



# **Reporting of Agglomerations and designated Major Roads inside Agglomerations under the Environmental Noise Regulations**

For the second round of the

## **Environmental Noise Regulations 2006**

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# Reporting of Agglomerations and designated Major Roads inside Agglomerations under the Environmental Noise Regulations

## Introduction

Directive 2002/49/EC of the European Parliament and of the Council relates to the assessment and management of environmental noise, and is commonly referred to as the Environmental Noise Directive or END.

The aim of the Directive is:

*“to define a common approach intended to avoid, prevent or reduce on a prioritised basis the harmful effects, including annoyance, due to exposure to environmental noise”.*

And to that end three stages are set out:

- Undertake strategic noise mapping to determine exposure to environmental noise;
- Ensure information on environmental noise and its effects is made available to the public;
- Adopt action plans, based upon the noise-mapping results, with a view to preventing and reducing environmental noise where necessary and particularly where exposure levels can induce harmful effects on human health and to preserving environmental noise quality where it is good.

## Designating agglomerations

In Ireland, the END is transposed by the Environmental Noise Regulations 2006, S.I. No. 140 of 2006 (Regulations). Under the Regulations, the certain Local Authorities are designated as noise mapping bodies for the agglomerations of Cork and Dublin. The designated noise mapping bodies for the agglomerations are:

- For the agglomeration of Cork:
  - Cork City Council; and
  - Cork County Council.
- For the agglomeration of Dublin:
  - Dublin City Council;
  - Dun Laoghaire / Rathdown County Council;
  - Fingal County Council; and
  - South Dublin County Council.

The extents of each of the agglomerations are set out within the Regulations as follows:

### **Agglomeration of Cork**

The Environmental Noise Regulations 2006 (S.I. No. 140 of 2006), define the “agglomeration of Cork” as:

- The restricted area of Cork as specified in the First Schedule to the Air Pollution Act 1987 (Marketing, Sale and Distribution of Fuels) Regulations 1998 (S.I. No. 118 of 1998).

The restricted area of Cork under the Air Pollution Act 1987 (Marketing, Sale and Distribution of Fuels) Regulations 1998 is defined as follows:

- The county borough of Cork; and
- The included areas of the administrative county of Cork
  - 1. The District Electoral Divisions of:
    - Ballincollig;
    - Douglas;
    - Inishkenny;
    - Lehenagh; and
    - Rathcooney.
  - 2. That part of the District Electoral Divisions of Bishopstown and St. Mary's not within the county borough of Cork.

These included areas of the administrative county of Cork are to be included with the county borough of Cork within the “agglomeration of Cork” as defined in the Environmental Noise Regulations 2006.

### ***Agglomeration of Dublin***

The Environmental Noise Regulations 2006 (S.I. No. 140 of 2006), define the “agglomeration of Dublin” as:

- The county borough of Dublin;
- The administrative county of Fingal;
- The administrative county of South Dublin; and
- The administrative county of Dun Laoghaire/Rathdown other than those areas excluded in the First Schedule to the Air Pollution Act 1987 (Marketing, Sale and Distribution of Fuels) Regulations 1998 (S.I. No. 118 of 1998).

The excluded areas of Dún Laoghaire-Rathdown under the Air Pollution Act 1987 (Marketing, Sale and Distribution of Fuels) Regulations 1998 are as follows:

1. The District Electoral Division of Tibbradden.
2. That part of the District Electoral Division of Glencullen situated west of an imaginary line drawn as follows:

Commencing at the junction of Slate Cabin Lane and Woodside Road, thence in a south-easterly direction and proceeding along Woodside Road and Ballyedmonduff Road to the county boundary at Glencullen Bridge.

These excluded areas are not included within the “agglomeration of Dublin” as defined in the Environmental Noise Regulations 2006.

## Reporting agglomerations

Noise mapping bodies are required to deliver certain reports and data to the EPA acting in its role as national competent authority under the Regulations. Prior to the commencement of the assessment of noise for the Round 2 strategic noise mapping, the EPA requires reports from each of the noise mapping bodies providing details of the extents of the strategic noise mapping which they are to undertake.

The reports should be submitted to the EPA using the attached ESRI Shapefile template. This template is supplied with a specification which sets out the required content of each of the fields of data within the report.

The data to be supplied for each agglomeration is set out in Table 1.

**Table 1:** Data required for each agglomeration

Field Name	Field Definition	Methodology
<b>Agglomeration Name</b>	Name of Agglomeration.	Cork or Dublin
<b>Number of Inhabitants</b>	The number of inhabitants living inside the boundary of the agglomeration.	The methodology for calculating population and determining agglomerations must be detailed in the accompanying metadata "Description" or "Methodology description" field.
<b>Size</b>	The area of coverage of the agglomeration.	
<b>LAU2 codes for location</b>	The second LAU level.	Option 1: provide a list of LAU 2 codes separated by comma (','), Codes are available from <a href="http://ec.europa.eu/eurostat/ramon/nuts/la_en.html">http://ec.europa.eu/eurostat/ramon/nuts/la_en.html</a>  Option 2: Upload a shapefile containing the agglomerations (not the area corresponding to the reporting entities)

The agglomeration boundary polygon should be one polygon object based upon OSi Largescale boundary data which sets out the calculation boundary to be used for the R2 strategic noise mapping of the agglomeration.

## Designating major roads

Under the Regulations, the National Roads Authority is the designated noise mapping body for National roads designated as “major roads”. The relevant road authority or local authorities are the designated noise mapping bodies for non-National “major roads” within their functional area.

For the second round of strategic noise mapping, to be completed by the end of June 2012, a “major road” is defined as a road with an annual total bi-directional flow during 2011 above 3,000,000 vehicle passages per year, approximately 8,220 vehicle passages per average 24 hours.

**Note:** The above definition of “major roads” has been clarified to consist of all roads classified as “National” roads or “Regional” roads with a total flow above 3,000,000 vehicle passages per year. Therefore local authorities and roads authorities need to identify all Regional roads with a total annual traffic flow above 3 million vehicles.

The National Roads Authority, Local Authorities and road authorities across Ireland are responsible for identifying and reporting to the EPA sections of major road above the relevant flow threshold. The noise mapping bodies for national and non-national major roads are to liaise to ensure that the mapping of slip roads, connecting roads, roundabouts and junctions is coordinated to ensure continuity of coverage of the mapping, and consistency of the traffic flow data and modelling data used.

### **Removal of first round designated major roads**

Under the first round of the strategic noise mapping in 2007, National and non-National roads were designated as major roads if the 2006 total annual traffic flow exceeded 6 million vehicles. Authorities were supplied with a list of all Round 1 major roads during the development of first round noise action plans. As part of this reporting process, noise mapping bodies are to update the 2006 total annual traffic flow on R1 major roads to the 2011 total annual traffic flow.

In certain situations it may be the case that a road designated as a major road for R1 does not qualify as a designated major road for R2. The two situations where it is thought that this may arise are:

1. The R1 major road has been bypassed by a newly opened National or Regional road which has significantly altered local traffic flow patterns; or
2. The R1 major road is either a Local or unclassified road in 2011, and therefore no longer designated as a major road.

If either of these situations arise, and a road mapped during R1 in 2007 does not qualify for the strategic noise mapping in 2012, the road is to be included within the report submitted to the agency, with the Year First Mapped attribute set to -1 to show that it has been removed from the strategic noise mapping of major roads between R1 and R2. The noise mapping body is also requested to submit a short explanatory note to document the reason for the removal of each road section, where this occurs, and details of the 2006 and 2011 annual traffic flow figures.

### **Reporting major roads**

Noise mapping bodies are required to deliver certain reports and data to the EPA acting in its role as national competent authority under the Regulations. Prior to the commencement of the assessment of noise from major roads for Round 2 in 2012, the EPA requires reports from each of the noise mapping bodies providing details of the sections of roads identified and designated as major roads based upon the total 2011 annual traffic flow.

The EPA understands that the agglomeration noise mapping bodies and the NRA have formed an agreement by which the National roads designated as major roads within the agglomerations, which are the responsibility of the NRA under the Regulations, will be mapped by the agglomeration NMBS using data provided by the NRA. The major roads within the agglomeration will therefore include both National and Regional roads which have been designated as major roads for the R2 strategic noise mapping.

The reports should be submitted to the EPA using the attached ESRI Shapefile template. This template is supplied with a specification which sets out the required content of each of the fields of data within the report.

The traffic flow data is to be the total annual flow for 2011 for each section of National or Regional road i.e. N4, M50. This total annual figure is to include all the vehicles, travelling in both directions, on all of the lanes, across all of the carriageways, which make up the road. This total annual flow figure, for each section of road between main junctions or roundabout, is then compared with the 3 million vehicles per year threshold, and if it is above then that section of road is designated as a major road, and reported via the SHP template sent over by the EPA.

Traffic flow data may be provided from the NRA, manual or automated traffic counts, traffic flow models such as the DTO model, or traffic forecasting models. Care needs to be taken in consolidating these various sources, as they may hold data in different formats, including 24 hours, 18 hours, AADT, am peak, pm peak, off peak, weekday, weekend, 7 day etc. It is commonly required to apply factors to flows to provide a common base situation, and undertake linking of traffic flow data to the road centreline geometry. It is recommended that expansion factors and scale factors used are based upon the results of local road traffic counts on National or Regional roads. Where these are not available it may be worth consulting with NRA publication TR201 "Expansion Factors for Short Period Traffic Counts" (1978).

The nominal assessment year for Round 2 of the strategic noise mapping is 2011, however the data used for the mapping may be up to three years old. In the case of traffic count data which was captured prior to 2011 it should be adapted from the base year to the nominal 2011 assessment year using appropriate traffic growth factors derived from local traffic count data.

It is requested that the template is completed using the OSI Large Scale road centrelines, and as such dual carriageways and motorways will be reported with 2 centrelines, each would be designated as major road, even if the flow per carriageway is below 3 million, as long as the total of the two carriageways is above 3 million.

Each section of road may include multiple lanes, and/or multiple carriageways, or slip roads in the case of grade separated junctions. All of these several components within the OSI Large Scale should be designated as major road, as they collectively make up the section of road carrying a total annual flow above 3 million.

For example, M50 motorway has two carriageways, with 2 centrelines in Large Scale. If over a particular section there are 1.7 million veh/yr northbound, and 1.5 million veh/yr southbound the total flow for that section of M50 = 3.2M veh/yr, therefore the road is a major road. In the report the centrelines from Large Scale will be assigned 1.7m on the northbound carriageway, and 1.5m on the southbound.

The data to be supplied for each section of National or Regional road, identified as having a 2011 total annual traffic flow above 3 million vehicle passages, is set out in Table 2.

In some situations there may be sections of Local or unclassified roads within the agglomeration which have a annual traffic flow above 3,000,000. For the R2 strategic noise mapping, these are not to be included within the major roads however they are to be included within the all roads results.

**Table 2:** Data required for each section of road designated as a major road

Field Name	Field Definition	Methodology
<b>EU Road ID</b>	European Road Number used to reference the road, where relevant.	Trans European Road (E-road) Network numbering convention defined by UNECE, as displayed in Euro Route panels on road signs e.g. E201, if applicable.
<b>Road ID</b>	Road Number used within Ireland to reference the road, where relevant.	Defined using the standard Irish road numbering system as used on road sign, e.g. M8, N2, R118.
<b>Road Name</b>	Textual Road Name, where relevant.	Road name catalogued by OSI
<b>Year First Mapped</b>	The year for which strategic noise mapping was first undertaken for each major road segment.	Value should be 2006 if the road segment was included within the first round of strategic noise mapping reported in 2007 and it will be included within the second round mapping in 2012; the value should be 2011 if the road segment was not included within the mapping reported in 2007 and is to be included within the 2012 mapping; the value should be -1 if the road segment was included within the first round strategic noise mapping reported in 2007 however the 2011 total annual traffic flow is below the 3 million vehicle threshold and the road segment is therefore outside the scope of the 2012 mapping.
<b>Annual Traffic Flow</b>	The number of vehicle passages in a year on the section of major road.	In the case of a single carriageway road, the bi-directional flow on the section of major road (the minimum flow threshold in the second implementation and thereafter is 3,000,000). In the case of a dual carriageway represented by a pair of OS Large Scale centrelines, the uni-directional flow on the carriageway of the section of major road (the two road carriageways should total in excess of 3,000,000).
<b>Length</b>	The actual length of the road link, in metres (not the node to node length).	
<b>Road Start Node (x1)</b>	Geographical co-ordinate in metres, the longitudinal location of the road start node.	Longitude, meters, Irish National Grid
<b>Road Start Node (y1)</b>	Geographical co-ordinate in metres, the latitudinal location of the road start node.	Latitude, meters, Irish National Grid
<b>Road End Node (x2)</b>	Geographical co-ordinate in metres, the longitudinal location of the road end node.	Longitude, meters, Irish National Grid
<b>Road End Node (y2)</b>	Geographical co-ordinate in metres, the latitudinal location of the road end node.	Latitude, meters, Irish National Grid
<b>Road Coordinate System</b>	Textual coordinate system name used by the local authority to derive start and end nodes	Irish Grid
<b>Road Classification</b>	The classification of the road section.	National or Regional

With regard to the coordinate system, OSi and many authorities are currently transitioning from Irish Grid (IG) to Irish Transverse Mercator (ITM). It is recommended that the template may be completed using ITM where it is the primary coordinate system in use within the authority, and the final dataset is then re-projected to IG immediately prior to deliver to the EPA.

The EPA Guidance recommends that hourly traffic flows are used to undertake the noise calculations, using CRTN and the TRL Method 1 back-end corrections. If hourly traffic data is not available for a particular section of major road, it is recommended to derive an appropriate diurnal flow profile from nearby hourly count data. If this is not possible due to lack of data, the diurnal flow profile from Appendix 1 of the *NRA Guidelines for the Treatment of Noise and Vibration in National Road Schemes, Revision 1, October 2004*, should be used as a default. This recommended approach is in line with the preferred method identified within the NRA Guidelines, and also follows discussions with the authors of the TRL report, who have reiterated the statements within the report regarding the robustness of Method 1 compared with Method 2 or Method 3, even when using hourly data derived from factoring AADT data.

Further information and guidance on the collection and preparation of data for strategic noise mapping can be found in the EPA Guidance Note on Strategic Noise Mapping, Version 2, August 2011, available at <http://www.epa.ie/downloads/advice/noisemapping/>.