

NEWTOWNABBEY BOROUGH COUNCIL
Environmental Services Department

LOCAL AIR QUALITY PROGRESS REPORT

OCTOBER 2008



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Appendix 1

Appendix 2

1 INTRODUCTION

The local air quality management (LAQM) system was introduced by the Environment (Northern Ireland) Order 2002 and subsequent Regulations. Under this legislation District councils are required to review the present quality of air and the likely future quality of air and assess whether the nationally prescribed objectives are likely to be achieved.

As part of the LAQM process District Councils are required to prepare Progress Reports. The objective of the Progress Report is to report any potential changes in air quality that may occur between the three yearly review and assessment of air quality whilst reporting on progress of local air quality management and achieving concentrations below the air quality objectives.

In August 2007 Newtownabbey Borough Council published its first Progress Report. This second Progress Report will focus on:

1. Progress from the findings of the 2007 Progress Report
2. New Monitoring Results
3. New Local Developments

2 PROGRESS FROM 2007 PROGRESS REPORT

2.1 Summary of Findings from 2007 Progress Report

The 2007 Progress Report concluded that the 2006 Annual Average Concentrations for the passive nitrogen dioxide monitoring sites at Sandyholme Way, Antrim Road at Elmfield and Main Street Ballyclare, were equal to or above the Annual Mean Air Quality Objective of 40 µgm³.

It recommended that Air Quality Management Areas (AQMAs) should be declared at each site together with a Detailed Assessment at each site.

2.2 Air Quality Management Areas

The following AQMAs were declared on 29 January 2008 (Appendix 1):

1. AQMA No. 2 Main Street, Ballyclare
2. AQMA No. 3 Antrim Road, Elmfield
3. AQMA No. 4 Sandyknowes

The boundaries for the AQMAs were based on advice from AEA Technology following three months' concentrated diffusion tube results. Information from the Detailed Assessment will confirm these boundaries.

2.3 Detailed Assessment

Newtownabbey Borough Council has commissioned AEA to undertake Detailed Assessments at each of the AQMAs. This has been divided into two parts:

1. An extensive six month Monitoring Programme at the three exceeding areas;
2. Detailed Modelling Assessment using the new monitoring data

2.3.1 Extensive Six Month Monitoring Programme

This involved triplicate exposure of Nitrogen Dioxide Diffusion Tubes at each of the three Continuous Nitrogen Dioxide Analysers located in the AQMAs as well as an extra 12 sites per AQMA as single exposure. This work was completed between November 2007 and April 2008. The information from this monitoring is currently being used in the Detailed Modelling.

2.3.2 Detailed Modelling Assessment

A Detailed Assessment of road traffic emissions is currently being undertaken by AEA, using a complex computer dispersion modelling approach.

The output from the model will:

- provide predictions of the contribution to pollutant concentrations (NO₂) as a result of traffic emissions for the three AQMAs;
- determine whether exceedances of the NO₂ air quality objectives are likely at relevant receptor points for the baseline year and future years of interest;
- determine the magnitude and geographical extent of the exceedance areas;
- estimate the relative contribution of different vehicle sources within the areas of exceedance;
- determine more accurately the improvement in pollutant concentrations that is required to meet the Air Quality Strategy Objectives;
- provide technical justification for measures to be taken within an Action Plan.

It is anticipated that this Detailed Assessment Report will be submitted as a follow up to this Progress Report by the end of November.

2.4 Air Quality Action Plan

The Detailed Assessment Report will confirm that the existing AQMAs are still required and/or need to be redefined. Once the final AQMAs are established Newtownabbey Borough Council will be required to produce an Air Quality Action Plan for areas declared as AQMAs.

The Action Plan will set out the measures that are intended to be taken forward to achieve the Air Quality Objectives and the potential costs and benefits of the measures.

3 NEW MONITORING RESULTS

3.1 Automatic Monitoring Results

Location	Annual Hourly Mean μgm^3	Maximum Daily Mean μgm^3	Maximum Hourly Mean μgm^3
Sandyknowes	34	79	264
Shore Road	28	65	155

The mean nitrogen dioxide concentrations for the period 1 January to 31 December 2007 at both monitoring sites are below the Annual Mean Air Quality Objective of $40 \mu\text{gm}^3$.

3.2 New Automatic Monitoring Locations

In order to accurately monitor Nitrogen Dioxide in the three AQMAs, the Nitrogen Dioxide Automatic Monitor was relocated from Shore Road to Antrim Road, Elmfield in January 2008 and a new Nitrogen Dioxide Automatic Monitor has been located in Main Street, Ballyclare from December 2007.



Antrim Road, Elmfield



Main Street, Ballyclare

3.3 Passive Monitoring

The Diffusion Tube results for 2006 (listed below) were analysed following the last Progress Report (2007) and tubes were either removed or relocated due to consistently low results or moved to the façade of the dwelling.

Site Ref.	Location	No. of Tubes Averaged	Average
1	Main Street, Ballyclare	12	33
5	McMillan House, Antrim Road	12	20
8	Braden Heights (background)	12	13
11	44 Sandyknowes Avenue	12	28
12	12 Sandyholme Way	12	40
16	Doagh Village	12	19
18	Main Street, Ballynure	12	15
20	A8 Motorway at Sandyknowes	12	29
21	Ballyclare Road/Manse Road	11	14
27	1A Jordanstown Road	12	22
31	Bernice Road/Mallusk Road	12	16
36	NOx Analyser, Sandyknowes	12	29
37	NOx Analyser, Sandyknowes	12	29
38	NOx Analyser, Sandyknowes	12	22
39	NOx Analyser, Shore Road	12	19
40	NOx Analyser, Shore Road	12	18
41	NOx Analyser, Shore Road	12	23
42	Langley Hall, Shore Road	12	22
43	Antrim Road, Elmfield	12	39
44	Abbots Cross	12	15
45	B & Q	12	23
46	Collinbridge Road	12	27

Red - Ceased Monitoring

Blue – Relocated

Green – Moved to façade of dwelling

Black – Ongoing sites

3.3.1 New Monitoring Sites

New monitoring sites were identified, particularly in the AQMAs or where there was a perceived problem due to local knowledge of the area.

The Table below shows the Diffusion Tube locations for 2007.

Site No	Location
1R 1N	Main Street, Ballyclare (30/1/07 Moved on to house)
5	1 Hightown Road
8 B13N	Braden Heights/Rathcoole
11	44 Sandyknowes Avenue (Moved to house July 04)
12R 14N	Sandyholme Way (2/1/07 Moved on to house)
16	Doagh village (2/1/07 Moved on to building)
20R 11N	A8/Motorway at Sandyknowes (30/1/07 Moved on to house)
36	NOx Analyser, Sandyknowes
37	
38	
43	Antrim Road at Elmfield Lights
46	12 Collinbridge Road
47	13 Sandyholme Park
48	24 Sandyknowes Avenue
49	6 Sandyknowes Gardens
50	45 Burney's Lane
51	196 Shore Road
52	10 Mill Road
56	Lamp post outside 5 Sandyholme Park
57	7 Sandyholme Way
58	198 Antrim Road, Glengormley
59	Main Street, Ballyclare

The Diffusion Tubes were analysed by Lambeth Scientific Services from January – September 2007 and then by Gradko International since October 2007.

The results of Nitrogen Dioxide Tubes will be reported in detail in the Detailed Assessment Report to follow.

4 NEW LOCAL DEVELOPMENTS

The following are new local developments since completion of the last Progress Report (August 2007).

4.1 New Industrial Developments

A list of Part A, B and C processes within Newtownabbey Borough Council are listed in Appendix 2. The only new Part C Vapour Recovery Process is ASDA, North End, Ballyclare.

4.2 New Retail Developments

Asda, North End, Ballyclare

4.3 New Residential Developments

Mayfield and Hyde Park Road Development

4.4 New Landfill Developments

No new landfill, quarrying or mineral processes have commenced in the last year and there have been no complaints about existing processes.

5 SUMMARY OF KEY POINTS AND FUTURE ACTIONS

This progress report indicates:

1. The recommendations of the 2007 Progress Report have been implemented.
2. Three AQMAs have been designated.
3. Detailed Assessments in the three AQMAs are currently being undertaken and the report will follow.
4. There have not been any significant changes in local circumstances to indicate possible exceedances of the air quality standards and objectives.
5. The main sources of pollutants in the Newtownabbey Borough Council area continue to be nitrogen dioxide from road traffic and sulphur dioxide from domestic.
6. Nitrogen Dioxide from road traffic needs to be monitored in key locations.
7. Newtownabbey Borough Council has a responsibility to produce an Air Quality Action Plan.