

Department for Regional Development – Roads - Environmental Noise Directive Round Two – Noise Action Plan 2013-2018

Environmental Noise Directive




Document reference: CO401053/RNAP




Revision: 1


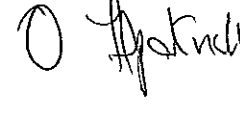
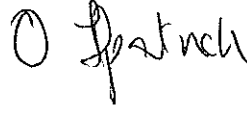


Document Control Sheet

Project Name:	Environmental Noise Directive - Second Round Mapping & Candidate Noise Management Areas
Project Number:	C0401053
Document / Report Title:	Final Roads Noise Action Plan
Document / Report Number:	CO401053/RNAP

Issue Status/Amendment	Prepared	Reviewed	Approved
Issue 0	Name: O Fitzpatrick Signature:  Date: 18/03/13	Name: R Tompsett Signature:  Date: 19/03/13	Name: R Moffett Signature:  Date: 21/03/13

Issue 1 - Final version on completion of consultation	Name: O Fitzpatrick Signature:  Date: 17/07/13	Name: J Simona Signature:  Date: 18/07/13	Name: R Moffett Signature:  Date: 19/07/13
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Issue 2 – Final version on review by DoE and AMEC	Name: O Fitzpatrick Signature:  Date: 03/12/13	Name: O Fitzpatrick Signature:  Date: 03/12/13	Name: O Fitzpatrick Signature:  Date: 03/12/13
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Executive Summary

This summary of information is from the main body of this Final Roads Noise Action Plan for the purpose of complying with the Environmental Noise Regulations (Northern Ireland) 2006, referred to as the Regulations. Annex V of the European Directive for Assessment and Management of Environmental Noise 2002/49/EC, referred to as the Environmental Noise Directive (END), requires that Action Plans must include as a minimum detail under the headings below.

A description of the Major Road and any other noise source taken into account

For the Second Round mapping, the Regulations reduce the thresholds from the First Round for which noise mapping and action planning should be prepared and reported to the following:

- All Major Roads with more than 3 million vehicle passages per year; and
- All Agglomerations with more than 100,000 inhabitants.

The only Agglomeration considered in the Second Round is the Belfast Agglomeration, which reaches the population threshold outlined above and defined in the Regulations. The Belfast Agglomeration and All Roads were modelled in the Second Round with an approximate area of 198km², and comprises the urban areas of Belfast, Castlereagh, Carrickfergus, Lisburn, Newtownabbey and North Down Local Government Districts. The data capture for the Second Round resulted in a capture area of 596km² by applying a 3km corridor to the boundary of the Belfast Agglomeration.

The extent of Major Roads is based on an assessment of roads which are likely to exceed the threshold as set out in the Regulations. "Major Roads" to be included in the Second Round noise mapping are trunk roads, motorways and classified roads with more than 3 million vehicle passages per year.

Northern Ireland's network of Major Roads is generally focused on Belfast including the main radial corridors along the M1, M2, A1 and A6. It also includes the main strategic routes within the Belfast Metropolitan and Derry Urban Areas in addition to short heavily trafficked stretches of the strategic road network in and around a number of towns across Northern Ireland

The Authority Responsible

The Regulations set out responsibilities charged to various Competent Authorities with the production of Noise Action Plans, and the Department of the Environment (DoE) as the Designated Authority overseeing the implementation. The Regulations states that the Competent Authority for drawing up Action Plans for roads is the Department for Regional Development.

The Legal Context

The Environmental Noise Directive was implemented in Northern Ireland by the Environmental Noise Regulations (NI) 2006, which outline the stages to manage and, where necessary, improve environmental noise conditions.

Limit Values

Currently there are no noise limit values set under the Environmental Noise Directive (END) for the UK. The DRD has recommended that the most appropriate approach is that of Defra and the Welsh Assembly Government in investigating important areas for potential action in relation to noise from roads by determining:

- Where the 1% of the population that are affected by the highest noise levels are located, and
- Where the analysis has revealed that for Northern Ireland these locations are where the $L_{A10,18h}$ indicator is at least 75dB.

Summary of Results

Noise maps were generated from the Second Round data and then investigated using a series of analytical tools needed to sift and manipulate through the vast amounts of electronic data. The Major Roads total population was based on a number of 421,968 people (185,505 buildings) in Northern Ireland above 50dB for $L_{A10,18hr}$. 1% is therefore roughly 4,220 people (1855 buildings).

The number of people and buildings affected in the area defined as above 75dB for $L_{A10,18hr}$ is 4,172 people (1,992 buildings), therefore the 1% of the population most affected by road noise equates approximately to those dwellings which are affected by noise ≥ 75 dB.

At this stage an understanding of the number of people exposed to different noise levels and the number of buildings affected was reached, thus enabling an initial list of Candidate Noise Management Areas (CNMAs) to be prepared.

Estimate of the Number of People Exposed to Noise and Identify Problems for Improvement

The Final Roads Noise Action Plan provides an overview of the results of the Second Round END dwelling and population analysis for Major Roads across Northern Ireland and outside the Belfast Agglomeration, and All Roads within the Belfast Agglomeration.

The main bulk of the CNMAs are located within the Belfast Agglomeration, twenty three out of a total thirty two. Nine of which are located in proximity to a motorway. The other fourteen CNMAs within the Belfast Agglomeration are located along main routes within the urban areas of Belfast, Lisburn, Bangor and Holywood.

Outside of the Belfast Agglomeration there are a total of nine CNMAs located in the towns and cities of Londonderry, Ballymena, Dungiven, Ballykelly, Moy, Newtownards and Armagh.

Public Consultation

A formal consultation exercise with various stakeholders on the Draft Roads Noise Action Plan together with the identification of the Candidate Noise Management Areas was undertaken between 1 May 2013 and 26 June 2013. A total of two responses were received as a result of this consultation process.

Actions which the Competent Authority intends to take in the next 5 years

The potential mitigation measures identified within the Draft Action Plan have been reviewed in detail with consideration of timescale of implementation, funding availability and powers available through DRD. As a result the CNMAs have been grouped on the following basis:

- i. Potential mitigation to be implemented by DRD within the next five years (2013 to 2018), subject to the necessary funding being made available;
- ii. Potential mitigation to be considered by DRD within the following five years (2019 to 2024), subject to the necessary funding being made available; and
- iii. Potential mitigation outside the control of DRD.

In addition to the above review, this Final Action Plan provides an outline programme and high level cost estimate of implementation of the recommended mitigation, where possible. All mitigation requires the necessary studies and consultation to be successfully undertaken, along with the required funding.

13 sites have been identified for consideration of measures within the first 5 years with prioritisation given to addressing CNMAs located adjacent to the motorways within Belfast, where mitigation includes acoustic barriers and/or low noise surfacing.

Long Term Strategy

This Plan is over a five year period between 2013 and 2018 up until the next round of noise mapping and action planning. However, environmental noise needs to be managed in a cost-effective manner as part of a long term strategy which runs beyond each five year Action Plan.

For all the CNMA's the DRD will monitor, alongside DoE Planning Service, and if developments are proposed within these designated areas any mitigation measures will be assessed as part of the design and planning process for implementation. To ensure that the overall aims of the END and this Action Plan are fully realised, noise issues need to be carefully considered through the planning system for specific development proposals and at a more strategic scale through the production of development plans. There needs to be a transparent relationship between the planning system and the END, allowing local planning policy to reflect this.



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Glossary

Agglomeration	Major Continuous Urban Area as set out in the Regulations
CNMA	Candidate Noise Management Area
CRTN	Calculation of Road Traffic Noise
dB	Decibel
dB(A) / L_{A10, 18h}	The arithmetic mean of the A-weighted noise levels exceeded for 10% of the time in each of the eighteen 1-hour periods between 06:00 and 24:00
dB L_{Aeq,16h}	The equivalent outdoor sound pressure level associated with a particular type of noise source during daytime outside an exposed window façade for 16 hours, calculated over a period of a year
dB L_{den}	Annual Average Day-Evening-Night Noise Rating Level over 24hrs
dB L_{day}	Annual Average 12-hr daytime noise level between 07:00 and 19:00
dB L_{eve}	Annual Average 4-hr evening noise level between 19:00 and 23:00
dB L_{night}	Annual Average 8-hr night noise level between 23:00 and 07:00
Defra	Department of Food and Rural Affairs
DoE	Department of Environment
DRD	Department for Regional Development
DMRB	Design Manual for Roads and Bridges
EC	European Commission
END	Environmental Noise Directive (2002/49/EC)
EU	European Union
First Round	First Round noise modelling for the Environmental Noise Regulations (NI) - 2006
NIENDSG	Northern Ireland Environmental Noise Directive Steering Group
NISRA	Northern Ireland Statistics and Research Agency
NPPF	National Planning Policy Framework
PPG	Planning Policy Guidance
PPS	Planning Policy Statement
RSPPG	Roads Service Policy and Procedure Guide



Second Round	Second Round noise modelling for the Environmental Noise Regulations (NI) - 2006
TAG	Department for Transports Transport Analysis Guidance
Translink	The main public transport service provider for Northern Ireland
WHO	World Health Organisation

1. Introduction

1.1. Purpose

- 1.1.1. This document presents the Final Roads Noise Action Plan that describes how the Department for Regional Development (DRD)¹, in conjunction with the Department of the Environment (DoE), proposes to deliver their obligations under the European Directive for Assessment and Management of Environmental Noise 2002/49/EC². This Noise Action Plan deals with noise from both Major Roads³ across Northern Ireland and All Roads within Agglomerations of greater than 100,000 inhabitants⁴.
- 1.1.2. The European Directive for Assessment and Management of Environmental Noise 2002/49/EC, more commonly referred to as the Environmental Noise Directive (END), was transposed into Northern Ireland (NI) regulations through the Environmental Noise Regulations (NI) 2006.
- 1.1.3. This is one of a set of five Action Plans, the others being:
- The Railways Noise Action Plan;
 - The Industrial Noise Action Plan;
 - The George Best City Airport Noise Action Plan; and
 - The Belfast International Airport Noise Action Plan.
- 1.1.4. The END requires an on-going programme of work and this Noise Action Plan covers the period 2013-2018. It follows on from the First Round Noise Action Plan⁵ and principally deals with the identification of noise impacts and Candidate Noise Management Areas, along with proposals for treating these.

1.2. Objectives of the Environmental Noise Directive (END)

- 1.2.1. The END emerged from the recognition that although there had been European-wide controls on the noise generated by individual vehicles for many years, the increasing number of vehicles being used may mean that there was no reduction being achieved in the resulting noise exposure.
- 1.2.2. The END relies heavily on computer modelling technology to support the development of noise maps and Action Plans, and as this technology develops the process of data collection will heavily evolve. The Directive does require a strategic approach to assessment and therefore the use of common noise indicators (L_{den} and L_{night}) and methodology.
- 1.2.3. The three main objectives of the 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.
- 1.2.4. As outlined, the END was published and translated into NI regulations in 2006, through the Environmental Noise Regulations (the 'Regulations'). 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 from, domestic activities, noise created by neighbours, noise at workplaces, noise inside means of transport or due to military activities in military areas.
- 1.2.5. In line with the Regulations, the following organisations and key partners will be involved in action planning for roads:
- Department for Regional Development;
 - Department of the Environment (DoE);
 - Northern Ireland Environment Agency (NIEA); and
 - District Councils.
- 1.2.6. In 2005, the DoE set up the Northern Ireland Environmental Noise Directive Steering Group (NIENDSG), which is made up of individuals from each of the Competent Authorities¹ and the DoE. The Group was set up to enable the DoE and Competent Authorities to develop strategic noise maps, Action Plans and a methodology with robust criteria. Any guidance from the Group should be considered by the Competent Authorities.

1.3. Roles and Responsibilities of Designated Bodies

- 1.3.1. The Regulations require Competent Authorities to undertake noise mapping of roads, railways, airports and industry every five years, or in the interim, if a major development affecting the current noise situation occurs⁶. The work commenced with the First Round of mapping for the whole of Northern Ireland completed by 31 March 2007.
- 1.3.2. The Competent Authorities are the Department for Regional Development⁷ (roads), Northern Ireland Transport Holding Company / Translink (rail), Belfast International Airport and George Best Belfast City Airport (air), and the Department of the Environment (industry).
- 1.3.3. The Competent Authority, in this case the DRD, is responsible for ensuring that the Action Plan is developed, however the necessary powers to implement the actions may rest with other bodies, such as the DoE or District Councils. Appropriate actions to address this are included further in this Action Plan such as recommendation of engagement between the Competent Authority and other such bodies.



1.4. Programme of Implementation

- 1.4.1. The creation of the First Round of strategic noise maps has been completed and published on the Northern Ireland Noise Map website www.noiseni.co.uk. DoE published draft guidance with the Regulations for the purpose of identification of priorities for Action Plans in June 2008. This allowed the First Round process of preparing Action Plans and the subsequent consultation in 2008 to take place. On completion of the consultation, the Noise Action Plan was finalised, adopted and formally submitted to the European Commission in January 2009 (Table 1).
- 1.4.2. Through the remainder of the First Round Action Plan period, the DoE along with the other Competent Authorities developed a methodology to determine:
- Noise map assessment criteria;
 - Candidate Noise Management Areas; and
 - To further assess previously identified Candidate Quiet Areas.
- 1.4.3. The requirement to examine quiet areas within the Agglomerations as consolidated maps of all environmental noise is primarily managed by the DoE. Although the DRD was involved with the work in identifying, prioritising and confirming Quiet Areas, this is as part of the consolidated noise for all noise sources being led by the DoE.

Table 1: Programme of Implementation		
Stage	Detail	Completion Date
1	Produce the First Round of strategic noise maps for Major Roads, rail, airports and Agglomerations	31 March 2007
2	Competent Authorities to draw up First Round Action Plans to manage noise	30 April 2008 (18 July 2008 for industry and consolidated plans)
3	Produce the Second Round of strategic noise maps for Major Roads, rail, airports and Agglomerations	31 March 2012
4	Competent Authorities to draw up Second Round Action Plans to manage noise	30 April 2013 (18 July 2013 for industry and consolidated plans)*

* An agreement was made with DoE to extend this until 9 August 2013



- 1.4.4. At the end of the five year First Round plan period, a further round of noise mapping was completed as part of the Second Round process required by the END. Based on the results of the noise mapping exercise, Competent Authorities are required to develop Action Plans which prioritise how they will deal with areas where noise levels are considered to be high. Action Plans must comply with Annex V of the Directive and be drawn up and submitted no later than 18 July 2013 to the DoE as Competent Authority in Northern Ireland with overall responsibility for monitoring compliance with the Regulations⁸. This includes a full Consultation process undertaken by each of the Competent Authorities. As outlined the 18 July deadline has been extended until 9 August 2013.
- 1.4.5. The Regulations place a duty on the DoE to review, approve, adopt and submit summaries of the Competent Authorities' Action Plans and produce a consolidated noise map and Action Plan for multiple noise sources across Northern Ireland. This all needs to be submitted to the European Commission no later than the 18 January 2014, and failure to submit this information is likely to lead to the Commission instigating infraction proceedings.
- 1.4.6. Once adopted the Competent Authority should treat this Action Plan as policy under the Regulations and the content of the Action Plan should be a material consideration for other decision-making bodies, such as the DoE Planning Service.

1.5. Layout of the Roads Noise Action Plan

- 1.5.1. The Action Plan will meet the requirements of Schedule 4 of the Regulations and Annex V of the END, and must include as a minimum the following tasks in Table 2.

Table 2: Layout of the Roads Noise Action Plan	
Task	Location in Action Plan*
A description of the major road and any other noise source taken into account.	Section 3.1, Appendix A & B
The authority responsible.	Section 2.1
The legal context.	Section 2.2, Appendix C
Any limit values in place.	Section 2.6
A summary of the results of the noise mapping.	Section 4.2 & 4.3, Appendix D
An estimate of the number of people exposed to noise and identify problems and situations that need to be improved.	Section 4.4
A record of public consultations organised in accordance with END Article 8(7).	Section 5
Any noise reduction measures already in force and any projects in preparation.	Section 3.2



Table 2: Layout of the Roads Noise Action Plan	
Task	Location in Action Plan*
Actions which the Competent Authority intends to take in the next 5 years.	Section 6
Financial information (if available).	Section 6
Long term strategy with provisions envisaged for evaluating the implementation and the results of the Action Plan.	Section 7

2. Regulatory and Policy Framework

2.1. The Authority Responsible

- 2.1.1. The Regulations sets out responsibilities charged to various Competent Authorities with the production of Noise Action Plans, and the Department of the Environment (DoE) as the Designated Authority overseeing the implementation. The Regulations states that the Competent Authority for drawing up Action Plans for roads is the Department for Regional Development.

2.2. European Policy

- 2.2.1. It is important that the Action Plan assesses the wider context of the national and local framework controlling noise from roads, such as current government policies and guidance, and wider policies such as local development and transport plans.
- 2.2.2. Environmental noise is one of the main environmental problems in Europe and the source of increasing complaints by the public. However, generally action to reduce environmental noise has had a lower priority than other environmental problems such as water and air pollution. The 1993 Fifth Action Programme⁹ started to remedy this and included a number of basic targets for noise exposure to be reached by the year 2000.
- 2.2.3. The 1996 European Union (EU) Green Paper on Future Noise and Policy was the first step in the development of such a programme and confirmed that environmental noise caused by traffic, industry and recreation is one of the main local environmental problems across Europe. The Paper was the start of development of noise policy with the aim that no person should be exposed to noise which endangers health and quality of life.
- 2.2.4. As more information on the health impacts of noise became available it became clear that global measures would be the most cost-effective way to address them, and the need for a higher level of protection of EU citizens through EU-wide measures became more imminent.
- 2.2.5. Following this the EU Commission adopted a proposal in 2000 which led to the European Parliament and Council adopting Directive 2002/49/EC, relating to the assessment and management of environmental noise on 25 June 2002, known as the Environmental Noise Directive. The END became one of the main instruments to identify noise pollution levels and initiate the necessary action both at Member and at EU level.
- 2.2.6. The END aims to *'define a common approach intended to avoid, prevent or reduce on a prioritised basis the harmful effects, including annoyance, due to the exposure to environmental noise'*. Furthermore, it aims at providing a basis for developing EU measures to reduce noise emitted by major sources, in particular road and rail vehicles and infrastructure, aircraft, outdoor and industrial equipment and mobile machinery.

- 2.2.7. The END places the requirement on Member States to produce strategic noise maps for the main sources of environmental noise, i.e. major roads, major railways and major airports. For the First Round in 2007, the END required strategic maps to be produced for agglomerations with a population of more than 250,000 persons and a certain population density. The second round in 2012 requires Member States to produce strategic maps for agglomerations of more than 100,000 persons and a certain population density¹⁰. Action Plans must be produced based on the noise mapping.
- 2.2.8. Article 3 of Directive 85/337/EEC (as amended) on the assessment of the effects of certain public and private projects on the environment requires Member States to assess the effect of noise, among other aspects, from specific projects including new roads¹¹. It provides the basis of the assessment process in terms of Environmental Impact Assessments for specific road schemes.
- 2.2.9. The World Health Organisation has day and night time guidelines for the protection of the public and their health from environmental noise. The health-based guidelines are widely used and are a basis for deriving noise standards within a framework of noise management. The WHO state that *'growth in noise pollution is unsustainable because it involves direct, as well as cumulative, adverse health effects.'*¹² The WHO has recently published the Night Noise Guidelines for Europe and recommend thresholds that if breached would threaten health¹³.

2.3. UK Policy

- 2.3.1. The UK Government Sustainable Development Strategy Securing the Future¹⁴ refers to the components of sustainable communities as embodying the principles of sustainable development. The communities would be, in addition to other aims according to the Strategy, environmentally sensitive allowing residents to live a lifestyle that minimises negative environmental impact and enhances positive impacts, through for example, reduction in noise pollution and dependence on cars.
- 2.3.2. The National Planning Policy Framework¹⁵ (NPPF) came into force in March 2012, and replaces among others Planning Policy Guidance (PPG) 24: Planning and Noise and PPG 1: Delivering Sustainable Development. The NPPF promotes sustainable development and states that *'transport policies have an important role to play in facilitating sustainable development but also in contributing to wider sustainability and health objectives.'* The Framework encourages solutions which support reductions in greenhouse gases and reduce congestion, stating that the transport system needs to be balanced in favour of sustainable travel modes.
- 2.3.3. In terms of noise the NPPF is specific about new development and the control of the impact on the existing noise environment, and states (in paragraph 123) that:
- 'Planning policies and decisions should aim to:*
- *avoid noise from giving rise to significant adverse impacts on health and quality of life as a result of new development;*

- *mitigate and reduce to a minimum other adverse impacts on health and quality of life arising from noise from new development, including through the use of conditions;*
- *recognise that development will often create some noise and existing businesses wanting to develop in continuance of their business should not have unreasonable restrictions put on them because of changes in nearby land uses since they were established; and*
- *identify and protect areas of tranquillity which have remained relatively undisturbed by noise and are prized for their recreational and amenity value for this reason.'*

2.3.4. In 2010, Department for Environment, Food and Rural Affairs (Defra) released the Noise Policy Statement for England¹⁶ (NPSE) whose aims for the effective management and control of environmental, neighbour and neighbourhood noise within the context of Government policy on sustainable development are:

- to avoid significant adverse impacts on health and quality of life;
- to mitigate and minimise adverse impacts on health and quality of life; and
- where possible, contribute to improvement of health and quality of life.

2.3.5. Defra has an important research programme which looks at how people subjectively assess noise and what they regard as nuisance, as well as various technical aspects of noise management. Research such as National Noise Attitude Surveys and reports on Noise and Health in the UK. The 2001 UK-wide National Noise Attitude Survey revealed that noise was ranked as the fourth highest pollutant of concern to residents in Northern Ireland¹⁷.

2.4. Local Policy

2.4.1. The Environmental Noise Regulations (Northern Ireland) 2006 applies to environmental noise in built-up areas, public parks or other quiet areas in agglomerations and other noise-sensitive buildings and areas. The Regulations apply to noise from road, railway and airport sources, as well as industrial noise, and 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. In between this time, the Regulations require the noise maps to be reviewed and revised whenever a major development occurs affecting the noise situation.

2.4.2. The Environmental Noise Regulations do not apply to noise caused by the person exposed to 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. Noise from domestic activities or noise created by neighbours or construction sites are dealt with under the Pollution Control and Local Government (NI) Order 1978, and Noise at work is governed by the Noise at Work Regulations (NI) 2006.

2.4.3. If a proposed development is likely to be a source of noise or result in a change of noise level, the threshold and timing of any noise emissions may be controlled through the planning system. Existing sources of noise such as rail or road traffic are not subject to planning

control, however they would generally be considered in the context of proposed development which may be affected by such sources.

- 2.4.4. Part II of the Land Acquisition and Compensation Order (Northern Ireland) 1973 makes provision for the payment of compensation for property depreciation caused by certain physical factors. One such factor is noise whereby a property's exposure to noise may differ following the completion of a nearby road scheme. The Order provides a right for homeowners to claim compensation where the value of an interest in land is depreciated by noise caused by the use of public works. The compensation must relate to the depreciation in value caused by the noise and other physical factors associated with the traffic using the road and not to the physical existence of the road.
- 2.4.5. The power to provide insulation is given in the Noise Insulation Regulations (NI) 1995, made under Article 22 of the Order. The aim of the Regulations is to enable residents subjected to increased traffic noise at or above a specified level arising directly through the use of new road, to benefit from grants for provision of noise insulation. Insulation may also be installed against increased traffic noise arising directly from certain altered roads and against construction noise.
- 2.4.6. Industrial noise due to Part A process as defined within the Pollution Prevention and Control (NI) Regulations 2003 is controlled under those Regulations by the Northern Ireland Environment Agency (NIEA). As part of its role as a regulator, the NIEA has produced guidance for use in controlling industrial noise, which is used when considering applications for Environmental Permits and inspections of installations.
- 2.4.7. Under Integrated Pollution Prevention and Control (IPPC) and the PPC Regulations 2007, there are existing controls in respect of major operational industrial sources, but at present there are no such controls over operational transportation sources and the preparation of noise mapping and Action Plans affords an opportunity to inform policy on such matters.
- 2.4.8. The Regional Development Strategy (RDS) 2025 sets out to guide the future development of Northern Ireland until 2025, when the population is expected to reach 2 million. The vision for transportation contained within the RDS is *'To have a modern, sustainable, safe transportation system which benefits society, the economy and the environment and which actively contributes to social inclusion and everyone's quality of life'*. The Regional Development Strategy is supported by a ten year Regional Transportation Strategy 2002 – 2012.
- 2.4.9. The existing framework for making decisions for transport investment is under the Regional Transportation Strategy 2002 – 2012, the delivery of which is progressed through the three transport plans namely the Regional Strategic Transport Network Transport Plan 2015, the Belfast Metropolitan Transport Plan 2015 and the Sub-Regional Transport Plan 2015. The Strategy states that its proposals have been assessed under the policy and need *'to consider the environmental impact of all key policies'* and *'to do so in an increasingly integrated way so to embed the principles of sustainable development in the urban and rural economy'*. The Strategy has a number of aims including new bypasses, traffic calming measures and improved walking/ cycling/public transport infrastructure. A general appraisal of the Strategy

was undertaken under the five government criteria of environment, economy, accessibility, integration and safety, with the noise sub-objective sitting within the environment criteria, concluding that within the ten year period of the strategy there will be a beneficial impact on the noise environment through rerouting of traffic away from urban areas. This appraisal is supported by a pilot Health Impact Assessment prepared in support of the Strategy.

- 2.4.10. The Belfast Metropolitan Transport Plan is the local transport plan for the Belfast Metropolitan Area, to be used to deliver a phased and costed implementation programme of transport schemes up to 2015. The full implementation of the schemes will be subject to the relevant statutory processes and appraisals. The Plan stated that within the metropolitan area the quality of life of many is affected through pollution from traffic, and as a result contains sub-objectives of reducing the impact of traffic particularly within city centres, town centres and villages. In terms of the noise sub-objective, the plan provides a high-level appraisal on the noise environment from new/relocated rail stations, new roads, traffic management schemes and new park and ride sites. This transport plan is the only one of the three that gives a quantitative appraisal as well as a qualitative. The Plan specifically proposes the consideration of noise in the design of cycle networks throughout Belfast Metropolitan Area.
- 2.4.11. The transport plan for the Regional Strategic Transport Network comprises the complete rail network, five Key Transport Corridors (KTCs), four Link Corridors, the Belfast Metropolitan Transport Corridors and the remainder of the trunk road network. A general appraisal of the regional strategic transport network proposed within the plan period was undertaken under the five government criteria. The appraisal provides broad and general conclusions on the predicted impact on the noise environment from large scale developments such as bypasses to more local scale public realm and improvement schemes.
- 2.4.12. The Sub-Regional Transport Plan deals with the transport needs for the whole of Northern Ireland, except the Belfast Metropolitan Area and the trunk road and rail networks dealt with under the other two plans. Similar to the plan for the Regional Strategic Transport Network, the Sub-Regional Transport Plan provides a general appraisal of changes under the government's five main criteria. Some general conclusions are made on the predicted effect on the noise environment from the plan proposals.
- 2.4.13. As outlined, all three transport plans take forward the initiatives within the Regional Transportation Strategy 2002 - 2012. On review, none of the three transport plans specifically reference targets for noise through its monitoring and review process through the lifetime of the plan and the ten year Regional Transportation Strategy. All three transport plans do recommend that each scheme will undergo economic appraisal and the relevant statutory procedures such as planning, environmental assessment and land acquisition.
- 2.4.14. The Department for Regional Development developed a new approach to the long-term development of regional transport through the document 'Ensuring a Sustainable Transport Future: A New Approach to Regional Transportation'. This document sets out how the DRD will develop regional transportation beyond 2015 when the current three transport plans reach their conclusion. The New Approach is based on three high-level transport aims centred on sustainability, each having their own supporting strategic objectives. One such aim is to

reduce the environmental impact of transport with a specific objective of reducing water, air and noise pollution wherever possible. This is a high level strategic document which does not provide any further detail on how and when this will be done.

- 2.4.15. Planning Policy Statement (PPS) 13: Transportation and Land Use was prepared to assist in the implementation of the Regional Development Strategy, through the planning and delivery of transportation and development. The PPS contains several general principles, the most appropriate is making public transport, cycling and walking more attractive by more effective traffic management and prioritising movement of people rather than traffic. An objective under this overarching principle is through the reduction of the impacts of heavy traffic such as noise.
- 2.4.16. The Design Manual for Roads and Bridges (DMRB) provides a comprehensive manual system which includes current Standards, Advice Notes and other published documents relating to trunk road works. DMRB Volume 11, Section 3, Part 7, HD 213/11: Noise and Vibration provides guidance on the assessment of impacts that road projects may have on noise and vibration levels. It enables assessments to be undertaken in a consistent manner in line with the relevant legislation.
- 2.4.17. The Department for Transport's Transport Analysis Guidance (TAG) provides guidance on the appraisal of major transport schemes, through setting objectives, identifying problems, developing solutions and creating a transport model. An appraisal through TAG was until recently undertaken in accordance with the government's five main criteria of environmental, economy, accessibility, integration and safety, and associated sub-objectives. Recent changes to TAG have resulted in the new appraisal framework of environmental, economy, social and public accounts¹⁸. Noise remains as a sub-objective assessed under the environmental section.
- 2.5. As and when the detailed noise management measures have been agreed and areas confirmed as Noise Management Areas, these will be assessed in the Final Noise Action Plan in the context of current plans, policies and strategies to establish synergies or conflicts. The DRD will take cognisance of the legislation and guidance referred to here and listed in Appendix C when considering the implementation of any new noise management measure.

2.6. Noise Assessment Criteria

- 2.6.1. Currently there are no noise limit values set under the Environmental Noise Directive (END) for the UK with regards to major roads in terms of L_{den} , L_{night} , $L_{evening}$ and L_{day} . However, regulations exist, namely, the Noise Insulation Regulations (Northern Ireland) 1995 that define a threshold level as part of the eligibility criteria.
- 2.6.2. The DRD has recommended that the most appropriate approach is that of Defra and the Welsh Assembly Government in investigating important areas for potential action in relation to noise from roads by determining:
- Where the 1% of the population that are affected by the highest noise levels are located, and

-
- Where the analysis has revealed that for Northern Ireland these locations are where the $L_{A10,18h}$ indicator is at least 75dB.
- 2.6.3. Thereby Candidate Noise Management Areas were initially identified where the $L_{A10,18h}$ indicator is at least 75dB. The $L_{A10,18h}$ parameter is used in the Design Manual for Roads and Bridges and other UK methodologies, therefore it is unlikely that the analysis of results would be different than using another parameter. This Noise Assessment Criteria was approved by the DRD Roads Service Board on 28 October 2009¹⁹.

3. Description of the Study Area

3.1. Extent

- 3.1.1. The END requires that Action Plans be designed to manage noise issues and effects at places near Major Roads and at places near All Roads within Agglomerations.
- 3.1.2. Within Agglomerations, the Regulations require the mapping of all road, railway, industry and airport noise regardless of the thresholds. For the Second Round mapping, the Regulations reduce the thresholds for which noise mapping and action planning should be prepared and reported to the following:
- All Major Roads with more than 3 million vehicle passages per year; and
 - All Agglomerations with more than 100,000 inhabitants.
- 3.1.3. The only Agglomeration considered in the Second Round is the Belfast Agglomeration, which reaches the population threshold outlined above and defined in the Regulations. The Belfast Agglomeration and All Roads modelled in the Second Round are presented in Appendix A with an approximate area of 198km², and comprise the urban areas of Belfast, Castlereagh, Carrickfergus, Lisburn, Newtownabbey and North Down Local Government Districts. Data obtained from the Northern Ireland Statistics and Research Agency (NISRA) for 2008 shows that the Belfast Metropolitan Area has a population of 267,742, which met the population threshold for the First Round also²⁰. The data capture for the Second Round resulted in a capture area of 596km² by applying a 3km corridor to the boundary of the Belfast Agglomeration²¹.
- 3.1.4. The second largest urban area is the Derry Urban Area, with data from NISRA showing a population of 85,016 therefore falling below the Second Round threshold.
- 3.1.5. The extent of Major Roads is based on an assessment of roads which are likely to exceed the threshold as set out in the Regulations. "Major Roads" to be included in the Second Round noise mapping are trunk roads, motorways and classified roads with more than 3 million vehicle passages per year²².
- 3.1.6. Northern Ireland's network of Major Roads is generally focused on Belfast including the main radial corridors along the M1, M2, A1 and A6. It also includes the main strategic routes within the Belfast Metropolitan and Derry Urban Areas in addition to short heavily trafficked stretches of the strategic road network in and around a number of towns across Northern Ireland. Appendix B provides an illustration of the extent of Major Roads outside of the Belfast Agglomeration modelled in the Second Round.
- 3.1.7. Mapping in accordance with the Second Round requirements of the Regulations was more extensive, as summarised in the following table²¹.

Table 3: Agglomeration and Major Roads –			
Noise Source	Extent of Data Capture Area (km²)		
	First Round	Second Round	Percentage Increase
All Roads within the Belfast Agglomeration	596	596	0%
Major Roads (outside the Belfast Agglomeration)	1,582	4,460	182%
Total Area	2,178	5,056	132%
Noise Source	Length of Roads Mapped (km)		
	First Round	Second Round	Percentage Increase
All Roads within the Belfast Agglomeration	937	1,020	9%
Major Roads (outside the Belfast Agglomeration)	442	1,291	192%
Total Area	1,379	2,311	68%

3.2. Current Environmental Noise Management

3.2.1. On a strategic and local scale, the DRD currently considers ways to manage and mitigate road noise in accordance with the following guidance documents:

- Transport Analysis Guidance published by the Department for Transport;
- Design Manual for Roads and Bridges Volume 11, Environmental Assessment;
- Roads Service Policy and Procedure Guide: RSPPG_E030 Major Works Schemes – Inception to Construction; and
- Noise Insulation Regulations (NI) 1995.

3.2.2. At various stages throughout the design process, the DRD requires the environmental impact to be assessed of schemes in line with their current procedural guidelines. The extent of the assessment depends on the design stage, the size of the scheme and its location and environmental sensitivity of the surrounds.

- 3.2.3. Wherever possible, the environmental assessment of road schemes aims to avoid or minimise adverse noise effects through taking a sustainable approach to scheme design by ensuring each scheme performs to an acceptable level across all of the government objectives of environmental, economy, social and public accounts (previous objectives where environmental, economy, accessibility, safety and integration). At an early stage in the design process measures can be considered including:
- Realigning the route away from residential areas or other sensitive areas;
 - Keeping the route low within the natural topography to exploit any natural screening;
 - Providing environmental barriers, such as earth mounding or acoustic fencing;
 - Using low noise surfacing to reduce noise at source.
- 3.2.4. In addition to the internal procedures DRD has, the planning system plays an important role in supporting the overall management of noise. Noise is a material consideration in the determination of planning applications, which means that noise effects are taken into account when considering development proposals. Existing local planning policy emphasises the need to carefully consider noise in the design of new development as well as development plans which include planning policies tailored to the control of noise.
- 3.2.5. Noise from individual vehicles is controlled under mandatory EU noise emission standard legislation which apply to all new road vehicles. This legislation is implemented through the Roads Traffic (NI) Orders, where all new vehicles must meet the requirements before starting service and once in operation must be maintained in good condition.
- 3.2.6. The Roads (NI) Orders also implement European legislation that controls the noise emitted from the contact of tyres to the road surface. The Orders mandate noise limits on new tyres fitted to newly manufactured vehicles and through a phased introduction, since 2011, on all replacement tyres.

4. Summary of the Results of the Noise Mapping

4.1. First Round Mapping

4.1.1. Strategic noise maps were produced as a result of the First Round mapping undertaken in 2007, which consisted of road noise contours around Major Roads and Roads within the Belfast Agglomeration. The maps were reported to the European Commission in accordance with the END and were made available to the public through the production of the First Round Roads Noise Action Plan⁵ and made available at www.noiseni.co.uk.

4.1.2. The Roads Noise Action Plan was approved and adopted by the Minister on 5 March 2010, and provided a preliminary analysis of:

- Where the environmental noise is located;
- The approximate magnitude of noise levels within the assessment area; and
- Approximately how many people are exposed to differing levels of environmental noise.

4.1.3. The First Round Roads Noise Action Plan confirmed that further analysis was needed to identify and prioritise Candidate Noise Management Areas (CNMAs) and Candidate Quiet Areas (CQAs). Following the development of noise assessment criteria by the NIENDSG, the criteria and any limit values was to consider whether or not the current noise levels due to roads at a particular location are acceptable. At locations where the First Round noise maps identified noise levels which are not acceptable then further action was required, which brings the assessment to the Second Round and the identification of CNMAs.

4.1.4. For the first round mapping in 2007, the Regulations required the preparation of noise maps for the following:

- All Major Roads with more than 6 million vehicle passages per year; and
- All Agglomerations with more than 250,000 inhabitants.

4.2. Second Round Mapping

4.2.1. Within Agglomerations, the Regulations require the mapping of all road, railway, industry and airport noise regardless of the thresholds. For the Second Round mapping, the Regulations reduce the thresholds for which noise mapping and action planning should be prepared.

4.2.2. Noise maps were generated from the Second Round data and then investigated using a series of analytical tools needed to sift and manipulate through the vast amounts of electronic data. It is noted that analysis was undertaken using 1dB intervals. At this stage an understanding of the number of people exposed to different noise levels and the number of buildings affected was reached, thus enabling an initial list of Candidate Noise Management Areas (CNMAs) to be prepared.

4.3. Identification of Candidate Noise Management Areas

4.3.1. Following the assessment of noise levels, analysis was undertaken using dwelling and population datasets. In addition, a field validation exercise was undertaken by DRD of the areas highlighted at this stage as CNMAs, consisting of:

- Comparison of CNMA noise maps with existing road layout;
- Comparison of CNMA noise maps with existing building footprints;
- Removal of any non-residential buildings from the CNMA noise maps;
- Mapping of existing roadside acoustic barriers;
- Confirmation that the type of road surface material and speed limit is the same as that modelled;
- Check on modelled road traffic data with current traffic data;
- Presence of any bus lanes or other traffic management in the area; and
- Any existing noise mitigation incorporated into residential buildings such as secondary or double glazing.

4.3.2. In addition, noise measurements taken by Amey for recent DRD schemes were compared with the predicted Second Round noise levels, where possible.

4.3.3. The Major Roads total population was based on a number of 421,968 people (185,505 buildings) in Northern Ireland above 50dB $L_{A10,18h}$; 1% is therefore roughly 4220 people (1855 buildings).

4.3.4. The number of people and buildings affected in the area defined as above 75dB $L_{A10,18h}$ is 4172 people (1992 buildings), therefore the 1% of the population most affected by road noise equates approximately to those dwellings which are affected by noise ≥ 75 dB $L_{A10,18h}$ and these properties are highlighted on the noise maps in red.

4.3.5. In accordance with the DoE Noise Mapping and Action Planning Technical Guidance²³ 'Having identified areas containing 1% of the population most affected by noise, the Competent Authority then need to assess the extent to which noise needs to be reduced in these areas and prioritise the area's most in need of protection through designation as formal Noise Management Areas. It is considered that attention could be focused on the locations where most people are exposed to the highest levels or where sensitive receptors are located', priority was given to areas where most people are exposed to the highest levels. DRD grouped properties into clusters within certain bands depending on the number of properties within each cluster. All the clusters were grouped into bands 1 – 4 to enable priorities to be targeted at larger populated areas affected by noise, as outlined;

- Band 1, > 20 properties affected
- Band 2, 11 – 20 properties affected
- Band 3, 5 – 10 properties affected

- Band 4, 1 – 4 properties affected
- 4.3.6. Correspondence has been received from residents and political representatives, including representation to the DRD Minister, for certain areas where noise is deemed a problem. With the priority being focused on the locations where most people are exposed to the highest levels (Band 1 and 2) the areas in question may be deemed a Candidate Noise Management Area (CNMA) at this stage or further in the rolling five year Action Plan period.
- 4.3.7. Based on the approach outlined above a list of Candidate Noise Management Areas have been identified across Northern Ireland, as shown in Appendix D. It is noted that the CNMA noise maps in Appendix D are for illustration purposes only and are to be reviewed in conjunction with this Final Action Plan. Areas delineated as within the CNMAs are approximate based on strategic mapping at a large scale. Further refinement and validation are required to be undertaken for specific areas, as noted in Section 6.
- 4.3.8. As outlined previously, CNMAs have been prioritised based on the number of dwellings grouped together with Bands 1 and 2, eleven or more properties, being addressed at this stage.
- 4.3.9. The main bulk of the CNMAs are located within the Belfast Agglomeration, twenty three out of a total thirty two. Nine of them are located in proximity to a motorway. The other fourteen CNMAs within the Belfast Agglomeration are located along main routes within the urban areas of Belfast, Lisburn, Bangor and Holywood.
- 4.3.10. Outside of the Belfast Agglomeration there are a total of nine CNMAs located in the towns and cities of Londonderry, Ballymena, Dungiven, Ballykelly, Moy, Newtownards and Armagh.

4.4. Population Exposure and Analysis

- 4.4.1. Annex VI of the END states that the estimated number of people living in dwellings that are exposed to noise are to be calculated for the various parameters mapped. Annex VI also states that the population exposure assessment is to be reported back to the European Commission.
- 4.4.2. The methodology behind this exposure assessment is provided in chapter 10 of the Amec Environment and Infrastructure UK Ltd 2012 report entitled 'Provision of Second Round Noise Maps for Northern Ireland', and the results of this analysis are presented in the tables below. A number of datasets were used within the population exposure assessment, therefore when considering the results it is important to be aware of the various factors which have influenced the exposure analysis.
- 4.4.3. Tables 4 to 6 provide an overview of the results of the Second Round END dwelling and population analysis for Major Roads across Northern Ireland and outside the Belfast Agglomeration, and All Roads within the Belfast Agglomeration. It is noted there has been a degree of rounding to the figures.
- 4.4.4. The number of dwellings exposed to Major Road noise and the associated population exposed within the Belfast Agglomeration is provided below in Table 4.

Table 4: Summary of Number of Dwellings and Population Exposed to Noise from Major Roads within the Belfast Agglomeration							
Major Roads – Number of Dwellings within the Belfast Agglomeration							
Noise Level dB	L _{Aeq,16hr}	L _{A10,18hr}	L _{den}	L _{day}	L _{eve}	Noise Level dB	L _{night}
<50	186,480	160,589	166,409	175,180	224,058	<45	207,255
50-54	39,329	54,596	51,014	46,354	16,086	45-49	25,419
55-59	13,837	19,720	18,838	16,104	7,881	50-54	11,786
60-64	8,852	10,383	9,940	9,412	9,797	55-59	7,952
65-69	8,588	8,036	8,495	8,358	3,834	60-64	7,890
70-74	4,550	7,242	6,401	5,894	314	65-69	1,547
≥75	339	1,409	878	673	5	≥70	126
Major Roads - Population Exposure within the Belfast Agglomeration							
Noise Level dB	L _{Aeq,16hr}	L _{A10,18hr}	L _{den}	L _{day}	L _{eve}	Noise Level dB	L _{night}
<50	408,803	352,459	365,266	384,570	491,385	<45	454,518
50-54	86,119	119,500	111,582	101,131	34,482	45-49	55,415
55-59	29,959	42,739	40,792	34,827	17,253	50-54	25,427
60-64	19,316	22,424	21,507	20,478	21,357	55-59	17,405
65-69	18,718	17,598	18,621	18,292	7,965	60-64	16,989
70-74	9,519	15,493	13,568	12,442	613	65-69	3,071
≥75	630	2,851	1,729	1,325	9	≥70	240

- 4.4.5. Within the Belfast Agglomeration approximately 2,851 people are shown to be exposed to Major Road noise levels greater than 75dB L_{A10,18hr}, which equates to an estimated 0.5% of the urban area population (Table 4).
- 4.4.6. For the L_{night} scenario, Table 4 shows that approximately four out of five (79%) of the people living in the Belfast Agglomeration have an exposure of less than 45dB and can therefore be considered to be largely unaffected by Major Road noise during the night. It is noted that an approximate 240 people within the Belfast Agglomeration are exposed to Major Road noise in excess of 70dB during the night.
- 4.4.7. Table 5 provides an overview of the number of dwellings and population exposed to road noise from All Roads within the Belfast Agglomeration.

Table 5: Summary of Number of Dwellings and Population Exposed to Noise from All Roads within the Belfast Agglomeration							
All Roads – Number of Dwellings within the Belfast Agglomeration							
Noise Level dB	L _{Aeq,16hr}	L _{A10,18hr}	L _{den}	L _{day}	L _{eve}	Noise Level dB	L _{night}
<50	142,140	109,654	118,931	127,441	194,698	<45	173,875
50-54	54,543	72,214	67,022	62,833	26,292	45-49	34,761
55-59	23,372	29,922	28,050	25,794	18,439	50-54	22,799
60-64	19,336	21,096	20,889	20,021	17,400	55-59	16,970
65-69	15,916	16,226	17,004	16,404	4,820	60-64	11,772
70-74	6,301	11,262	9,128	8,748	321	65-69	1,668
≥75	367	1,601	951	734	5	≥70	130
All Roads - Population Exposure within the Belfast Agglomeration							
Noise Level dB	L _{Aeq,16hr}	L _{A10,18hr}	L _{den}	L _{day}	L _{eve}	Noise Level dB	L _{night}
<50	314,004	243,471	263,912	282,798	428,100	<45	382,747
50-54	118,289	156,835	145,293	135,679	56,762	45-49	75,643
55-59	50,971	64,894	60,806	56,092	40,262	50-54	49,336
60-64	41,716	45,592	45,231	43,317	37,342	55-59	36,702
65-69	34,396	35,035	36,790	35,494	9,962	60-64	25,061
70-74	13,007	24,004	19,159	18,237	627	65-69	3,328
≥75	682	3,235	1,873	1,447	9	≥70	248

- 4.4.8. Within the Belfast Agglomeration approximately 3,235 people are shown to be exposed to road noise levels greater than 75dB L_{A10,18hr}, which equates to an estimated 0.6% of the urban area population (Table 5). An estimated 44% of the total length of roads mapped in the Second Round are located within the densely populated Belfast Agglomeration, giving rise to less than 1% of the population exposed to road noise levels greater than 75dB L_{A10,18hr}.
- 4.4.9. For the L_{night} scenario, Table 5 shows that approximately two thirds of the people living in the Belfast Agglomeration have an exposure of less than 45dB and can therefore be considered to be largely unaffected by noise during the night. It is noted that an approximate 248 people within the Belfast Agglomeration are exposed to road noise in excess of 70dB during the night.
- 4.4.10. When comparing Tables 4 and 5 it is noted that approximately 384 people are exposed to non-Major Road noise over 75dB L_{A10,18hr} within the Belfast Agglomeration.
- 4.4.11. The number of dwellings and estimate of population exposed to noise from Major Roads outside the Belfast Agglomeration is shown in Table 6.

Table 6: Summary of Number of Dwellings and Population Exposed to Noise from Major Roads outside the Belfast Agglomeration							
Major Roads – Number of Dwellings outside the Belfast Agglomeration							
Noise Level dB	L _{Aeq,16hr}	L _{A10,18hr}	L _{den}	L _{day}	L _{eve}	Noise Level dB	L _{night}
<50	427,866	407,789	412,944	421,422	449,016	<45	442,114
50-54	28,131	38,844	35,977	31,480	17,443	45-49	20,058
55-59	13,098	17,349	16,365	14,417	9,995	50-54	12,271
60-64	10,409	11,287	11,156	10,635	10,199	55-59	9,916
65-69	9,501	9,960	9,979	9,801	4,840	60-64	6,598
70-74	2,809	6,096	5,036	3,918	414	65-69	931
≥75	94	583	451	235	1	≥70	20
Major Roads - Population Exposure outside the Belfast Agglomeration							
Noise Level dB	L _{Aeq,16hr}	L _{A10,18hr}	L _{den}	L _{day}	L _{eve}	Noise Level dB	L _{night}
<50	1,047,659	999,144	1,011,836	1,032,184	1,098,413	<45	1,081,874
50-54	67,579	93,368	86,268	75,586	41,934	45-49	48,166
55-59	31,482	41,980	39,472	34,697	23,980	50-54	29,437
60-64	24,829	26,991	26,713	25,418	24,037	55-59	23,485
65-69	22,245	23,625	23,530	23,059	11,182	60-64	15,361
70-74	6,496	14,077	11,655	9,035	957	65-69	2,133
≥75	214	1,321	1,031	527	3	≥70	49

4.4.12. The results for the Major Roads outside the Belfast Agglomeration show that that approximately 0.1% (1,321) of the population outside of the Belfast urban area are exposed to Major Road noise levels greater than 75dB L_{A10,18hr}. Just over half (56%) of the length of roads modelled as part of the Second Round noise mapping are located outside of the Belfast Agglomeration.

4.4.13. Furthermore, for the L_{night} noise scenario, Table 6 shows that approximately 90% of the population outside of the Belfast Agglomeration are exposed to night noise levels of less than 45dB. This would be expected considering the nature of the population density outside of the Belfast Agglomeration. It is noted that approximately 49 people living outside the Belfast Agglomeration are exposed to night noise levels of greater than 70dB.

4.4.14. Table 7 provides an overview across Northern Ireland of the number of dwellings and population exposed to noise from Major Roads.

Table 7: Summary of Number of Dwellings and Population Exposed to Noise from Major Roads in Northern Ireland							
Major Roads – Number of Dwellings in Northern Ireland							
Noise Level dB	L _{Aeq,16hr}	L _{A10,18hr}	L _{den}	L _{day}	L _{eve}	Noise Level dB	L _{night}
<50	614,346	568,378	579,353	596,602	673,074	<45	649,369
50-54	67,460	93,440	86,991	77,834	33,529	45-49	45,477
55-59	26,935	37,069	35,203	30,521	17,876	50-54	24,057
60-64	19,261	21,670	21,096	20,047	19,996	55-59	17,868
65-69	18,089	17,996	18,474	18,159	8,674	60-64	14,488
70-74	7,359	13,338	11,437	9,812	728	65-69	2,478
≥75	433	1,992	1,329	908	6	≥70	146
Major Roads - Population Exposure in Northern Ireland							
Noise Level	L _{Aeq,16hr}	L _{A10,18hr}	L _{den}	L _{day}	L _{eve}	Noise Level dB	L _{night}
<50	1,456,463	1,351,603	1,377,102	1,416,753	1,589,798	<45	1,536,392
50-54	153,699	212,868	197,850	176,717	76,416	45-49	103,581
55-59	61,441	84,719	80,264	69,524	41,233	50-54	54,865
60-64	44,146	49,415	48,220	45,896	45,394	55-59	40,891
65-69	40,963	41,224	42,151	41,351	19,147	60-64	32,349
70-74	16,016	29,570	25,224	21,476	1,571	65-69	5,204
≥75	844	4,172	2,760	1,852	12	≥70	289

4.4.15. Table 7 shows that, for the LA_{10,18hr} scenario, less than 0.5% of the population (4,172) in Northern Ireland are exposed to Major Road noise levels in excess of 75dB. It is noted that 2,851 of this population live within the Belfast Agglomeration (Table 4).

4.4.16. Analysis of the L_{night} noise scenario has identified approximately 289 people across Northern Ireland that experience noise from Major Roads in excess of 75dB during the night, 240 of these people live within the Belfast Agglomeration. Table 7 shows that approximately 87% of the population in Northern Ireland are not affected by night noise from Major Roads.



5. Consultation

5.1. Public Consultation

- 5.1.1. Public consultation of the Draft Roads Noise Action Plan was undertaken in accordance with Article 8(7) of the Environmental Noise Directive between 1 May 2013 and 26 June 2013. In addition, the Equality Impact Assessment undertaken by the Department for Regional Development was made available through the consultation process. A full list of the consultees is available in Appendix E.
- 5.1.2. A total of two responses were received to the public consultation process, from:
- Belfast City Council; and
 - Ards Borough Council.
- 5.1.3. The Department for Regional Development responded directly to the councils. The main points raised by those who responded to the consultation and the response from DRD are summarised below in Table 8.

Table 8: Summary of consultation process and response from the Department for Regional Development	
Specific Comment	Departmental Response
Encourage the Department to undertake noise validation measurements as soon as practicable within all the CNMAs in order to ensure that the population exposure has been accurately characterised and that reported road noise levels are representative of ambient conditions.	Site-specific noise modelling will be required to determine the appropriateness and specification of acoustic barriers proposed for a number of CNMAs. At this stage noise monitoring will be undertaken to validate these site-specific noise models on a case by case basis.
Recommend that the Department engages with residents regarding the nature of local noise mitigation measures to be introduced.	The intention is to treat the CNMA's on an area based approach and consultation will be required with all occupants of the properties in the CNMA's and not just the properties highlighted on the noise maps. Residents within these areas will be consulted and their views considered before any mitigation measures are undertaken.
Request that the Department provides periodic updates regarding the progress of introduction of noise mitigation measures.	Consultation with the relevant bodies will be undertaken to seek their views or concerns on the proposed measures prior to implementation.
Recommend the application of an area based approach, similar to that employed for the designation of Air Quality Management Areas	The intention is to treat the CNMA's on an area based approach and consultation will be required with all occupants of the properties in the CNMA's and not just the properties highlighted on the noise maps. Residents within these areas will be consulted and their views considered before any mitigation measures are undertaken.



Table 8: Summary of consultation process and response from the Department for Regional Development	
Specific Comment	Departmental Response
<p>It is likely the provision of a bus lane will have little or no effect in directing noise sources further away from the relevant properties, as vehicles using the road already follow this pattern. Believe that the provision of a bus lane will prevent residents from parking outside or close to their properties while providing little or no noise mitigation, and would therefore simply be an inconvenience to occupiers of the effected dwellings.</p>	<p>The summary of proposed mitigation measures are subject to the successful outcome of a traffic study and consultation process. All of the measures proposed are also subject to the availability of the necessary finance.</p> <p>All comments will be kept on record and further consultation will take place should the proposed measures be developed further.</p>
<p>Further information regarding HGV restriction should be provided by the Department. Detail as to how the restrictions are to be implemented should be provided, particularly as the displacement of HGV traffic could then have an effect on other locations.</p>	<p>The summary of proposed mitigation measures are subject to the successful outcome of a traffic study and consultation process. All of the measures proposed are also subject to the availability of the necessary finance.</p> <p>All comments will be kept on record and further consultation will take place should the proposed measures be developed further.</p>

6. Consideration of Mitigation

6.1. Overview

- 6.1.1. The Draft Roads Noise Action Plan identified the CNMAs and potential mitigation measures for each CNMA. A wide range of direct and indirect noise mitigation measures are available, some of which are outside control of the DRD as they are at a national or regional level and some are not appropriate for the location or cost-effectiveness in their implementation.
- 6.1.2. The potential mitigation measures identified within the Draft Action Plan have been reviewed in detail with consideration of timescale of implementation, funding availability and powers available to the DRD. As a result the CNMAs have been grouped on the following basis:
- i. Potential mitigation to be implemented by DRD within the next five years (2013 to 2018), subject to the necessary funding being made available;
 - ii. Potential mitigation to be considered by DRD within the following five years (2019 to 2024), subject to the necessary funding being made available; and
 - iii. Potential mitigation outside the control of DRD.
- 6.1.3. In addition to the above review, this Final Action Plan provides an outline programme and high level cost estimate of implementation of the recommended mitigation, where possible. All mitigation requires the necessary studies and consultation to be successfully undertaken, along with the required funding.
- 6.1.4. With this in mind Tables 9 to 11 provide as much information as possible at this stage on the thirty two CNMAs identified within Bands 1 and 2.

Potential mitigation to be implemented by DRD within the next five years

- 6.1.5. Prioritisation has been given to addressing CNMAs located adjacent to motorways, where mitigation includes acoustic barriers and/or low-noise surfacing. Traffic noise within CNMAs 1 to 8 is attributed to the M2 motorway, see Appendix D for further detail. The estimated programme and cost has been provided for the design, manufacture, installation and maintenance of acoustic barriers for CNMAs 1 to 8 in Table 9. Low noise surfaces on carriageways are known to be less effective at lower speeds, therefore this option is most suitable for carriageways with average speed over 30mph²⁴. The costs for low-noise surfacing are not included within Table 9 as any cost associated with this resurfacing can be included within the DRD's general maintenance schemes.



- 6.1.6. The Regional Development Strategy identified that higher quality services could be provided through the development of a rapid transit system in Belfast. The implementation of this Strategy and the Regional Transportation Strategy were taken forward within the Belfast Metropolitan Transport Plan, which stated that a pilot stage of a rapid transit system could be undertaken during its lifetime before 2015. Following from this studies showed that a bus based rapid transport system would be viable for Belfast. A pilot project under the Belfast Rapid Transit (BRT) scheme was then confirmed consisting of three connecting routes for East and West Belfast, and the Titanic Quarter²⁵. Future proposals for the BRT will integrate the routes as part of the pilot project and the existing transport system in North and South Belfast.
- 6.1.7. The York Street Interchange provides direct links between the Westlink and the M2 and M3 motorways by creating new underpasses below the existing Lagan Road and Dargan Rail bridges and a new overbridge at York Street. This scheme will address noise issues associated with the new road alignment and at CNMA properties.

Table 9: Potential mitigation to be implemented by DRD within the next five years (2013 to 2018), subject to the necessary funding being made available			
CNMA Reference	Potential Measures	Cost	Delivery
Belfast – CNMA1	Site-specific modelling to determine the effectiveness of an acoustic barrier and/or low noise resurfacing of the motorway.	£2-3M	Year 2-5
Belfast – CNMA2	Site-specific modelling to determine the effectiveness of an acoustic barrier and/or low noise resurfacing of the motorway.		
Belfast – CNMA3	Site-specific modelling to determine the effectiveness of an acoustic barrier and/or low noise resurfacing of the motorway.		
Belfast – CNMA4	Site-specific modelling to determine the effectiveness of an acoustic barrier and/or low noise resurfacing of the motorway.		
Belfast – CNMA5	Site-specific modelling to determine the effectiveness of an acoustic barrier and/or low noise resurfacing of the motorway.		
Belfast – CNMA6	Site-specific modelling to determine the effectiveness of an acoustic barrier and/or low noise resurfacing of the motorway.		
Belfast – CNMA7	Site-specific modelling to determine the effectiveness of an acoustic barrier and/or low noise resurfacing of the motorway.		
Belfast – CNMA8	Site-specific modelling to determine the effectiveness of an acoustic barrier and/or low noise resurfacing of the motorway.		

Table 9: Potential mitigation to be implemented by DRD within the next five years (2013 to 2018), subject to the necessary funding being made available			
CNMA Reference	Potential Measures	Cost	Delivery
Belfast – CNMA10	Traffic management through promotion of the proposed WWAY Belfast Rapid Transit system. Improvement and promotion of the public transport system within the Belfast area.	-	2018
Belfast – CNMA16	Traffic management through promotion of the proposed EWAY Belfast Rapid Transit system on the A20 Upper Newtownards Road As part of the BRT, a park and ride is proposed in Dundonald which aims to alleviate traffic on the A20 and within the CNMA.	-	2018
Belfast – CNMA21	Site-specific modelling to determine the effectiveness of an acoustic barrier and/or low noise resurfacing of the A55 Milltown Road	£250K	Year 2
Belfast – CNMA23	Proposal for the delivery of the York Street Interchange will address noise issues at these properties.	-	2018
Moy – CNMA1	Site-specific modelling to determine the effectiveness of an acoustic barrier.	£120k	2018

Potential mitigation to be considered by DRD after the next five years

- 6.1.8. An overview of the schemes to be considered outside the next five year period which will assist in addressing noise within the identified CNMAs are outlined in Table 10. All these schemes are subject to the availability of finance.
- 6.1.9. There are a number of proposed schemes which when completed will reduce noise levels at dwellings within identified CNMAs, namely Dungiven, Ballykelly, A2 Buncrana Road, Armagh East Link Road and Armagh North and West Link Road.
- 6.1.10. The Regional Strategic Transport Network Transport Plan (RSTN TP) 2015 endorsed the provision of a 30 kilometre dual carriageway from Derry to Dungiven, including a dual carriageway bypass of Dungiven. The scheme complements the Ilex Regeneration Plan for Derry and the wider North West. The proposed A6 Derry to Dungiven bypass will reroute through traffic away from the CNMA, therefore reducing traffic volume and percentage of heavy goods vehicles. A public inquiry was held in September/ October 2012 on the proposed road scheme. A Departmental Statement will be issued in due course of the findings from the Inquiry.
- 6.1.11. The Investment Strategy for Northern Ireland 2011-2021 includes construction of a number of high priority schemes on the M2, A6 and A26, as part of a £390 million package funded through alternative finance in the period 2015/16 to 2020/21. However, a commitment to fund the revenue consequences of this roads package will be required; therefore, the timing will depend upon future resource budget settlements. In the event of alternative finance not being

available, the A6 Derry to Dungiven Dualling could be included, together with other priority schemes, in the bidding process for conventional funds, in the next Budget period.

- 6.1.12. The preferred route for the Ballykelly bypass scheme, announced on 6 March 2010, provides for a 4.2km dual carriageway bypass south of the village. The bypass begins at a new roundabout on the Ballykelly Road east of the village, skirting around the south of the village before re-joining the Clooney Road at a new roundabout west of the village. Once funding becomes available, work will resume to complete the design and assessment of the bypass and publication of Draft Statutory Orders and Environmental Statement.
- 6.1.13. There are proposals for the Ballymena North and West Distributor Road which will redistribute traffic and allow alternative route options for accessing the town centre. Currently these proposals are contained in the Sub-Regional Transport Plan (SRTP) 2015. The implementation of measures proposed in the SRTP is subject to appropriate economic appraisal, any relevant statutory procedures such as environmental assessment, planning and land acquisition and the availability of funding.
- 6.1.14. The Regional Strategic Transport Network Transport Plan (RSTN TP) 2015 endorsed improvement of the A2 Buncrana Road, Derry from Pennyburn Roundabout to the border with the Republic of Ireland. The preferred route for the scheme, announced on 10 February 2009, will widen the existing road from Pennyburn Roundabout to Skeoge Link Roundabout to four lanes and will provide a dual carriageway from Skeoge Roundabout to the Border with the Republic of Ireland. There is no provision in the 2011-2015 NI budget for construction of the scheme and spending beyond the current budget period on schemes such as the Buncrana Road improvement will depend on the funding made available by the Executive through the Investment Strategy for Northern Ireland 2011-2021 process.
- 6.1.15. The Armagh North and West Link Road is for the provision of a single carriageway road, approximately 6.9 km long, extending around the northern and western outskirts of the City of Armagh, linking between the A3 Portadown Road and the A3 Monaghan Road. Consideration of options for a preferred line and junction strategy based on the 'out of town' corridor, published in July 2008, is continuing.
- 6.1.16. The proposal is for the provision of a 2.25km long single carriageway Armagh East Link Road from A3 Portadown Road to A28 Markethill Road. The selection of the preferred alignment and junction options has been completed.
- 6.1.17. As for all the schemes requiring further assessment and development of Draft Statutory Orders, a complete appraisal will be undertaken in line with the Department for Transport's Transport Analysis Guidance and the Design Manual for Roads and Bridges. This will include appraisal in terms of environment, economy and social objectives.

Table 10: Potential mitigation to be considered by DRD within the following five years (2019 to 2024), subject to the necessary funding being made available			
CNMA Reference	Potential Measures	Cost	Delivery
Belfast – CNMA11	Bus lane currently in operation into town. Potential for traffic management through the introduction of a bus lane out of town. In addition, there is potential for the Antrim Road to be included within the Belfast Rapid Transit system.	-	>5years
Belfast – CNMA12	Bus lanes have been determined, through previous appraisals, to not be economically feasible for this section of the Ormeau Road. Proposals for the Ormeau Road will be under the Belfast Rapid Transit system as the main southern corridor. Currently, Cairnshill Park and Ride is at approximately 50% capacity. The BRT will also have knock-on effects to the existing Cairnshill Park and Ride and further increase its usage.	-	>5years
Londonderry – CNMA1	Promotion of a suitable alternative such as the A2 Buncrana road widening scheme.	-	>5years
Ballymena – CNMA1	There are proposals for the Ballymena North and West Distributor Road which will redistribute traffic and allow alternative route options for accessing the town centre.	-	>5years
Dungiven – CNMA1	The proposed A6 Derry to Dungiven bypass will reroute through traffic away from the CNMA, therefore reducing traffic volume and percentage of heavy goods vehicles.	-	>5years
Ballykelly – CNMA1	The proposed Ballykelly bypass will reroute through traffic away from the CNMA, therefore reducing traffic volume and percentage of heavy goods vehicles.	-	>5years
Armagh – CNMA1	Proposal for a link road to the north and west of the city, thereby rerouting traffic away from the CNMA. Proposal for a link road to the east of the city, thereby rerouting traffic away from the CNMA.	-	>5years
Armagh – CNMA2	Proposal for a link road to the north and west of the city, thereby rerouting traffic away from the CNMA. Proposal for a link road to the east of the city, thereby rerouting traffic away from the CNMA.	-	>5years

Potential mitigation outside the control of DRD

- 6.1.18. On completion of the detailed review of the identified CNMAs there remained some areas which would not lend themselves to mitigation within control of the DRD. Such measures would be driven through at a European and national level, such as vehicle emission and tyre noise legislation, and the manufacture and maintenance of vehicles. The amendment of any existing national noise policy would be again outside of the control of the DRD, however the



noise mapping process has enabled baseline information to be mapped allowing any future changes to be monitored.

6.1.19. A summary of these CNMAs and measures outside the remit of DRD are provided in Table 11.

Table 11: Potential mitigation outside the control of DRD	
CNMA Reference	Potential Measures
Belfast – CNMA9	Vehicle noise emissions and tyre noise regulations set at EU level;
Belfast – CNMA13	Noise regulations which would be set at national level;
Belfast – CNMA14	Transport policy objectives set at regional level;
Belfast – CNMA15	District Council and Government Departments' powers;
Belfast – CNMA17	Vehicle manufacture/ design controlling noise at source;
Belfast – CNMA18	Vehicle maintenance to reduce engine noise;
Belfast – CNMA19	Smooth driving with minimal revving, keeping music at an acceptable level and limiting the use of the horn and the slamming of vehicle doors;
Belfast – CNMA20	Introduction of specific initiatives, such as car pools; and
Belfast – CNMA22	Design and layout of developments or urban landscape to ensure that noise insensitive buildings are used as barriers to protect noise sensitive structures.
Newtownards – CNMA1	
Newtownards – CNMA2	

7. Forward Strategy

- 7.1.1. This Plan is over a five year period between 2013 and 2018 up until the next round of noise mapping and action planning. However, environmental noise needs to be managed in a cost-effective manner as part of a long term strategy which runs beyond each five year Action Plan. Therefore, in line with the DoE Technical Guidance²³, the following aspects should be borne in mind over the next five year period.
- 7.1.2. There is opportunity for the results of the Second Round strategic noise model to be validated in more detail. For example traffic flows and composition, local conditions and topography are just a number of parameters where input data can be verified locally.
- 7.1.3. The meetings and progress of the NIENDSG should continue in order for any updates to local, national or European policy can be taken on board. In addition, it would be beneficial for the NIENDSG to discuss the appropriate use of European parameters L_{den} , L_{night} , L_{day} and L_{eve} in the Noise Action Plans.
- 7.1.4. Within the next five years properties highlighted within Bands 3 and 4 should be assessed, thereby with development of the next Action Plan these properties will be addressed in the same way that Bands 1 and 2 have been.
- 7.1.5. When addressing specific CNMAs validation exercises can be undertaken, for example site-specific noise monitoring can be completed when developing noise models to determine the specification of acoustic barriers. This information can then be used to help inform the next round of mapping exercise in five years time.
- 7.1.6. It is proposed that minor works or traffic calming schemes affecting CNMAs should be awarded additional points to boost the Minor Works/ Traffic Calming scoring system used to prioritise such schemes. The Roads Service Policy and Procedure Guidance RSPPG_EO32 Minor Improvement Schemes already awards additional scoring for installing noise barriers and improvements to surfacing to reduce road noise.
- 7.1.7. On a more strategic scale DRD will further consider amending such policy and guidance to enable schemes to be prioritised which will provide benefits to CNMAs in terms of noise. This can be undertaken across the board for minor works, traffic calming and maintenance schemes.
- 7.1.8. In addition, it is recommended that, in accordance with the END, assessment is undertaken to determine the effectiveness of any mitigation implemented as a result of this process. Therefore, all mitigation will be included within the next mapping exercise and comparison made between pre and post-mitigation scenarios.
- 7.1.9. For all the CNMAs the DRD will monitor, alongside DoE Planning Service, and if developments are proposed within these designated areas any mitigation measures will be assessed as part of the design and planning process for implementation. To ensure that the overall aims of the END and this Action Plan are fully realised, noise issues need to be carefully considered through the planning system for specific development proposals and at a



more strategic scale through the production of development plans. There needs to be a transparent relationship between the planning system and the END, allowing local planning policy to reflect this.

- 7.1.10. In addition, the DRD will work with the DoE and other relevant authorities and bodies to establish a clear framework of responsibility, so that road noise is properly managed in the context of sustainable development and role of each body is clearly understood by the public. Where a potentially beneficial action has been identified by the DRD, for which it is not the managing authority or organisation it will liaise with the relevant authority to discuss the viability of action, or support the other authority in undertaking desired actions.

8. References

1. The competent authorities as per the Regulations are, Department of the Environment, Department for Regional Development, Northern Ireland Transport Holding Company and airport operators.
2. For further information see
<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2002:189:0012:0025:EN:PDF>
3. Trunk Roads, Motorways and Classified Roads with more than 3 million vehicle passages per year as set out within Regulation 3 of The Environmental Noise Regulations (NI) 2006.
4. Major Continuous Urban Area having a population in excess of 100,000 persons as set out within Regulation 3 of The Environmental Noise Regulations (NI) 2006.
5. First Round Roads Noise Action Plan available at
http://www.doeni.gov.uk/doeni_-_final_roads_noise_action_plan.pdf
6. The term 'major development' is not defined in the Regulations or the END.
7. Regulation 26 of The Environmental Noise Regulations (NI) 2006.
8. The 18 July 2013 applies to industry and consolidated plans.
9. For more information see
http://europa.eu/legislation_summaries/other/l28062_en.htm
10. The population density, specified within the NI Regulations, is equal to or greater than 500 people per km².
11. For more information see
<http://ec.europa.eu/environment/eia/full-legal-text/85337.htm>
12. World Health Organisation (1999). Guidelines for Community Noise. World Health Organisation, Geneva.
13. World Health Organisation (2009). Night Noise Guidelines for Europe. World Health Organisation, Geneva.
14. HM Government (2005). Securing the Future – Delivering the UK Sustainable Development Strategy.
15. Department for Communities and Local Government (2012). National Planning Policy Framework.
16. Department of Environment, Food and Rural Affairs (2010). Noise Policy Statement for England.
17. For more information see
www.defra.gov.uk/
18. For more information see
<http://www.dft.gov.uk/webtag/documents/project-manager/unit2.7.2.php>
19. DRD Roads Service Meeting Minutes (2010). Note to Roads Service Board for the Formal Adoption of the Roads Noise Action Plan.
20. For more information see <http://www.nisra.gov.uk/>
21. Amec Environment and Infrastructure UK Ltd (2012). Provision of Second Round Noise Maps for Northern Ireland – Roads Noise Mapping Final Report.
22. Regulation 3(8) of The Environmental Noise Regulations (NI) 2006.
23. Department of Environment (2013). Noise Mapping and Action Planning Technical Guidance – Noise from Roads.
24. Transport Research Library (2010). A Review of Current Research on Road Surface Noise Reduction Techniques PPR 443.
25. For more information see
<http://www.drdni.gov.uk/index/rapid-transit.htm>
26. For more information see
<http://webarchive.nationalarchives.gov.uk/+www.dft.gov.uk/about/strategy/whitepapers/air/>



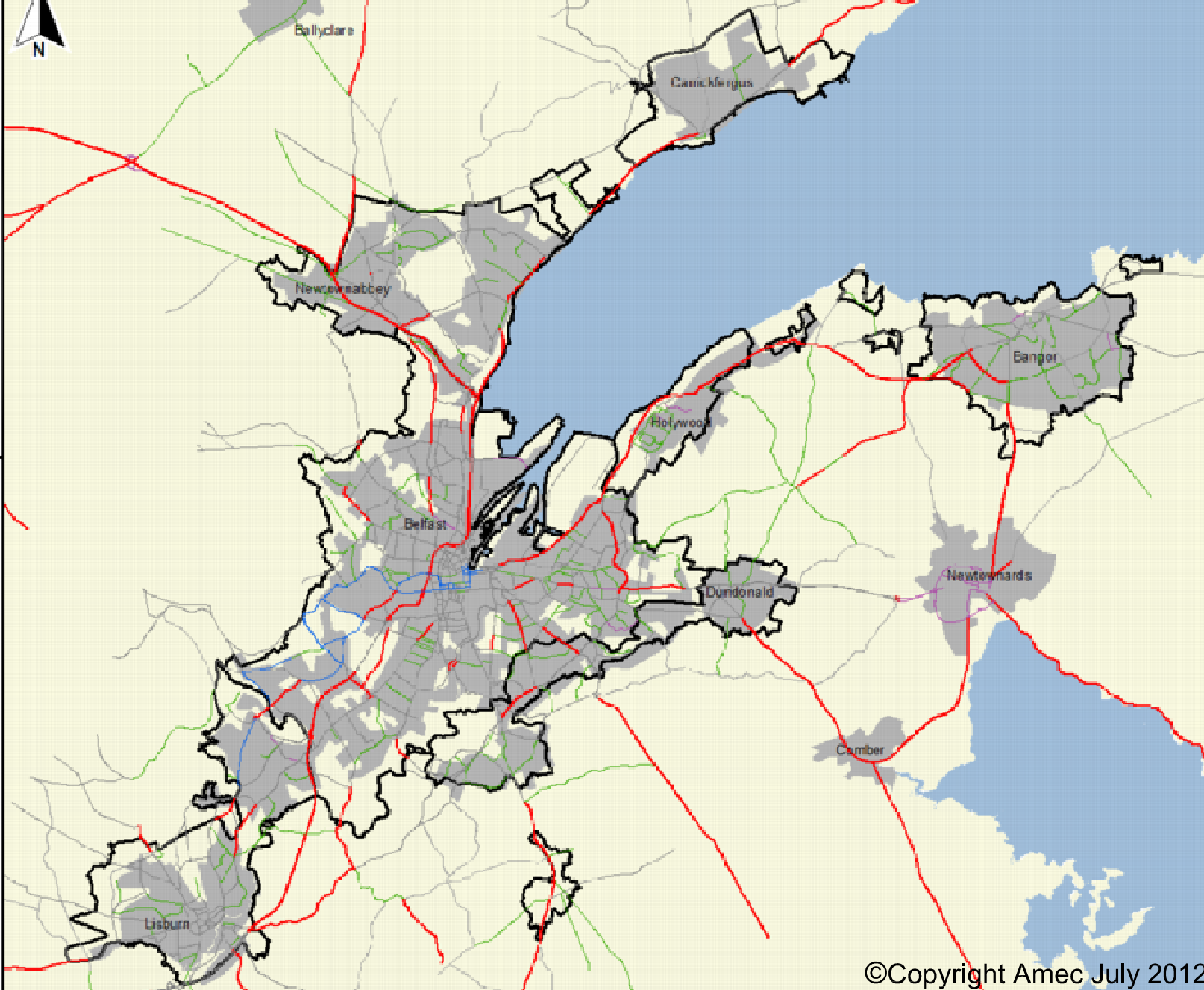
Appendices



Appendix A

Modelled Roads in Belfast Agglomeration

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Key

- Permanent ATC's
- Temporary ATC's
- Derived
- Rapid Transit
- BTM
- Defaults
- Belfast Agglomeration
- Built Up Areas

Rev	Revision details	Chkd	Appd	Date
Drawn: CC			Preliminary	<input checked="" type="checkbox"/>
Design: CC			For comment	<input type="checkbox"/>
Chkd: OF			For tender	<input type="checkbox"/>
Appd: OF			For construction	<input type="checkbox"/>
Date: March 2013			As constructed	<input type="checkbox"/>
			Other	<input type="checkbox"/>



Client
DRD Roads Service
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Belfast BT8 8JL (028) 9025 3000

Project Name
Roads Noise Action Plan

Drawing Title
Modelled Roads in Belfast Agglomeration

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Drawing No Figure 2	Rev P0
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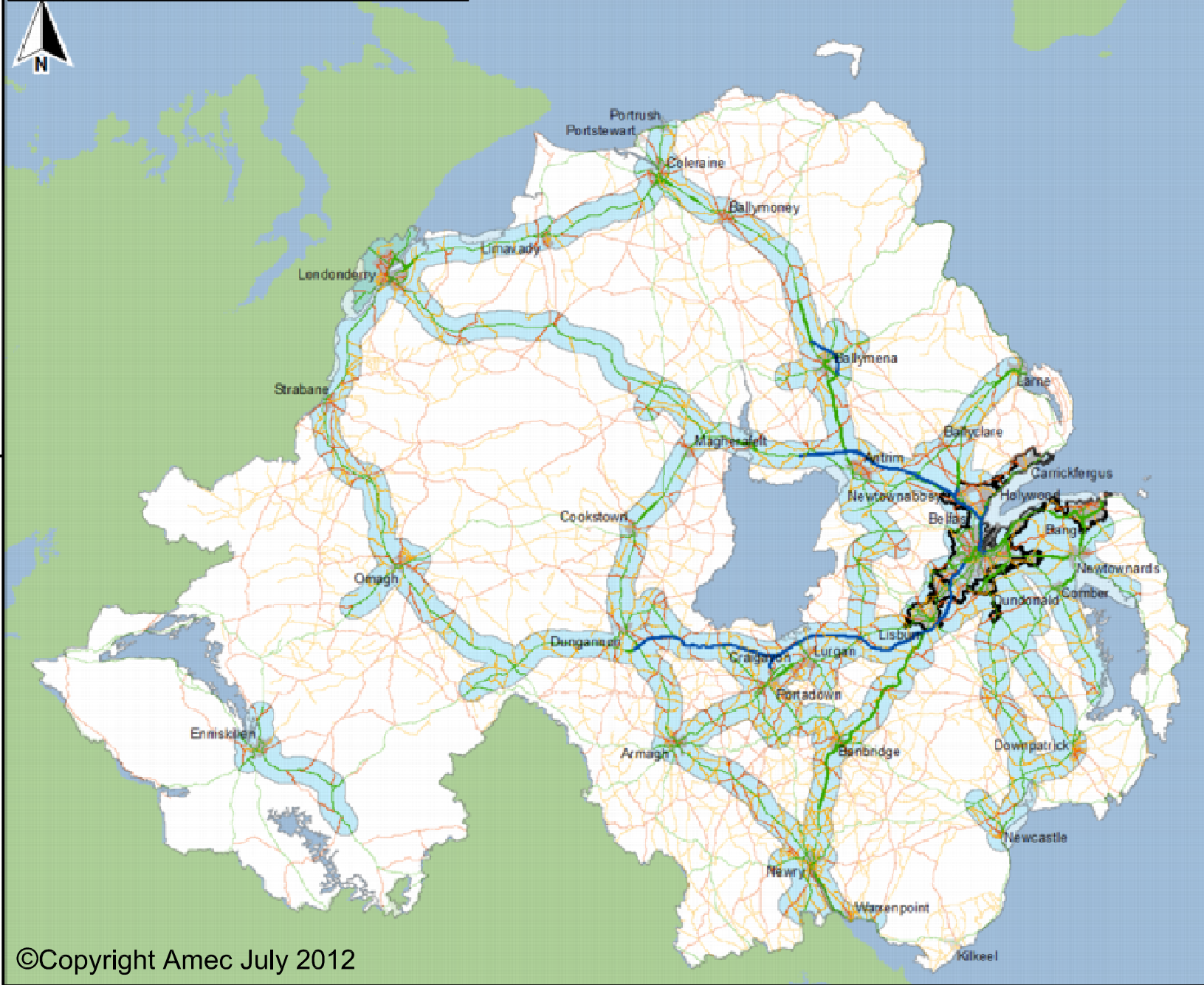


Appendix B

Major Roads mapping in Second Round

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Key

- Motoway
- Dual Carriageway
- A Road
- B Road
- C Road
- Belfast Agglomeration
- Built Up Areas
- Major Road Coverage Extent

Rev	Revision details	Chkd	Appd	Date
Drawn:	CC			Preliminary
Design:	CC			For comment
Chkd:	OF			For tender
Appd:	OF			For construction
Date:	March 2013			As constructed
				Other



Client
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Project Name
Roads Noise Action Plan

Drawing Title
Major Roads Mapped in Round Two

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Project Name: END Second Round Mapping

Document Title: FinalDraft Roads Noise Action Plan

Appendix C

List of Current Policy and Framework used in the Management of Environmental Noise

C.1. Legislation

Land Acquisition and Compensation (NI) Order 1973
Pollution Control and Local Government (NI) Order 1978
Noise Insulation Regulations (NI) 1995
The Environmental Assessment of Plans and Programmes Regulations (NI) 2004
Environmental Impact Assessment (NI) Regulations 1999
The Clean Neighbourhoods and Environment Act 2011

C.2. Relevant Policy and Guidance Publications

Control of Noise (Code of Practice for Construction and Open Sites) Order (NI) 2002
Calculation of Road Traffic Noise – Department of Transport 1988, NI Modification 1995
Design Manual for Roads and Bridges, Volume 11, Section 3, Part 7, HD 213/11 Noise and Vibration
Land Compensation – your rights explained. Insulation against traffic noise 1995
BS 5228 Noise and Vibration Control on Construction and Open Sites
Part 1 1997 – Code of Practice for basic info and procedures for noise and vibration control.
Part 2 1997 – Guide to noise and vibration control legislation for construction and demolition including road construction and maintenance
BS5228 Part 4 1992 – Code of Practice for noise and vibration from piling operations
BS 6472 1992 Guide to evaluation of human exposure to vibration in buildings (1Hz to 80Hz)
BS ISO 4866:2010 Mechanical vibration and shock -- Vibration of fixed structures -- Guidelines for the measurement of vibrations and evaluation of their effects on structures
BS 7385 Part 2 1993 – Evaluation and measurement of vibration in buildings, guide to damage levels from ground borne vibration
BS 7445 Part 1: 2003 – Description and measurement of environmental noise. Guide to quantities and procedures
BS 7445 Part 2: 1991 – Description and measurement of environmental noise. Guide to the acquisition of data pertinent to land use
BS 7445 Part 3: 1991 – Description and measurement of environmental noise. Guide to application to noise limits
BS 8233 1999- Sound insulation and noise reduction from buildings Code of Practice
Defra – Low Frequency Noise 2002

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Delivering the goods – a toolkit for improving night time deliveries Freight Transport Association in consultation with the Department of Transport

Calculation of Railway Noise – Department of Transport 1995

The Noise Insulation (Railways and other Guided Transport Systems) Regulations 1996

Defra – A review of published research on high frequency noise and its effects 2003

Development Control Advice Note 10 (Revised) EIA 1999

DMRB Screening Method Spreadsheet Version 1.02 2003

Transport Assessment: Guidelines for development proposals in Northern Ireland 2006

The Air Quality Directive 2008/50/ EC

The Air Quality Strategy for England, Scotland, Wales and Northern Ireland 2007

The Air Quality Standard Regulations (Northern Ireland) 2010

Environment (NI) Order 2002

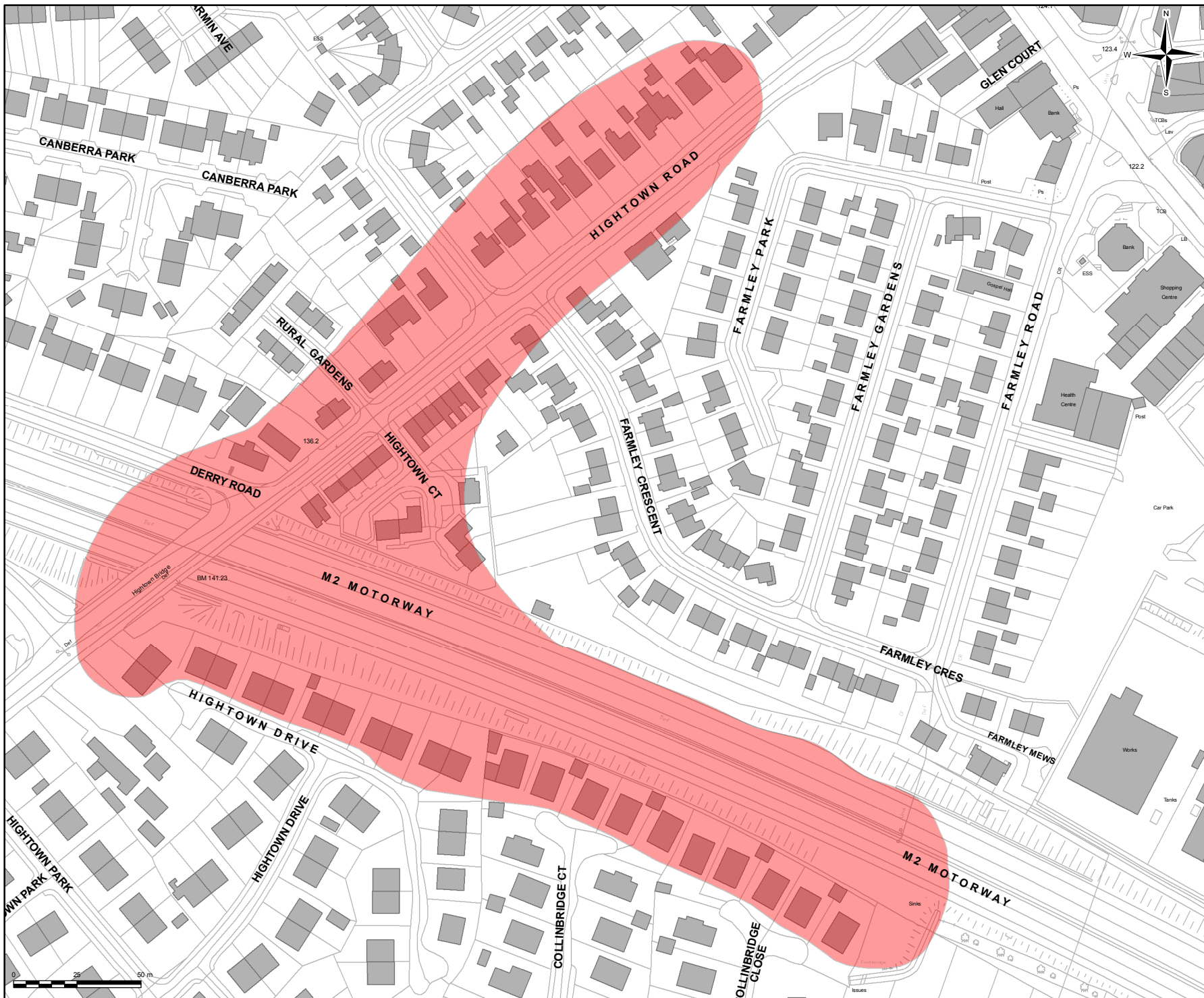
Local Air Quality Management Technical Guidance (LAQM TG09)

Appendix D

Results of Second Round Mapping

Identification of Candidate Noise Management Areas in Bands 1 and 2.

It is noted that these CNMA noise maps should be reviewed in conjunction with this report and are for illustration purposes only. The maps are based on strategic mapping and require further refinement and validation.



Legend

Candidate Noise Management Area (CNMA)

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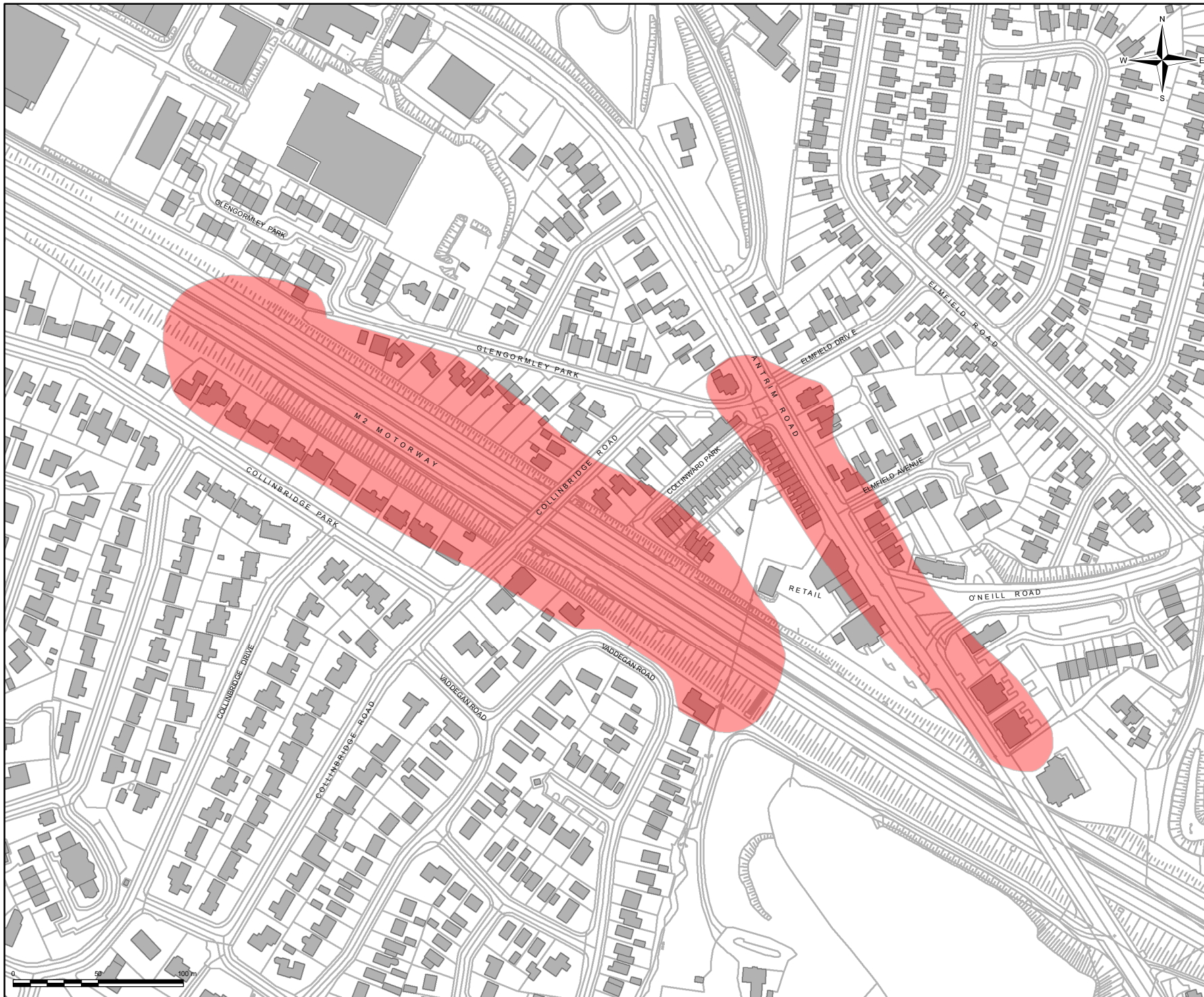
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	Design : ACT			For Comment
	Chkd : OF			For tender
	Appd : OF			For construction
	Date : Nov 2013			As constructed
				Other

Client :  Department for Regional Development
www.drnl.gov.uk

Project Name :
**Roads Noise Action Plan
Second Round**

Drawing Title :
**Belfast Agglomeration -
CNMA 1**

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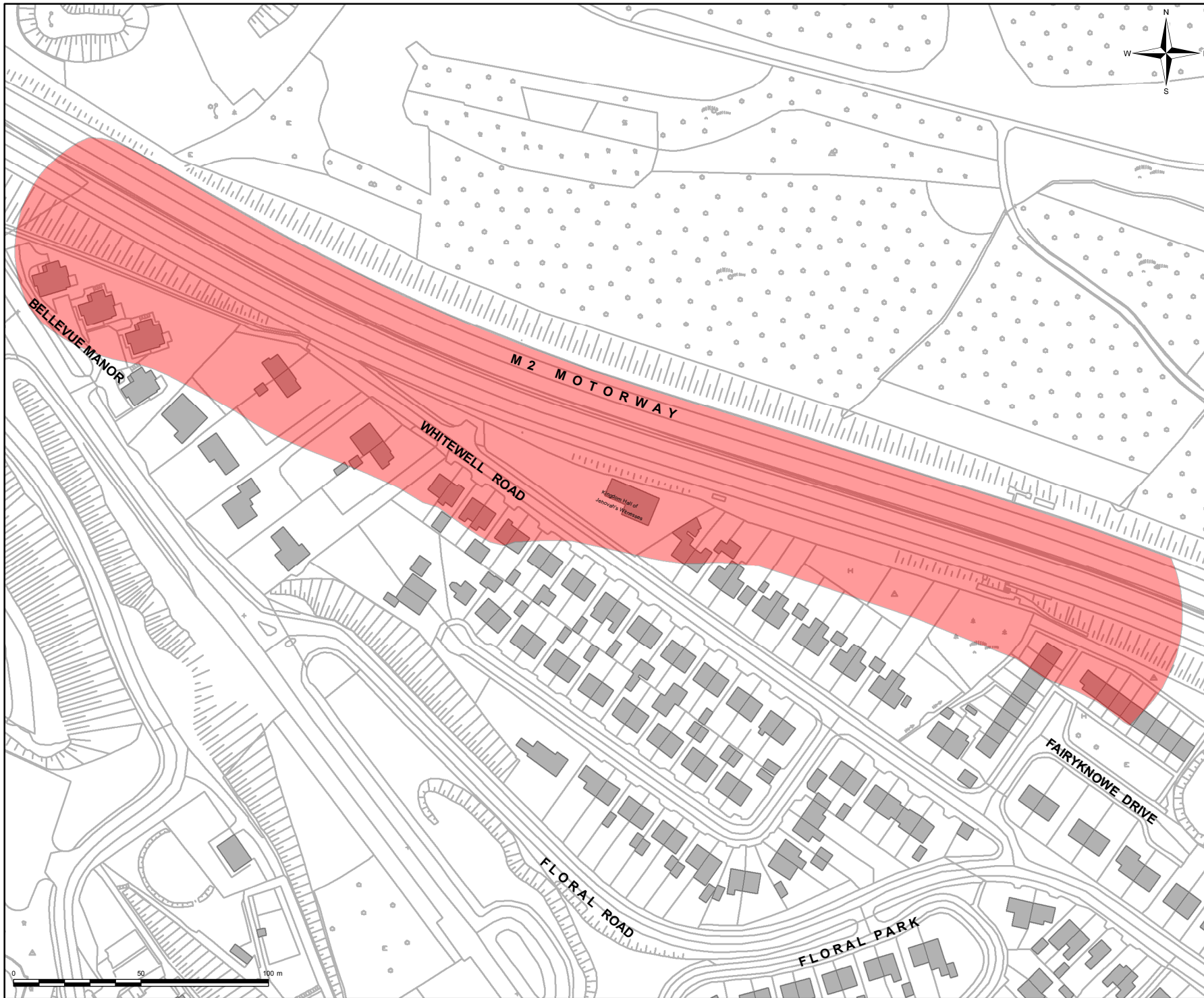


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Project Name :
**Roads Noise Action Plan
Second Round**

Drawing Title :
**Belfast Agglomeration -
CNMA 2**

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Date : Nov 2013				As constructed
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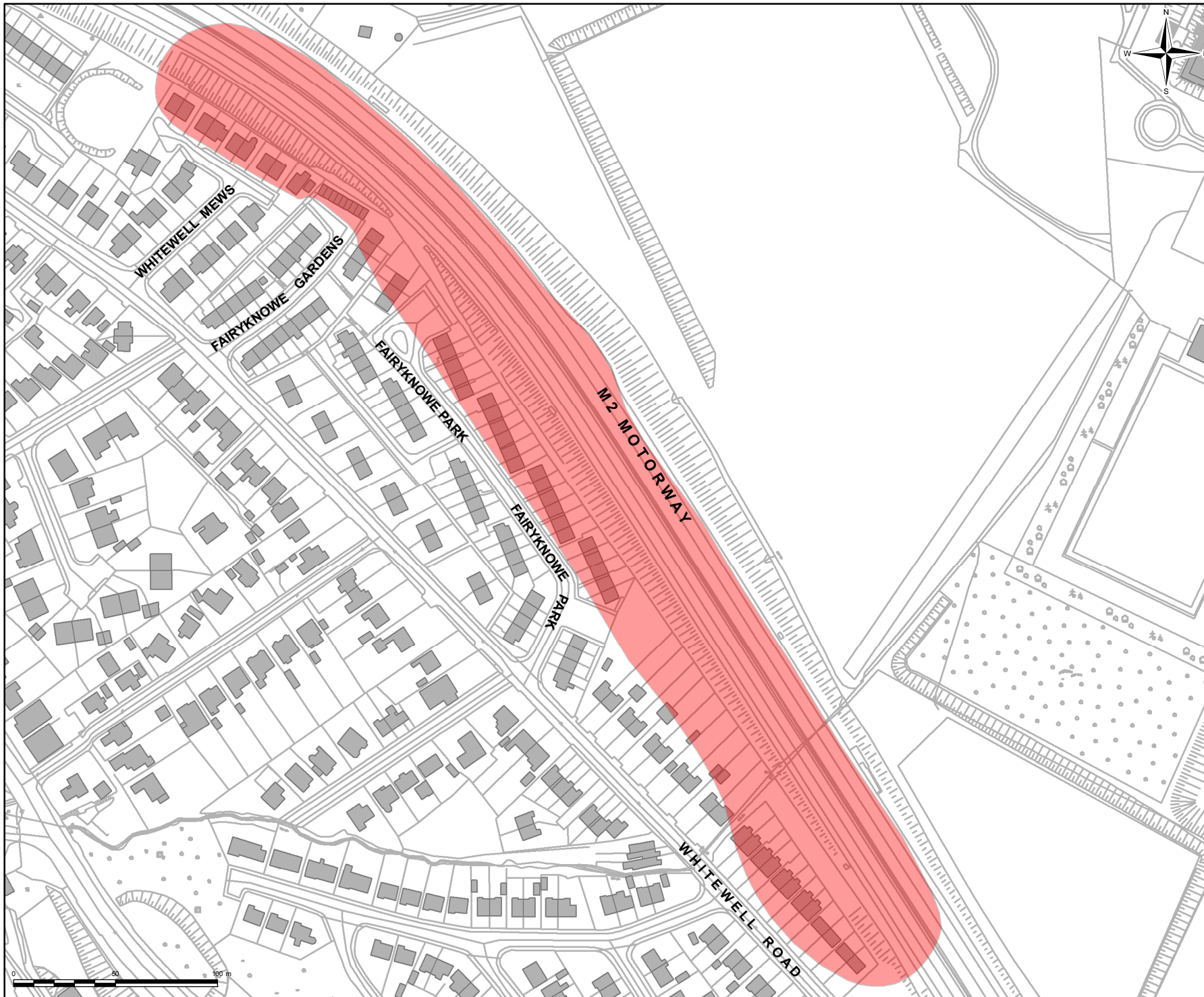


Client : Department for Regional Development
www.drndi.gov.uk

Project Name :
**Roads Noise Action Plan
Second Round**

Drawing Title :
**Belfast Agglomeration -
CNMA 3**

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	Date : Nov 2013			As constructed
				Other

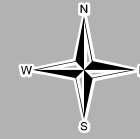


Client : Department for Regional Development
www.drndi.gov.uk

Project Name :
**Roads Noise Action Plan
Second Round**

Drawing Title :
**Belfast Agglomeration -
CNMA 4**

Original Drawing Size : A4	Dimensions :
Scale : 1:2,500	
Drawing No Belfast- CNMA4	Rev R0



Legend

Candidate Noise Management Area (CNMA)

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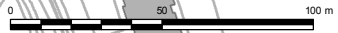
Rev	Revision Details	Chkd	Appd	Date
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	Design : ACT			For Comment
	Chkd : OF			For tender
	Appd : OF			For construction
	Date : Nov 2013			As constructed
				Other

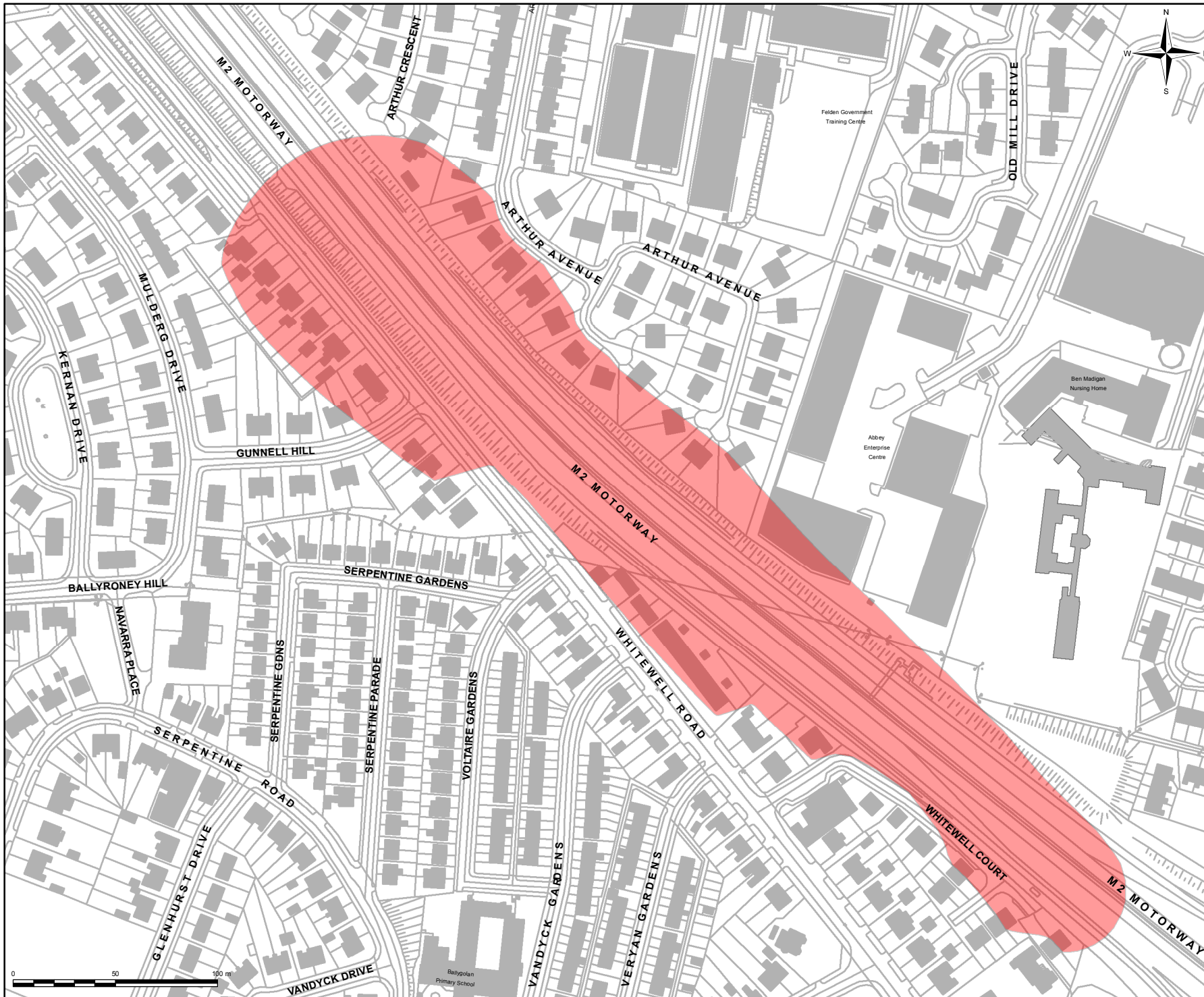


Project Name :
**Roads Noise Action Plan
Second Round**

Drawing Title :
**Belfast Agglomeration -
CNMA 5**

Original Drawing Size : A4	Dimensions :
Scale : 1:2,500	
Drawing No Belfast- CNMA5	Rev R0





Legend

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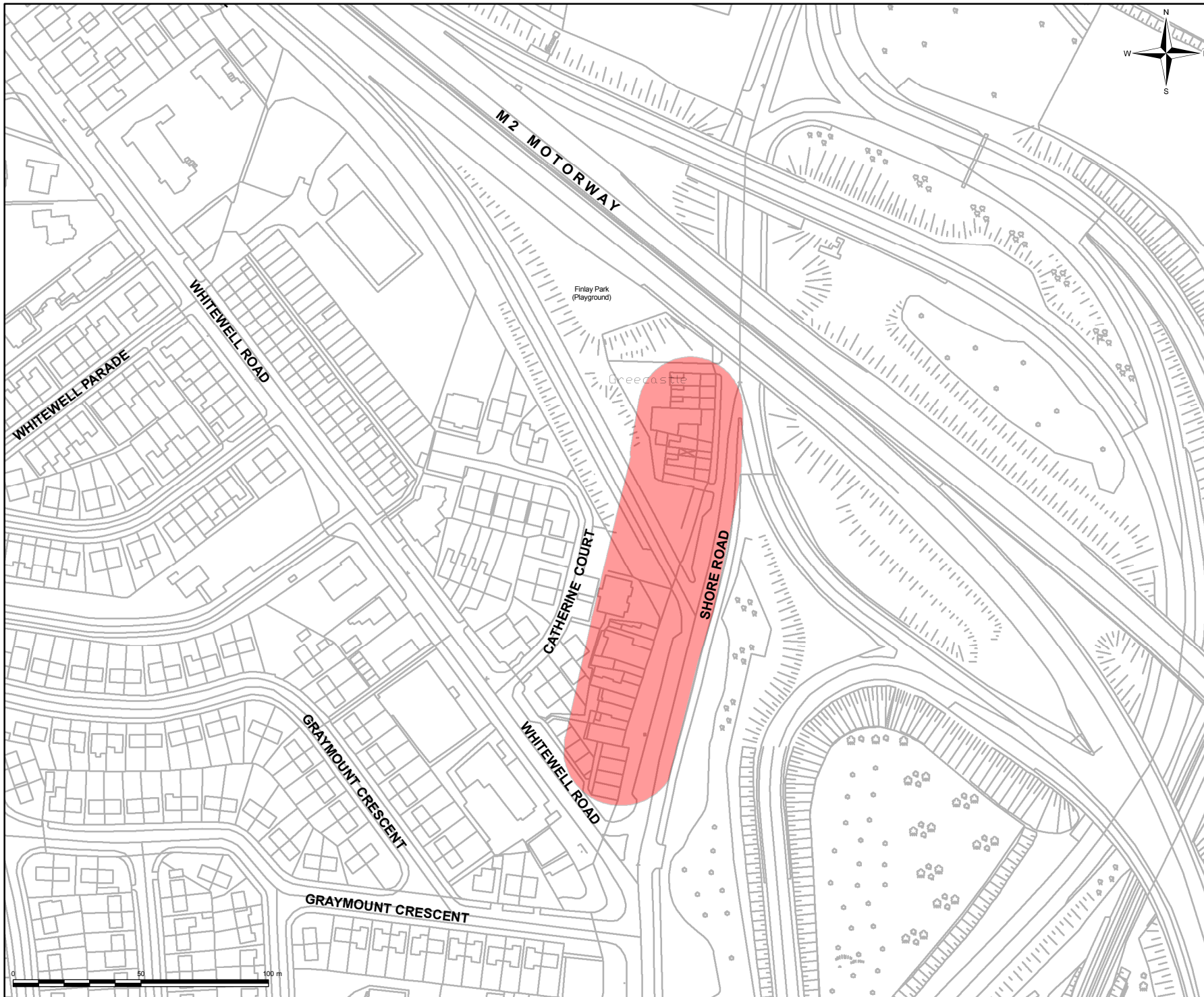
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Drawn	: ACT			Preliminary
Design	: ACT			For Comment
Chkd	: OF			For tender
Appd	: OF			For construction
Date	: Nov 2013			As constructed
				Other

Client: Department for Regional Development
www.drhl.gov.uk

Project Name:
**Roads Noise Action Plan
Second Round**

Drawing Title:
**Belfast Agglomeration -
CNMA 6**

Original Drawing Size:	A4
Scale:	1:2,500
Dimensions:	
Drawing No: Belfast-CNMA6	Rev R0



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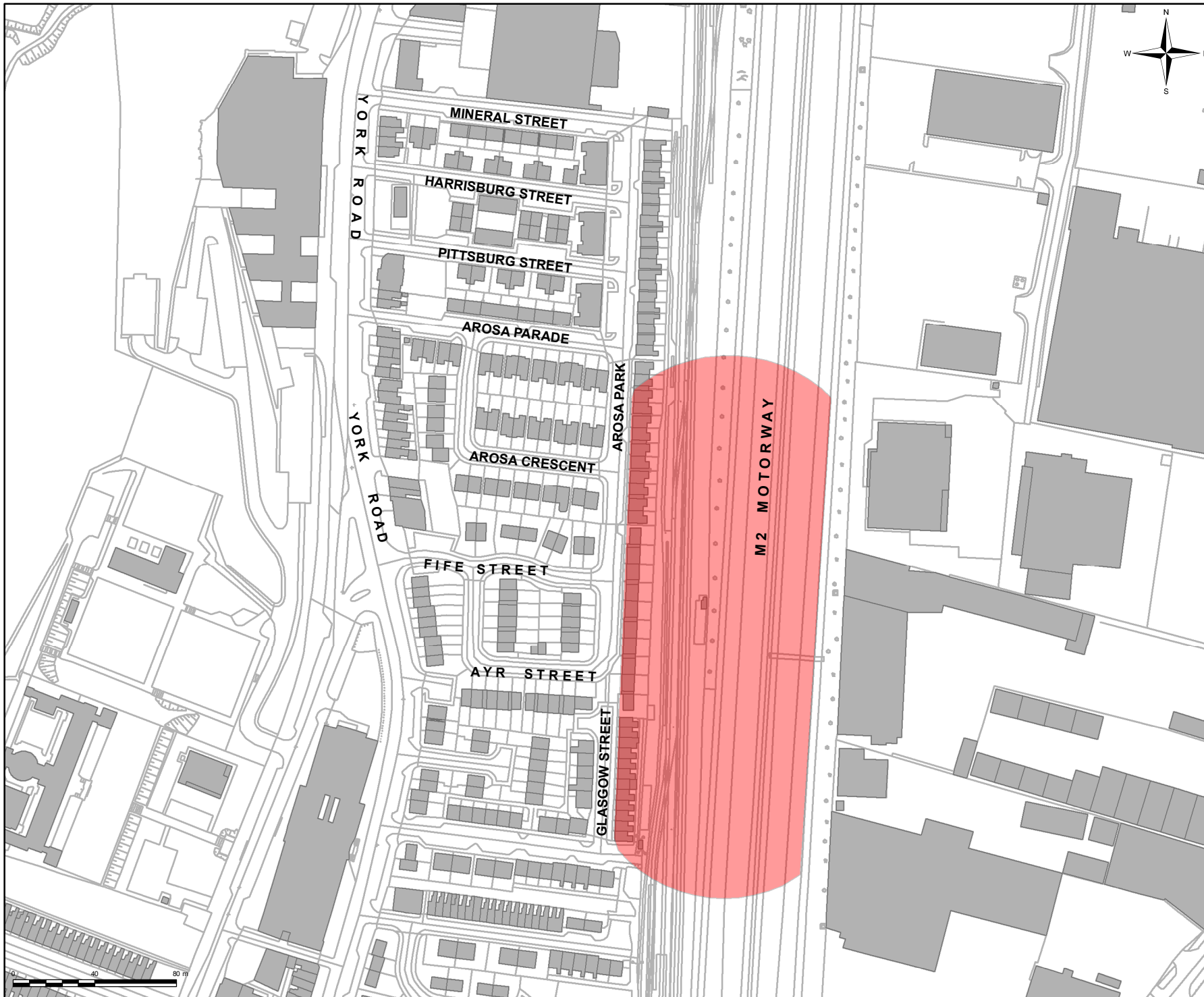
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Drawn : ACT				Preliminary
Design : ACT				For Comment
Chkd : OF				For tender
Appd : OF				For construction
Date : Nov 2013				As constructed
				Other



Project Name :
**Roads Noise Action Plan
Second Round**

Drawing Title :
**Belfast Agglomeration -
CNMA 7**

Original Drawing Size : A4	Dimensions :
Scale : 1:2,000	
Drawing No Belfast- CNMA7	Rev R0



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Drawn : ACT				Preliminary
Design : ACT				For Comment
Chkd : OF				For tender
Appd : OF				For construction
Date : Nov 2013				As constructed
				Other



Client :  Department for Regional Development
www.drndni.gov.uk

Project Name :
**Roads Noise Action Plan
Second Round**

Drawing Title :
**Belfast Agglomeration -
CNMA 8**

Original Drawing Size : A4	Dimensions :
Scale : 1:2,500	
Drawing No Belfast- CNMA8	Rev R0



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Drawn	: ACT			Preliminary
Design	: ACT			For Comment
Chkd	: OF			For tender
Appd	: OF			For construction
Date	: Nov 2013			As constructed
				Other



Project Name :
**Roads Noise Action Plan
Second Round**

Drawing Title :
**Belfast Agglomeration -
CNMA 9**

Original Drawing Size :	A4
Scale :	1:1,500
Dimensions :	
Drawing No Belfast-CNMA9	Rev R0



Legend

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Drawn : ACT				Preliminary
Design : ACT				For Comment
Chkd : OF				For tender
Appd : OF				For construction
Date : Nov 2013				As constructed
				Other



Client :  Department for Regional Development
www.drda.gov.uk

Project Name :
**Roads Noise Action Plan
Second Round**

Drawing Title :
**Belfast Agglomeration -
CNMA 10**

Original Drawing Size : A4	Dimensions :
Scale : 1:6,000	
Drawing No Belfast-CNMA10	Rev R0



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	Chkd : OF			For tender
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	Date : Nov 2013			As constructed
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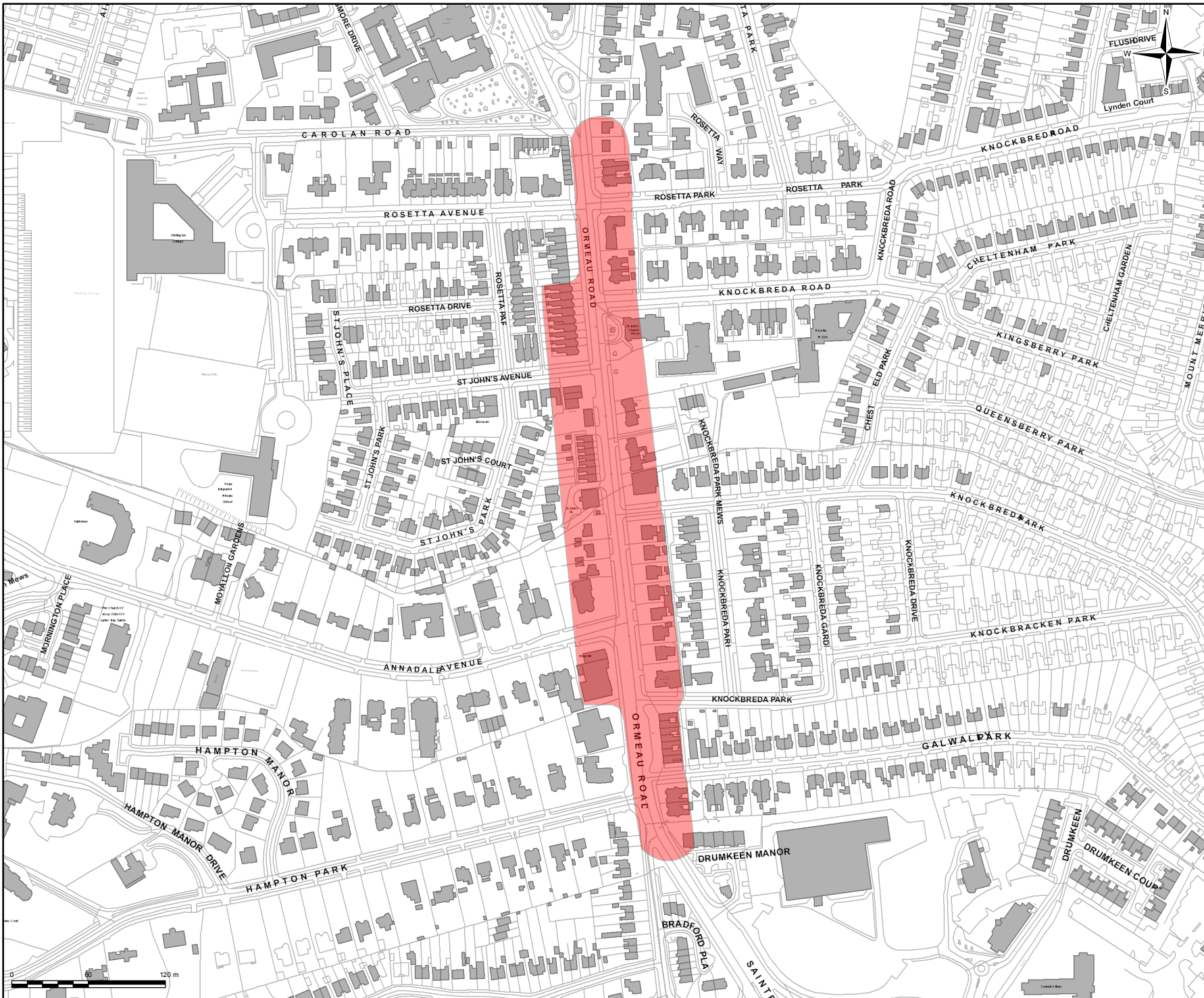


Client :  Department for Regional Development
www.drndi.gov.uk

Project Name :
**Roads Noise Action Plan
Second Round**

Drawing Title :
**Belfast Agglomeration -
CNMA 11**

Original Drawing Size : A4	Dimensions :
Scale : 1:2,000	
Drawing No Belfast-CNMA11	Rev R0



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Drawn : ACT				Preliminary
Design : ACT				For Comment
Chkd : OF				For tender
Appd : OF				For construction
Date : Nov 2013				As constructed
				Other



Client : Department for Regional Development
www.drnl.gov.uk

Project Name :
**Roads Noise Action Plan
Second Round**

Drawing Title :
**Belfast Agglomeration -
CNMA 12**

Original Drawing Size : A4	Dimensions :
Scale : 1:4,000	
Drawing No Belfast-CNMA12	Rev R0



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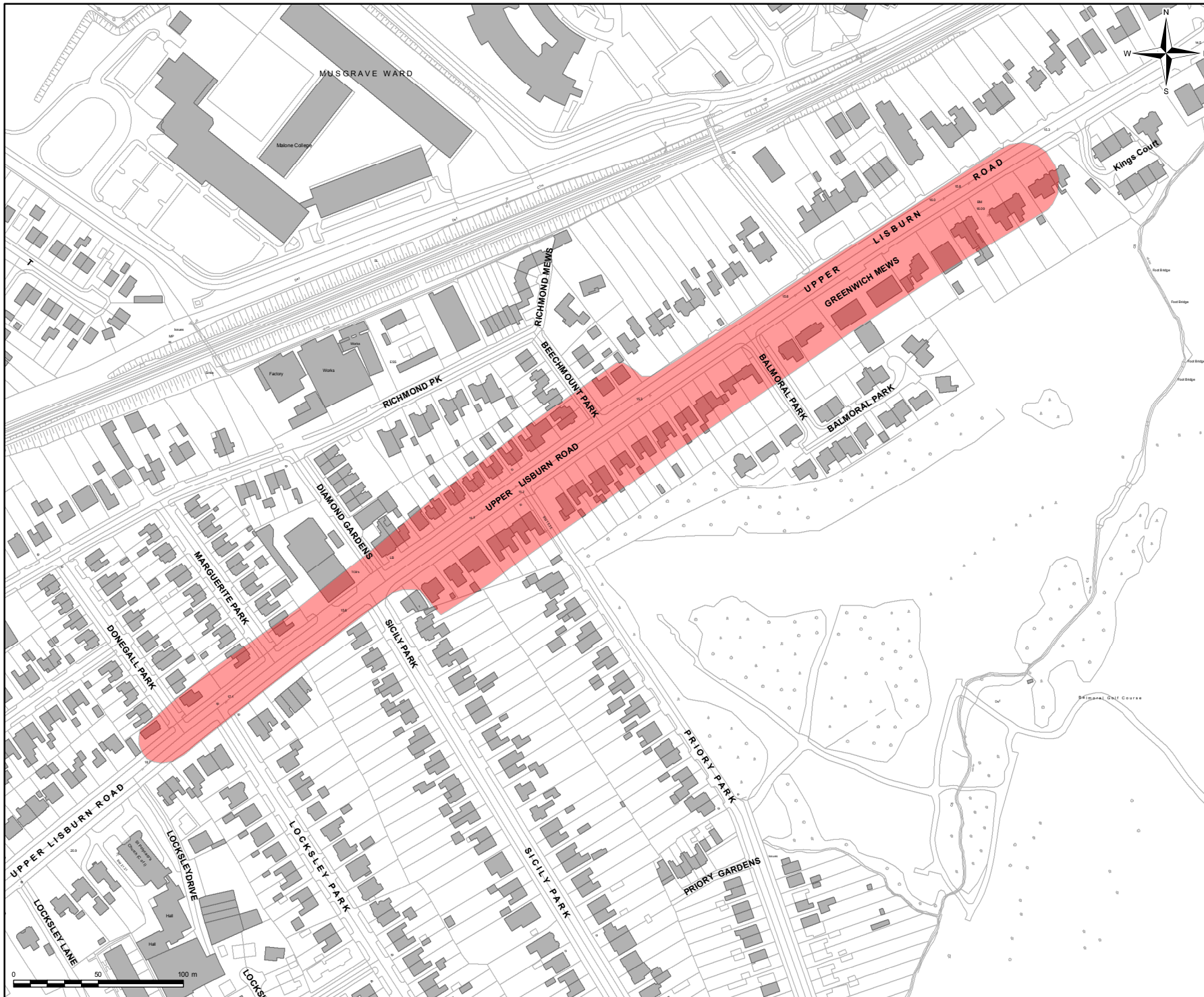
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Drawn	: ACT			Preliminary
Design	: ACT			For Comment
Chkd	: OF			For tender
Appd	: OF			For construction
Date	: Nov 2013			As constructed
				Other



Project Name :
Roads Noise Action Plan
Second Round

Drawing Title :
Belfast Agglomeration -
CNMA 13

Original Drawing Size :	A4
Scale :	1:1,500
Dimensions :	
Drawing No Belfast-CNMA13	Rev R0



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Drawn : ACT				Preliminary
Design : ACT				For Comment
Chkd : OF				For tender
Appd : OF				For construction
Date : Nov 2013				As constructed
				Other



Client : Department for Regional Development
www.drdrni.gov.uk

Project Name : Roads Noise Action Plan Second Round

Drawing Title : Belfast Agglomeration - CNMA 14

Original Drawing Size : A4	Dimensions :
Scale : 1:3,000	
Drawing No Belfast-CNMA14	Rev R0



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Drawn	: ACT			Preliminary
Design	: ACT			For Comment
Chkd	: OF			For tender
Appd	: OF			For construction
Date	: Nov 2013			As constructed
				Other



Project Name :
**Roads Noise Action Plan
Second Round**

Drawing Title :
**Belfast Agglomeration -
CNMA 15**

Original Drawing Size : A4	
Scale : 1:1,500	Dimensions :
Drawing No Belfast-CNMA15	Rev R0



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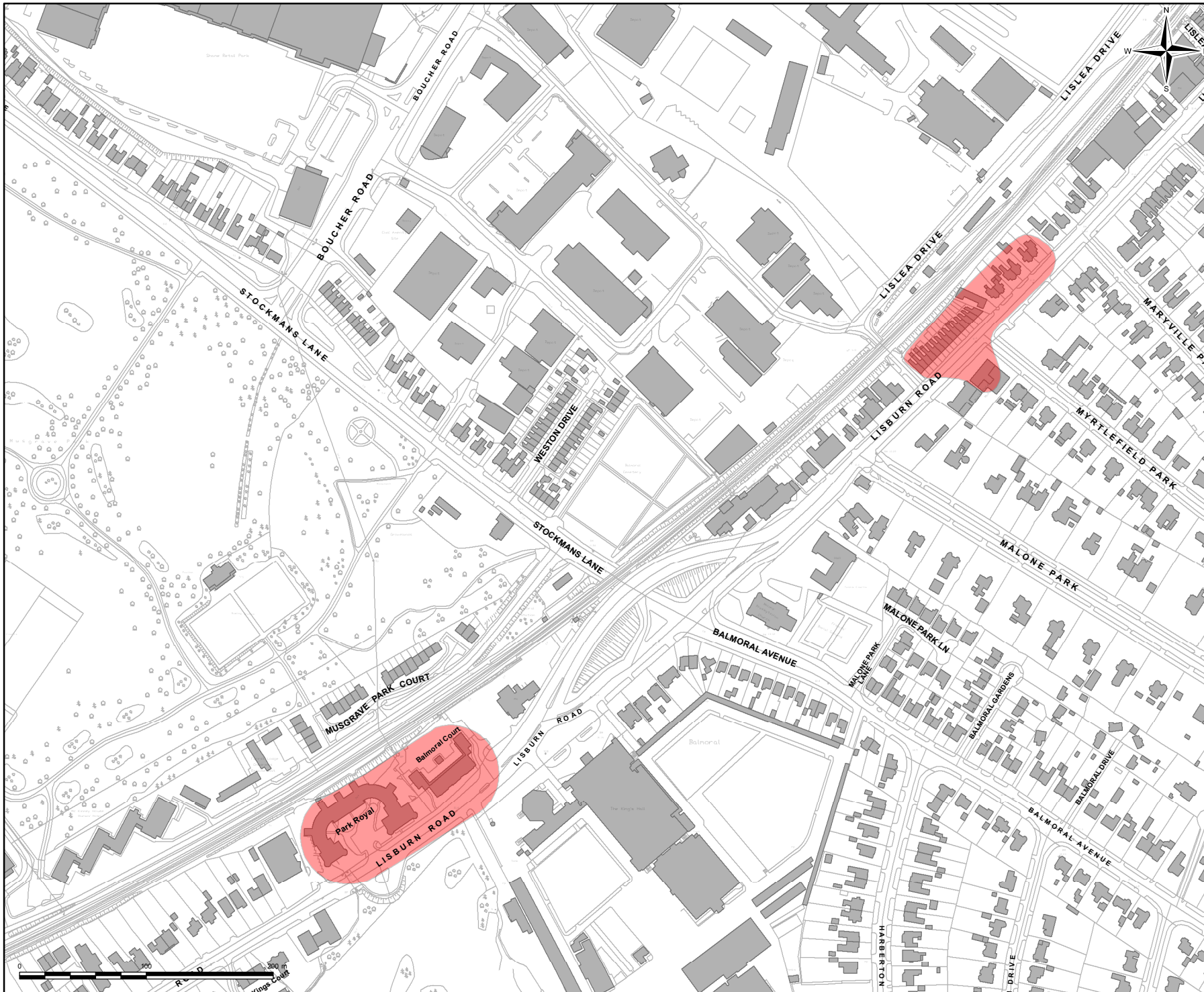
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	Date : Nov 2013			As constructed
				Other



Project Name :
**Roads Noise Action Plan
Second Round**

Drawing Title :
**Belfast Agglomeration -
CNMA 16**

Original Drawing Size : A4	Dimensions :
Scale : 1:1,500	
Drawing No Belfast- CNMA16	Rev R0



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Date : Nov 2013				As constructed
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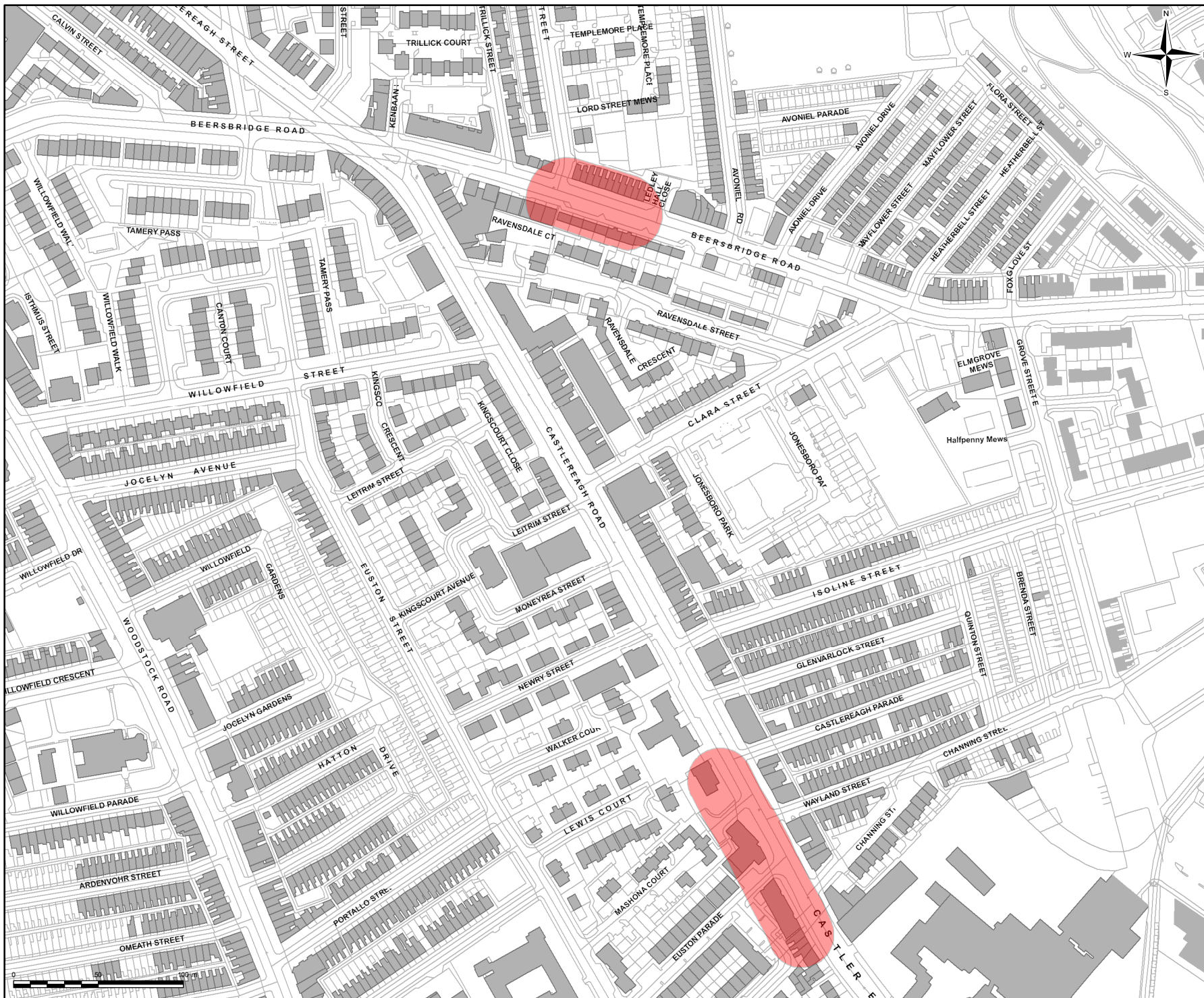


Client : Department for Regional Development
www.drni.gov.uk

Project Name :
**Roads Noise Action Plan
Second Round**

Drawing Title :
**Belfast Agglomeration -
CNMA 17**

Original Drawing Size : A4	Dimensions :
Scale : 1:4,000	
Drawing No Belfast-CNMA17	Rev R0



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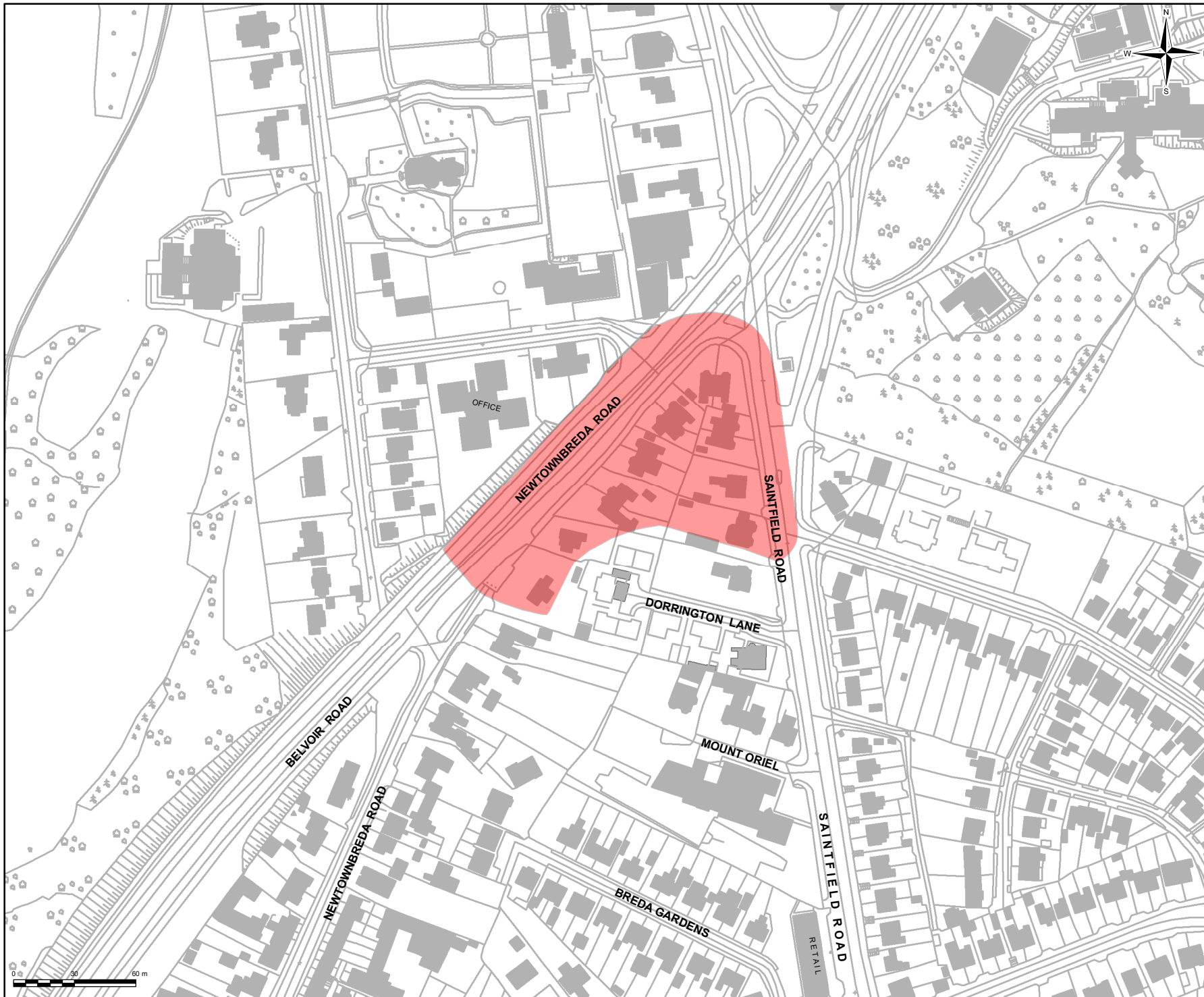
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	Design : ACT			For Comment
	Chkd : OF			For tender
	Appd : OF			For construction
	Date : Nov 2013			As constructed
				Other



Client :
 Project Name :
**Roads Noise Action Plan
 Second Round**

Drawing Title :
**Belfast Agglomeration -
 CNMA 18**

Original Drawing Size : A4	Dimensions :
Scale : 1:3,000	
Drawing No Belfast-CNMA18	Rev R0



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Design : ACT				For Comment
Chkd : OF				For tender
Appd : OF				For construction
Date : Nov 2013				As constructed
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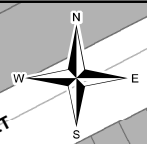


Client : Department for Regional Development
www.drnl.gov.uk

Project Name :
**Roads Noise Action Plan
Second Round**

Drawing Title :
**Belfast Agglomeration -
CNMA 19**

Original Drawing Size : A4	Dimensions :
Scale : 1:2,500	
Drawing No Belfast-CNMA19	Rev R0



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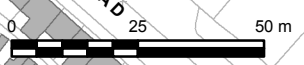
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Chkd : OF				For tender
Appd : OF				For construction
Date : Nov 2013				As constructed
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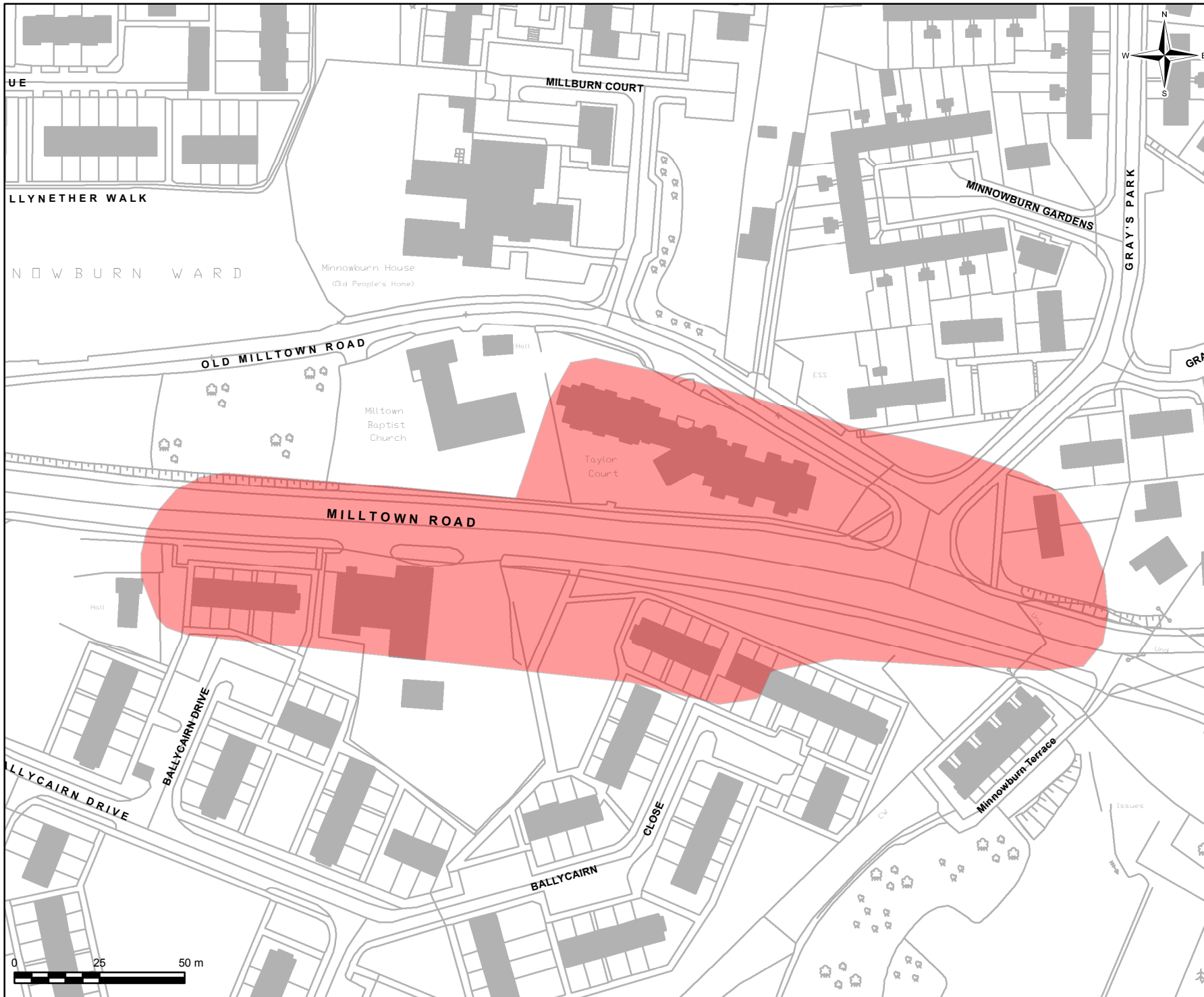


Client : Department for Regional Development
 Project Name : Roads Noise Action Plan Second Round

Drawing Title : Belfast Agglomeration - CNMA 20

Original Drawing Size : A4	Dimensions :
Scale : 1:1,500	
Drawing No : Belfast-CNMA20	Rev : R0





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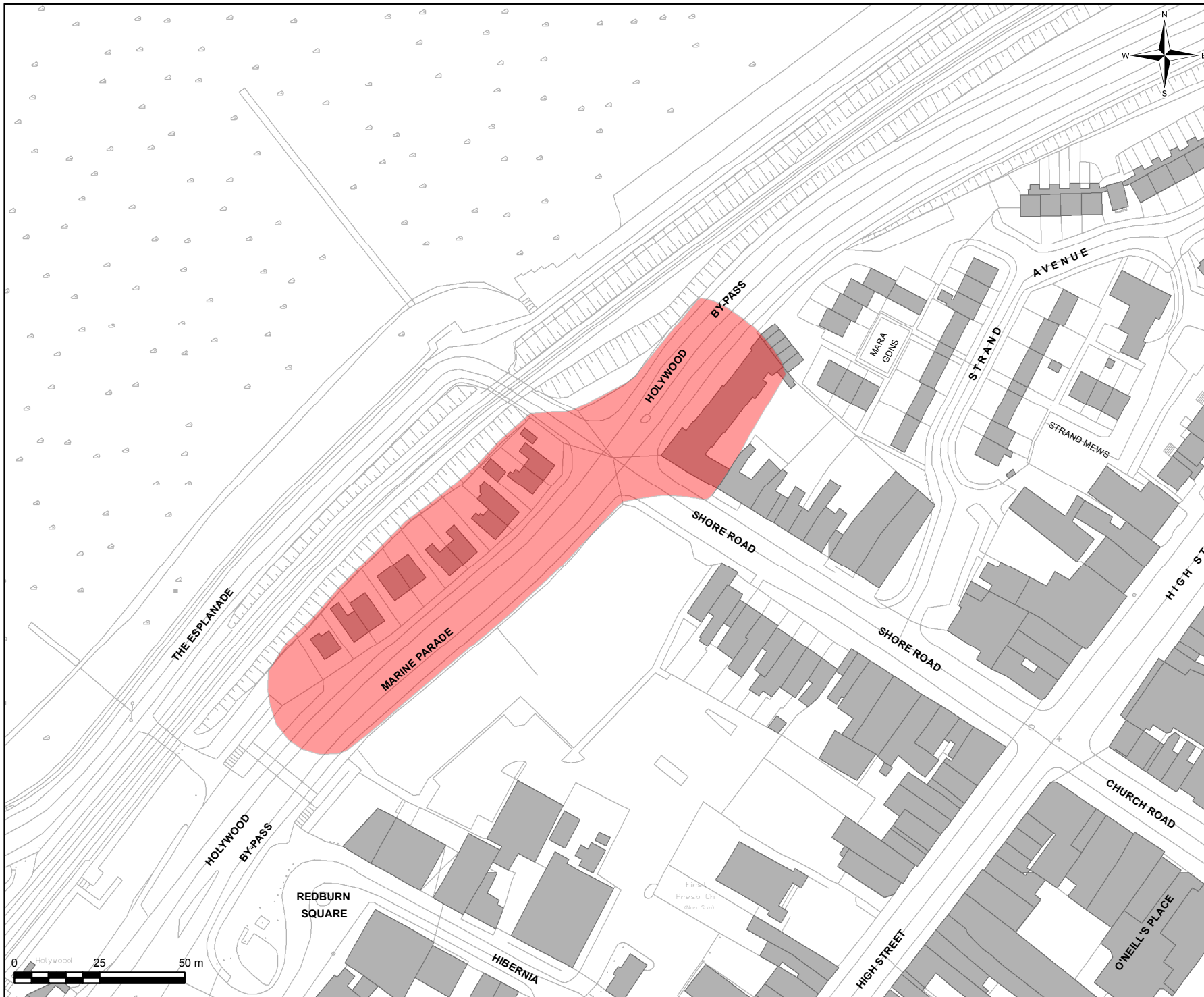


Client :  Department for Regional Development
www.drndi.gov.uk

Project Name :
**Roads Noise Action Plan
Second Round**

Drawing Title :
**Belfast Agglomeration -
CNMA 21**

Original Drawing Size : A4	Dimensions :
Scale : 1:1,500	
Drawing No Belfast-CNMA21	Rev R0



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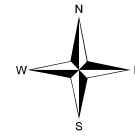
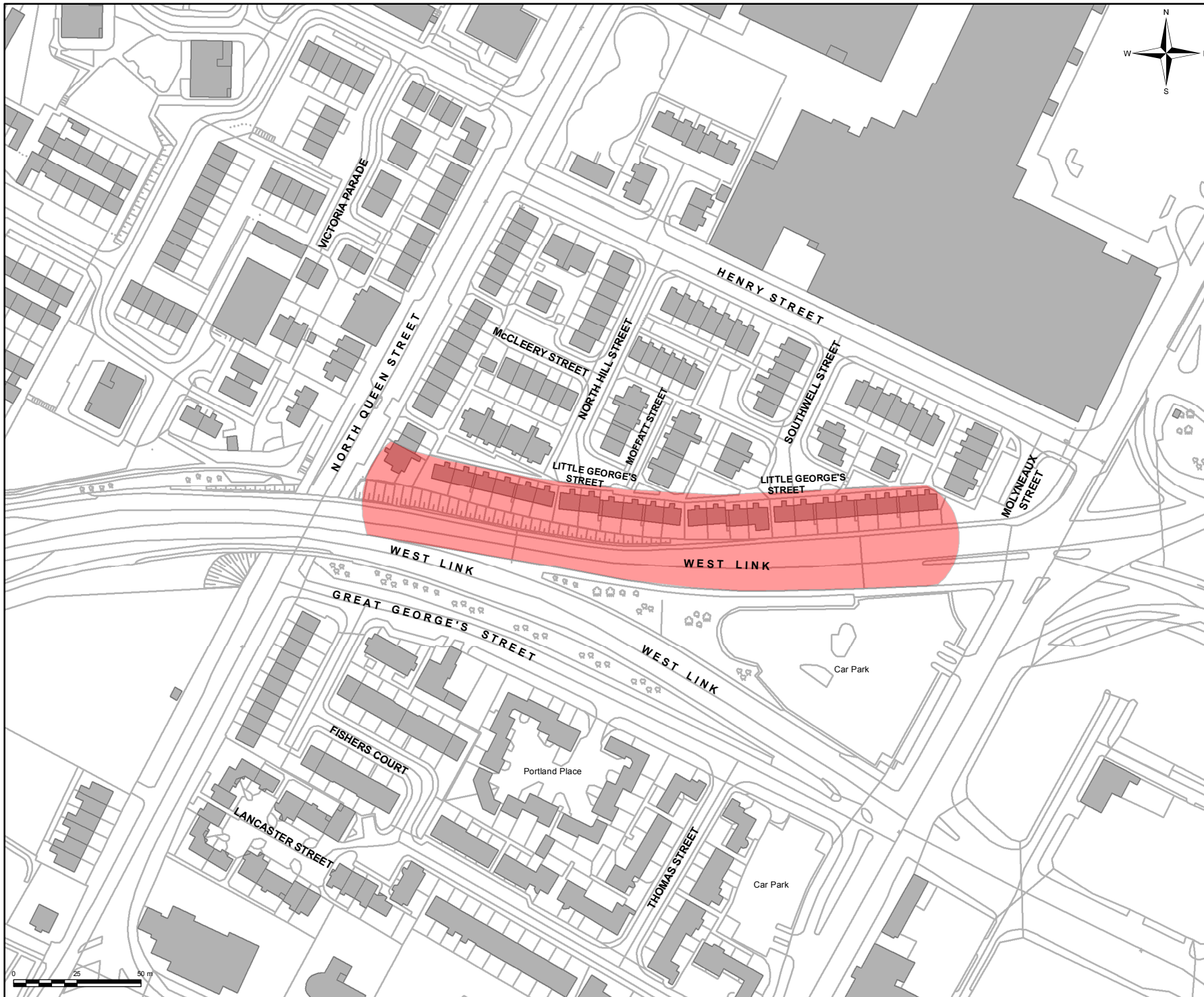
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Chkd : OF				For tender
Appd : OF				For construction
Date : Nov 2013				As constructed
				Other



Project Name :
**Roads Noise Action Plan
Second Round**

Drawing Title :
**Belfast Agglomeration -
CNMA 22**

Original Drawing Size : A4	Dimensions :
Scale : 1:1,500	
Drawing No Belfast-CNMA22	Rev R0



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	Chkd : OF			For tender
	Appd : OF			For construction
	Date : Nov 2013			As constructed
				Other



Client :  Department for Regional Development
www.drnl.gov.uk


Project Name :
**Roads Noise Action Plan
Second Round**

Drawing Title :
**Belfast Agglomeration -
CNMA 23**

Original Drawing Size : A4	Dimensions :
Scale : 1:2,000	
Drawing No Belfast-CNMA23	Rev R0



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Design : ACT				For Comment
Chkd : OF				For tender
Appd : OF				For construction
Date : Nov 2013				As constructed
				Other



Client :  Department for Regional Development
www.drndi.gov.uk

Project Name :
**Roads Noise Action Plan
Second Round**

Drawing Title :
Ballykelly - CNMA 1

Original Drawing Size : A4	Dimensions :
Scale : 1:2,000	
Drawing No Ballykelly-CNMA1	Rev R0



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Chkd : OF				For tender
Appd : OF				For construction
Date : Nov 2013				As constructed
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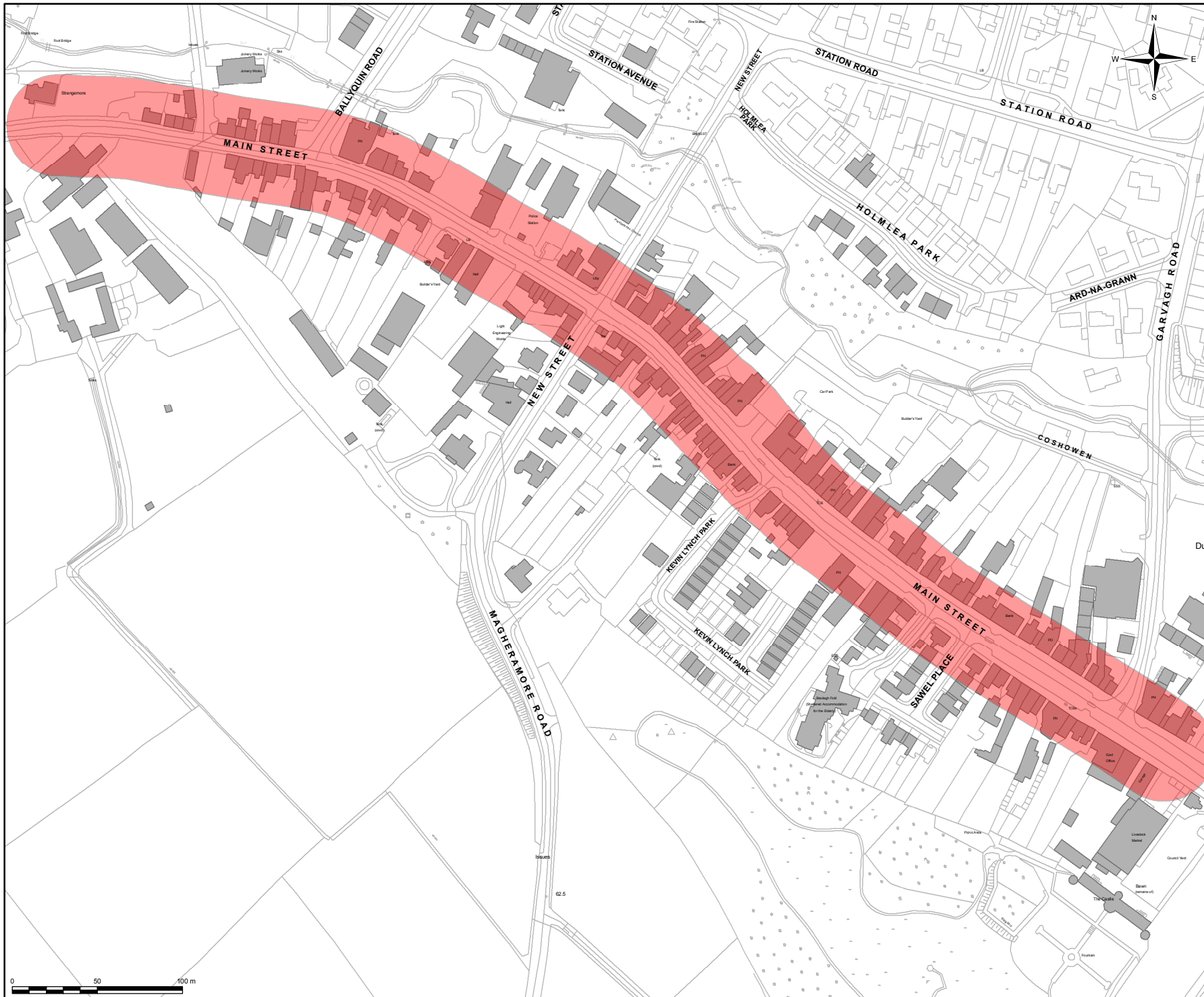


Client : Department for Regional Development
www.drni.gov.uk

Project Name :
**Roads Noise Action Plan
Second Round**

Drawing Title :
Ballymena - CNMA 1

Original Drawing Size : A4	Dimensions :
Scale : 1:4,000	
Drawing No Ballymena-CNMA1	Rev R0



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	Design : ACT			For Comment
	Chkd : OF			For tender
	Appd : OF			For construction
	Date : Nov 2013			As constructed
				Other



Client : Department for Regional Development
www.drddni.gov.uk

Project Name :
**Roads Noise Action Plan
Second Round**

Drawing Title :
Dungiven - CNMA 1

Original Drawing Size : A4
Scale : 1:3,000 Dimensions :

Drawing No :
Dungiven-CNMA1 Rev :
R0



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Design : ACT				For Comment
Chkd : OF				For tender
Appd : OF				For construction
Date : Nov 2013				As constructed
				Other



Project Name :
**Roads Noise Action Plan
Second Round**

Drawing Title :
Londonderry - CNMA 1

Original Drawing Size : A4	Dimensions :
Scale : 1:1,500	
Drawing No Londonderry-CNMA 1	Rev R0





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Design : ACT				For Comment
Chkd : OF				For tender
Appd : OF				For construction
Date : Nov 2013				As constructed
				Other



Client :  Department for Regional Development
www.drndi.gov.uk

Project Name :
**Roads Noise Action Plan
Second Round**

Drawing Title :
Armagh - CNMA 1

Original Drawing Size : A4	Dimensions :
Scale : 1:1,500	
Drawing No Armagh-CNMA1	Rev R0



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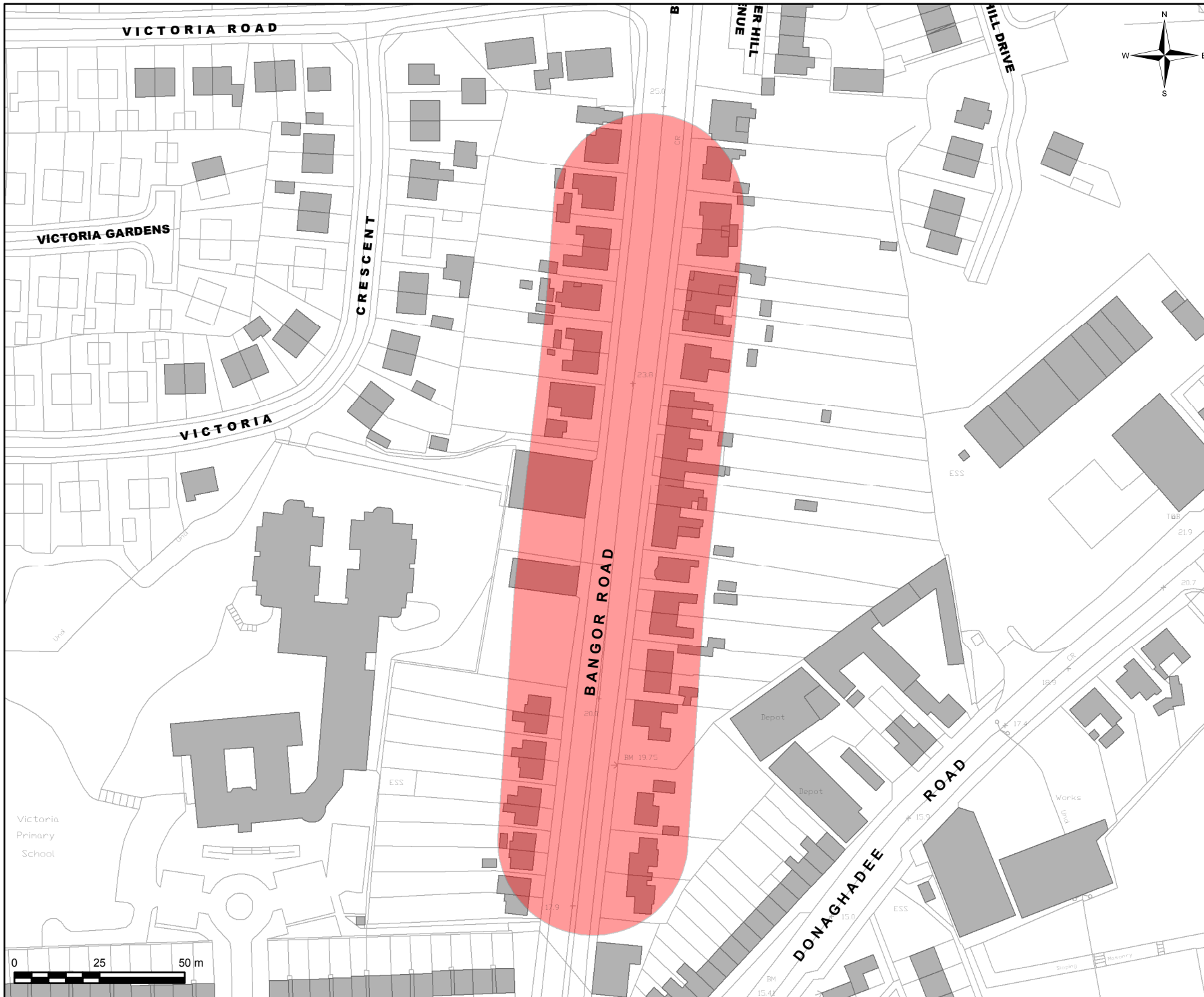


Client :  Department for Regional Development
www.drda.gov.uk

Project Name :
**Roads Noise Action Plan
Second Round**

Drawing Title :
Armagh - CNMA 2

Original Drawing Size : A4	
Scale : 1:2,000	Dimensions :
Drawing No Armagh-CNMA2	Rev R0



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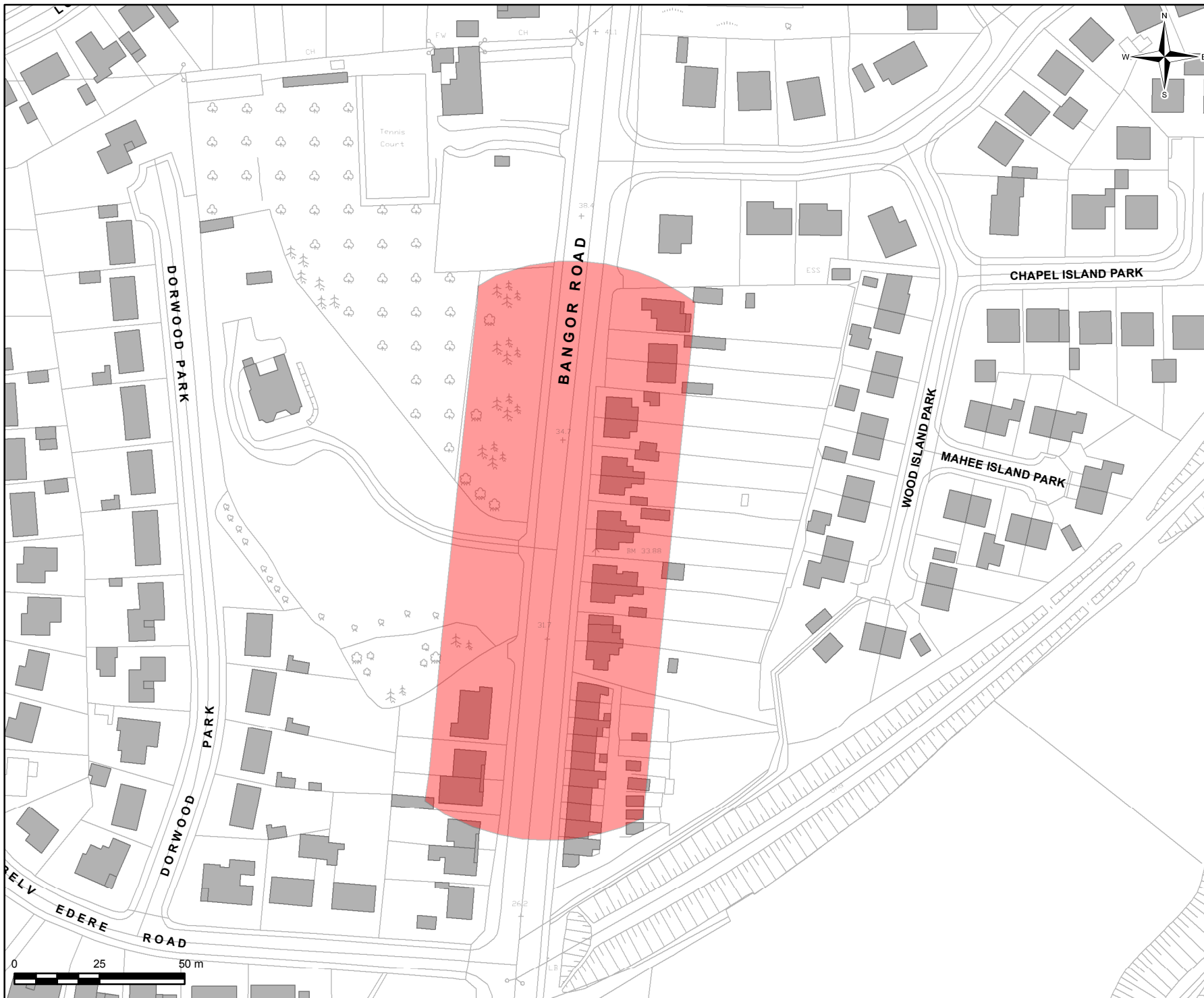
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Design : ACT				For Comment
Chkd : OF				For tender
Appd : OF				For construction
Date : Nov 2013				As constructed
				Other

Client :  Department for Regional Development
www.drnl.gov.uk

Project Name :
**Roads Noise Action Plan
Second Round**

Drawing Title :
Newtownards - CNMA 1

Original Drawing Size : A4	Dimensions :
Scale : 1:1,500	
Drawing No Newtownards-CNMA1	Rev R0



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Design : ACT				For Comment
Chkd : OF				For tender
Appd : OF				For construction
Date : Nov 2013				As constructed
				Other



Project Name :
**Roads Noise Action Plan
Second Round**

Drawing Title :
Newtownards - CNMA 2

Original Drawing Size : A4	Dimensions :
Scale : 1:1,500	
Drawing No Newtownards-CNMA2	Rev R0



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Design : ACT			For Comment	
Chkd : OF			For tender	
Appd : OF			For construction	
Date : Nov 2013			As constructed	
			Other	



Project Name :
**Roads Noise Action Plan
Second Round**

Drawing Title :
Moy - CNMA 1

Original Drawing Size : A4	Dimensions :
Scale : 1:1,500	
Drawing No Moy-CNMA 1	Rev R0



Appendix E

Consultee List

All MLAs (109) (E-mail)
All NI Members of Parliament (E-mail)
All NI Members of European Parliament (E-mail)
Age Northern Ireland (E-mail)
Age Sector Platform (E-mail)
Alliance Party of Northern Ireland (Hard copy by postal)
Action Cancer (E-mail)
Action Mental Health (E-mail)
Action on Hearing Loss (E-mail)
Alzheimer's Disease (E-mail)
Amalgamated Engineering & Electrical Union (AEEU) (E-mail)
An Munia Tober (E-mail)
Antrim Borough Council (Hard copy by postal)
Ards Borough Council (Hard copy by postal)
Armagh City & District Council (Hard copy by postal)
Aspergers Network (E mail)
Assembly Library (E mail)
Association for Spina Bifida and Hydrocephalus (ASBAH) (E mail)
Asthma UK NI (E mail)
Autism NI (E-mail)
Ballymena Borough Council (Hard copy by postal)
Ballymoney Borough Council (Hard copy by postal)
Banbridge District Council (Hard copy by postal)
Barnardos NI (E-mail)
Barnardos, Tuar Ceatha Project (E-mail)
Belfast Butterfly Club (E-mail)
Belfast City Council (Hard copy by postal)
Belfast Harbour Hard (copy by postal)
Belfast Healthy Cities Project (Hard copy by postal)
Belfast Hebrew Congregation (E-mail)
Belfast International Airport (E-mail)
Belfast Islamic Centre (E-mail)
Blind Centre for Northern Ireland (E-mail)
British Association for Shooting and Conservation (E-mail)
British Deaf Association (NI) (E-mail)
British Medical Association Ltd (E-mail)
British Sports Association for the Disabled (E-mail)
Bryson Charitable Group (E-mail)
Business Services Organisation – HSC, Equality Unit (E-mail)
CaraFriend/ Lesbianline Belfast (E-mail)
CARE in Northern Ireland (E-mail)

CARDI (Centre for Aging Research & Development in Ireland) (E-mail)
Campaign for Better Transport (E-mail)
Carers Northern Ireland (E-mail)
Carrickfergus Borough Council (E-mail)
Carlingford Lough Commission
Castlereagh Borough Council (E-mail)
Census NISRA (E-mail)
Chartered Institution of Highways & Transportation (E-mail)
Child Poverty Action Group (E-mail)
Children in Northern Ireland (E-mail)
Children's Law Centre (E-mail)
Children with disabilities Strategic Alliance (E-mail)
Childrens Research Network (E-mail)
Chinese Welfare Association (E-mail)
Chrysalis Women's Centre (E-mail)
Church of Ireland House (E-mail)
Citizens Advice Bureau Belfast (E-mail)
Citizens Advice Bureau Derry (E-mail)
City of Derry Airport (E-mail)
Coleraine Borough Council (E-mail)
Coleraine Harbour (E-mail)
Commisioner for Older People NI (E-mail)
Committee on the Administration of Justice (E-mail)
Community Development and Health Network (E-mail)
Community Places (E-mail)
Community Relations Council (E-mail)
Community Transport Association (E-mail)
Confederation of British Industry (E-mail)
Concordia Partnership for Progress (E-mail)
Conservation Volunteers Northern Ireland (E-mail)
Consumer Council for NI (E-mail)
Contact a Family (E-mail)
Cookstown District Council (E-mail)
Craigavon Borough Council (E-mail)
CTC / National Cycling Charity (E-mail)
Cycling Ireland (E-mail)
Democratic Unionist Party (E-mail)
Department for Employment & Learning (E-mail)
Department for Social Development (E-mail)
Department of Agriculture & Rural Development (E-mail)
Department of Culture Arts & Leisure (E-mail)
Department of Education for NI (E-mail)

Department of Enterprise, Trade & Investment (E-mail)
Department of Finance & Personnel (E-mail)
Department of Health, Social Services and Public Safety (E-mail)
Department of Justice (E-mail)
Department of the Environment (E-mail)
Derry City Council (E-mail)
Derry Well Woman (E-mail)
Disability Action Belfast (E-mail)
Disability Action Derry (E-mail)
Disability Sports NI (E-mail)
Disabled Drivers Association NI (E-mail)
Down District Council (E-mail)
Down's Syndrome Association (E-mail)
Dungannon & South Tyrone Borough Council (E-mail)
Eastern Health and Social Services (E-mail)
Economic Research Institute of Northern Ireland (E-mail)
Education of Deaf & Blind Society (E-mail)
Employers' Forum on Disability (E-mail)
Enniskillen Airport (St Angelo) (E-mail)
Equality Coalition (E-mail) (E-mail)
Equality Commission for NI (E-mail)
Equality Forum NI (E-mail)
Falls Community Council (E-mail)
Falls Women Centre (E-mail)
Federation of Small Businesses (E-mail)
Fermanagh District Council (E-mail)
Foyle Women's Aid (E-mail)
Foyle Women's Information Network (E-mail)
Freight Transport Association (E-mail)
Friends of the Earth (E-mail)
Gay and Lesbian Youth (NI) (E-mail)
General Consumer Council for N.I. (E-mail)
George Best Belfast City Airport (E-mail)
Gingerbread NI (E-mail)
Health and Safety Executive for Northern Ireland (E-mail)
Health and Social Care - DHSSPS (E-mail)
IMTAC (E-mail)
Indian Community Centre (E-mail)
Institute of Directors (E-mail)
Institution of Highways and Transportation (E-mail)
Invest Northern Ireland (E-mail)
Irish Congress of Trade Unions (NI Committee) (E-mail)

Irish Transport Heritage Limited (E-mail)
Labour Party (E-mail)
Larne Borough Council (E-mail)
Larne Harbour (E-mail)
Lesbian Line –Belfast (E-mail)
Limavady Borough Council (Hard copy by postal)
Lisburn City Council (E-mail)
Living Streets (E-mail)
Local Government Staff Commission for Northern Ireland (E-mail)
Londonderry Port & Harbour Commissioners (E-mail)
Lower North Belfast Community Council (E-mail)
Magherafelt District Council (Hard copy by postal)
Magherafelt Women’s Group (E-mail)
ME Association (ME/CFS) (E-mail)
MENCAP (E-mail)
Men's Health Forum In Ireland (E-mail)
Mental Health Action (E-mail)
Methodist Church in Ireland (E-mail)
Mid-Ulster Women’s Network(E-mail)
Ministerial Advisory Group for Built Environment and Architecture (MAG)
Mobilise NI (E-mail)
Moyle District Council (E-mail)
Multi-Cultural Resource Centre (E-mail)
Multiple Sclerosis Society (E-mail)
Newtownabbey Borough Council (E-mail)
Newry & Mourne District Council (E-mail)
Newry & Mourne Senior Citizens’ Consortium (E-mail)
Newry & Mourne Women Ltd (E-mail)
Newtownabbey Borough Council (E-mail)
NI Anti-Poverty Network (E-mail)
NIACRO (E-mail)
NI Association for Mental Health (E-mail)
NI Bird Watchers’ Association (E-mail)
NI Chamber of Commerce and Industry (E-mail)
NI Chest,Heart & Stroke Association (E-mail)
NI Commissioner for Children & Young People (NICCY) (E-mail)
NI Council for Ethnic Minorities (NICEM) (E-mail)
NI Council for Voluntary Action (NICVA) (E-mail)
NI Cycling Initiative (E-mail)
NI Environment Link (E-mail)
NI Gay Rights Association (NIGRA) (E-mail)
NI Housing Executive Equality Unit (E-mail)

NI Human Rights Commission (E-mail)
NI Pensioners Convention (E-mail)
NI Rural Development Council (E-mail)
NI Rural Womens Network (E-mail)
NI Statistics and Research Agency (NISRA) (E-mail)
NI Tourist Board (E-mail)
NI Women's Aid Federation (E-mail)
NI Women's European Platform (E-mail)
NIPSA (Hard copy by postal)
NITHC (Hard copy by postal)
North Down Borough Council (E-mail)
North Eastern Education and Library Board (E-mail)
North West Community Network (E-mail)
North West Forum of People with Disabilities (E-mail)
Northern Ireland Ambulance Service (E-mail)
Northern Ireland Anti-Poverty Network (E-mail)
Northern Ireland Association for Mental Health (E-mail)
Northern Ireland Economic Council (E-mail)
Northern Ireland Institute for the Disabled (E-mail)
Northern Ireland Office (NIO) (E-mail)
NSPCC (E-mail)
NUS-USI Northern Ireland Student Centre (E-mail)
Office of the Archbishop of Armagh (E-mail)
Office of the First Minister and deputy First Minister (E-mail)
Omagh District Council (Hard copy by postal)
Omagh Women's Area Network (E-mail)
Parenting NI (E-mail)
Parkinson's UK Northern Ireland (E-mail)
Participation Network (E-mail)
Phoenix Natural Gas (E-mail)
POBAL (E-mail)
Polish Association N.I. (E-mail)
Presbyterian Church in Ireland (E-mail) (E-mail)
Press for Change (E-mail)
Progressive Unionist Party (E-mail)
Quarry Products Association (E-mail)
Queer Space (E-mail)
Road Safety Council for NI (E-mail)
Rural Community Network (Hard copy by postal)
Rural Support (E-mail)
Save the Children (E-mail)
S.T.E.P. (South Tyrone Empowerment Programme) (E-mail)

SDLP (E-mail)
SEELB (E-mail)
Sense NI (E-mail)
Shopmobility (E-mail)
Sikh Cultural Centre (E-mail)
Sinn Fein (E-mail)
Sperrin Lakeland Senior Citizens' Consortium (E-mail)
Strabane District Council (Hard copy by postal)
SUSTRANS (E-mail)
The Cedar Foundation (E-mail)
The Community Foundation (E-mail)
The Green Party in Northern Ireland (E-mail)
The Guide Dogs for the Blind Association (E-mail)
The Law Society of Northern Ireland (E-mail)
The Men's Project (E-mail)
The Omnibus Partnership (E-mail)
The Participation Network (E-mail)
The Rainbow Project (E-mail)
The Women's Centre (E-mail)
The Workers' Party (E-mail)
Translink (Hard copy by postal)
Travellers' Movement NI (E-mail)
Ulster Archaeological Society (E-mail)
The Ulster Scots Agency (E-mail)
Ulster Scots Heritage Council (E-mail)
Ulster Society for the Protection of the Countryside (E-mail)
Ulster Unionist Party (E-mail)
ULTACH (E-mail)
UNISON (E-mail)
Warrenpoint Harbour Authority (E-mail)
Waterways Ireland (E-mail)
Wildfowl and Wetlands Trust (E-mail)
Women's Forum (E-mail)
Women's Support Network (E-mail)
Womens Resource and Development Agency (E-mail)
Youth Council for NI (E-mail)
Youthnet (E-mail)

Copies requested during the consultation period:
Mr Gerald Kelly, Belfast (Hard copy by postal)
Mr W.A Mitchell, Doagh (Hard copy by postal)