



**Department of the Environment
Northern Ireland**

Directive 2002/49/EC

**Data Flow 4 Supplementary Report
Agglomeration Roads in Northern Ireland**

Ref: GB_N_DF4_Agg_Road

14 December 2007

1 Introduction

1.1 Report Purpose

This report provides supplementary information regarding the computation methodologies adopted for the mapping of agglomeration roads within Northern Ireland, part of the United Kingdom of Great Britain and Northern Ireland.

The report is to be read in conjunction with the results of the mapping which are reported in the associated document GB_N_DF4_Agg.xls.

Collectively these documents meet the 31 December 2007 reporting obligation¹ for agglomeration roads in Northern Ireland as set out in Article 10-2 and annex VI of Directive 2002/49/EC².

1.2 Contents

The report provides mandatory and optional information as set out in the reporting guidelines issued by the European Commission³.

¹ <http://rod.eionet.europa.eu/show.jsv?id=368&aid=&mode=A&tab=overview>

² <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32002L0049:EN:NOT>

³ European Commission, DG Environment (2007). Reporting Mechanism Proposed for Reporting under the Environmental Noise Directive 2002/49/EC. Handbook (including Data Specifications)

2 Mandatory Information

2.1 Confirmation of the definition of the time periods used for day evening and night

Day	07:00 to 19:00
Evening	19:00 to 23:00
Night	23:00 to 07:00

2.2 Whether the results have been derived from computation or measurement

The results have been derived from computation.

2.3 The computation methods used

The computation method used was the Calculation of Road Traffic Noise

2.4 If national computation methods have been used that have had to be adapted as described in paragraph 2.1 of Annex II, information regarding the adaptation must be provided, and must include, as required in Art 6(2), a demonstration that the results are equivalent to the results that would be obtained with the methods set out in paragraph 2.2 of Annex II of the END.

Details of the adaptation of the Calculation of Road Traffic Noise method are set out in Defra report 'Method for Converting the UK Road Traffic Noise Index $L_{10,18h}$ to the EU Noise Indices for Road Traffic Noise'⁴

2.5 If measurements have been used, the measurement method must be defined and it must be stated whether it has been adapted in accordance with Annex II 3 of the END;

Measurement methods have not been used

2.6 The contour maps required by paragraph 2.7 of Annex VI

Not applicable

⁴ <http://www.defra.gov.uk/environment/noise/research/crtn/pdf/noise-crtn-update2006.pdf>

2.7 For Agglomerations, an explanation of the extent of the sources incorporated in the mapping must be given for roads, railways, airports and industry.

The roads included in the mapping include all Motorways, A roads, B roads and C roads.

3 Optional Information

3.1 If Interim methods have been used, information about any adaptations to the methods

Not applicable

3.2 For calculation methods, the software used to carry out the calculations and the version of the software

Calculation for Road Traffic Noise as implemented in LimA 5.2

3.3 For calculation methods, information regarding the input datasets used in the noise models and the methodologies employed to derive the input datasets

The following input datasets were used:

Agglomeration Roads Source Model, comprising:

- Geometry from OSNI Road Centre Line dataset (edited)
- Road traffic information from the Department of Regional Development Traffic & Travel Survey Database and the Belfast Traffic Model
- Traffic speeds derived from the Calculation for Road Traffic Noise
- Physical road attributes from field survey

Ground Model, comprising:

- OSNI Enhanced DTM
- CORINE Land Use dataset, re-classified into 10 acoustic absorption categories
- OSNI Large-scale vector buildings
- Noise Barriers from OSNI Large-scale and field survey
- Bridges and Tunnel dataset captured from field survey

3.4 For calculation methods, information regarding the extent to which the Good Practice Guide Toolkits has been used to determine the input data and the likely accuracy of the result. Information may also include estimates of the error and uncertainty of the results.

Toolkit 3 - Tool 3.5
Toolkit 5 - Tool 5.3
Toolkit 14 - Tool 14.2
Toolkit 15 - Tool 15.2

3.5 For calculation methods, information on the extent to which the noise level results have been validated

The map results have been validated against a permanent noise monitoring site located within Belfast agglomeration.

3.6 The datasets and methodology used to derive the population exposure statistics.

The population exposure assessment utilises the following datasets:

- OSNI Large-scale vector buildings (Polygons)
- OSNI Pointer Address Database (Points)
- 2001 Northern Ireland Output Areas (Polygons)
- 2001 Census (Text Database)
- Agglomeration Road Noise dataset (Polygon)

The methodology involves a series of steps:

- Filter OSNI Large-scale vector buildings using OSNI Pointer Address Database to produce a Residential Buildings dataset.
- Assign population in the 2001 Census to the Residential Buildings dataset using Northern Ireland Output Area data to produce a Residential Population Location dataset.
- Intersect the Residential Population Location dataset with the Agglomeration Road Noise dataset to assign a maximum noise level to the population living in the associated dwelling.