production of Associated Data on Noise Exposure, Version 2, 13th August 2007.

Other Relevant Documents

- Environmental Transport Noise and Health: Evidence from Ireland (Noise–Health), EPA Research, Report No. 423, 2022.
- Longford Town -Local Transport Plan (October 2023).
- Draft National Guidance for the Consideration of Transportation Noise in the Design of New Residential Development, June 2021.
- Road Management Office, Round 4 Strategic Noise Mapping of Major Roads - Guidance and Specification, June 2021.
- Transitioning to Strategic Noise Mapping under CNOSSOS-EU (Noise-Adapt), EPA Research, Report No. 382, 2021.
- The Acoustics, Ventilation and Overheating Guide, IOA/ANC, January 2020.
- National Planning Framework - Ireland 2040 Our Plan (NPF) (2018).
- WHO, Environmental Noise Guidelines for the European Region, 2018.
- Professional Practice Guidance on planning and noise: New Residential Development, IOA/ANC/CIEH,

2017.

- Guidance for Public Authorities and others on implementation of the AIE Regulations, DECC, May 2013.
- Association of Acoustic Consultants of Ireland - Environmental Noise Guidelines for Local Authority Enforcement and Planning Sections (Release 2, Jan 2021).
- WHO, Night noise guidelines for Europe, 2009.
- WHO, Guidelines for community noise, 1999.
- WHO, Environmental Noise Guidelines for the European Region, 2018.

Appendix IV- Submissions Received