

# Fermanagh District Council



## Air Quality Updating and Screening Assessment 2012

Environment (Northern Ireland) Order 2002  
Local Air Quality Management

October 2012



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## **Executive Summary**

The Local Air Quality Management process places an obligation on all local authorities to regularly review and assess air quality in their areas, and to determine whether or not the air quality objectives are likely to be achieved. Where these targets are not likely to be met, the local authority must then declare an Air Quality Management Area (AQMA) and prepare an Air Quality Action Plan (AQAP) setting out the measures it intends to put in place in order to pursuit of the objectives.

This 2012 Updating and Screening Assessment has been carried out in accordance with the requirements of the Local Air Quality Management Technical Guidance TG (09) and focuses on changes to pollution sources, new source types and sources where new exposure has been identified, since the last round of review and assessment.

There have been no significant changes to any pollution sources in the Fermanagh District Council area and no additional sources of pollution have been identified since the last round of review and assessment, which concluded that the relevant air quality objectives would be met.

The Council has not identified the requirement for any proposed action at this time other than to complete and submit a Progress Report in 2013.

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# 1 Introduction

## 1.1 Description of Local Authority Area



Fermanagh District Council, with an area of 1876 km<sup>2</sup> and population of approximately 61000\*, accounts for 13% of land mass of Northern Ireland. It is bordered by Donegal, Monaghan, Cavan and Leitrim councils in Eire, and by Dungannon, Omagh and Strabane councils in Northern Ireland.

The District is predominantly rural in character and has one of the lowest population densities in the United Kingdom. It is bisected by the River Erne system which flows from south-east to north-west along the length of Fermanagh. Approximately 20% of Fermanagh is covered with lakes and waterways.

Enniskillen, the largest town in Fermanagh, occupies a strategic position at one of the four crossing points of Lough Erne, where the Upper Lough is a narrow river channel before widening out into the expanse of Lower Lough Erne. Enniskillen is also located on the main South Western Transport Corridor, between Belfast and Sligo. The other main centres of population are Irvinestown and Lisnaskea.

Agriculture and tourism are the main industries, with some manufacturing, timber milling, food processing and several large quarries.

\* NI Statistics and Research Agency Estimate for 2007

## **1.2 Purpose of Report**

This report fulfils the requirements of the Local Air Quality Management process as set out in the Environment (Northern Ireland) Order 2002, the Air Quality Strategy for England, Scotland, Wales and Northern Ireland 2007 and the relevant Policy and Technical Guidance documents. The LAQM process places an obligation on all local authorities to regularly review and assess air quality in their areas, and to determine whether or not the air quality objectives are likely to be achieved. Where exceedances are considered likely, the local authority must then declare an Air Quality Management Area (AQMA) and prepare an Air Quality Action Plan (AQAP) setting out the measures it intends to put in place in pursuit of the objectives.

## **1.3 Air Quality Objectives**

The air quality objectives applicable to LAQM in Northern Ireland are set out in the Air Quality Regulations (Northern Ireland) 2003, Statutory Rules of Northern Ireland 2003, no. 342, and are shown in Table 1.1. This table shows the objectives in units of microgrammes per cubic metre  $\mu\text{g}/\text{m}^3$  (milligrammes per cubic metre,  $\text{mg}/\text{m}^3$  for carbon monoxide) with the number of exceedances in each year that are permitted (where applicable).

**Table 1.1 Air Quality Objectives included in Regulations for the purpose of Local Air Quality Management in Northern Ireland.**

Pollutant	Air Quality Objective		Date to be achieved by
	Concentration	Measured as	
<b>Benzene</b>	16.25 $\mu\text{g}/\text{m}^3$	Running annual mean	31.12.2003
	3.25 $\mu\text{g}/\text{m}^3$	Running annual mean	31.12.2010
<b>1,3-Butadiene</b>	2.25 $\mu\text{g}/\text{m}^3$	Running annual mean	31.12.2003
<b>Carbon monoxide</b>	10.0 $\text{mg}/\text{m}^3$	Running 8-hour mean	31.12.2003
<b>Lead</b>	0.5 $\mu\text{g}/\text{m}^3$	Annual mean	31.12.2004
	0.25 $\mu\text{g}/\text{m}^3$	Annual mean	31.12.2008
<b>Nitrogen dioxide</b>	200 $\mu\text{g}/\text{m}^3$ not to be exceeded more than 18 times a year	1-hour mean	31.12.2005
	40 $\mu\text{g}/\text{m}^3$	Annual mean	31.12.2005
<b>Particles (PM<sub>10</sub>) (gravimetric)</b>	50 $\mu\text{g}/\text{m}^3$ , not to be exceeded more than 35 times a year	24-hour mean	31.12.2004
	40 $\mu\text{g}/\text{m}^3$	Annual mean	31.12.2004
<b>Sulphur dioxide</b>	350 $\mu\text{g}/\text{m}^3$ , not to be exceeded more than 24 times a year	1-hour mean	31.12.2004
	125 $\mu\text{g}/\text{m}^3$ , not to be exceeded more than 3 times a year	24-hour mean	31.12.2004
	266 $\mu\text{g}/\text{m}^3$ , not to be exceeded more than 35 times a year	15-minute mean	31.12.2005



## 1.4 Summary of Previous Review and Assessments

### 2001 Stage One

The Stage One report for Fermanagh District Council, an initial screening of industrial, transport and any other sources of pollution that could have a significant impact within the council area, was completed in August 2001. It concluded that no further investigation or action needed to be undertaken for the following pollutants:

- Benzene
- 1,3-Butadiene
- Lead
- Carbon Monoxide

However, the Stage One screening indicated that air quality objectives were at risk of being exceeded for three of the strategy pollutants, namely:

- Nitrogen Dioxide
- Sulphur Dioxide
- Particulate Matter (PM<sub>10</sub>)

Accordingly, Fermanagh District Council was required to proceed to a Stage Two/Three Review of these pollutants.

### 2004 Stage Two/Three

This was a more detailed assessment of all the pollutants identified as significant locally in the first stage. Completed in 2004, it included computer modelling of sources and made reference to locally monitored air quality data.

The conclusions of the second/third stage were:

#### Nitrogen Dioxide (NO<sub>2</sub>) (Stage Two):

The assessment of NO<sub>2</sub> emissions from road traffic was largely based upon the application of the Design Manual for Roads and Bridges (DMRB) and some diffusion tube monitoring data that was available.

The results of both the diffusion tube survey and the DMRB modelling showed that it is unlikely that either the annual mean or hourly NO<sub>2</sub> objective will be exceeded in Fermanagh DC area at relevant receptor locations.

It was therefore not necessary to undertake a Third Stage Review and Assessment for NO<sub>2</sub>.

#### Sulphur Dioxide (SO<sub>2</sub>) (Stage Two/Three):

In the absence of any reliable local monitoring, Fermanagh District Council was required to proceed directly to a Third Stage Review and Assessment in respect of

SO<sub>2</sub> from domestic fuel combustion for the 1km x 1km grid square identified in Stage One.

The results of the assessment, using ADMS computer modelling, suggested that there was unlikely to be an exceedance of the SO<sub>2</sub> objectives in the modelled area.

#### Particulates (PM<sub>10</sub>) (Stage Two/Three):

The results of DMRB modelling confirmed that there would be no likelihood of predicted exceedances of the PM<sub>10</sub> objective from traffic sources.

Based on findings elsewhere it was not considered necessary to proceed to a Stage Three Review and Assessment for PM<sub>10</sub> in respect of industrial type sources, controlled or uncontrolled.

In relation to domestic solid fuel use, in the absence of any reliable local monitoring data, it again was necessary to proceed to a Third Stage Review and Assessment for this source. This also involved detailed modelling of domestic fuel emissions using ADMS version 3.1, using new fuel usage data, as well as more locally accurate PM<sub>10</sub> monitoring data from neighbouring Omagh District Council.

The modelling suggested that an exceedance of the PM<sub>10</sub> objective was unlikely.

The conclusion of the first round of the Review and Assessment process was that it is not necessary to declare an Air Quality Management area within the Fermanagh District Council area.

### **2005 Progress Report**

The LAQM process was taken forward by reporting progress on local air quality management and whether objectives were being achieved. This report concluded that there were no likely exceedances of the air quality objectives and hence no requirement for a detailed assessment.

### **2006 Updating and Screening Assessment**

This assessment considered any matters which had changed since the previous assessments and that might lead to a risk of an air quality objective being exceeded. It involved considering new air quality objectives, any new monitoring data, new sources or significant changes to existing sources within FDC area and surrounding authorities. Each of these matters was considered on a pollutant-by-pollutant basis but the report concluded that exceedances of objectives were unlikely and there was no need for a detailed assessment.

### **2007 Progress Report**

This report gave an update on LAQM progress by considering any changed circumstances and new monitoring data. It concluded that no detailed assessment was required.

**2008 Progress Report**

This report gave a further update on LAQM progress by considering any changed circumstances and new monitoring data. It concluded that no detailed assessment was required.

**2009 Updating and Screening Assessment**

No new or significantly changed sources were identified and therefore the report did not identify the need to proceed to a Detailed Assessment.

**2010 Progress Report**

There were no changed circumstances or new monitoring data to consider and the conclusion was that no detailed assessment was required.

**2011 Progress Report**

There were again no significantly changed circumstances or new monitoring data to consider and this report concluded that objective exceedances were unlikely and no detailed assessment was required.

## **2 New Monitoring Data**

### **2.1 Summary of Monitoring Undertaken**

#### **2.1.1 Automatic Monitoring Sites**

There are no Automatic Monitoring Sites in the Fermanagh District Council area.

#### **2.1.2 Non-Automatic Monitoring**

The conclusions of previous Review and Assessments were that no exceedances of the air quality objectives were likely. Consequently there has been no new diffusion tube monitoring carried out since the last (2008) Progress Report.

### **2.2 Comparison of Monitoring Results with AQ Objectives**

#### **2.2.1 Nitrogen Dioxide**

##### **Diffusion Tube Monitoring Data**

No monitoring has been carried out since 2006 but the results in Table 2.1, together with the DMRB modelling carried out in the Stage 3 assessment, indicate that it is unlikely that either the annual mean or hourly NO<sub>2</sub> objective will be exceeded in Fermanagh DC area at relevant receptor locations.

For information the table below shows the previous NO<sub>2</sub> Diffusion Tube results for 2004 – 2006

**Table 2.1 Results of Nitrogen Dioxide Diffusion Tubes**

Site ID	Location	Kerb to Receptor (m)	Within AQMA?	Annual mean concentrations ( $\mu\text{g}/\text{m}^3$ ) Adjusted for bias		
				2004	2005	2006
FDC1	Townhall Enniskillen	3.1	No	11.9	22.4	20.9
FDC2	Belmore St Enniskillen	3.75	No	18.2	29.8	26.9
FDC3	Tempo Rd Enniskillen	Urban B/ground	No	4.2	7.4	6.5
FDC4	Rossole Rd Enniskillen	Urban B/ground	No	5.4	8.3	8.9

Lab used: Eurofins

Bias adjustment factor: 0.79 (Co-location study)

Nitrogen Dioxide AQ Objective:  $40 \mu\text{g}/\text{m}^3$  (annual mean)

### 2.2.2 PM<sub>10</sub>

Fermanagh District Council does not monitor PM<sub>10</sub>.

### 2.2.3 Sulphur Dioxide

Fermanagh District Council does not monitor SO<sub>2</sub>.

### 2.2.4 Benzene

Fermanagh District Council does not monitor Benzene.

### 2.2.5 Other pollutants monitored

Fermanagh District Council does not monitor any other pollutants.

### **3 Road Traffic Sources**

#### **3.1 Narrow Congested Streets with Residential Properties Close to the Kerb**

Fermanagh District Council confirms that there are no new/newly identified congested streets with a flow above 5,000 vehicles per day and residential properties close to the kerb, that have not been adequately considered in previous rounds of Review and Assessment.

#### **3.2 Busy Streets Where People May Spend 1-hour or More Close to Traffic**

Fermanagh District Council confirms that there are no new/newly identified busy streets where people may spend 1 hour or more close to traffic.

#### **3.3 Roads with a High Flow of Buses and/or HGVs.**

Fermanagh District Council confirms that there are no new/newly identified roads with high flows of buses/HGVs.

#### **3.4 Junctions**

Fermanagh District Council confirms that there are no new/newly identified busy junctions/busy roads.

### **3.5 New Roads Constructed or Proposed Since the Last Round of Review and Assessment**

Fermanagh District Council confirms that there are no new/proposed roads which meet the criteria in Section A.5 of Box 5.3 in TG(09).

Construction is currently in progress on the new 2 Km Cherrymount Link road scheme in Enniskillen which will connect the Irvinestown Road with the Tempo Road. An air quality assessment for this project did not indicate any breach of air quality objectives. One benefit of this new road will be a reduction in the traffic congestion through the town centre area and a consequential improvement in air quality there. Completion is scheduled for early 2013.

A Southern Bypass for Enniskillen is also proposed, allowing through traffic using the A4 to avoid the town centre. This will also significantly reduce town centre traffic congestion and improve local air quality. Although it is not anticipated that the scheme will be completed until perhaps 2018, an air quality impact assessment will be carried out in due course.

### **3.6 Roads with Significantly Changed Traffic Flows**

Fermanagh District Council confirms that there are no new/newly identified roads with significantly changed traffic flows.

### **3.7 Bus and Coach Stations**

Fermanagh District Council confirms that there are no relevant bus stations in the District.

## **4 Other Transport Sources**

### **4.1 Airports**

Fermanagh District Council confirms that there are no relevant airports in the Local Authority area.

### **4.2 Railways (Diesel and Steam Trains)**

Fermanagh District Council confirms that there are no railways or stations on the Local Authority area.

### **4.3 Ports (Shipping)**

Fermanagh District Council confirms that there are no ports within the Local Authority area.



## **5 Industrial Sources**

### **5.1 Industrial Installations**

#### **5.1.1 New or Proposed Installations for which an Air Quality Assessment has been Carried Out**

Fermanagh District Council confirms that there are no new or proposed industrial installations for which planning approval has been granted within its area or nearby in a neighbouring authority and which will adversely impact on air quality.

#### **5.1.2 Existing Installations where Emissions have Increased Substantially or New Relevant Exposure has been Introduced**

Fermanagh District Council confirms that there are no industrial installations with substantially increased emissions or new relevant exposure in their vicinity within its area or nearby in a neighbouring authority.

#### **5.1.3 New or Significantly Changed Installations with No Previous Air Quality Assessment**

Fermanagh District Council confirms that there are no new or proposed industrial installations for which planning approval has been granted within its area or nearby in a neighbouring authority.

### **5.2 Major Fuel (Petrol) Storage Depots**

There are no major fuel (petrol) storage depots within the Local Authority area.

### **5.3 Petrol Stations**

Fermanagh District Council confirms that there are no petrol stations meeting the specified criteria.

### **5.4 Poultry Farms**

Fermanagh District Council confirms that there are no poultry farms meeting the specified criteria.

## **6 Commercial and Domestic Sources**

### **6.1 Biomass Combustion – Individual Installations**

Fermanagh District Council confirms that there are no relevant biomass combustion plants in the District.

The 2011 Progress Report referred to a proposed additional Combined Heat and Power plant to be installed at Balcas Timber Ltd, Laragh, Enniskillen, together with a new wood dryer and pelletising plant. This proposal has now been withdrawn and emissions from the current CHP plant will continue to be regulated by a PPC Permit. The new hospital at Enniskillen, which opened earlier in 2012, has two biomass boilers installed. The potential air quality impact of these was assessed using the Technical Guidance screening tool, but they were found to be unlikely to lead to exceedances. Hence no further detailed assessment was required.

### **6.2 Biomass Combustion – Combined Impacts**

Fermanagh District Council confirms that there are no relevant biomass combustion plants in the District.

### **6.3 Domestic Solid-Fuel Burning**

Fermanagh District Council confirms that there are no relevant areas of significant domestic fuel use in the District.

## **7 Fugitive or Uncontrolled Sources**

Fermanagh District Council confirms that there are no relevant potential sources of fugitive particulate matter emissions in the District.

## **8 Conclusions and Proposed Actions**

### **8.1 Conclusions from New Monitoring Data**

There has been no new monitoring carried out since the last Progress Report.

### **8.2 Conclusions from Assessment of Sources**

No new or significantly changed sources have been identified and therefore it is not necessary to proceed to a Detailed Assessment

### **8.3 Proposed Actions**

The Updating and Screening Assessment has not identified the need to proceed to a Detailed Assessment for any pollutant and therefore the proposed action is to carry out and submit a Progress Report in 2013.

## 9 References

Local Air Quality Management Technical Guidance LAQM.TG(09)

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

AEA Technical Guidance on Screening Assessment for Biomass Boilers

FDC Stage 1 Review and Assessment 2001

FDC Stage 2/3 Review and Assessment 2004

FDC Progress Report 2005

FDC Updating & Screening Assessment 2006

FDC Progress Report 2007

FDC Progress Report 2008

FDC Updating & Screening Assessment 2009

FDC Progress Report 2010

FDC Progress Report 2011