

COUNTY MEATH NOISE ACTION PLAN

2024-2028

Meath County Council

customerservice@meathcoco.ie | (046) 9097000 | www.meath.ie

Executive Summary

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, as revised. These Regulations provide a common approach for Action Planning Authorities (in this case Meath County Council) to identify measures to avoid, prevent and reduce environmental noise and its harmful effects on a prioritised basis.

The County Meath Noise Action Plan (NAP) has been prepared in accordance with the aforementioned Regulations and is aimed at the strategic long-term management of environmental noise from traffic-related sources. The proposed actions are based on the results of Strategic Noise Maps which have been examined to estimate the population exposure and extent of harmful effects of noise in the County. The results of the assessment have been used to identify areas that shall be subject to noise management activities during the implementation of the NAP. These areas are referred to as Priority Important Areas. Meath County Council is committed to further investigating the requirement for noise mitigation in the Priority Important Areas within the lifespan of the NAP, including consideration of costs and -benefits as necessary to determine measures that may appropriate to introduce.

Contents

1	Introduction	5
1.1	Sound and Noise.....	5
1.2	Purpose and Scope of the Environmental Noise Directive.....	6
1.2.1	Noise Assessment.....	6
1.2.2	Development of Noise Action Plans (NAPs)	7
1.2.3	Disseminating Data to the Public	7
1.3	END and Ireland - Environmental Noise Regulations	8
1.4	Roles and Responsibilities of Dedicated Bodies	8
1.4.1	Noise Mapping Bodies.....	8
1.4.2	Responsibilities.....	9
1.4.3	Action Planning Authorities.....	9
1.4.4	Responsibilities.....	9
1.5	Complying with Environmental Noise Regulations - Key Phases	10
1.5.1	Identification of Areas for Noise Mapping	10
1.5.2	Preparation of Strategic Noise Maps.....	10
1.5.3	Development of the Noise Action Plan	11
1.5.4	Timelines.....	12
1.5.5	Public Participation and the Role of the Public	12
1.5.6	Strategic Environmental Assessment	12
1.5.7	Appropriate Assessment Screening.....	13
1.6	Overriding Status of the Plan.....	13
2	Human Health and Existing Noise Management Legislation.....	14
2.1	Noise and Human Health.....	14
2.2	European Legislation and Guidance	15
2.2.1	Zero Pollution Action Plan	15
2.2.2	Directive 2015/996 - Common Noise Assessment Methods – CNOSSOS-EU -.....	15
2.2.3	Directive 2021/1226- Amending, for the Purposes of Adapting to Scientific and Technical Progress, Annex II to Directive.....	16

2.2.4	Directive 2020/367 - Establishment of Assessment Methods for Harmful Effects of Environmental Noise	16
2.3	National Legislation and Guidance	16
2.3.1	Project Ireland 2040 – National Planning Framework (NPF)	16
2.3.2	Environmental Protection Agency Act 1992.....	16
2.3.3	The Roads Act 1993	17
2.3.4	EPA Guidance.....	17
2.3.5	Transport Infrastructure Ireland Guidelines.....	17
2.3.6	National Speed Limit Review	18
2.3.7	Integrated Pollution Prevention Control Licensing	18
2.3.8	Building Regulations 1997-2014 (Part E – Sound)	18
2.3.9	Wind Energy Planning Guidelines.....	19
2.4	Regional and Local Legislation and Guidance	19
2.4.1	Eastern and Midlands Regional Spatial and Economic Strategy, 2019-2031	19
2.4.2	County Meath Development Plan 2021-2027	19
2.4.3	County Meath Noise Action Plan 2019.....	21
3	Description of the Action Planning Area.....	22
3.1.1	Major Roads for Noise Mapping.....	22
3.1.2	24
3.1.3	Description of the General Population.....	24
3.2	Review of 2019 Noise Action Plan Implementation.....	25
3.2.1	Significant Developments 2019 - 2023.....	25
3.2.2	Implementation of Planned Actions 2019 - 2023.....	25
4	Responsible Authority for Noise Action Planning.....	28
5	Summary of the Results of Noise Mapping	29
5.1	CNOSSOS-EU:2020.....	29
5.2	Model Calculation Scenarios	29
5.3	Regulatory Background to Noise Exposure and Harmful Effects	29
5.4	Strategic Noise Mapping Figures.....	29
5.5	Noise Exposure Assessment for County Meath	30
5.6	Harmful Effects Assessment for County Meath	31
6	Identification of Areas Subjected to Noise Management Activities.....	33

6.1	Description of approach to identify IAs, MIAs and PIAs.....	33
7	Mitigation and Protection Measures.....	38
7.1	Overview.....	38
7.2	Mitigation	39
7.2.1	Examination of Priority Important Areas	39
7.2.2	Confirmation the Extent of Noise Impact.....	39
7.2.3	Active Travel	40
7.3	Prevention	40
7.3.1	Land Use Planning and Management.....	40
7.3.2	Future Road Network Development	41
7.4	Protection.....	41
7.4.1	Exploration of Candidate Quiet Areas	41
8	Implementation Plan	43
8.1	Roles and Responsibilities	43
8.2	Targets and Objectives	43
8.3	Programme of Works	43
8.4	Estimate of Reduction in Number of People Affected	44
8.5	Evaluation and Review	44
9	Public Consultation	46
9.1	Details of Public Consultation.....	46
9.2	Submissions	47
9.2.1	Themes and Responses	47
	Appendix A - Glossary of Terms	49
	Appendix B - Strategic Noise Maps	51
	Appendix C – PIA Maps.....	52

1 Introduction

1.1 Sound and Noise

The difference between sound and noise can often depend on the perspective of the listener. A sound that is considered bothersome by one individual may not even be noticed by another. Whether it disrupts speech or simply reduces the enjoyment of a garden, noise is almost always undesirable. But how exactly is noise classified and measured? The human ear perceives sound by detecting pressure changes in the air caused by propagating sound waves. Sound, and noise, is measured on a logarithmic scale, to account for the fact that people can detect sounds over a wide range of pressures.

These range from approximately $20\mu\text{Pa}$ (Micropascals) known as the Threshold of Hearing, to upwards of 100Pa (Pascals), commonly known as the Threshold of Pain. The ratio between the two is over a million to one. It is for this reason that sound pressure levels (SPLs) are measured in decibels, dB (SPL). The SPL is a logarithmic measure of the average sound pressure, relative to the Threshold of Hearing.

The scale in Figure 1-1 indicates the range of sound pressure levels which humans can hear and shows some examples of scenarios where they might be experienced. Within the range of audible sound, one must also consider the perception of sound. A doubling of the sound pressure results in a 6dB increase in sound pressure level, however, this does not mean that the sound appears twice as loud. But what level can be considered loud or annoying? The subjective nature of noise annoyance makes defining a specific value a complex task. Furthermore, not all types of sound are perceived in the same manner. The ear does not have a uniform response to all sounds, and it is more responsive to certain frequencies.

The frequency of the sound is similar to the pitch, low frequency sounds has a bass sound while very high frequency sound is high pitched. Humans can hear sounds with frequencies in the range 20Hz (Hertz) to 20kHz (kilohertz) approximately but can hear some frequencies better than others. When measuring sound levels this is usually accounted for using frequency weighting. The most commonly used weighting filter is the A-weighting filter. A-weighting of noise levels accounts for the fact that the human ear is more responsive to certain types of sound than others. The A-weighting process applies weightings to different types of noise to better approximate the human perception of sounds. A-weighted sound pressure levels are measured in decibels, dB(A).

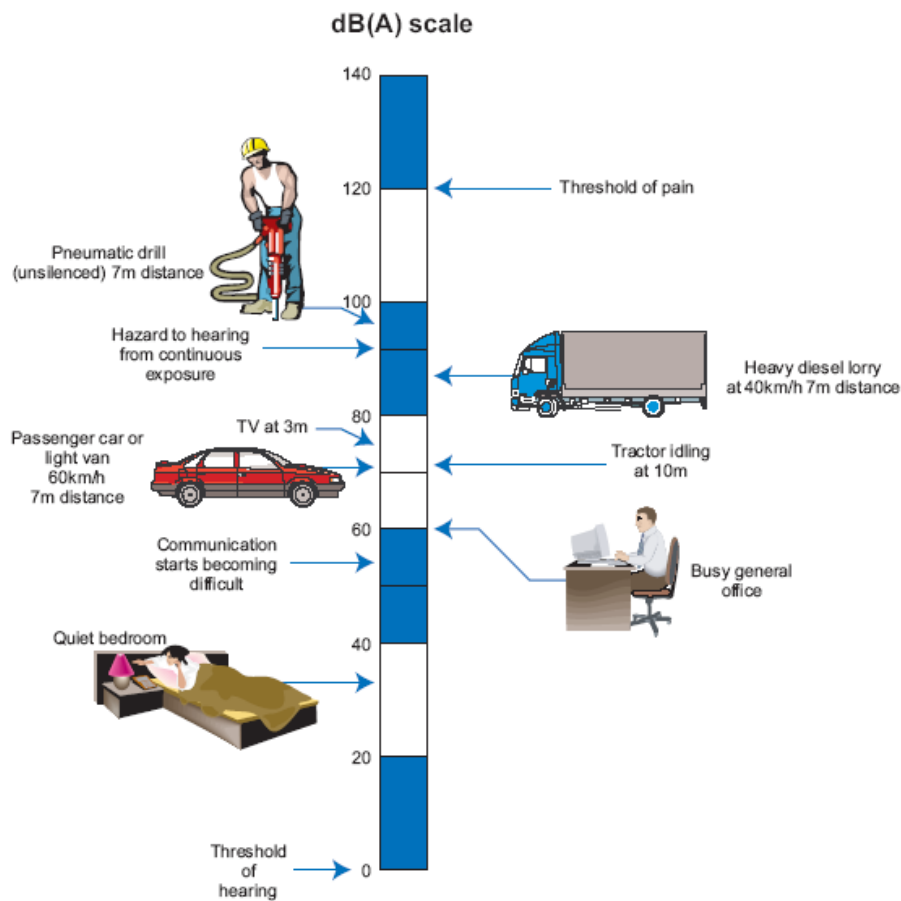


Figure 1-1: The level of typical common sounds on the dB(A) scale (NRA Guidelines for the Treatment of Noise and Vibration in National Road Schemes, 2004)

1.2 Purpose and Scope of the Environmental Noise Directive

In 2002 the European Union issued a Directive (2002/49/EC) relating to the assessment and management of environmental noise pollution. Also known as the Environmental Noise Directive (END), the Directive's main aim is to put in place a European-wide system for identifying sources of environmental noise pollution, informing the public about relevant noise data and then taking the necessary steps to avoid, prevent or reduce, on a prioritised basis, noise exposure. The basic principles and requirements of the END can be summarized as follows:

1.2.1 Noise Assessment

The Directive aims to monitor environmental noise problems by requiring competent authorities in Member States to generate strategic noise maps for major roads, railways, airports and agglomerations, using the harmonised noise indicators L_{DEN} (day-evening-night average sound level) and L_{NIGHT} (night time average sound level). These maps are to be used as a means of presenting environmental noise data, as a source of information for the public and as an aid in the preparation of noise action plans.

All member states are required to develop strategic noise maps describing the environmental noise situation within their territories. The first phase of these noise maps was due by 30th of June 2007 and the

second phase was delivered in June 2012. The 3rd round of Action Plans were submitted to the EPA for final review in September 2018. Updated versions of the strategic noise maps are due every five years thereafter. Strategic noise maps have been prepared for Round 4 (2022), representing the annual average situation during 2021.

Strategic noise maps present environmental noise level data in terms of a relevant noise indicator. Their purpose is to allow authorities to identify areas where a noise limit value may have been exceeded, estimate the number of people potentially exposed to environmental noise and evaluate the contribution of various noise sources to the overall noise situation.

1.2.2 Development of Noise Action Plans (NAPs)

The Directive also aims to address local environmental noise issues by requiring competent authorities to draw up action plans to reduce the harmful effects of exposure to environmental noise where necessary and maintain the environmental acoustic quality where it is good. The Directive does not set any limit value, nor does it prescribe the measures to be used in the action plans, which remain at the discretion of the competent authorities.

Action plans outline the measures which competent authorities intend to take to assess any environmental noise issues identified during the strategic mapping process. This includes the prioritisation of actions to reduce environmental noise levels where exposure is deemed to be high and the preservation of the noise situation in locations which have been designated as quiet areas.

In Ireland, it is recommended that the NAPs support Policy Objective 65 from the National Planning Framework 2040, which states:

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

1.2.3 Disseminating Data to the Public

One of the underlying themes throughout the Directive is the dissemination of noise data to the general public using channels and media that are both suitable and effective. The Directive instructs that the public be made aware of any noise assessment data, be consulted during the formulation of action plans and informed of any decisions taken.

The overall goal of these actions is to develop a long-term EU strategy, which includes objectives to reduce the number of people affected by noise and provide a framework for developing existing community policy on noise reduction from major sources.

The END is aimed at establishing harmonised EU measures to reduce noise emitted by the major sources, in particular road and rail vehicles and infrastructure, aircraft, outdoor and industrial equipment and also at providing a basis for developing and complementing the existing set of community measures concerning environmental noise. The Directive applies to environmental noise to which humans are exposed, in particular in built-up areas, in public parks or other quiet areas in an agglomeration, in quiet areas in open country, near schools, hospitals and other noise sensitive buildings and areas. It does not apply to noise that is caused by the exposed person, noise from domestic activities, noise created by neighbours, noise at work places or noise inside means of transport or due to military activities in military areas. Noise maps are strategic tools that should not be used for the assessment of local noise nuisances.

1.3 END and Ireland - Environmental Noise Regulations

Statutory Instrument No. 140 of 2006, also known as The Environmental Noise Regulations, was brought into effect by The Minister for the Environment, Heritage and Local Government, for the purpose of giving effect to END in relation to the assessment and management of environmental noise.

The Regulations were revised and revoked by the European Communities (Environmental Noise) Regulations 2018 (S.I. 549/2018) and through the European Communities (Environmental Noise) (Amendment) Regulations 2021 (S.I. 663/2021). These regulations are commonly referred to as the Environmental Noise Regulations.

The Environmental Noise Regulations provide for the implementation in Ireland of 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.

1.4 Roles and Responsibilities of Dedicated Bodies

The Regulations designate the Environmental Protection Agency (EPA) as the national authority responsible for overseeing the implementation of the Regulations. The EPA is required to provide advice 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.

The EPA provides guidance (“EPA Guidance”) on the required activities to be undertaken during the implementation of the Regulations. These have been accounted for in the preparation of this NAP.

1.4.1 Noise Mapping Bodies

Under the Environmental Noise Regulations, the following organisations have been designated as noise mapping bodies:

- For the agglomeration of Cork, Cork City Council and Cork County Council;
- For the agglomeration of Dublin, Dublin City Council and the County Councils of Dun Laoghaire-Rathdown, Fingal, and South Dublin;
- For major railways, Iarnród Éireann or the Railway Procurement Agency, as appropriate, on behalf of the action planning authority or authorities concerned;

For major roads,

- i. where such roads are classified as national roads in accordance with Section 10 of the Roads Act 1993 (No. 14 of 1993), Transport Infrastructure Ireland, on behalf of the action planning authority or authorities concerned, and
 - ii. other than those provided for in part (i), the relevant road authority or authorities, as appropriate; and
- For major airports, the relevant airport authority, on behalf of the action planning authority or authorities concerned

The maps on which this NAP is based were prepared by the TII.

1.4.2 Responsibilities

The relevant noise mapping bodies are required to produce strategic noise maps, for:

- Any agglomeration with a population greater than 250,000;
- Any major road with more than 3 million vehicle passages per year;
- Any major railway with more than 30,000 train passages per year; and
- Any major airport.

1.4.3 Action Planning Authorities

Under the Environmental Noise Regulations, the following organisations have been designated as action planning authorities:

- For the agglomeration of Cork, Cork City Council and Cork County Council;
- For the agglomeration of Dublin, Dublin City Council and the County Councils of Dun Laoghaire-Rathdown, Fingal, and South Dublin;
- For major railways, the local authority or local authorities within whose functional area or areas the railway is located;
- For major roads, the relevant local authority or local authorities within whose functional area or areas the road is located; and
- For major airports, the local authority or local authorities within whose functional area the airport is located.

Accordingly, the Council are designated as the action planning authority for all sections of major roads within the functional areas of the Council which experience a volume of traffic greater than 3 million vehicle passages per year. There are no other major sources of environmental noise which exceed the thresholds in 1.4.2 within the functional areas of the Council which require MCC to prepare noise mapping or include in the action planning process.

1.4.4 Responsibilities

Action planning authorities are responsible for the making and approval of noise action plans, in consultation with the Agency and the noise mapping body for the noise map involved. Action plans must satisfy the minimum requirements set out in the Fourth Schedule of the Regulations.

Action planning authorities are required to ensure that:

- the general public and interested stakeholders are consulted on proposals for action plans;
- the general public and interested stakeholders are given early and effective opportunities to participate in the preparation and review of action plans;
- the results of public participation are considered in finalising action plans or reviews of action plans;

- the general public and interested stakeholders are informed of the decisions taken in relation to action plans;
- reasonable time-frames are adopted to allow sufficient time for each stage of public participation.

1.5 Complying with Environmental Noise Regulations - Key Phases

The key phases involved in meeting the requirements of the Regulations are laid out below. The responsibility is shared between the noise mapping bodies and action planning authorities.

1.5.1 Identification of Areas for Noise Mapping

Strategic noise maps have been developed for all roadways meeting the criteria set out in Article 10(1) of the Regulations, specifically any motorway, regional or national road with more than 3 million vehicle passages per year. Road traffic volumes were obtained using the Transport Infrastructure Ireland (TII) traffic counting system and local traffic counts. Data gathered by the TII and local authorities was used to identify roadways which were eligible for mapping.

1.5.2 Preparation of Strategic Noise Maps

1.5.2.1 Purpose and Scope

According to the END a strategic noise map is “A map designed for the global assessment of noise exposure in a given area or for overall predictions for such an area.” A noise map is a representation of the noise situation in a given area, presented in terms of a chosen noise indicator.

The most common format for noise maps is a graphical representation of the noise levels in an area. Colour coded contour plots show the areas subject to the highest noise levels, and link areas of equal noise exposure.

Noise mapping techniques employ predictive software that estimates the noise level in an area from a particular source, given several governing factors e.g. speed of the traffic flow, number of light and heavy vehicles, building topology, road surface and gradient.

The maps are intended to provide a representation of the possible noise levels perceived within the assessment area due to a particular source and are used to identify locations where action may be needed to reduce high noise levels and protect the acoustic environment where favourably low noise levels are present.

1.5.2.2 Extent/Range

The previous three rounds of strategic road noise mapping for local authorities in Ireland used an ‘interim’ assessment method, CRTN 198810. For the fourth round of noise mapping a common noise assessment method has been implemented (Common Noise Assessment Methods in Europe, CNOSSOS-EU11) in line with Annex II of the Directive which was revised by the mandatory EU Directive 2015/996 and brought into effect through the Environmental Noise Regulations, 2018.

This change in methodology makes any direct comparison of the Round 4 noise exposure statistics with the previous three rounds methodologically complex and inaccurate. For the noise action planning

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

This NAP therefore includes the identification of existing noise emissions, the identification of priority important areas based on an assessment of harmful effects and details of noise management measures for consideration and evaluation at implementation stage. The NAP also includes some discussion on the identification of Candidate Quiet Areas for consideration as Quiet Areas at the implementation stage.

1.5.2.3 Noise Indicators

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

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

1.5.3 Development of the Noise Action Plan

1.5.3.1 Purpose and scope

Noise action plans are aimed at defining a common approach intended to avoid, prevent and reduce the harmful effects of exposure to environmental noise and also at protecting quiet areas. They will form the basis of a long term environmental noise strategy and are not tools for dealing with nuisance noise complaints.

1.5.3.2 Extent/Range

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

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

An overview of what actions are included in the NAP and how mitigation measures are identified and implements over the life of the NAP is summarised in Figure 1-2 below. Further explanations in relation to stages 1 and 2 are provided in Chapters 6 and 7.

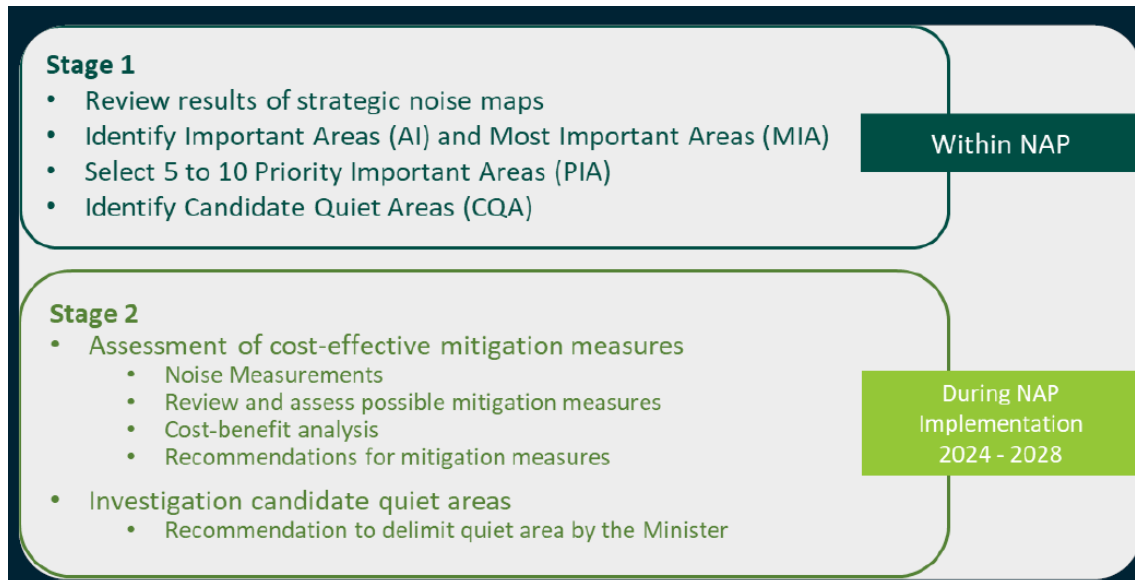


Figure 1-2 Approach to Determining Actions in NAPs and During Implementation

1.5.4 Timelines

Meath County Council is required to have prepared its NAP and undertaken public consultation so that it can be included in the EPA’s report to the EEA in January 2025.

1.5.5 Public Participation and the Role of the Public

As part of the consultation process noise action planning authorities are required to ensure that the public are consulted as per section 1.4.4:

1.5.6 Strategic Environmental Assessment

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

The requirement for SEA for plans and programs is outlined in European Directive 2001/42/EC (“SEA Directive”). In the context of specific land-use plans, this directive is implemented in Irish law through the Planning and Development (Strategic Environmental Assessment) Regulations, 2004 (S. I. 436/2006). This legislation has been amended by the Planning and Development (Strategic Environmental Assessment) (Amendment) Regulations 2011 (S.I. 201/ 2011). For all other sectorial plans, the SEA Directive is transposed into Irish law by European Communities (Environmental Assessment of Certain Plans and Programmes) Regulations 2004 (S. I. 435/2004), as amended by European Communities (Environmental Assessment of Certain Plans and Programmes) (Amendment) Regulations 2011 (S. I. 200/2011).

The Plan has been screened for the need to undertake SEA in compliance with S.I. No. 435/2004), as amended. The conclusion is that full SEA is not required.

1.5.7 Appropriate Assessment Screening

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

The Plan has also been screened for the need to undertake Stage 2 Appropriate Assessment (AA) in compliance with S.I. No. 477/2011), as amended. The conclusion is that full Stage 2 AA is not required.

1.6 Overriding Status of the Plan

This Plan is situated alongside a hierarchy of statutory documents that has been subject to environmental assessment/screening for environmental assessment, as appropriate, and forms the decision-making and consent-granting framework. The Plan does not provide consent or establish a framework for granting consent and will not be binding on any decisions relating to the granting of consent.

In order to be realised, projects included in this Plan (in a similar way to other projects from any other sectors) will have to comply, as relevant, with various legislation, policies, plans and programmes (including requirements for lower-tier Appropriate Assessment, Environmental Impact Assessment and other licencing requirements as appropriate) that form the statutory decision-making and consent-granting framework. It is a specific provision of this Plan to ensure that all of the provisions from the Meath County Development Plan 2021-2027, as varied, (including those identified in the accompanying Screening SEA report) shall be complied with throughout the implementation of this Plan.”

2 Human Health and Existing Noise Management

Legislation

The following section highlights some of the existing legislation, policy and planning documents in place within Europe, Ireland and County Meath regarding noise control and reduction. These documents deal with noise on several levels; noise reduction at source, management of nuisance noise and consideration of noise at the planning stage.

2.1 Noise and Human Health

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

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

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

The ENG provide recommendations for protecting human health from exposure to noise originating from various sources including road traffic, railway and aircraft. The recommendations include guideline values using Lden and Lnight metrics in terms of the onset of health effects. However, no single noise metric best correlates with all adverse health outcomes associated with environmental noise effects, and health effects can be correlated with more than one metric. The noise metrics which are generally considered to best correlate with the different health effects, and are the subject of this NAP, are set out in Table 2.1.

Noise Metric	Health Effects
Lden	Cardiovascular disease, Cognitive impairment, and Annoyance
Ldn	Annoyance

Table 2-1 Noise Metrics and Associated Health Effects

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

- 53 dB Lden and 45 dB Lnight.

The basis of these recommendations has informed the required methods for the assessment of health

effects of noise (ischaemic heart disease, high annoyance and high sleep disturbance) in the Environmental Noise (Amendment) Regulations 2021 for noise action planning.

Subsequently, the European Commission (EC) has adopted the Zero Pollution Action Plan (ZPAP)¹⁵ (2021). 'Vision for 2050' under the ZPAP includes key targets for noise by 2030 - that is reducing the share of people chronically disturbed by transport noise by 30%.

2.2 European Legislation and Guidance

The END and Environmental Noise Regulations have been covered in Chapter 1. Other relevant European legislation and guidance is included in sections 2.2.1 and 2.2.4.

2.2.1 Zero Pollution Action Plan

In May 2021 the EU launched the Zero Pollution Action Plan (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.

The first integrated Zero Pollution Monitoring and Outlook Report from the Commission to the European Parliament was published in December 2022, and estimated that the number of people chronically disturbed by road transport noise is unlikely to decline by more than 19% by 2030 (i.e. well below the 30% reduction target set in the zero pollution action plan) unless a substantial set of additional measures is taken at national, regional and local level and unless reinforced EU action across relevant sectors delivers significant further reduction in noise pollution.

To help achieve the noise reduction targets in ZPAP, the Phenomena study was undertaken by the EU. The study sought to define the potential of measures capable of delivering significant reductions (20%-50%) of health burden arising from the environmental noise of roads, railways and aircraft, and to assess how relevant noise related legislation could increase the implementation of the most effective measures, while considering the constraints and specificities of each transport mode. The project relied on a combination of policy research, consultation, health economics and environmental assessment.

Using the DPSEEA framework, individual noise abatement measures were examined and their health impact quantified. A shortlist of the most effective combinations of measures were identified for each transport mode. The analysis found that an effective and EU-wide reduction of noise health burden can only be reached by a set of combined and complementary measures. Altogether 23 individual policy options are proposed. This includes six legislative changes for generic policy measures that would affect all transport modes. It is suggested that the proposed policy options are developed within the context of an overarching strategy.

2.2.2 Directive 2015/996 - Common Noise Assessment Methods – CNOSSOS-EU -

Directive 2015/996 establishing common noise assessment methods according to Directive 2002/49/EC replaced Annex II of the END, removed the recommended Interim Methods, and established the common noise assessment methods. It sets out the noise calculation methods (CNOSSOS-EU) in the Annex and some guidance on aircraft modelling and database tables of input data for roads, railways and aircraft. The CNOSSOS-EU methods set out within the Directive are to be used for strategic noise maps under the END (since December 2018). Directive 2015/996 was published in January 2018 to address errors in the original Directive.

2.2.3 Directive 2021/1226- Amending, for the Purposes of Adapting to Scientific and Technical Progress, Annex II to Directive

Directive 2021/1226 introduces several amendments to CNOSSOS-EU (Annex II of the END), some of which relate to road traffic noise modelling required to produce strategic noise maps. Both Directives 2015/996 and 2021/1226 were transposed into the Irish Regulations under The European Communities (Environmental Noise) Regulations 2018 (S.I. No. 549/2018).

2.2.4 Directive 2020/367 - Establishment of Assessment Methods for Harmful Effects of Environmental Noise

Directive 2020/367 amends Annex III of the END and establishes health impact assessment methods i.e. assessment methods for the harmful effects of environmental noise based on the dose-response relationship established in the WHO Environmental Noise Guidelines for the European Region (2018). The health impacts to be assessed and reported for major sources specified in the END are:

- ☐ Number of people Highly Annoyed (HA)
- ☐ Number of people Highly Sleep Disturbed (HSD) for roads, railways and aircraft; and
- ☐ Instances of Ischemic Heart Disease (IHD) for roads.

This Directive was transposed into Irish Regulations via the European Communities (Environmental Noise) (Amendment) Regulations 2021

2.3 National Legislation and Guidance

Section 1.2 sets out how the END is transposed to Irish Law and how both the European Communities (Environmental Noise) Regulations 2018² (S.I. 549/2018) and the European Communities (Environmental Noise) (Amendment) Regulations 2021 (S.I. 663/2021) form what is commonly referred to as the Environmental Noise Regulations. Other national guidance and legislation includes the following documents as described in sections 2.3.1 to 2.3.9.

2.3.1 Project Ireland 2040 – National Planning Framework (NPF)

In 2018, the Government issued the National Planning Framework 2040. In the context of noise, it includes Policy Objective 65 to: *“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.”*

2.3.2 Environmental Protection Agency Act 1992

The EPA Act identifies noise as a form of environmental pollution and contains provisions for dealing with noise “which is a nuisance or would endanger human health or damage property or harm the environment.” The Act is not related to the making of NAPs but includes national legislation regarding environmental noise with statutory provisions relating to the control of environmental noise which may

give rise to nuisance or loss of private amenity, constitute a danger to health, or damage property. The sections of the Act relevant to noise pollution are:

Section 106 – Regulations for Control of Noise

This section gives the Minister for Environment, Heritage and Local Government the power to make regulations for the purpose of preventing or limiting noise. This may include imposing noise limits, controlling sources of noise and the imposition of charges for noise pollution.

National and regional transport initiatives that may arise from implementation of the NPF and the Regional Spatial and Economic Strategy for the Eastern and Midlands Region have the potential to result in, inter alia: adverse health effects that will need to be mitigated; and/or beneficial effects with regard to preserving environmental noise quality. Such issues will be considered during the implementation of the NPF and the Regional Spatial and Economic Strategy, including as part of the environmental assessments, where required, for individual transport initiatives.

Section 107 – Power of Local Authority or Agency to Prevent or Limit Noise

This section gives powers to Local Authorities or the Environmental Protection Agency to control and limit noise from any premises, process or work.

Section 108 – Noise as a Nuisance

This section gives provision for Local Authorities, the EPA or any individual to complain to the District Court regarding noise nuisance causing unreasonable annoyance. The Court may order the offending person or body to take specific measures to limit or prevent noise pollution.

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

2.3.3 The Roads Act 1993

Under section 77 of the Roads Act 1993, power is given to the Minister to make regulations requiring relevant road authorities to take measures to mitigate the effects of road traffic noise. The Minister may also specify limits for road traffic noise which, if exceeded, would require mitigating action from the road authorities. However, Section 77 was repealed under the Public Transport Regulation Act, 2009.

2.3.4 EPA Guidance

The EPA Draft Guidance Note for Noise Action Planning for the European Communities (Environmental Noise) Regulations 2018 DRAFT Version 2 January 2024 provides practical information, advice and guidance to designated Action Planning Authorities on the development of noise action plans under the Environmental Noise Regulations

2.3.5 Transport Infrastructure Ireland Guidelines

The TII published the “*Good Practice Guidance for the Treatment of Noise during the Planning of National Road Schemes*”. These guidelines propose design goals for noise related to both the construction and operational stages of new road schemes. Following a review of similar guidelines in the UK and adapting methodologies in line with the requirements of the END, the Authority proposed an operational design goal of 60dB(A) L_{DEN} free field value including reflections from the façade i.e. a limit value of 60dB(A) measured at any dwellings close to the road. Essentially what this means is that for any new national road scheme the Environmental Impact Assessment must take this target into account with regard to any existing sensitive residential property likely to be affected by the road scheme. The guidelines present an

approach to mitigating the adverse effects of road construction in so far as possible through the use of measures such as alignment changes, barrier construction and the use of low noise road surfaces.

2.3.6 National Speed Limit Review

The National Speed Limit Review, led by the Department of Transport, was published in September 2023, in accordance with Ireland's Government Road Safety Strategy, 2021 - 2030. Any introduction of the proposed recommendations - although not its primary goal - might have the effect of reducing road noise levels. The key recommendation is that for built-up and urban areas that a default speed limit of 30 km/h be introduced. A 30 km/h limit should apply, for all urban centres, residential roads and locations where there is a significant presence of vulnerable/active road users. There are exceptions to the recommendation (e.g. pedestrian zones and shared spaces/zones where a speed limit of 20 km/h would apply, 50 km/h for national, regional, arterial roads and key public transport routes etc.). It is recommended that default speed limits remain the same on the rural road network except for National Secondary Roads where it is recommended that the default Speed Limit be reduced from 100 km/h to 80 km/h and local roads where it is recommended that the default speed limit be reduced from 80 km/h to 60 km/h. There are a number of specific recommendations on the applications of speed limits for particular circumstances such as Cycle Streets (Urban), School Speed Zones, Urban Shared Spaces/Zones, Pedestrian Zones, Slow Zones, Quiet Lanes etc. Work has commenced by the Department of Transport to review the existing guidelines for managing and setting speed limits and it is envisaged that legislation to implement recommendations shall be introduced in 2024.

2.3.7 Integrated Pollution Prevention Control Licensing

The EPA's Integrated Pollution Prevention Control Licensing terms require that certain bodies must limit environmental pollution caused by industrial activities in order to obtain a license to operate. The criteria relating to noise pollution are outlined in the EPA publication "*Guidance Note for Noise in Relation to Scheduled Activities*." This document recommends a "Best Available Technique" approach to the assessment and mitigation of noise pollution. This approach should consider the nature of the noise e.g. constant, impulsive or tonal, the nature of the surrounding environment and the time and duration of noise emissions. The document contains guideline values that can be applied on a general level. Noise attributed to activities on a licensed site should not exceed 55dB $L_{Ar,T}$ at any noise sensitive location during the daytime period (08:00 – 22:00). ($L_{Ar,T}$ is the equivalent continuous A-weighted sound pressure level during a specified time interval, T, plus specified adjustments for tonal character and impulsiveness of the sound). During the night time (22:00 – 08:00) the noise from on-site activities should not exceed 45dB $L_{Aeq,T}$. ($L_{Aeq,T}$ is the equivalent steady A-weighted sound level in dB containing the same acoustic energy as the actual fluctuating sound level over the given period T).

In addition to these general limits, the guidance notes that "the noise from the licensed facility should not be so loud, so continuous, so repeated, of such duration or pitch and it should not occur at such times as to give reasonable grounds for annoyance."

2.3.8 Building Regulations 1997-2014 (Part E – Sound)

Part E of the Building Regulations (Amendment) 2014 (S.I. no. 606/2014) relates to the mitigation of sound transfer between dwellings and rooms within a building. The regulations state that walls and floors must have "reasonable resistance" to airborne and impact sound. This concerns sound transmission within a structure such as between apartments or semi-detached housing. It does not account for noise sources outside the building. No consideration is given to the nature or location of the building or potential noise sources.

2.3.9 Wind Energy Planning Guidelines

Wind turbine developments are subject to operational reviews regarding noise emissions on site and at noise sensitive locations in the vicinity. In 2011 the EPA published the “*Guidance Note on Noise Assessment of Wind Turbine Operations at EPA Licensed Sites*”. This Guidance Note proposes the following Cumulative Site and Turbine Noise Limits

Daytime 55 dB LAr,T

Night-time 45 dB LAeq

Wind turbine noise not to exceed 45 dB LAeq at any time, or to contain any significant tonal components

Draft Revised Wind Energy Development Guidelines were produced in December 2019 and propose new robust noise restriction limits which are consistent with World Health Organisation standards.

The guidelines propose a relative rated noise limit of 5dB(A) above existing background noise within the range of 35 to 43dB(A) for both day and night, with 43dB(A) being the maximum noise limit permitted. The rated limit will take account of certain noise characteristics specific to wind turbines (e.g. tonal, low frequency and amplitude modulation) and where identified, the noise limit permitted will be further reduced to mitigate for these noise characteristics. The noise limits will apply to outdoor locations at any residential or noise sensitive properties.

Local authorities will enforce the noise limits as conditioned in the planning permission, in conjunction with the Environmental Protection Agency who will provide independent noise monitoring of wind farms. It is proposed that where there is evidence of non-compliance with noise limits, wind turbines will be required to be turned off until compliance with the noise limits is proven.

2.4 Regional and Local Legislation and Guidance

2.4.1 Eastern and Midlands Regional Spatial and Economic Strategy, 2019-2031

The RSES requires that:

‘Spatial planning policies in the vicinity of the airport shall protect the operation of Dublin Airport in respect to its growth and the safe navigation of aircraft from non-compatible land uses. Policies shall recognise and reflect the airport noise zones associated with Dublin Airport. Within the Inner Airport Noise Zone, provision of new residential and/or other noise sensitive development shall be actively resisted. Within the Outer Noise Zone, provision of new residential and/or other noise sensitive development shall be strictly controlled and require appropriate levels of noise insulation in all cases.’

2.4.2 County Meath Development Plan 2021-2027

The County Meath Development Plan 2021-2027 was adopted on the 22nd September 2021. Subsequently, Variations 1 & 2 were adopted on the 13th May 2024. The Development Plan describes the goals and policies of Meath County Council relating to a broad range of key strategic issues which will guide the development of the County in the coming years. Environmental concerns are a key aspect in all areas of the Development Plan, as efforts are made to balance protection of the natural environment with economic growth, transport initiatives, housing and planning. Noise considerations span several categories as the Council has taken cognisance of the importance of noise in the planning process.

2.4.2.1 Development within the Noise Zones of Dublin Airport

In 2019, a review of the effectiveness and appropriateness of the existing noise zones for Dublin Airport was undertaken. This review, completed by the Noise Regulator for Dublin Airport, concluded that noise zones should be updated to take into account increased annoyance due to aircraft noise at lower noise exposure levels, and to account for night-time aircraft noise exposure which had not been previously considered. Based on the outcome of this review, the previous noise zones were replaced to set out revised noise zones.

No part of County Meath falls within Noise Zone A, which seeks to actively resist new provision for residential development and other noise sensitive uses. Instead, a portion of the County falls within Zone B and Zone C of the Noise Zones. Within these geographical areas, there is a need to minimise the adverse impact of noise without placing unreasonable restrictions on development.

Developments located with Noise zones B & C should therefore be controlled to require noise insulation where the predicted noise environment of the site is considered exceed levels appropriate for the development. In the case of residential development, this serves to protect the residential amenity of the proposed dwelling whilst safeguarding the future operations of Dublin Airport. The extents of the Noise Zones and Public Safety Zones for Dublin Airport are shown in the Plan maps nos. 5.4.1 & 5.4.2 in the CDP.

MOV OBJ 68 in the CDP states that it is an objective of the Council *‘To manage noise sensitive development in Noise Zone B and Noise Zone C, where aircraft may give rise to annoyance and sleep disturbance, and to ensure, where appropriate, noise insulation is incorporated within the development.’*

MOV OJV 70 requires that *‘noise sensitive development in Noise Zone B and Noise Zone C to undertake an internal noise assessment and where appropriate, demonstrate that relevant internal noise guidelines will be met.’*

It is also an objective of Meath County Council (MOV OBJ 69) to *‘ensure that development which would give rise to conflicts with aircraft movements on environmental or safety grounds on lands in the vicinity of Dublin Airport and on the main flight paths serving Dublin Airport is restricted.’* DM POL 31 and 32 in the CDP are also relevant.

2.4.2.2 Wind Energy

Developments of wind turbine facilities are subject to several planning and operational criteria including good acoustical design and guarantees that there is no significant increase in ambient noise levels which would affect local residences, wildlife or the general tranquility of the area.

2.4.2.3 Extractive Industries

Regulation of extractive industries requires Local Authorities to find a balance between facilitating economic growth, creating employment and protecting the natural landscape and local population from unwanted effects of heavy industry. The County Development Plan makes provisions to support extractive industries where it does not unduly compromise the environmental quality of the county. The influence on environmental quality is judged on a number of factors, including noise. Proposals for new developments in particular are required to address the noise impact on local communities in detail in planning proposals. See DM OBJ 62.

2.4.2.4 Development Management Standards

The potential noise impact of new business developments on local dwellings and communities are highlighted as a key consideration in the planning process for any proposed ventures. A wide range of developments are addressed including, but not limited to, industrial and office facilities, sports facilities, petrol stations, home businesses, land reclamation and childcare facilities. The Council have incorporated consideration of noise emissions and annoyance into guidelines and policies governing the planning and operation of developments with the aim of protecting residents and preserving natural and public amenity.

The Meath CDP contains MOV OBJ 56 to '*avoid locating residential development and other noise sensitive land uses in areas likely to be affected by inappropriate levels of noise.*' It also includes the following objectives

Upper Floors / Over Shop Developments - *DM OBJ 45: To require that a separate and distinctive point of entry with an identifiable address be provided. Mitigation measures to address possible sources of external noise should be provided.*

Home Based Economic Activity – *DM OBJ 51 states that in determining applications for developments involving working from home, the Council will, inter alia have regard to 'The impacts on the amenities of adjoining occupiers, particularly in relation to hours of work, noise and general disturbance.'*

DM POL 21 states that 'Service stations will not generally be permitted in/adjoining residential areas, unless it can be clearly demonstrated no significant effect on residential amenities by reason of HGV facilities, where appropriate noise, traffic, visual obtrusion, safety considerations or fumes and smells. Hours of operation will be limited if a service station is permitted in a residential area. Proposals to demonstrate the above will be required to be submitted as part of pre-application discussion and planning application documentation.'

Land reclamation - *DM OBJ 65 requires that all applications for land reclamation / soil and stone recovery shall comprehensively address, inter alia, the Impact of such development on existing local communities regarding but not limited to noise, dust, emissions. as part of a pre-application discussion and/or planning application proposal.*

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

2.4.3 County Meath Noise Action Plan 2019

In 2019, Meath County Council published a Noise Action Plan in line with the requirements of the Environmental Noise Regulations (S.I. 140 of 2006). The Noise Action Plan outlines the Council's strategic approach to reducing the harmful effects of exposure to environmental noise and the protection of the acoustic environment in the interest of preserving public amenity and protecting public health. The Plan was based on the results of the third round of strategic noise mapping. This NAP covering the period 2024-2028 is a revision and update of the 2019 Noise Action Plan based on current advice.

3 Description of the Action Planning Area

County Meath covers an area of approximately 2,342km². The recorded population in the 2022 census was 220,826. There were no agglomerations, major railways or airports identified for noise mapping within County Meath.

Meath is divided into the six Municipal Districts of: Ashbourne; Kells, Navan, Laytown-Bettystown, Ratoath and Trim. The county town is Navan, with a population of over 30,000 people. Other growth areas include Ashbourne, Dunboyne, Dunshaughlin, East Meath, Kells, Ratoath, and Trim. The remainder of the county remains largely rural in nature with a well-developed network of smaller towns and villages. The county forms part of the Eastern and Midlands Region.

Meath has a diverse range of landscapes, including ten kilometres of coastline, the drumlin hills in North Meath, rich pastures, tracts of peatland and raised bog in the southwest and the central upland area that includes Tara - the ancient capital of Ireland. This landscape reflects the changing influences of its population over time; from the megalithic sites at Newgrange and Oldcastle, to the Norman castle at Trim, the landed estates at Headfort and Summerhill, the historic and changing network of field boundaries to modern day dynamic settlements such as Navan.

The fertile soils provide the basis for a thriving agricultural and food sector and the county's natural and heritage assets support a growing tourism sector. The county is also home to an increasing number of large multinational corporations and has a strong local enterprise base.

The county is supported by a well-developed road infrastructure system, with circa 3,500km of public road including 220km of national road, 92km of which is motorway. This provides access to international transport networks at Dublin Airport and Dublin Port and the remainder of the country. Meath also has a higher than national average highspeed broadband coverage.

3.1.1 Major Roads for Noise Mapping

Within the boundaries of County Meath there are approximately 152km of national roads and 109 km of regional/local roads which qualify as major roads for noise mapping. Descriptions of these road sections are provided in the tables below.

Road	Approximate Length (km)	Location
M1	14.3	County border east of Gormanstown to the county border at the River Boyne, west of Drogheda
M2	10.9	County border at Ward Lower to the end of the M2 at Rath
M3	50.1	County border at Clonee to the end of the M3 southwest of Kells
M4	36.7	County border at the Ballycorrion river southeast of Enfield to the county border at the River Blackwater at Martinstown and from the county border at the River Boyne southeast of Clonard to the county border at Kinnegad
N2	12.5	Junction of M3 and N2 at Rath to Balrath Cross; Slane village from junction of N2/N51 to junction N2/L5603
N3	25.1	The end of the M3 southwest of Kells to the county border at Derver.
N51	2.0	The junction with the R163 at Slane Castle Domain to the N51/N2 junction; Navan Round 'o' junction to Rathholdren Road Junction

Table 3-1: Description of national roads eligible for noise mapping

Road	Approximate Length (km)	Location
R125 and R155	11.4	Centre of Ratoath village to west to Nine Mile Stone Rbt. Junction of R155/Meadowbankhill Rd to Blackbull Rbt
R132	7.8	The exit to the M1 at Richardstown to the county border at Stameen
R135	4.1	From Nine Mile Stone Roundabout to the Rath Roundabout
R147	20.5	Adjacent to the M3 between Pace and Roestown Rbt, Dunshaughlin, Loughsallagh Rbt to the county border, and M3 Jctn 6, Philpotstown to the R147/N51 junction in Navan.
R148	12.3	From the county border east of Enfield to the Enfield ring road and from the ring road to the county border west of Enfield. Also, from the county border at Leinster Bridge to the county border at Kinnegad
R154	19	From junction with Castle Street Trim to Merrywell rbt
R161	13.9	Navan town centre at the R147/Circular Road jctn to the Ring Road in Trim.
Metges Road Navan	2.1	From its junction with the R153 to its Junction with the R147
R152	16.5	From its junction with the N2 at Kilmoon Cross to Louth County Boundary
L2228	1.3	From its junction with Millfarm to the Loughsallagh Rbt

Table 3-2: Description of regional/local roads eligible for noise mapping

3.1.2

3.1.3 Description of the General Population

There are several notable population centres in the County which fall within the areas covered by the strategic noise maps are Julianstown, Navan, Ashbourne, Slane, Enfield, Ratoath, Dunboyne, Environs of Drogheda and Clonee.

There are also ribbon settlements along roads classified as major roads for strategic noise mapping. These are more common on regional roads. Larger developments such as motorways and national routes tend to have fewer dwellings in the immediate vicinity due to noise impact mitigation at the planning and route selection stages.

3.2 Review of 2019 Noise Action Plan Implementation

The 2019-2023 Noise Action Plan included a programme to measure progress of planned actions and assess the impact of significant developments and any noise mitigation efforts undertaken.

3.2.1 Significant Developments 2019 - 2023

In the intervening years since the last Noise Action Plan was prepared in 2018/2019, the County has developed against the backdrop of an improving national economy which displayed strong signs of continued growth. Unemployment rates fell to their lowest rates since 2008, consumer confidence improved, and economic forecasts throughout the period were consistently positive. Despite the foregoing positive signs, the economic impact of Brexit, and the sudden and unforeseen impact from the Covid 19 pandemic caused uncertainty. One outcome of the Covid 19 pandemic relevant to this NAP is the increase in numbers of people working for home. This has changed travel patterns and behaviours although the full implications of this are not yet well understood.

The results on the 2022 census yielded an updated picture of the County and how it changed since 2016. The population of Meath has grown by approximately 25,000 residents since 2016 to stand at 220,296 people, representing a +12.9% rise. From a noise perspective the increase in population has obvious consequences for the numbers of people travelling and potentially exposed to noise. Some notable features of the population change that the County has experienced between 2016 and 2022 are as follows:

- In Meath, 32,539 people (aged 15 and over) worked from home at least one day a week in 2022. This represented 32% of the workforce. The national figure was 32%.
- The average age of Meath's population in April 2022 was 36.9 years, compared with 35.2 years in April 2016. Nationally, the average age of the population was 38.8, up from 37.4 in April 2016.
- In 2022, 87% of people in Meath stated that their health was good or very good compared with 90% in 2016. Nationally, 83% of people stated that their health was good/very good, compared to 87% in 2016.
- The number of people aged 65 and over continues to grow. This age group increased by 30% to 27,059 in Meath and by 22% to 776,315 at a national level since 2016.

3.2.2 Implementation of Planned Actions 2019 - 2023

The Meath NAP 2019 - 2023 stated that the Council intended to manage environmental noise in built-up areas by several mitigation methods including traffic management, traffic calming, designation of 30km zones and encouraging more sustainable forms of transport such as walking, cycling and public transport. A summary of some of these activities as follows:

Traffic Management - the council have implemented a variety of traffic management measures across the county aimed at improving safety. One positive consequence of this from a noise perspective is slower traffic and a commensurate reduction in noise. Traffic management measures have been introduced in Kilberry, Batterstown and Kilcloon. In addition, additional traffic calming measures for Julianstown have been granted planning permission. These works benefit Whitecross National School and Moorehall Nursing Home and it is intended to proceed with construction in due course.

Navan 2030 Project – 11 potentially noise sensitive locations were identified in the NAP in Navan. These relate exclusively to schools in the County Town. Navan is the focus of significant investment aimed at improving public transport, cycling and walking. This is being funded largely by the NTA. The Navan 2030 project to create a bus interchange in the centre of Navan has been well advanced over the lifespan of the NAP 2019-2023. New bus stops and a re-vamp of the town bus service delivered as part of the scheme

have led to a surge in annual passenger numbers using the town bus service. In 2023 this number topped 400,000 (up from approximately 35,000 in 2017).

The Navan 2030 project also includes significant pavement and active travel improvements which all have positive noise implications and contribute to increased access to the town centre by these modes of travel. The measures introduced as part of the scheme are of direct relevance to the potential noise sensitive locations at Scoil Mhuire, St Anne's Loreto Primary and St Joseph's Mercy Primary.

Annual Roadworks Programme Significant areas of the road network are repaired and overlain using Stone Mastic Asphalt (SMA) every year as part of the Council's Annual Roadworks Programme. SMA is a 'quiet' noise surface which has benefits for those living next to busy roads in the County. In 2020 alone, the Council resurfaced 1,724m of major roads previously identified as roads which require noise mapping in the county. The relevant schemes were located on the R147 Berrilstown, South of Ross Cross and the R147 in Dunshaughlin. Other examples are of noise reducing measures in the Roadworks Programme are:

- 402m of lower noise reducing surfacing material laid on the N2 at Cushionstown.
- Over 35,000m² of SMA was laid in 2023 in the County. This includes roads in larger settlements such as Dunshaughlin, Navan, Trim and Ratoath.

Slane Bypass – Meath County Council have continued design work on a bypass for Slane village to remove through traffic on the N2 from the historic village centre, including the potential noise sensitive location at St Patrick's National School. The scheme also includes complimentary measures for traffic calming, active travel and works to improve the public realm in the village. An application was made to An Bord Pleanála in 2023 for approval for the bypass scheme.

Safe Routes to School -. In conjunction with the NTA and An Taisce, the Council operates specific schemes targeted at road safety in the vicinity of schools. These sustainable transport measures include the Safe Routes to Schools Programme, providing safer cycling and walking facilities for schools across the country. So far around 10 projects have/are being progressed completed under Round 1 and 2 of the Programme and the associated health and wellbeing benefits for children and parents are already being felt.

In addition, the Council funds small scale traffic calming around a number of schools to slow and regulate traffic. Schools in Gormanston, St Paul's School Navan; Our lady of Mercy Junior School/St Colmcille's BNS Kells; Dangan NS, Summerhill; and S in 2020. SID application made to ABP for local distributor road in Navan (LDR4) which will divert a significant amount of traffic away from noise sensitive location at St Paul's School in Navan.

Work commenced on the Compulsory Purchase Order (CPO) for local distributor road in Navan (LDR1b) which will divert traffic away from noise sensitive locations of Flowerfield NS, St Joseph's and St. Annes. In Ratoath, the Junior school had traffic calming measures installed on the R155 which will help slow traffic in the vicinity of the school.

Active Travel - There has been unprecedented investment in walking and cycling in recent years. Over the course of 2024, total investment nationally by the NTA in walking and cycling infrastructure since 2020 will break the €1bn barrier. Meath County Council's Active Travel team are currently progressing over 30 projects aimed at delivering cycling, walking and public transport initiatives and infrastructure throughout County Meath

In 2023, the Council had 36km of cycle facilities in the pre-planning stage and 15km at construction (this excludes 26km of the Boyne Greenway which is at route option stage and is funded by TII/RRDF). The Council also had 10.3 km of new/improved footpath at design stage and 5.5km at construction.

Major active travel schemes funded by the NTA are being prepared and implemented in Navan, Ashbourne, Dunboyne and Ratoath.

Speed limit Reviews

Approximately 340 estates in the charge of Meath County Council have 30kph speed limits. 20 number housing estates were added to 30 kph bye-law in 2023.

Electric Vehicles

The Council commenced a trial of 3 EV charging stations in Bettystown with a view to better understanding costs and demand associated with operating EV chargers and to inform EV strategy for the County. A rapid 'Faster charger' was also installed in Kennedy Plaza in Navan. The Council is working in collaboration with neighbouring local authorities and ZEVl to develop its strategy for EV charging in the County.

Development Management

The Council continues to operate development control of noise and potential nuisance by implementing policies in the County Development Plan.

These include:

- Requiring Service stations and Fast / food and take-aways to discuss noise nuisance effects of any planning proposals.
- The extractive industry, major solar and land reclamation developments are required to comprehensively address Impact on existing local communities with regard to as part of a pre-application discussion and/or planning application proposals.
- A requirement to manage noise in Noise Zones of airports and airfields.

The consideration of environmental noise at the planning stage of developments will allow for significant improvement in the acoustic quality of existing and future developments by providing planners with greater tools to assess and control the potential noise impact in sensitive areas. The County Development Plan includes noise considerations based on the previous Noise Action Plan. This is considered to be an important step in the ongoing implementation of the Council's Noise Action Plan Policy aimed at protecting the population from the harmful effects of environmental noise.

4 Responsible Authority for Noise Action Planning

The County Council is responsible for the production and implementation of the Noise Action Plan for County Meath. Any communication in relation to the Noise Action Plan should be addressed to:

Name and Contact Details:

Transportation Department (Noise Action Plan)
Meath County Council
Buvinda House
Dublin Road
Navan
Co. Meath
C15 Y291
Ireland

Telephone: +353 (046) 909 7000
Fax: +353 (046) 909 7001
Email: transportation@meathcoco.ie

5 Summary of the Results of Noise Mapping

5.1 CNOSSOS-EU:2020

The European Commission (EC) Directive 2015/996 established common noise assessment methods meeting the requirements of the END. It replaced Annex II of the END now requires that Member States apply the Common Noise Assessment Methods for Europe (CNOSSOS-EU) for the noise modelling of road, rail, aircraft and industrial sources. The use of the CNOSSOS-EU method has been transposed into Irish Law via the European Communities (Environmental Noise) (Amendment) Regulations 2021 (S.I. 663/2021) and has been used to produce the Strategic Noise Maps and to calculate the noise exposure statistics and harmful effects.

5.2 Model Calculation Scenarios

Two result formats have been prepared for the noise indicators specified in the Regulations, Lden and Lnight:

A 10 metres grid format where the model outputs a result every 10 metres in a uniform grid. These results are used to produce the Strategic Noise Maps; and

Façade receiver format - where the model outputs a result at receiver points digitised at the façades of residential, school and hospital buildings. These results are used to calculate the exposure statistics and harmful effects.

5.3 Regulatory Background to Noise Exposure and Harmful Effects

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

The EC Environmental Noise (Amendment) Regulations, 2021, transposes the EC Delegated Directive (EU) 2021/1226 into Irish Law. It sets out the assessment methods for harmful effects, which considers ischaemic heart disease (IHD), high annoyance (HA) and high sleep disturbance (HSD).

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

5.4 Strategic Noise Mapping Figures

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

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

The Regulations do not set out noise limits which are permissible or not permissible in relation to environmental noise, however, do set the noise exposure bands to be reported, which are reflected in the strategic noise maps. In the absence of noise limits, it could be assumed that the closer the calculated

noise level is to the highest noise exposure band set out in the Regulations the more undesirable it may be. Conversely, the closer the calculated noise is to the lowest noise exposure band the more desirable it may be.

The Round 4 strategic noise maps for County Meath, are shown for the County in Appendix B for the two noise indicators specified in the Regulations, Lden and Lnight, respectively. The Round 4 strategic noise mapping is also available online, on a national basis, at the following website: <https://gis.epa.ie/EPAMaps/>.

5.5 Noise Exposure Assessment for County Meath

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

The Round 4 noise exposure statistics for County Meath are presented in Tables 5.1 to 5.6 (rounded to the nearest 100 as required under the regulations). The number of people in tables 5-1 and 5-2 are calculated from a residential property count within each noise band multiplied by a factor of 3.02 which represents the average household size in County Meath according to CSO.

Noise Exposure (dB)	Population exposed
55-59	13,700
60-64	7,000
65-69	2,000
70-74	
>=75	

Table 5-1 Number of people in dwellings exposed to Lden from major roads.

Noise Exposure (dB)	Population exposed
45-49	16,500
50-54	9,600
55-59	2,900
60-64	700
65-69	
70-74	
>=75	

Table 5-2 Number of people in dwellings exposed to Lnight from major roads.

Noise Exposure (dB)	% of County Population Exposed
45-49	
50-54	

55-59	6.2%
60-64	3.2%
65-69	0.9%
70-74	
>=75	

Table 5-3 Percentage of population exposed to Lden from major roads.

Noise Exposure (dB)	% of County Population Exposed
45-49	7.5%
50-54	4.3%
55-59	1.3%
60-64	0.3%
65-69	
70-74	
>=75	

Table 5-4 Percentage of people in dwellings exposed to Lnight from major roads.

Noise Exposure (dB)	Number of Buildings
45-49	
50-54	
55-59	24
60-64	7
65-69	1
70-74	
>=75	

Table 5-5 Number of educational buildings (Preschool, Primary, Post Primary) and hospital buildings (Nursing Homes and Hospitals) exposed to Lden from major roads.

Noise Exposure (dB)	Number of Buildings
45-49	22
50-54	11
55-59	2
60-64	2
65-69	
70-74	
>=75	

Table 5-6 Number of educational buildings and hospital buildings exposed to Lnight from major roads.

5.6 Harmful Effects Assessment for County Meath

The Environmental Noise (Amendment) Regulations, 2021, set out the process to be followed to calculate the extent of population exposure to harmful effects (High Annoyance (HA), High Sleep Disturbance (HSD) and Ischaemic Heart Disease (IHD) of noise, and noise thresholds above which health effects should be calculated and reported in noise action plans. For road traffic noise, the calculations for harmful effects should be undertaken using the relevant formula in respect of the estimated number of people exposed to noise in each noise band Table 5.7 presents these calculated harmful effects from high annoyance (HA), high sleep disturbance (HSD) and ischaemic heart disease (IHD) in the case of traffic-related noise in County Meath from the major roads.

Total number of cases of IHD	2
% of population with IHD	0%
Total number of people HA	3378
% of population HA	1.53%
Total number of people HSD	1088
% of population HSD	0.49%
*Total population for County Meath, 220,800	

Table 5-7 Estimated Number of People Exposed to Harmful Effects from Roads

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

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

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

6 Identification of Areas Subjected to Noise Management Activities

6.1 Description of approach to identify IAs, MIAs and PIAs

The Environmental Noise Regulations require that Meath County Council, in its capacity as Action Planning Authority, addresses “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 sets out the following 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 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; and
3. **Priority Important Areas (PIAs)** – between 5 and 10 Most Important Areas or group of similarly affected Most Important Areas, should be identified, through a prioritisation process, as those which will be evaluated and addressed during the implementation of the NAP.

Identified Important Areas have been used to inform the identification of Most Important Areas (MIAs) and this process was done by external consultants for Local Authorities outside agglomerations. The process of identifying MIAs is set out in the EPA Guidance and is an automated process within GIS software which uses the results of the strategic noise maps assigned to population statistics in areas with exposures greater than the Important Area guide levels.

The assignment of population to the calculated noise levels is set out within Annex II of the END (CNOSSOS-EU), where harmful effects due to noise are statistically assessed at geographically specific locations. The EPA Guidance sets out the process for using the calculated number of people Highly Annoyed to generate a gridded “heatmap” of values which represent (approximately) the number of people 100m². Using the heatmap, the areas of higher concentrations of people highly annoyed (HA) are identified and delineated as a digital polygon. The EPA Guidance sets a density criterion of 15 or more people per 100m² as being the most appropriate for Most Important Areas in main urban areas, with lower criteria of 10 and 7.5 people per 100m² appropriate on the edge of urban or in rural areas.

It is crucial to emphasize that the approach to identifying Most Important Areas 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 Most Important Areas definitive. Instead, they are indicative in identifying areas with a relatively high number of people who may be potentially highly annoyed due to noise.

A summary of the Most Important Areas identified along the major routes using the EPA Guidance density criteria (Highly Annoyed Threshold) of 7.5, 10 and 15 or more people per 100m² is provided in Table 6-1.

Highly Annoyed (HA) Threshold/100m2	No. of MIAs Near Major Roads	No. of MIAs Near Major Rail	No. of People in MIA			
			Total	Highly Annoyed (HA)	Highly Sleep Disturbed (HSD)	Ischaemic Heart Disease (IHD)
7.5	44	0	10862	1574	498	1
10	33	0	6866	1048	334	1
15	15	0	1915	360	117	0

Table 6-1 Most Important Area (MIA) Summary

A total of 44 MIAs have been identified across the county, 33 of the 44 MIAs have 10 or more people per 100m², whereas 15 of the 44 MIAs have 15 or more people per 100m². Ranking of the MIAs was undertaken to determine 5-10 Priority Important Areas, for assessment for noise mitigation measures over the life of the Noise Action Plan.

The EPA Guidance requires consideration be given to the following criteria, where information is available:

- Number of people exposed to noise, and the harmful effects
- Level of noise exposure
- Potential for grouping adjacent Most Important Areas into a larger Priority Important Area
- The main source of transport noise
- Competent body to carry out any proposed mitigation measures
- History of complaints
- Planned road maintenance and resurfacing programme
- Planned speed or traffic calming measures
- Planned nearby developments
- Existing noise reduction measures

To inform the decision on the selection of Priority Important Areas, consistent with the requirements of the EPA Guidance, associated statistical information has been developed for each Most Important Area, including:

- Noise source identifying the Most Important Area, i.e., railways or roads
- Area (m²)
- Total population
- Number of people highly annoyed (HA)
- Number of people highly sleep disturbed (HSD)
- Population increased risk of ischaemic heart disease (IHD)
- Number of dwellings
- Population noise exposure above END threshold values for road traffic noise exposure

in 5 dB bands (L_{den} 55 - 75 dB, L_{night} 50 - 70 dB) (See Chapter 5)

A list of ten Priority Important Areas was provided by external consultant, based on the criteria as outlined above and synopsis in Table 6-2. Figures in Table 6-2 **Error! Reference source not found.** are based on those Most Important Areas with the highest total population, generated using the EPA Guidance density criterion ('HA Threshold') 15/10/7.5 or more people per 100m². In the case of Meath 15 people HA per 100m² applies. It should be noted that any mitigation measures applied to address 15 people HA per 100m² could also positively impact both 10 and 7.5 people HA per 100m² areas.

PIA	Total Population in PIA	Source	Area (m ²)	Number of People			Number of People Above IA Guideline Level			
				HA	HSD	IHD	Road 53dB _{Lden}	Road 45dB _{Lnight}	Railway 54dB _{Lden}	Railway 44dB _{Lnight}
MHC_1	342.25	Road	17700	75.65	24.43	0.09	308.48	304.26	0	0
MHC_2	339.75	Road	26300	60.44	19.82	0.06	339.75	339.75	0	0
MHC_3	184.51	Road	8100	18.67	5.34	0.01	171.48	162.11	0	0
MHC_4	156.85	Road	8100	26.68	9.37	0.03	142.59	142.59	0	0
MHC_5	143.39	Road	10500	34.12	11.35	0.04	143.39	143.39	0	0
MHC_6	112.04	Road	6800	12.59	3.85	0.01	112.04	112.04	0	0
MHC_7	106.84	Road	7500	20.1	6.69	0.02	106.84	106.84	0	0
MHC_8	99.09	Road	8400	17.57	5.89	0.02	99.09	99.09	0	0
MHC_9	90.88	Road	10300	28.84	9.72	0.03	90.88	90.88	0	0
MHC_10	70.45	Road	4200	16.19	5.5	0.02	70.45	70.45	0	0
Total				311	102	0	1585	1571	0	0

Table 6-2 Priority Important Areas

From the 10 PIAs identified in Table 6-2, 5 locations were chosen by Meath County Council to progress to assessment stage of noise mitigation measures over the life of the Noise Action Plan. As MHC_2 is in close proximity to MH_10 the two areas will be combined, therefore a total of 6 PIAs will be delivered. The proposed PIAs have a combined population of 1176, this figure equates to 71% of the total population of all 10 PIAs.

The 5 PIAs are presented in Table 6-2, the areas chosen are based on the highest densities of population with 3 locations identified in Ashbourne (2 under a single PIA due to their proximity), one in Navan, Drogheda South and Clonee. The identified areas are a mix of apartment and terraced residential development, some apartment developments have under unit retail development.

MIA	Approved PIA (2024-28)	Location
MHC_1	PIA_1	Academy Street, Navan
MHC_2	PIA_2	Johnswood Court & Kilderry Hall, Ashbourne
MHC_10		The Ashes, Ashbourne
MHC_3	PIA_3	Millbourne, Ashbourne
MHC_4	PIA_4	Colpe Cross, Drogheda
MHC_5	PIA_5	Ard Cluain, Clonee

Table 6-2 Selected PIAs for Consideration in Noise Action Plan 2025-2028

6.2 Quiet areas in Open Country

Under Section 10(2) of the European Communities (Environmental Noise) Regulation 2018 an action planning authority may, following consultation with the Agency and with the approval of the Minister delimit quiet areas in open country that are undisturbed by noise from traffic, industry or recreational activities.

The nature of the assessed noise under this Noise Action Plan is limited to traffic noise which was undertaken at locations near major noise sources and not at locations which would be undisturbed by them. Noise from industrial or recreational activities are not considered in the assessments under the Noise Action Plan. The results of the strategic noise mapping do not provide a clear acoustic indication of potential locations that could be assigned as quiet areas in open country.

There are areas in County Meath within the coverage of the strategic noise maps where low levels of environmental noise may be seen to be desirable and of public amenity. The procedure outlined for delineating quiet areas requires the preservation of existing noise levels where they are deemed to be good.

The strategic noise maps generated by the TII included several areas, close to major roads, where the predicted environmental noise levels are potentially below the recommended quiet threshold of 57dB LDEN and 45dB LNIGHT. However, it is important to point out that the predicted noise levels are those attributable only to the major road. All of these areas are covered by networks of regional roads connecting to the major primary routes. Traffic on regional roads will have an influence on the noise levels in these areas and the actual levels of environmental noise at these locations is unlikely to be as low as those indicated by the strategic noise maps. Nonetheless, thought should be given to the protection of these areas as they can be seen as being “relatively quiet” with respect to noise emissions from the major roads.

During the implementation of the Noise Action Plan it is proposed to identify locations within the coverage of the strategic noise maps where, if appropriate, the existing noise levels should be preserved. These areas are to offer public amenity and include public open spaces and areas of natural beauty.

The Environmental Noise Regulations define a quiet area in open country as “an area, delimited by an action planning authority following consultation with the Agency and approval by the Minister, that is undisturbed by noise from traffic, industry or recreational activities.”

County Meath is a region of extensive natural beauty. The rural landscape contains several areas of environmental and historical significance including a World Heritage site at Brú na Bóinne.

The Landscape Character Assessment in the CDP outlines several policies and recommendations relating to the protection of the landscape and the natural environment. These policies are general in nature and provide a best practice approach. The aim of both policies and recommendations is to enhance and maintain landscape character within the broader goal of accommodating development in a sustainable manner. This approach ensures that future development is complementary to landscape character.

Areas of natural beauty and visual amenity are enhanced by the sense of tranquillity experienced when there is a lack of noise related to human activity. What constitutes a tranquil area is often a matter of perception. The acoustic amenity of quiet areas and open spaces in the countryside can be as dependent on qualitative factors as on absolute levels of noise. By definition these areas will be outside the coverage of strategic noise maps.

It is recognized that quiet areas may provide other benefits such as amenities, biodiversity and ecology, culture and heritage. Parts of the recently built Greenway between Navan and Kingscourt may be suitable candidates for Quiet Areas along the route which traverses the countryside along the original rail track. Meath County Council will liaise with other agencies to develop potential locations for Quiet Areas over the life of the plan and will do so in consultation with the EPA.

7 Mitigation and Protection Measures

7.1 Overview

The three approaches in the NAP 2024-2028 for reducing exposure of the existing and future populations of County Meath to undesirably high noise levels are 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 the Council will attempt to identify and evaluate measures to reduce the effects of noise exposure.

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

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

A range of possible mitigation measures are available as illustrated in Figure 7-1 below. The selection of the most appropriate one in any given instance requires consideration of the effectiveness and cost over the life-span on the NAP.



Figure 7-1 Road Traffic Noise Management Framework

7.2 Mitigation

7.2.1 Examination of Priority Important Areas

Over the lifetime of the Noise Action Plan the 5 Priority Important Areas shown in Table 6-2 will be examined; this examination will include:

1. Noise monitoring – field measurement and comparison and checking against the levels documented at mapping stage.
2. Noise modelling – using up-to-date data the noise models will be reviewed and refined as necessary
3. Noise Mitigation Measure – a selection of noise mitigation measures will be investigated for each PIA.
4. Cost Benefit Analysis – A CBA will be undertaken on the mitigation measures, considering lifetime construction and maintenance costs and using a selection matrix to guide towards the most suitable measure.

It should be acknowledged that there is currently no dedicated national funding mechanism available for the implementation of measures that target noise mitigation through noise action planning. It is likely that the implementation of measures in PIAs will be delivered as part of proposed or scheduled road improvement works where practicable during the period of the NAP.

7.2.2 Confirmation the Extent of Noise Impact

For each PIA ambient noise monitoring will be undertaken at appropriate locations within the PIA, the type and extent of noise monitoring will be bespoke to the individual PIA considering size and type of PIA and nature of source noise. These results will be used to validate the previous measurement.

The noise models will be reviewed for the PIAs based on the data captures through the field survey work, aspects as follows will included in the assessments:

- Traffic volumes and type of traffic
- Traffic speed
- Road surface type
- Location and height of existing noise barriers, and
- Any other noise mitigations measures present within the PIA.

7.2.3 Active Travel

Active travel schemes, which promote walking, cycling, and other non-motorized forms of transportation, offer several noise reduction benefits:

1. **Reduction in Traffic Noise:** By decreasing the number of motor vehicles on the road, these schemes reduce overall traffic noise, which is a major source of urban noise pollution.
2. **Quieter Streets:** Increased use of bicycles and walking leads to quieter streets, as these modes of transportation are significantly less noisy than cars and buses.
3. **Improved Quality of Life:** Lower noise levels contribute to a more pleasant urban environment, enhancing residents' quality of life and potentially improving public health by reducing stress and noise-related health issues.
4. **Enhanced Community Spaces:** Quieter streets and public spaces encourage social interaction and community activities, creating more vibrant and liveable neighbourhoods.

Overall, active travel schemes help create more peaceful and enjoyable urban environments by reducing noise pollution from traffic.

Meath County Council have established a dedicated Active Travel Office, with funding from the National Transport Authority, and have ambitious plans to transform Meath's urban cycling and walking network. Through this partnership with the NTA the Council is improving and delivering new high-quality, accessible and connected network of cycleways and pedestrian routes particularly in the large urban areas in the County. The continued role out of the Active Travel programme will be an ongoing action of the NAP and part of the Council's long term strategy to manage traffic noise.

7.3 Prevention

7.3.1 Land Use Planning and Management

The Council takes a strategic approach to managing environmental noise within its administrative area. Section 2.4.2 sets out the requirements of the CDP in relation to noise. To avoid locating residential development and other noise sensitive land uses in areas likely to be affected by inappropriate levels of noise, new applications will be assessed in accordance with the CDP requirements. Where there is the likelihood of an adverse noise impact near major roads developers will be required to take account of published noise mapping and undertake an appropriate acoustic design in accordance with best practice and published guidance to ensure residents are not exposed to undesirable noise levels.

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. Where relevant plans to improve the public realm in towns and villages in the county will contain analysis and recommendations in relation to the acoustic environment.

7.3.2 Future Road Network Development

The Councils road objectives are set out in sections 5.8 and 5.9 of the Meath CDP; Map 5.2 and in the written statements for the settlements in Meath. These include such road schemes as:

- N2 Slane Bypass
- N2 Rath – Kilmoon Cross
- N52 Grange – Clontail Scheme
- N3 – N4 Link Road
- Local Distributor Road Network in Navan
- Eastern Distributor Road Dunboyne
- Local Bypasses –of various settlements
- Motorway junction upgrades

The assessment of the impact of noise on new road projects is carried out on a scheme by scheme basis to recognised TII standards and best practice guidance in section 2.3.5. Noise mitigation measures for new roads projects are generally funded through the overall allocation for the road project in question. The Council will ensure that noise mitigation measures identified as part of its road developments will be included in the overall project construction contracts.

7.4 Protection

7.4.1 Exploration of Candidate Quiet Areas

Under Article 3(1) of the Regulations it is a requirement to delimit quiet areas in the open country, this is defined as an area that is “undisturbed by noise from traffic, industry or recreational activities”. As outline in Section 6.2 the data provided under the noise mapping exercise does not allow for a complete assessment of potential Candidate 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 to be low and should therefore be protected from the potential impacts of new developments.

The EPA have carried out research which has identified evidence for direct positive relationships between the presence of green and blue spaces with health indicators including self-reported health, mortality and disability. The EPA Guidance defines ‘green spaces’ in the context of the identification of areas which could be considered a Candidate Quiet Area (a candidate for an application for Quiet Area designation by the Minister).

Candidate Quiet Areas (CQAs) fall in to two categories

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

Absolute CQAs are described by the EPA to now have a representative noise level less than 50 dB LAeq,16hr. Relative CQAs are areas with a noise level which is more than 10 dB lower than the noise exposure experienced by more than 25% of the population living within 1,000 metres.

It is recognized that quiet areas may provide other benefits such as amenities, biodiversity and ecology, culture and heritage. Recent built active travel Greenway infrastructure may be a suitable candidate as a Quiet Area along some of the route which traverses the countryside along the original rail track. Meath County Council will liaise with the Planning Section and other agencies to develop potential locations for Quiet Areas over the life of the plan and will do so in consultation with the EPA. A consultation process will then be undertaken on any appropriate potential Quiet Areas prior to submission for approval by the Minister.

8 Implementation Plan

8.1 Roles and Responsibilities

Meath County Council is the designated Action Planning Authority for this Noise Action Plan and will oversee the implementation of the plan.

The implementation of the Planning and licensing regulations is a matter for the appropriate statutory body including Meath County Council, EPA and An Bord Pleanála.

TII is the key external stakeholder during the implementation of this Action Plan. Review of the strategic noise maps will be carried out in consultation with TII and the EPA. TII also allocates and administers funding for the construction, maintenance and improvement of national roads. Non- national roads are solely the responsibility of the local authority and TII is not responsible for their upkeep.

8.2 Targets and Objectives

The Action Plans drawn up for Round 4 over the next 4 years, and beyond to subsequent rounds, will ensure that appropriate mitigation measures are implemented to prevent and reduce environmental noise where necessary from major road sources.

8.3 Programme of Works

2025	<ul style="list-style-type: none">• Undertake site visits and visual assessments of 5 PIA locations• Prepare tender documents for Noise Consultants• Procure and appoint Noise Consultants• Commence noise monitoring and model validation of the 5 PIA locations• Update traffic data at the 5 PIA locations• Provide NAP annual report to the EPA• Deliver Active Travel Programme• Deliver low noise road surfaces through roadworks programme
2026	<ul style="list-style-type: none">• Undertake an assessment of potential noise mitigating measures for the 5 PIAs locations• Prepare Cost Benefit Analysis of identified potential mitigation measures.• Identify budget streams• Provide NAP annual report to the EPA• Deliver Active Travel Programme• Deliver low noise road surfaces through roadworks programme
2027	<ul style="list-style-type: none">• Agree works package with relevant authorities, including time frame from implementation and evaluation.• Consult with EPA on the process for delimiting Quiet Areas• Undertake additional noise monitoring to obtain additional data for use in potential Quiet Areas• Identify Candidate Quiet Areas• Public consultation of Candidate Quiet Areas and submit proposal to the EPA and Minister

	<ul style="list-style-type: none"> • Provide NAP annual report to the EPA • Deliver Active Travel Programme • Deliver low noise road surfaces through roadworks programme
2028	<ul style="list-style-type: none"> • Provide NAP annual report to the EPA • Undertake end of programme review • Participate in R5 NAP review • Deliver Active Travel Programme • Deliver low noise road surfaces through roadworks programme

In addition to the above, and on an ongoing basis over the life of the NAP and in the long-term, the Council will also:

- Use the development management process to ensure new developments are designed in accordance with best practice and published guidance to ensure residents are not exposed to undesirable noise levels.
- Liaise and collaborate with a range of key stakeholders to address noise-related issues to ensure the effective management of noise from related infrastructure.
- Review and investigate general neighbourhood noise complaints as per section 2.3.2.
- Collaborate with relevant internal and third party organisations to support the implementation of plans and policies including updates to CDP, Local Transport Plans and Climate Action Plan.
- Support the implementation of new public realm and greenway and where appropriate to provide suitable acoustic environments for citizens health and well-being.

8.4 Estimate of Reduction in Number of People Affected

Tables 5-1 and 5-2 show population estimates of 22,700 and 29,700 respectively exposed to noise levels between 55db to 75db during the day and 50db to 70db at night. Table 6-2 shows the numbers of people in the 10 PIAs above the Guideline Levels of 53dbLDEN and 45dbLNIGHT as 1585 and 1571 respectively. In the six selected PIAs the equivalent figures are 1176 and 1163, of which 232 and 76 people respectively experience high annoyance and high sleep disturbance. Over the life of the plan the Council estimates that once work is carried out in the PIAs the numbers experiencing HA and HSD will fall by 50%. It is further estimated that other works in the Roadworks programme and Active Travel Programme over the life of the NAP will positively affect 5-10% of the numbers of people exposed to noise levels between 55db to 75db during the day and 50db to 70db at night in the County.

8.5 Evaluation and Review

A review of this Noise Action Plan will be carried out by Meath County Council to assess progress against the programme of works. An interim summary report will be prepared annually. This report will highlight progress in implementation of action plan measures and will also identify areas where corrective action is required or where the proposed measures must be modified for reasons unforeseen at present.

There are a number of risk factors associated with the delivery of this Noise Action Plan, particularly financial risks. Some critical elements of the Action Plan are outside the control of Meath County Council and will require the approval of other statutory bodies. Also, the financial resources required to deliver the programme has yet to be determined and the delivery of the noise action plan will be contingent on adequate funding being available. In view of these uncertainties, it is important that the programme is subject to an ongoing review so as to alert all relevant parties to any change in circumstances.

In 2028 the Council will carry out a review of the program of works implemented under this action plan. Progress and results will be evaluated using information gathered through local assessment of environmental noise exposure. This will include “before and after” evaluations of any noise mitigation

measures. A review of new noise maps will also be carried out by TII, giving an indication of the change in environmental noise levels and the numbers of people exposed.

9 Public Consultation

9.1 Details of Public Consultation

The Draft County Meath NAP 2024-2028 was made available for public consultation from 19th August 2024 until 13th September 2024. Notice of the public consultation was advertised in the Meath Chronicle and Drogheda Independent. Hard copies of the plan were placed on display at:

- Meath County Council, Headquarters, Buvinda House, Dublin Road, Navan, C15 Y291.
- Laytown/Bettystown Municipal District, Main Street, Duleek, A92 CR33.
- Trim Municipal District, Mornington House, Summerhill Road, Trim, C15 P2HE.
- Kells Municipal District, Headfort Place, Kells, A82 W2R3.
- Ashbourne Municipal District, Ashbourne Library, Killelland Street, Ashbourne, A84 NY73.

The draft NAP was also available for inspection on the Meath County Council website at:

<https://www.meath.ie/council/council-services/roadsand-travel/noise-action-plan>

and on the Council's consultation portal at <https://consult.meath.ie>

The Plan was also made available for purchase by any person(s) on payment of a fee of € 30 at the above-mentioned offices.

The public were able to make submissions on the draft NAP via Meath County Council's consultation portal or in writing or by e-mail to the following address

Transportation Department (Noise Action Plan)
Meath County Council
Buvinda House
Dublin Road
Navan
Co. Meath
C15 Y291
Ireland
Email: transportation@meathcoco.ie

The designated statutory authorities for Strategic Environmental Assessments were notified of the draft Plan and environmental reports as well as other relevant stakeholders including:

- EPA
- Department of Environment, Climate and Communications
- Environmental Co-ordination Unit - Department of Agriculture, Food and the Marine

NPWS - Development Applications Unit

9.2 Submissions

A total of 61 submissions were received. 56 of these related to airport and aircraft noise emanating from Dublin Airport. 4 related to road traffic noise and the remaining submission was from the EPA.

9.2.1 Themes and Responses

9.2.1.1 Aircraft and Airport Noise

Issue:- The vast majority of the submissions received related to aviation and aircraft noise emanating from Dublin Airport. There were 56 of these in total and 44 of these followed the same or similar format (some with additions and customisation to the particular individual's experience). The broad themes raised in these submissions were as follows:

- Since third runway opened there has been an exponential increase in noise in Ashbourne, Ratoath and surrounding areas.
- The operation of flights at Dublin Airport contravene current planning permissions. Flight paths do not correspond to planning conditions or commitments that have been given to residents by the DAA.
- As a result of bullet point 2 above, the provisions in the Meath County Development Plan in relation to airport noise zones do not reflect current operations at the airport. These need to be reviewed and amended.
- The noise action plan should take account of the impacts of future expansion on Dublin Airport Meath to avoid future developments in areas likely to experience high noise levels without appropriate mitigation.
- There is a need to provide and retrofit adequate noise mitigation measures for residents in Meath due to aircraft noise and the operations at Dublin Airport, particularly in light of points 1,2 & 3 above.
- General concern regarding disturbance, annoyance and associated health impacts of aviation noise on Meath residents and the growing need to take measures to protect their health and well-being.
- There are no opportunities in East Meath for Quiet Areas due to the presence of Dublin Airport.
- Meath Noise Action Plan should take account of the cumulative effects of noise from all sources including those from the operations at Dublin Airport

Response:- Meath County Council is not the relevant Action Planning Authority in respect of Dublin Airport and these submissions are not relevant to the Meath County Council Noise Action Plan. No changes on foot of these submissions is proposed. Fingal County Council (FCC) is the designated authority for making a noise action plan for Dublin Airport. It is also the competent authority (through the functions of ANCA) for the purposes of aircraft noise regulation at Dublin Airport through the Aircraft Noise (Dublin Airport) Regulation Act 2019. Meath County Council note that a draft Noise Action Plan has been prepared by FCC that details the regulatory framework and processes for managing aircraft noise at Dublin Airport. We further note that FCC put their Noise Action Plan out for public consultation, with the deadline for submissions being 15th October 2024. MCC made a submission to FCC highlighting *inter alia* the general concerns that have been raised in the above submissions.

Issue:- The DAA made a submission which provides context on plans, policies and planning applications that shape (or have potential to shape) the interaction of Dublin Airport with the noise environment in County Meath. The DAA stated that the spirit of policies in Meath CDP fully aligns with the principles of the 'Balanced Approach'. DAA suggest the Meath NAP should 1. Acknowledge that Maps 5.4.1 and 5.4.2 in the CDP may have to be updated to take account of any final ABP Regulatory decision on the NRRRA application. 2. Provide flexibility in the NAP to reflect the potential for change. Noise band C has potential

to grow and MCC should consider use of forecast contours that maximise the extent of the noise contour within the period in the NAP. 3. The development and opening of runway 10L-28R in August 2022 is a significant development affecting the noise environment within County Meath. The DAA submission also re-iterates a commitment to 'buy-out' schemes and notes it proposes to hold an airport safeguarding information day.

Response:- MCC notes the contents of the DAA submission. MCC consider that the County Development Plan is the appropriate document to reflect Meath County Council's development control policies, objectives and mapping. Therefore, no changes are proposed to the draft NAP on foot of this submission.

9.2.1.2 Road Issues

Four of the submissions received related to roads issues. These are summarised and responded to as follows:

Issue:- Noise effects of Ramps installed in Summerhill on the R158 at Dangan School.

Response:- This is an ongoing local issue which has previously been raised by residents. Further traffic management is proposed by the Council at the location in question but the R158 is not included in the strategic noise mapping for roads in the NAP. Therefore, no change to the draft NAP is proposed on foot of this submission.

Issue:- Adequate steps were not taken to address noise that comes from the N3. Construction of R147 causes significant noise. Location of toll relative to M3 parkway leads to toll avoidance and additional traffic on the R147 at their property. R147 being used as layby trucks unloading at night generate considerable noise.

Response:- The M3 motorway was granted approval for planning by An Bord Pleanála in August 2003. A full noise assessment was carried out and included in the Environmental Impact Statement. This looked at future year noise predictions and noise mitigation was provided based on future year projections during the construction of the motorway. Strategic Noise Mapping has been undertaken for the M3 motorway has been undertaken and the draft NAP captures the effects of noise from the motorway and takes account of them. No change to the draft NAP is therefore proposed on foot of this submission.

Issue:- 2 submissions questioned the omission of the R132 between Richardstown Road and Fingal Border from the strategic noise maps in the draft NAP. The submissions also question why Gormonston Woods Nursing Home and Nua Health Care Facility are not mentioned in the plan? The submissions highlighted that motorway and roadside acoustic noise barriers are essential for sensitive areas of villages and towns adjacent to motorways and busy regional roads. It is suggested that areas around Gormonston should be included in the plan for action and that the NAP should acknowledge impact of aviation activity from Dublin Airport and Aerodrome at Gormonston. The submission also raised the issue of deficiencies in applications for offshore windfarm and that this should be addressed in NAP. Suggests 'Quiet Area' Designation for Gormanston Beach.

Response:- Traffic counts taken between 11/9/2023 to 18/9/2023 show that this section of the R132 is below the 3 million vehicle passages per year threshold requiring the production of strategic noise maps. The M1 motorway is included in the strategic noise mapping that informs the draft NAP. Aircraft Noise from Dublin Airport, the Aerodrome at Gormonston and Windfarms are not relevant to this Noise Action Plan. The suggestion of Gormonston Beach as a designated Quiet Area is noted, and the draft NAP sets out the Council's approach to designating these over the life of the plan. No change to the draft NAP is proposed on foot of this submission.

Appendix A - Glossary of Terms

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

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

L_{day}	The A-weighted long term average sound level as defined in ISO1996-2: 2007, determined over all the day periods over a long-term period (e.g. a year).
L_{evening}	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).
L_{night}	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).
NAP	Noise Action Plan.
NPO	National Policy Objective in the National Development Plan.
NRA	National Roads Authority.
NPF	National Planning Framework
NTA	National Transport Authority.
PCQA	Potential Candidate Quiet Area.
TII	Transport Infrastructure Ireland.

Appendix B - Strategic Noise Maps

Appendix C – PIA Maps
