

Industry

Noise Action Plan

Round 3

Environmental Noise Regulations
(Northern Ireland) 2006

[] 2018

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Summary

Annex V of the Environmental Noise Directive requires that Action Plans must include the detail under the various headings below. This information has been summarised from the main body of the Plan for the purpose of complying with the Environmental Noise Regulations (Northern Ireland) 2006 ('the Regulations') in order to assist with EU reporting requirements.

A description of the agglomerations, the major roads, major railways or major airports and other noise sources taken into account.

The Belfast Agglomeration comprises the urban areas of Belfast, Newtownabbey, Carrickfergus, Lisburn, Holywood, Dundonald, Bangor, Carryduff and a small number of small urbanised areas in North Down. The Agglomeration extentd to 209km² and generally forms a continuous area with the exception of the urban areas around Bangor, Carrickfergus and Carryduff. Much of the Belfast agglomeration is in a valley, surrounded by high ground to the West, North and East.

With regard to industrial noise, 130 industrial sites were mapped in the Round 3 mapping exercise, compared to 104 in Round 1 and 111 in Round 2. 108 of these sites were located within the agglomeration and 22 within a 1km buffer of the agglomeration. This is the same approach used in Round 2 mapping.

A total of 65 of these 130 sites are governed by the Pollution Prevention and Control (PPC) regime, 62 were located in the port/harbour and 3 were other waste sites. Details of all Part A and B industrial activities are listed in Appendix 2.

The authority responsible.

The Regulations state that the Competent Authority for drawing up Action Plans for industry is the Department of the Environment, now the Department for Agriculture, Environment and Rural Affairs (DAERA). The Northern Ireland Environment Agency (NIEA) has responsibility for the control of industrial noise from PPC Part A installations and as such this Action Plan has been drafted in conjunction with NIEA as it will be responsible for implementation of the plan for those sites.

Relevant contacts within both organisations are:

Amy Holmes
Air and Environmental Quality
Regulatory and Natural Resources Policy Division
Department of Agriculture, Environment and Rural Affairs
2nd Floor, Klondyke Building
Cromac Street
Gasworks Business Park
Belfast
BT7 2JA

Tel: 028 90 569543
Email: amy.holmes@daera-ni.gov.uk

Keith Bradley 028 90 569285
Industrial Pollution and Radiochemical Inspectorate
Klondyke Building

Cromac Street
Gasworks Business Park
Belfast
BT7 2JA

Tel: 028 90 569285
Email: keith.bradley@daera-ni.gov.uk

The legal context

The Environmental Noise Directive is implemented in Northern Ireland by the Environmental Noise (Northern Ireland) Regulations 2006 (the Regulations) which outline a number of stages to manage and, where necessary, improve environmental noise. The Department of the Environment (now DAERA) issued Technical Guidance for Noise Mapping and Action Planning for the road, rail and airport Competent Authorities in 2013. This Action Plan will follow the procedures set out in that guidance and will be implemented by DAERA and the NIEA.

Any limit values in place in accordance with Article 5

Currently there are no noise limit values set under the Environmental Noise Directive (END) for the UK. Nor do the Regulations set any limit values.

A summary of the results of the noise mapping

The results of the analysis for major industrial activities within the Belfast Metropolitan Area are set out in Table 3. It shows the area within each noise contour band inside the Belfast Agglomeration and the number of dwellings and population within these dwellings.

An evaluation of the estimated number of people exposed to different noise categories in Round 3.

Total **area** exposed to noise categories within the Belfast Agglomeration from industrial sources:

L _{den}	50 ≥75 dB = 14.8km ²
L _{night}	45 ≥70 dB = 13.5km ²
L _{Aeq, 16hr}	50 ≥75 dB = 9.8km ²

Total **number of dwellings** exposed to noise categories within the Belfast Agglomeration from industrial sources:

L _{den}	50 ≥75 dB = 1592
L _{night}	45 ≥70 dB = 873
L _{Aeq, 16hr}	50 ≥75 dB = 100

Total **population** living within dwellings exposed to noise categories within the Belfast Agglomeration from industrial sources:

L _{den}	50 ≥75 dB = 4426
L _{night}	45 ≥70 dB = 2728
L _{Aeq, 16hr}	50 ≥75 dB = 246

Identification of potential problems and situations that may need to be improved.

DAERA, in conjunction with the other Competent Authorities, has identified, through the Northern Ireland Environmental Noise Directive Steering Group (NIENDSG), an appropriate methodology for the identification of action planning priorities. This methodology identifies 'Important Areas' and following further investigation, such areas may be considered Candidate Noise Management Areas (CNMA), prior to formal designation as Noise Management Areas.

The methodology minimises any uncertainty and ensures that the CNMAs selected are relevant, thereby enabling the most appropriate and cost-effective action to be determined.

A record of the public consultations organised in accordance with Article 8(7).

Following a review of the Round 3 Noise Maps a draft Industry Noise Action Plan was issued for an 8 week formal public consultation on 10 September 2018. The consultation closed on 5 November 2018. Given the limited number of individuals and dwellings affected by industrial noise within the Belfast Agglomeration it was not deemed necessary to hold seminars or events to involve the wider community.

As part of the consultation, DAERA/NIEA sought comments from:

- Other relevant government departments;
- Department for Infrastructure;
- Other Competent Authorities;
- Local and regional authorities;
- Local and national pressure groups;
- NGOs;
- Relevant professional bodies; and
- Local citizen groups.

Any noise-reduction measures already in force and any projects in preparation.

In Northern Ireland, noise from Part A processes is controlled through The Pollution Prevention and Control (Industrial Emissions) Regulations (Northern Ireland) 2013 and noise from part B and C processes is subjected to the statutory nuisance regime, which is enforced by district councils. It is generally accepted in the UK that the impact of noise from industrial installations is adequately controlled under existing regulatory controls. This appears to be true of Northern Ireland as well, since industrial noise complaints accounted for only 2.32% of noise complaints across all of Northern Ireland in 2016/17.

Noise from Part A PPC installations within the Belfast agglomeration is satisfactorily managed using the regulatory framework already in place to control noise (i.e. The Pollution Prevention and Control (Industrial Emissions) Regulations (Northern Ireland) 2013).

Actions which the Competent Authorities intend to take in the next five years, including any measures to preserve quiet areas.

The action planning process includes five key stages:

1. Analysis of the strategic noise maps;
 2. Identification and prioritisation of CNMAs and Candidate Quiet Areas;
 3. Confirmation of NMAs and Quiet Areas;
 4. Review of existing measures and consideration of potentially new mitigation measures;
- and

5. Evaluation of existing UK and Northern Ireland Policies, Plans and Programmes.

Based on the results of the noise maps, DAERA identified where the top 1% of the population that are most affected by the highest levels of industrial noise are located (Important Areas). These areas were investigated to identify if, or to what extent further action needed taking. The Department/NIEA also considered the location of the Quiet Areas designated pursuant to the END.

Long-term strategy.

Future Action Plans will be drafted to reflect ongoing research in noise both in terms of the health impacts of exposure and also in terms of technological advances in noise mitigation. Action Plans will also be updated, if necessary, following any major development which affects the noise situation or the designation of further Quiet Areas within the Agglomeration.

DAERA will continue to update relevant websites relating to industry and noise and ensure that information is made available to the public. It will also consider its system of data collection in advance of Round 4 noise mapping and will continue engagement with international bodies such as Eionet on environmental noise issues and with Defra and the Devolved Administrations on a variety of projects and initiatives.

Financial information (if available): budgets, cost-effectiveness assessment, cost-benefit assessment.

DAERA has in place a charging scheme which ensures that, as far as practicable, fees and charges payable for permits under the Pollution Prevention and Control (Industrial Emissions) Regulations (NI) 2013 are sufficient to cover the costs of the Chief Inspector and district councils in exercising their functions under the Regulations. The overall aim of the charging schemes is to provide full cost recovery for regulation of prescribed installations in keeping with the 'polluter pays' principle.

Provisions envisaged for evaluating the implementation and results of the Action Plan.

DAERA, in conjunction with the NIENDSG, has agreed appropriate noise indicators for each noise source and developed a methodology for the identification of action planning priorities. This methodology is set out in Noise Mapping and Action Planning Technical Guidance which was issued by the Department of the Environment in February 2013.

Consideration will be given to the form in which the NIENDSG will continue in order to facilitate ongoing planning work, including identification of Noise Management Areas, implementation of actions, and the development of future plans following the required five-yearly reviews of noise maps.

Estimates in terms of the reduction of the number of people affected (annoyed, sleep, disturbed, or other).

Population analysis for industrial activities within the Belfast agglomeration show that no one experiences noise in the top three noise categories (more than or equal to 75 dBL_{aeq}16hr, 70-74 dBL_{aeq}16hr and 65-69 dBL_{aeq}16hr). Only 13 people (7 properties) experience noise of 60-64 dBL_{aeq}16hr.

These results are a notable improvement on Round 2 results. A brief comparison of the Round 2 and Round 3 population exposure results for Laeq16hr is included below.

Noise indicator and level	Number of people in Round 2	Number of people in Round 3
60-64 dBLaeq16hr	160	13
65-69 dBLaeq16hr	7	0
70-74 dBLaeq16hr	0	0
75 dBLaeq16hr	0	0

1. Introduction

1.1. Purpose

- 1.1.1. The purpose of this Industry Noise Action Plan is to describe how DAERA proposes to deliver its obligations under the Environmental Noise Directive for industrial noise in Northern Ireland. This Action Plan deals with noise from industrial activities within the Belfast Agglomeration¹.
- 1.1.2. NIEA is the agency within DAERA with responsibility for the management of industrial noise emissions from PPC Part A installations and shall undertake the actions outlined in this Action Plans for those types of installations. The Department will also make recommendations for action and update the Plan as required throughout its lifetime.
- 1.1.3. There are Competent Authorities for each noise source covered by the END. The Competent Authorities are DAERA (including NIEA), Department for Infrastructure, Northern Ireland Transport Holding Company and airport operators.
- 1.1.4. This is one of a set of five Action Plans, namely:
 - The Roads Noise Action Plan;
 - The Railways Noise Action Plan;
 - The Industrial Noise Action Plan;
 - The George Best Belfast City Airport Noise Action Plan; and
 - The Belfast International Airport Noise Action Plan.

1.2. Requirements of noise action planning

- 1.2.1. The European Parliament and Council Directive for Assessment and Management of Environmental Noise 2002/49/EC, more commonly referred to as the Environmental Noise Directive (END), was published in the Official Journal of the European Union in July 2002. The Directive deals with noise from roads, rail, air traffic, and from agglomerations.
- 1.2.2. The aim of the Directive is to define a common approach intended to avoid, prevent or reduce on a prioritised basis the harmful effects, including annoyance, due to exposure to environmental noise. The three main objectives of END are:
 - To determine exposure to environmental noise through noise mapping;
 - To ensure information on environmental noise and its effects is made available to the public; and
 - To adopt Action Plans based upon the mapping results, to prevent and reduce environmental noise where necessary, where exposure levels can induce harmful effects on human health and to preserve environmental noise quality where it is good.
- 1.2.3. The Environmental Noise Regulations (Northern Ireland) 2006 (the Regulations) came into force on 20th October 2006 and apply to environmental noise levels, in particular in built-up areas, public parks or other quiet areas in agglomerations, near schools, hospitals and other noise-sensitive buildings and areas. The Regulations apply to noise from road, railway and airport sources, as well as industrial noise. The Regulations do not apply to noise that is caused by the person exposed to the noise, domestic activities, noise created by neighbours, noise at workplaces, or noise inside means of transport or due to military activities in military areas.
- 1.2.4. Annex V of the Directive requires that Action Plans must include the detail in Table 1 below. Their location in this Plan is indicated.

¹ Major Continuous Urban Area having a population in excess of 100,00 persons as set out within Regulation No. 3 of The Environmental Noise Regulations (Northern Ireland) 2006.

Table 1 – Annex V Minimum Requirements for Action Plan from Directive r

No	Description	Section in document
1	A description of the agglomerations, major roads, major railways or major airports and other noise sources taken into account.	Section 1.1 and 3.2
2	The authority responsible.	Section 2.1
3	The legal context.	Section 2.2
4	Any limit values in place in accordance with Article 5.	Section 2.3
5	A summary of the results of the noise mapping.	Section 3.4
6	An evaluation of the estimated number of people exposed to noise.	Section 3.4
7	Identification of potential problems and situations that may need to be improved.	Section 4.1
8	A record of the public consultations organised in accordance with Article 8(7).	Summary
9	Any noise-reduction measures already in force and any projects in preparation.	Section 4.2
10	Actions which the Competent Authorities intend to take in the next five years, including any measures to preserve quiet areas.	Section 4.3
11	Long-term strategy.	Section 4.4
12	Financial information (if available): budgets, cost-effectiveness assessment, cost-benefit assessment.	Section 4.5
13	Provisions envisaged for evaluating the implementation and the results of the Action Plan.	Section 4.6
14	Estimates in terms of the reduction of the number of people affected (annoyed, sleep, disturbed, or other).	Section 4.7

1.3 Current Status

1.3.1 Under the Regulations a number of ‘rounds’ of noise mapping and action planning are outlined to manage and, where necessary, improve environmental noise. Table 2 outlines the timings for these rounds.

Table 2 – Environmental Noise Regulation Progress

Round	Detail	Status
1	Produce Round 1 strategic noise maps for major roads, rail, airports, and agglomerations	Completed
	Competent Authorities to draw up Round 1 Action Plans to manage noise	Completed
2	Produce Round 2 of strategic noise maps for major roads, rail, airports, and agglomerations	Completed
	Competent Authorities to draw up Round 2 Action Plans to manage noise	Completed
3	Produce Round 3 strategic noise maps for major roads, rail,	Completed

airports, and agglomerations	
Competent Authorities to draw up Round 3 Action Plans to manage noise from industry	Ongoing

1.3.2 Round 1 Action Plans were approved/adopted by the Minister in spring and early summer 2010 and Round 2 Action Plans in July 2013 and January 2014. Current noise maps and Action Plans are available on the DAERA website at <https://www.daera-ni.gov.uk/articles/noise#toc-1>

Following each round, a summary of the Action Plan was submitted to the European Commission.

1.4 Technical Guidance

1.4.1 In 2013, the Department for the Environment published Technical Guidance on Noise Mapping and Action Planning which it had developed in conjunction with the other Competent Authorities (in the form of the NIENDSG). The Guidance assists each Competent Authority in analysing their noise maps and drafting their Action Plans, including the identification of priority areas. It also assists the Competent Authorities in implementing their Action Plans over the five year period of the plan.

1.5 Common Assessment Method

1.5.1 The Joint Research centre (JRC) of the European Commission has produced a Common Noise Assessment Method in Europe (CNOSSOS – EU) which has been set out in the Annex of Commission Directive (EU) 2015/996 of 19 May 2015. Annex II of END is to be replaced by this Annex and Member States are to have transposed this Annex by 31 December 2018. The CNOSSOS – EU methodology will apply for Round 4 mapping onwards.

2. Policy Context

2.1. The authority responsible

2.1.1. The Regulations set out various responsibilities associated with the production of Noise Action Plans. Various Competent Authorities are charged with the responsibility of producing Noise Action Plans, and DAERA is the designated Authority overseeing the implementation of each Action Plan.

2.1.2. The Competent Authorities are:

- the Department for Infrastructure for major roads across Northern Ireland and all roads within the agglomerations;
- the Northern Ireland Transport Holding Company (Translink) for major railways and railways within the agglomerations;
- the relevant airport operator for major airports and other airports that were mapped; and
- DAERA/NIEA for industrial sources within the agglomerations.

2.1.3. The NIENDSG was set up by DOE in 2005 to provide input to the development of the strategic noise maps for Northern Ireland and subsequent Action Plans. This group is made up of representatives from each Competent Authority.

2.2. The legal context

- 2.2.1. Directive 2002/49/EC relates to the assessment and management of environmental noise and is referred to as the Environmental Noise Directive or END². The END requires Member States to produce strategic noise maps for the main sources of environmental noise, i.e major roads, major railways and major airports. The Directive also requires strategic noise maps to be produced for agglomerations with a population of more than 250,000 persons and a certain population density in 2007, and those with a population of more than 100,000 persons and a certain population density in 2012 and subsequent Rounds³. Action Plans must be produced based on the results of the noise mapping. The Regulations require the Competent Authorities to produce an Action Plan in 2008, 2013 and every five years thereafter, based on the results of the noise mapping. Action Plans must also be reviewed whenever a major development⁴ occurs affecting the existing noise situation. Round 1 noise maps⁵ were produced in December 2007, Round 2 in 2013 and Round 3 in 2017.
- 2.2.2. The Regulations do not apply to noise caused by the person exposed to the noise, noise from domestic activities, noise created by neighbours, noise at work places, noise inside means of transport or due to military activities in military areas. They apply solely to environmental noise to which humans are exposed, in particular in built-up areas, in public parks or other quiet areas in an agglomeration, near schools, hospitals and other noise-sensitive buildings. Noise from domestic activities or noise created by neighbours or construction sites can be dealt with under the Clean Neighbourhoods and Environment Act (Northern Ireland) 2011. Noise at work is governed by the Control of Noise at Work Regulations (Northern Ireland) 2006.
- 2.2.3. In Northern Ireland, Part A industrial processes are controlled through The Pollution Prevention and Control (Industrial Emissions) Regulations (Northern Ireland) 2013. Part B and C processes are subject to the statutory nuisance regime which is enforced by district councils.
- 2.2.4. Noise from Part A processes is controlled by the Northern Ireland Environment Agency through imposing conditions on permits. As part of its role as a regulator, the NIEA has produced guidance⁶ for use in controlling industrial noise, which is used when considering applications for Environmental Permits and inspections of installations. Generally speaking noise from Part A PPC installations within the Belfast agglomeration is satisfactorily managed using the regulatory framework already in place to control noise (i.e. The Pollution Prevention and Control (Industrial Emissions) Regulations (Northern Ireland) 2013).
- 2.2.5. In addition to the PPC regime, if a proposed development is likely to be a source of noise, its location and measures regarding the level or timing of noise emissions may be controlled through the planning system, as noise is a “material consideration” in the determination of individual planning applications. This means that, where appropriate, noise implications will be fully taken into account by the Planning Authority when considering development proposals.
- 2.2.6. When making recommendations as part of the action planning process, the existing legislative and guidance framework in Northern Ireland must be considered to establish potential synergies or conflicts. The current policy and legislative framework

² For further information see

http://eur-lex.europa.eu/pri/en/oj/dat/2002/l_189/l_18920020718en00120025.pdf

³ The population density, specified within the NI Regulations, is equal to or greater than 500 people per km².

⁴ The term ‘major development’ is not defined in the Regulations or the END

⁵ Noise maps can be viewed on the Departments website at www.noiseni.co.uk

⁶ Horizontal Guidance Note for Noise - IPPC H3 Part 1 and 2. Available at <http://www.doeni.gov.uk/niea/pollution-home/ippc/horizontal-guidance.htm>

for controlling environmental noise in Northern Ireland is detailed in Appendix 1. Relevant plans, policies and strategies may include (but are not limited to):

- Regional Development Strategy 2025;
- Development Plans e.g. BMAP;
- Planning Policy Statements and Planning Supplementary Guidance;
- A Planning Strategy for Rural Northern Ireland;
- Ensuring a Sustainable Transport Future : A New Approach to Regional Transportation;
- Belfast Metropolitan Transport Plan 2015;
- Sustainable Development objectives, plans and policies;
- Regional Strategic Transport Network Transport Plan 2015;
- Sub-Regional Transport Plan 2015;
- Air Quality Regulations and Action Plans;
- Renewable Energy Action Plans;
- Local Authority Open Spaces policies;
- Mosaic GI Strategy for Northern Ireland;
- Emerging climate change initiatives;
- Spatial Data Strategy;
- Urban Regeneration Strategies;
- Planning Agreements;
- Noise Abatement Policies;
- Environmental Impact Assessment Regulations;
- Strategic Environmental Assessment Regulations; and
- Noise Insulation Regulations.

2.3. Any limit values in place

- 2.3.1. Currently there are no noise limit values set under END or the Regulations. Although there are no immediate plans to introduce limit values, Defra and the Devolved Administrations will keep the option under review during the implementation phase of the early rounds of action planning.

Characteristics

3.1. Scope of the Action Plans

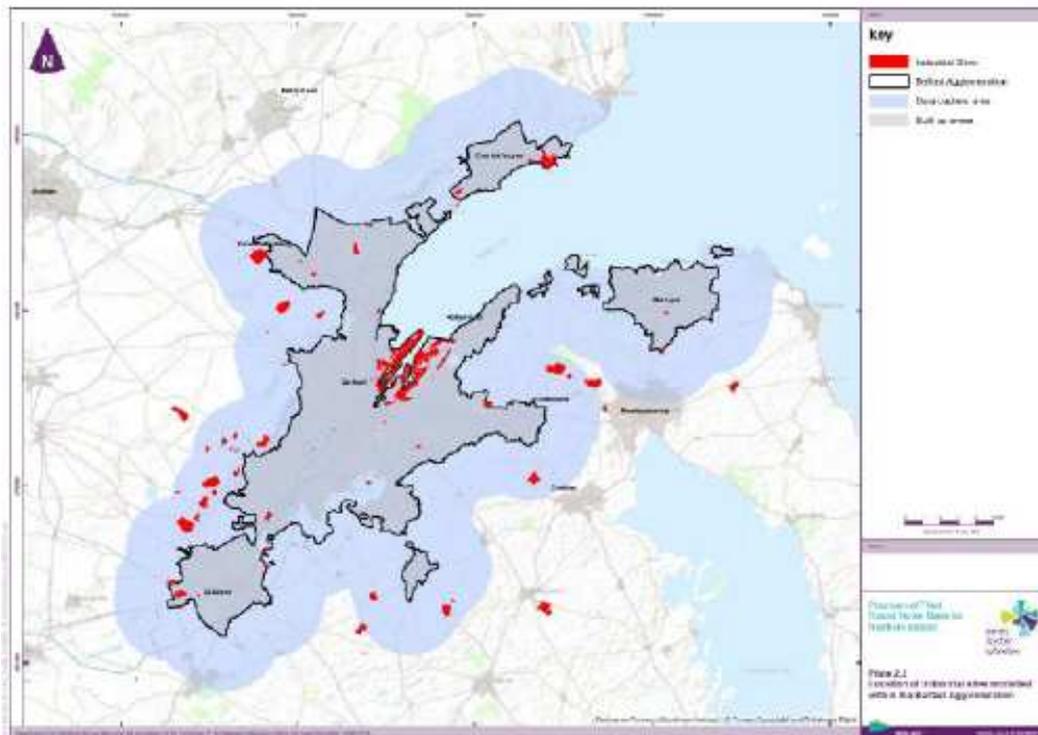
- 3.1.1. END requires that Action Plans be designed to manage noise issues and effects from industrial sources located within the Agglomeration.

3.2. Description of industrial activities within the Belfast agglomeration

- 3.2.1. The Directive defines a second and third round agglomeration as having more than 100,000 inhabitants. On the basis of data from the Northern Ireland Statistics and Research Agency (NISRA), the Belfast agglomeration has a population of 597,419. The Derry Urban Area has a population of 91,602 and thus Belfast is the only settlement within Northern Ireland which is classified as an agglomeration for Round 3 mapping.
- 3.2.2. The Round 3 Belfast Agglomeration is 209km² and comprises the urban areas of Belfast, Castlereagh, Carrickfergus, Lisburn, Newtownabbey and North Down Local Government Districts. It generally forms a continuous area with the exception of the urban areas around Bangor, Carrickfergus and Carryduff. The Round 3 Belfast agglomeration represents an 11km² increase on the Round 2 agglomeration which reflects creation of new housing developments on the edge of Belfast since 2011.

3.2.3. END defines industrial sources as those in Annex 1 of the Integrated Pollution Prevention Control Directive (96/61/EC) (superseded by the Industrial Emissions Directive). The Environment (Northern Ireland) Order 2002, together with The Pollution Prevention and Control (Industrial Emissions) Regulations (Northern Ireland) 2013 (as amended), implement the IPPC Directive in Northern Ireland. Part A and B installations are regulated by the NIEA's Industrial Pollution Inspectorate (but Part B with regard to air emissions only). Part C activities are regulated by District Councils.

Figure 1 Location of Round 3 Industrial Noise Sites in Belfast Agglomeration



3.2.4. 130 industrial sites were mapped in the Round 3 mapping exercise, compared to 104 in Round 1 and 111 in Round 2. 108 of these Round 3 sites were located within the agglomeration and 22 within a 1km buffer of the agglomeration. This is the same approach used in Round 2 mapping. 65 of these 130 Round 3 sites are governed by the PPC regime, 62 were located in the port/harbour and 3 were other waste sites. Details of all Part A and B industrial activities are listed in Appendix 2.

3.3. Preparation of Noise Maps

3.3.1 DAERA let a contract for Round 3 noise mapping to AMEC Environment and Infrastructure UK Limited (AMEC) on behalf of all the Competent Authorities in September 2016. Letting a single contract ensured that the mapping was undertaken in a consistent manner. The noise maps were completed in Autumn 2017.

3.3.2 Data relating to waste and industrial sites was supplied to AMEC by NIEA and Belfast Harbour Authority supplied data relating to industrial activities in the harbour. Population data was supplied by NISRA.

3.3.3 AMEC appraised the quality of the data, identified gaps, modify data, collect further data and collated the data into appropriate datasets. Following this they created a digital noise model, calculated noise level outputs, completed noise modelling and generated maps. The noise mapping stages are:

Table 3 Area, dwellings and population exposed to Round 3 industry noise within the Belfast Agglomeration

Noise Scenario	Noise Category	Area (km ²)	Number of Dwellings	Population
L _{den}	50-54	4.1	1389	3953
	55-59	2.9	160	392
	60-64	2.2	36	68
	65-69	3.2	4	8
	70-74	2.2	3	5
	≥75	0.2	0	0
	Total	14.8	1592	4426
L _{night}	45-49	3.6	746	2423
	50-54	2.8	97	251
	55-59	1.9	23	39
	60-64	4.0	7	13
	65-69	1.2	0	0
	≥70	0	0	0
	Total	13.5	873	2728
L _{Aeq 16hr}	50-54	2.8	72	197
	55-59	1.9	21	36
	60-64	3.9	7	13
	65-69	1.1	0	0
	70-74	0	0	0
	≥75	0	0	0
	Total	9.8	100	246

3.4.2 LAeq 16hr is the primary indicator selected by the NIENDSG to assess industrial noise. Comparison with the Round 2 and 3 results reveal that whilst a slightly greater total area is affected by noise levels greater than 50dB LAeq 16hr, the number of dwellings and the population affected have reduced to approximately one-third of what they were in Round 2.

3.4.3 These Round 3 results are very positive, particularly given that only six individuals and four properties were affected by the top 1% of industrial noise in Round 2. These properties were investigated and found to be non-residential and thus no further action was deemed necessary.

3.5 Limitations of Noise Maps

3.5.1 Noise maps are based on models and may not provide accurate data on the actual noise levels experienced. Models use widely accepted assumptions and are only as accurate as the data used. No specific validation of the Round 3 input data using noise measurements or monitoring or site-specific studies was undertaken.

3.5.2 Noise maps are a high level, strategic tool used to determine areas of relative high or low noise and provide an indication of overall exposure of the population to environmental noise. However, caution must be taken when interpreting the noise maps. The noise maps are based on predicted noise levels using a 10-metre grid spacing at a receptor height of 4 metres. The noise level for a given grid square is calculated for the centre of that grid square. It is also necessary to consider that annoyance due to noise is highly subjective and not determined solely by the number of decibels, but also by the nature of the noise, tonal component and the sensitivity of the hearer. Due to this, it is often necessary, before any decisions are made, to investigate,

through noise measurement or monitoring, the actual noise levels experienced at a particular point.

4. Action planning process

4.1. Identification of potential problems and situations that may need to be improved

Aim of Action Plans

4.1.1 In accordance with the aims and objectives of the Directive, the proposals within this Action Plan are focussed upon: *“preventing and reducing environmental noise where necessary and particularly where exposure levels can induce harmful effects on human health and to preserving environmental noise quality where it is good.”*

4.1.2 The action planning process includes five key stages.

1. Analysis of the strategic noise maps
2. Identification and prioritisation of CNMAs
3. Confirmation of NMAs
4. Evaluation of potential mitigation measures
5. Evaluation of existing UK and Northern Ireland Policies, Plans and Programmes.

Effects of Noise

4.1.3 Noise can be a consequence of a mature and vibrant society. People enjoy the benefits of road, rail and air transport and industrial processes, and these benefits manifest themselves in terms of business, leisure, the movement of goods and employment.

4.1.4 There are many different effects of noise, and individuals experience each of them to different degrees. Noise can disturb human activity, by causing distraction or by physically interfering with it. Effects of noise can include:

- general detection/distraction;
- speech interference;
- disruption of work/mental activity;
- sleep disturbance;
- hearing loss;
- physiological effects (including stress, irritability and annoyance); and
- possibly more overt reactions, including complaints.

4.1.5 The nature of the psychological effects is much less certain, although it is known that noise can cause a variety of biological reflexes and responses referred to as stress reactions. Whether, over a period of time, these reactions could lead to clinically recognisable disease is unclear. The possibility that severe annoyance might itself induce stress cannot be ignored⁷.

Analysis of strategic noise maps

4.1.6 The noise maps have been analysed to inform the scope of this Action Plan by assessing the area, population and number of dwellings affected by various levels of noise. This provides an understanding of:

- where environmental noise is located;

⁷ The World Health Organisation provides a range of evidence on the effects of exposure to environmental noise – more information at www.who.int/topics/noise/en/

- the approximate magnitude of noise levels within the assessment area; and
 - approximately how many people are exposed to differing levels of environmental noise.
- 4.1.7 The Noise Mapping and Action Planning Technical Guidance issued in 2013 sets out assessment criteria for the identification of Important Areas with a view to these potentially becoming CNMA once the actual noise levels experienced at those locations have been determined.

Noise Assessment Criteria

- 4.1.8 The methodology in the Technical Guidance provides a framework for the detailed assessment of the strategic noise maps to inform the identification of priorities for the Action Plan. It minimises any uncertainty and ensures that the areas selected are relevant thereby enabling the most appropriate and cost effective action to be determined. In the first instance, the criteria will be used to identify Important Areas which are investigated prior to becoming CNMAs.
- 4.1.9 The NIENSG agreed that $L_{Aeq\ 16hr}$ is the primary indicator for industrial noise and that as a first priority, Competent Authorities should identify the total population affected by noise levels of more than 50dB $L_{Aeq\ 16h}$ from industry. Competent Authorities should then identify the location of the top 1% affected by the highest noise levels (Important Areas) and target these areas for investigation with a view to them becoming CNMAs. Additional noise indicators such as, $L_{Aeq\ 18hr}$, L_{day} , L_{eve} and L_{night} can also be examined to identify if there are any particular features of the noise that could be managed further or if there are any additional measures that could be taken to improve the management of the noise.
- 4.1.10 The location of Quiet Areas will also be considered. In September 2016 the following Quiet Areas were designated:
- Conor Park/Stricklands Glen – Bangor West;
 - Bashfordlands – Carrickfergus; and
 - Carnmoney Hill, Upper - Newtownabbey.

Identification of Important Areas

- 4.1.11 Based on the Round 3 noise mapping results, 246 people within the Belfast agglomeration experience industry noise levels of 50dB $L_{Aeq\ 16hr}$ or more. 1% of this is 2.4 people (rounded to 2 people) equating to 2 properties. Analysis of the available data has shown that 7 properties fall within the 60-64dB $L_{Aeq\ 16hr}$ range. The two residential buildings with the highest exposure in this range are located near an industrial IPPC site located on the eastern edge of the Belfast Agglomeration, near Knock/Dundonald.
- 4.1.12 Given the modelled nature of the maps, these properties would normally then be targeted for further investigation to determine the actual noise levels experienced at those points and whether or not the properties are inhabited. Further investigation has revealed that the site consists of an incinerator that is operational for only a few days a month. Thus, it is highly likely that the noise maps are overstating, by some degree, the noise levels experienced at the two properties identified. Officers from NIEA have also confirmed that they are not aware of any noise issues at this site. Thus, it has been determined that no further investigation or action is necessary in respect of this site. However, should the operational pattern of the incinerator increase so as to materially affect the noise environment experienced, it may become necessary to look at this situation again. Further investigation may include, for example, whether or not these two properties fall within the boundaries of the IPPC site or are possibly inhabited by the owners of the site and whether the properties are vacant.

4.1.13 Should it be found, in the event of a change in operating pattern, that the noise levels are similar to those reflected in the maps, consideration will be given to noise reduction measures already in place and what further action can be taken before they are identified as CNMAs.

4.2 Any noise reduction measures already in force and any projects in preparation

4.2.1 Noise from Part A PPC installations within the Belfast agglomeration is managed using the regulatory framework established in the Pollution Prevention and Control (Industrial Emissions) Regulations (Northern Ireland) 2013. As part of an application for a PPC permit, the operators of installations are required to assess the impact of noise emissions to ensure that:

- the noise control techniques will be Best Available Techniques (BAT); and
- the impact from noise emissions will not be a reasonable cause of annoyance.

4.2.2 Noise emissions from Part A PPC installations will be controlled by conditions in Part A PPC permits, (including noise management plans where appropriate), which will be assessed as part of periodic routine site inspections.

4.2.3 Noise emissions from Part B and C industrial installations are controlled by District Councils using Statutory Nuisance provisions under the Clean Neighbourhoods and Environment Act (Northern Ireland) 2011. Where the top 1% of properties are affected by noise from part B or C processes, the Department will liaise with the relevant District Council to determine whether or not complaints have been received. However, noise from Part B and C PPC installations is not thought to be a significant issue within the Belfast Agglomeration, nor a significant contributor to the combined impact from other sources of noise.

4.3 Actions which the competent authorities intend to take in the next five years, including measures to preserve quiet areas

4.3.1 Whilst it has been determined that no further action is required at present, should the operations or nature of the site affecting the two properties change so as to make the noise experienced unacceptable, NIEA will address the issue in light of the paragraphs below.

4.3.2 For a Part A process, the Department will review the noise conditions contained in the permits to confirm whether or not they are still appropriate and will review the noise mitigation measures currently in use to confirm whether or not the Best Available Techniques are being adopted in line with regulation 11 of the Pollution Prevention and Control (Industrial Emissions) Regulations (Northern Ireland) 2013. When considering whether or not to impose additional permit conditions NIEA will assess their effectiveness and cost in the wider context, including positive impacts on health and quality of life, the impact on the local economy and whether or not any measure could have adverse environmental impacts, such as on air quality.

4.3.3 Following this desktop exercise, and due to the modelled nature of the noise maps it may be necessary for officers to visit the site to undertake noise monitoring to provide a true indication of the actual noise exposure levels. It should be borne in mind that noise monitoring is indiscriminate and will not just record industrial noise. Such a visit will also confirm the type of properties affected (residential or otherwise), the extent of the exposed population and the location of any noise-sensitive properties (such as schools or hospitals) or noise-sensitive rooms within those properties.

4.3.4 Where noise from Part B and C PPC installations is indicated by the noise maps to be an issue, NIEA will liaise with the relevant District Council to determine whether or not complaints have been received.

Identification and prioritisation of CNMAs

- 4.3.5 With reference to the site and properties in paragraph 4.1.1, a CNMA has not been identified here, given the infrequent operation of the site and the fact that only two properties are affected by moderate levels of noise (60-64 dB LAeq 16h).

Confirmation of NMAs

- 4.3.6 In the event that a CNMA is identified on the basis of the strategic noise maps, the modelled noise levels need to be validated prior to each location being confirmed as a NMA.

Review of Possible Prevention and Mitigation Measures

- 4.3.7 In the event that a CNMA for industrial noise is subsequently identified during the lifetime of this Action Plan, the potential noise mitigation measures and the associated costs and benefits should be investigated. Such an investigation would take account of mitigation measures and regulatory controls which are already in place, prior to formal designation as NMA.
- 4.3.8 When identifying potential mitigation measures NIEA will consider a variety of measures and controls, including working with the Department for Infrastructure – Planning and local councils to develop supportive land-use policies, adoption of technical noise mitigation measures at source, selection of quieter apparatus or adoption of measures to reduce sound transmission.
- 4.3.9 NIEA will also undertake a cost-benefit analysis of potential mitigation measures. Such analysis will address construction, maintenance and lifetime costs of measures. The benefits gained from noise reduction will also be viewed in terms of health advantages

Table 4 - Programme of Work/Key Milestones for Round 3

	Action	Expected date of completion
1.	Identify top 1% affected by highest noise levels	Completed
2.	Identify/visit the top 1% of properties, and consider <ul style="list-style-type: none">• Type of property• Noise sensitive property/façade/rooms• Noise monitoring to validate maps	Completed
3.	Review PPC permits of the installations affecting the properties most affected (top 1%) and consider possible mitigation measures based on BAT	N/A
4.	Consider, over the lifetime of this Action Plan reviewing permits of installations on a prioritised basis	2018 - 2023
6.	Review the implementation of this noise Action Plan following the designation of additional Quiet Areas	As required
7.	Review this Action Plan following any major developments which affect the existing noise situation	As required

Evaluation of existing UK, Northern Ireland and local Policies, Plans and Programmes

- 4.3.10 Given that the top 1% of properties affected by the most industrial noise amounts to only 2 properties, noise levels due to industrial activities in the Belfast agglomeration

are considered acceptable and adequately controlled under the existing regulatory controls. However any synergies/conflicts with current local plans, policies and programmes that may be identified during the further assessment of noise maps will be considered by the NIENDSG.

4.4 Long-term strategy

- 4.4.1 This Action Plan will be updated, as appropriate, to reflect ongoing research in noise-related issues, both in terms of acquiring an understanding of the impacts to health of the exposure to noise and also in terms of technological advances to possible noise mitigation solutions. The Action Plan will also be updated, if necessary, following a major development which affects the noise situation or the designation of Quiet Areas within the Agglomeration by DAERA.
- 4.4.2 The Department will continue to work with the Department for the Environment, Food and Rural Affairs (DEFRA) and the other Devolved Administrations on a number of research programmes, which include investigations into various technical aspects of noise management. Engagement with international bodies will continue through, for example, the Eurocities Working Group and Eionet
- 4.4.3 The Department will also update relevant websites relating to industry and noise and ensure that all relevant information is made available to the public.

Land-use Planning Policy Guidance

- 4.4.4 The 2015 Strategic Planning Policy Statement for Northern Ireland also indirectly supports this Action Plan through a number of references to noise throughout the document.

4.5 Financial information: budgets, cost-effectiveness assessment, cost-benefit assessment

- 4.5.1 DAERA is required to have in place a charging scheme so that, as far as practicable, fees and charges payable for permits under the Pollution Prevention and Control (Industrial Emissions) Regulations (NI) 2013 are sufficient to recover the costs of the Chief Inspector and District Councils in exercising their functions under the Regulation, which is in keeping with the 'polluter pays' principle.
- 4.5.2 Current fees and charges payable to the Chief Inspector are specified in the NIEA Industrial Pollution Charging Scheme for new and existing installations. Another charging scheme, the Pollution Prevention and Control Charging Scheme Northern Ireland 2018/2019 is applicable only to part C installations.
- 4.5.3 The Round 3 actions that have been taken by DAERA/NIEA to date have been highly cost-effective. The desktop exercise undertaken in respect of the site at Knock/Dundonald will have required some staff time and a limited amount of technical input from DAERA's noise mapping contractor. In the event of operational changes at the incinerator on the site at Knock/Dundonald, on-site visits may be undertaken to determine if any further actions should be taken.

4.6 Provisions envisaged for evaluating the implementation and the results of the Action Plan over a 5 -year period

- 4.6.1 The Department will continue to meet regularly with the NIENDSG and will keep the form of the Group under consideration, in order to facilitate ongoing planning work, implementation of actions, and the development of future noise Action Plans.

4.6.2 In order to ensure that the Action Plan is delivered effectively, it is important to identify in advance, the approach to monitoring its implementation and success. This will be done in the event that a Noise management Area is designated for industrial noise.

4.6.3 Throughout the period of the Action Plan, DAERA will continue to collate noise complaint statistics, paying particular attention to those relating to industrial noise within the agglomeration.

4.7 Estimates in terms of the reduction of the number of people affected (annoyed, sleep disturbed, or other)

4.7.1 The assessment criteria and subsequent mitigation measures will prioritise actions to the worse affected population. The noise maps have estimated the populations exposed to noise greater than 50 dB for the decibel ranges set out in the Directive.

Appendix 1 Current policy and legislative framework for controlling industrial noise in Northern Ireland.

Clean Neighbourhoods and Environment Act (Northern Ireland) 2011

The Pollution Prevention and Control Regulations (Northern Ireland) 2003

The Pollution Prevention and Control (Industrial Emissions) Regulations (Northern Ireland) 2013

The Environmental Assessment of Plans and Programmes Regulations (NI) 2004

Environmental Noise Regulations (Northern Ireland) 2006

Relevant Policy and Guidance Publications

Control of Noise (Code of Practice for Construction and Open Sites) Order (NI) 2002

DOE Control of Noise at Surface Mineral Workings 1990

DOE Environmental Effects of Surface Mineral Workings 1992

BS 5228 - 1 Noise and Vibration Control on Construction and Open Sites: Noise

BS 5228 - 2 Noise and Vibration Control on Construction and Open Sites: Vibration

BS 5821 - 3:1994 Methods for rating the sound insulation in buildings and of building elements

BS 4142: 2014 - Method for rating and assessing industrial and commercial sound

BS 6472 Guide to evaluation of human exposure to vibration in buildings

BS 7385 - 2 1993 - Evaluation and Measurement for Vibration in buildings - Guide to damage levels from ground borne vibration

BS 7445 - 1: 2003 - Description and measurement of environmental noise. Guide to quantities and procedures

BS 7445 - 2: 1999 – Description and measurement of environmental noise. Guide to the acquisition of data pertinent to land use

BS 7445 Part 3: 1999 – Description and measurement of environmental noise. Guide to the application of noise limits.

BS 8233 2014 – Guidance on sound insulation and noise reduction for buildings

Environment Agency IPPC Horizontal Guidance for Noise - 1 Regulation and Permitting 2001

Environment Agency Horizontal Guidance for Noise - 2 - Noise Assessment and Control 2001

DEFRA – A Review of Published Research on High Freq. Noise and Its Effects – May 2003

World Health Organisation – Guidelines for Community Noise 1999

World Health Organisation - Night Noise Guidelines for Europe 2009

Strategic Planning Policy Statement for Northern Ireland 2015

Appendix 2 Schedule of Round 3 Industry sites within Belfast agglomeration and 1km buffer

65 PPC Sites

Operator	Site Activity	Site Type
3M (UK) Ltd	Costing activities, printing, textile treatments	PPC – part A
ABN Knockmore	Treatment of animal and vegetable matter	PPC – part A
Biofuels	Organic chemicals	PPC - part A
Cemex (Sealstown)	Coating road stone with tar/bitumen	PPC – part B
Coca Cola Bottlers (Ulster) Limited Knockmore	Treatment of animal and vegetable matter	PPC – part A
Coca Cola Bottlers (Ulster) Ltd Lambeg	Treatment of animal and vegetable matter	PPC – part A
Coca Cola HBC Northern Ireland	Treatment of animal and vegetable matter	PPC – part A
Contour Global Solutions (Northern Ireland) Ltd	Combustion Process	PPC – part A
Derek Hall	Intensive farming	PPC – part A
Diageo	Treatment of animal and vegetable matter	PPC – part A
Diageo Baileys Global Supply Mallusk	Treatment of animal and vegetable matter	PPC – part A
HMG Powder Coatings	Dyestuffs, printing, ink and coating materials	PPC – part B
Kiel Pharma	Pharmaceutical production	PPC – part A
Montupet (UK) Ltd	Non-ferrous metals	PPC - part A
NK Coatings	Ferrous metals	PPC – part A
Royal Group of Hospitals	Combustion activities	PPC – part A
Ryobi Aluminium Castings (UK) Ltd	Non-ferrous metals	PPC – part A
Source Oil Limited	Organic Chemicals	PPC - part A
Tennants Textile Colours Ltd	Organic Chemicals	PPC – part A
Lisburn Proteins	Treatment of animal and vegetable matter	PPC – part A
Whitemountain Quarry	Other mineral activities	PPC – part B
Belfast Sewage Sludge Incinerator	Waste disposal - incineration	PPC- part A/harbour
Belfast Terminal	Gassification, liquefaction and refining activities	PPC – part B/harbour

Charles Tennant & Co (NI) Ltd	Coating road stone with tar/bitumen	PPC – part B/harbour
Duncrue Street	Disposal/recovery of hazardous waste	PPC – part A/harbour
Full Circle Generation Limited	Incineration of non-hazardous waste	PPC – part A/harbour
J Thompson		PPC – part A/harbour
Larsson– Processing fine aggregates	Production of cement and lime	PPC – part B/harbour
NuStar terminals Limited		PPC – part B/harbour
SITA	Temporary and underground storage of waste	PPC part A/harbour
United Feeds	Treatment of animal and vegetable matter	PPC – part A/harbour
AFBI VSD	Waste disposal - incineration	PPC – part B/waste
Ballyduff Landfill Site	Disposal of waste by landfill	PPC – part A/ waste
Boyds Quarry	Other mineral activities	PPC – part B/ waste
Browns Landfill Site (William Brown)	Disposal of waste by landfill	PPC – part A/waste
Carrickfergus WWTW Sludge Thickening Plant	Disposal or recovery of non-hazardous waste	PPC – part A/waste
Cottonmount Landfill	Disposal of waste by landfill	PPC – part A/waste
Drumhirk Way Landfill	Disposal of waste by landfill	PPC – part A/waste
Dunmurry WWTW	Disposal of waste other than by incineration or landfill	PPC – part A/waste
ENVA (NI) Ltd	Recovery of waste	PPC – part A/waste
Kilroot Landfill Site	Disposal of waste by landfill	PPC – part A/waste
Kilroot Power Ltd	Combustion activities	PPC – part A/waste
Kinnegar Sludge Treatment Centre/Kinnegar	Disposal or recovery of non-hazardous waste	PPC – part A/waste
New Holland WWTW	Disposal of waste other than by incineration or landfill	PPC – part A/waste
Newtownbreda WWTW	Disposal of waste other than by incineration or landfill	PPC – part A/waste
Northstone	Production of cement and lime	PPC – part B/waste
Renewable Power Systems, Dargan Road Gas	Incineration of waste and co-incineration of waste	PPC - part A/waste
Wastebeater Recycling		PPC part A/waste

Whitehoust WWTW Sludge Thickening Plant	Disposal or recovery of non-hazardous waste	PPC - part A/waste
Aughrim Quarry*	Other mineral activities	PPC – part B/waste
Blackmountain*	Other mineral activities	PPC – part B/waste
Blackmountain phase I, ii, iii landfill*	Disposal of waste by landfill	PPC – part A/waste
Colin Glen Road Landfill (Aughrim Quarry 0192/01B)	Disposal of waste by landfill	PPC – part A/waste
Colin Glen Roas Landfill*	Disposal of waste by landfill	PPC – part A/waste
Dorisland WWT*	Disposal or recovery of non-hazardous waste	PPC – part A/waste
F P McCann Ltd*	Coating road stone wit tar or bitumen	PPC – part B/waste
Greenisland WWTW Sludge Thickening Plant*	Disposal or recovery of non-hazardous waste	PPC – part A/waste
Hightown landfill*	Disposal of waste by landfill	PPC – part A/waste
Mullaghglass Landfill Site*	Disposal of waste by landfill	PPC – part A/waste
NWP Ltd*	Disposal or recovery of non-hazardous waste	PPC – part A/waste
PSNI Seapark*	Waste Disposal – incineration	PPC – part A/waste
Renewable Power Systems (NI) Limited*	Incineration and Co-incineration of waste	PPC – part A/waste
Roadmix*	Other mineral activities	PPC – part B/waste
Rumbling Hole*	Disposal of waste by landfill	PPC – part A/waste
Wolfhill Landfill Site – Belfast*	Disposal of waste by landfill	PPC – part A/waste

*Located within 1km buffer around the Belfast agglomeration

62 Non-PPC sites in the Belfast Port area by function

Function	Number of sites
Area with light industry	20
Asphaltic concrete	2
Bulk terminal	2
Chemical storage	1
Coal storage	1
Construction	1
Ferry Terminal	1
Liquid and Gas Storage	13
Shipyard	4
Trans-shipment	5
Warehouse/Storage	11
Wind Turbine	1

3 Non-PPC Waste Sites

Clearway Disposals Ltd, East Twin Road, Belfast Harbour Estate

Natural World Products Ltd, Glenside Road, Dunmurry, Co. Antrim

Whitehill Quarry landfill, Glenside Road, Dunmurry, Co Antrim

Appendix 3

Glossary of acoustic and technical terms

Term	Definition
Agglomeration	Major Continuous Urban Area as set out within the Regulations
ASL	Above Sea Level
Attribute Data	A trait, quality, or property describing a geographical feature, e.g. vehicle flow or building height
Attributing (Data)	The linking of attribute data to spatial geometric data
GBBCA	George Best Belfast City Airport
BIA	Belfast International Airport
CRN	The Calculation of Railway Noise 1995. The railway prediction methodology published by the UK Department of Transport.
CRTN	The Calculation of Road Traffic Noise 1988. The road traffic prediction methodology published by the UK Department of Transport.
Data	Data comprises information required to generate the outputs specified, and the results specified
dB	Decibel
DEM	Digital Elevation Model
DSM	Digital Surface Model
DTM	Digital Terrain Model
DVD	Digital Versatile Disk
EC	European Commission
END	Environmental Noise Directive (2002/49/EC)
First Round Agglomeration	An agglomeration but having a population in excess of 250,000 persons.
GIS	Geographic Information System
INM	Integrated Noise Model
Irish National Grid (ING)	The official spatial referencing system of Ireland
ISO	International Standards Organisation
Metadata	Descriptive information summarising data
NA	Not Applicable
Noise Bands	Areas lying between contours of the following levels (dB): L_{den} <55, 55 – 59, 60 – 64, 65 – 69, 70 – 74, >74 L_d <55, 55 – 59, 60 – 64, 65 – 69, 70 – 74, >74 L_e <55, 55 – 59, 60 – 64, 65 – 69, 70 – 74, >74 L_n <50, 50 – 54, 55 – 59, 60 – 64, 65 – 69, >69

Term	Definition
Noise Levels	Free-field values of L_{den} , L_d , L_e , L_n , and $L_{A10,18hour}$ at a height of 4m above local ground level
Noise Level - L_d - Daytime	L_d (or L_{day}) = $L_{Aeq,12h}(07:00 \text{ to } 19:00)$
Noise Level - L_e - Evening	L_e (or $L_{evening}$) = $L_{Aeq,4h}(19:00 \text{ to } 23:00)$
Noise Level - L_n - Night	L_n (or L_{night}) = $L_{Aeq,8h}(23:00 \text{ to } 07:00)$
Noise Level - L_{den} - Day/Evening/Night	A noise rating indicator based upon L_d , L_e and L_n as follows: $L_{den} = 10 * \lg \left\{ \frac{1}{24} \left[12 * 10^{((L_{day})/10)} + 4 * 10^{((L_{evening}+5)/10)} + 8 * 10^{((L_{night}+10)/10)} \right] \right\}$
Noise Level - $L_{A10,18hour}$	$L_{A10,18hour} = L_{A10,18hour} (06:00 \text{ to } 24:00)$
Noise Mapping (Input) Data	Two broad categories: (1) Spatial (e.g. road centre lines, building outlines). (2) Attribute (e.g. vehicle flow, building height – assigned to specific spatial data)
Noise Mapping Software	Computer program that calculates required noise levels based on relevant input data
Noise Model	All the input data collated and held within a computer program to enable noise levels to be calculated.
Noise Model File	The (proprietary software specific) project file(s) comprising the noise model
Output Data	The noise outputs generated by the noise model
OSNI	Ordnance Survey for Northern Ireland
Processing Data	Any form of manipulation, correction, adjustment factoring, correcting, or other adjustment of data to make it fit for purpose. (Includes operations sometimes referred to as 'cleaning' of data)
QA	Quality Assurance
Shapefile	ESRI proprietary GIS dataset format. Contains both geometry to define features, and associated alphanumeric attribute information.
Spatial (Input) Data	Information about the location, shape, and relationships among geographic features, for example road centre lines and buildings.
WG - AEN	Working Group – Assessment of Exposure to Noise