Directive 2002/49/EC

Data Flow 4 and 8 Supplementary Report
Major Roads in Wales

Ref: UK_W_DF4_8_MRoad_2017
1 Introduction

1.1 Report Purpose

This report provides supplementary information regarding the computation methodologies adopted for the mapping of major roads within Wales, part of the United Kingdom.

The report is to be read in conjunction with the results of the mapping which are reported in the associated document UK_W_DF4_8_2017_del.xls (worksheet “DF4_8_MRoad”).

Collectively these documents meet the 30 December 2017 reporting obligation¹ for major roads in Wales as set out in Article 10-2 and annex VI of Directive 2002/49/EC (Directive)².

1.2 Contents

The report provides mandatory information as required by the Directive, along with optional information in the same format as that reported in DF4 in 2007.

A noise map showing the Major Road 55dB $L_{den}$ and 65dB $L_{den}$ noise contours as required by Section 2.7 of Annex VI of Directive 2002/49/EC is also appended at the back of this report.

¹ http://rod.eionet.europa.eu/obligations/369
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’.\(^3\)

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

Please see Appendix I

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.

Not applicable.
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 9.0.1

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 review of strategic noise maps in Wales\(^4\) concluded that new major road noise maps would be required in round three. The following input dataset were used:

Major roads source model, comprising:
- Geometry from OS MasterMap® Integrated Transport Network™ (ITN) Roads
- Road traffic information from Traffic Wales and the Department for Transport Major Roads Databases
- Traffic speeds derived from the Calculation for Road Traffic Noise, and
- Physical road attributes from asset information sources and aerial photo interpretation

Ground model, comprising:
- Terrain data derived from Next Perspectives 5 m DTM and OS Terrain 5
- CORINE Land Cover data, re-classified into 10 acoustic absorption categories
- OS MasterMap® Topography Layer Buildings
- Bridge and Tunnel locations captured from terrain and aerial photo interpretation

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Noise level results data from round two, has been published both interactively\(^5\) and as open data\(^6\). The round three results will also be made available in this format in due course.

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.**

The Good Practice Guide Toolkit 2, Tool 2.5 (Option 5) was used to pro rata traffic flow data for the required time period of the calculation method.

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

The map results have not been validated; however the calculation methodology has previously been validated.

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

The population exposure assessment utilised the following datasets:

- OS MasterMap\(^7\) Topography Layer buildings (polygons)
- OS AddressBase Plus (points)
- Census Output Areas (polygons)
- 2011 Census Statistics and mid-year population estimates for 2015 (statistics tables)
- Noise level results data (grids)

The methodology involves a series of steps:

- Filter OS MasterMap buildings using OS AddressBase data to produce a residential buildings dataset.
- Assign Census population statistics to the residential buildings data using Census Output Area data to produce a residential population location model.

\(^5\) [http://lle.gov.wales/map/airbornepollution](http://lle.gov.wales/map/airbornepollution)
• Intersect the residential population location data with the noise level results data to assign a maximum noise level to the population living in the associated dwelling.
Appendix I

Graphical Plot showing the 55dB L_{den} and 65dB L_{den} contours for Major Roads in Wales
Wales Major Road Noise Map

Legend
- Agglomeration
- Urban settlements

Noise Levels ($L_{den}$)
- > 55 dB
- > 65 dB