Cookstown
DISTRICT COUNCIL
COMHAIRLE CHEANTAR NA CO! RRE CRÍOCHAÍ
DISTRICK COONCIL O COOKESTOUN

2013 Air Quality Progress Report for Cookstown District Council

In fulfillment of Environment (Northern Ireland) Order 2002
Local Air Quality Management

Date November 2013

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Executive Summary

Local Air Quality Management by Local Authorities was introduced as a Statutory Duty by the Environment (Northern Ireland) Order 2002, and subsequent Regulations. Under this legislation District Councils are required to review the present air quality and the likely future air quality, to assess whether the nationally presented objectives are likely to be achieved. The first stage of Cookstown District Councils Review and assessment of air quality was published in August 2001.This identified the main sources of seven key pollutants within the district.

This was followed by the second and third stage Review and Assessment published in 2004, which further scrutinized three pollutants which had been identified in the previous reports as potentially concerning, namely Nitrogen dioxide, Sulphur dioxide and particulates. This report concluded that it was unlikely that the air quality objectives would be exceeded, and that it was not necessary for Cookstown District Council to declare any Air Quality Management Areas.

Subsequent updating and Screening Assessments for Cookstown, concluded that for each of the seven key air pollutants the air quality objectives were likely to be met. This progress report has confirmed that the air quality objectives are still being met for each of the seven key air pollutants and a more detailed assessment is not required at this time

Table of Contents

List of Tables

List of Figures

Appendices

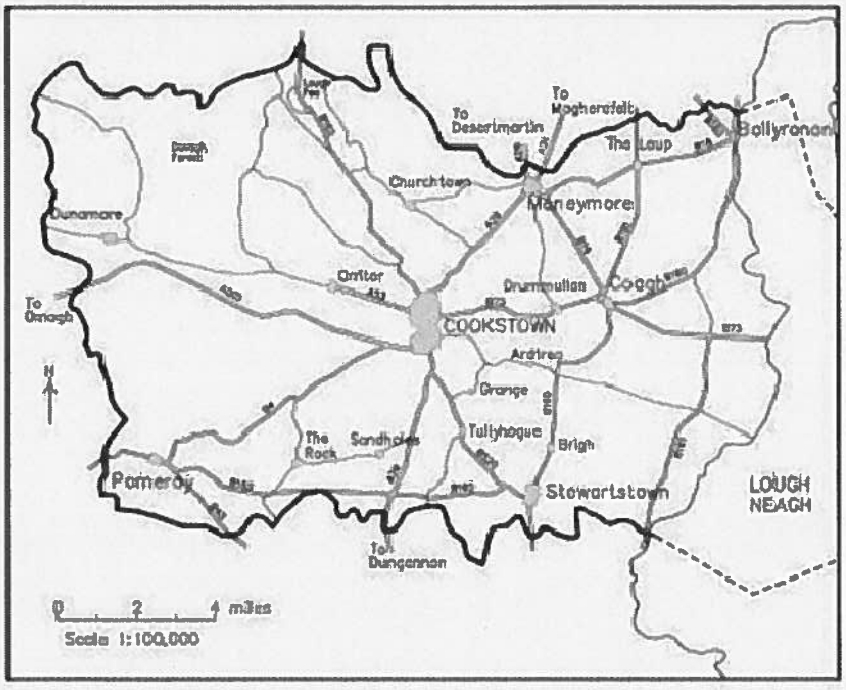
1 Introduction

1.1 Description of Local Authority Area

Northern Ireland. It shares it boundaries with Magherafelt District Council to the north, Omagh District Council to the west, and Dungannon and South Tyrone Borough Council to the south. Its eastern boundary is the shoreline of Lough Neagh. The area has a population of 32,000 and covers 235 square miles. Much of the population of the District is located in the town of Cookstown which is central to the area. There are also a number of rural villages in the district, Moneymore, Stewartstown, Coagh, Ardboe and Pomeroy.

The area is easily accessible and is a convenient distance from Northern Ireland's two main motorways, the M1 and M2. The main A29 north-south route bisects the district. The major airports and harbours in Northern Ireland are all within 1 hour's drive of Cookstown. Agriculture and the agri-food business are strong contributors to the areas economy. However, the district also boasts a number of key industrial employers.

Fig. 1.1 – Map showing Cookstown District Council area.



1.2 Purpose of Progress 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 exceedences 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.

Progress Reports are required in the intervening years between the three-yearly Updating and Screening Assessment reports. Their purpose is to maintain continuity in the Local Air Quality Management process.

They are not intended to be as detailed as Updating and Screening Assessment Reports, or to require as much effort. However, if the Progress Report identifies the risk of exceedence of an Air Quality Objective, the Local Authority (LA) should undertake a Detailed Assessment immediately, and not wait until the next round of Review and Assessment.

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 micrograms per cubic metre $\mu g/m^3$ (milligrammes per cubic metre, mg/m^3 for carbon monoxide) with the number of exceedences in each year that are permitted (where applicable).

Table 1.1 Air Quality Objectives included in Regulations for the purpose of LAQM in Northern Ireland

Pollutant	Air Quality Objective		Date to be achieved by
	Concentration	Measured as	
Benzene	16.25 µg/m^3	Running annual mean	31.12.2003
	3.25 µg/m^3	Running annual mean	31.12.2010
1,3-Butadiene	2.25 µg/m^3	Running annual mean	31.12.2003
Carbon monoxide	10 mg/m^3	Running 8-hour mean	31.12.2003
Lead	0.50 µg/m^3	Annual mean	31.12.2004
	0.25 µg/m^3	Annual mean	31.12.2008
Nitrogen dioxide	200 µg/m^3 not to be exceeded more than 18 times a year	1-hour mean	31.12.2005
	40 µg/m^3	Annual mean	31.12.2005
Particulate Matter (PM_{10}) (gravimetric)	50 µg/m^3, not to be exceeded more than 35 times a year	24-hour mean	31.12.2004
	40 µg/m^3	Annual mean	31.12.2004
Sulphur dioxide	350 µg/m^3, not to be exceeded more than 24 times a year	1-hour mean	31.12.2004
	125 µg/m^3, not to be exceeded more than 3 times a year	24-hour mean	31.12.2004
	266 µg/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

The first round review and assessment of air quality was completed in 2004. It involved a 3-stage approach, the findings of which are contained in two reports:

Table 1.2
Summary of first stage review and assessment in Cookstown.

Pollutant	Significant Sources	Recommendations
Carbon Monoxide	No significant Sources	No further assessment
Benzene	No significant Sources	No further assessment
1–3 Butadiene	No significant Sources	No further assessment
Lead	No significant sources	No further assessment
Nitrogen Dioxide	• Four single carriageway road junctions exceeding average threshold • Two dual carriageway junctions exceeding 10,000 vpd and sensitive properties within 10 metres • Three dual carriageway sections exceeding 10,000 vpd and sensitive properties within 10m • One Part A process in Cookstown	Proceed to 2nd stage
Sulphur Dioxide	• One Part A process • One Thermal combustion system • At least 2 1x1km grid squares with potentially more than 300 houses burning coal	Proceed to 2nd stage
PM_{10}	• At least 16 sections of single carriageway roads and 7 road junctions exceeding 5000 vehicles per day and with sensitive properties within 2m (single carriageway) or 10m (dual carriageway) • Four dual carriageway sections exceeds 5000 vpd with sensitive properties within 10 metres • One significant Part A process	Proceed to 2nd stage

2nd/3rd Stage Review and Assessment Report – August 2004.

Conclusions and Recommendations of the 2nd/3rd Stage Report are given below.

- Air quality objectives for SO2 and PM10 are likely to be met and therefore there is no need to designate an air quality management area for these pollutants.

- Existing monitoring of the SO2 and PM10 will continue using real-time analysers, in order to provide data to verify the detailed dispersion modelling predictions resulting in the above conclusions.

- Air quality objectives for NO2 are expected to be met at locations of relevant public exposure i.e. building facades of residential properties, despite exceedances of the annual mean objective at three kerbside sites. An air quality management area for NO2 is therefore not being designated for this pollutant.

- Predicted concentrations of NO2 at a number of building facades of residential properties are close, but not exceeding air quality objectives. Further monitoring of NO2 will be carried out using diffusion tubes. These will be located on the facades of residential properties closest to the kerbside sites where exceedances of the NO2 annual mean objective have been identified.

3) Update And Screening Assessment Report August 2006

Table 1.3

Summary findings of Update and Screening Assessment 2006.

Pollutant	Conclusion	Recommendation
Carbon Monoxide	The objective for CO is unlikely to be exceeded at any location in the Cookstown area.	There is no need to undertake a detailed assessment for Carbon Monoxide.
Benzene	The objective for Benzene is unlikely to be exceeded at any location in the Cookstown area.	There is no need to undertake a detailed assessment for Benzene.
1 – 3 Butadiene	The objective for 1-3 Butadiene is unlikely to be exceeded at any location in the Cookstown area.	There is no need to undertake a detailed assessment for 1-3 Butadiene.
Lead	The objective for lead is unlikely to be exceeded at any location in the Cookstown area.	There is no need to undertake a detailed assessment for Lead.
Nitrogen Dioxide	The assessment indicated that the conclusion drawn from the 1st round of review and assessment remains valid, and has indicated that the annual menu and hourly objective for Nitrogen Dioxide are unlikely to be exceeded.	There is no need to undertake a detailed assessment for Nitrogen Dioxide.
Particulate Matter PM_{10}	The assessment has indicated that both the daily and the annual mean for particulate matter are unlikely to be exceeded at any location in Cookstown area.	There is no need to undertake a detailed assessment for PM_{10}
Sulphur Dioxide SO_2	The assessment has indicated that both the annual mean and hourly objective 15 minute mean for Sulphur Dioxide are unlikely to be exceeded at any location in the Cookstown area.	There is no need to undertake a detailed assessment for Sulphur Dioxide.

4) Update And Screening Assessment Report 2009

Table 1.4

Summary findings of Update and Screening Assessment 2009.

Pollutant	Conclusion	Recommendation
Carbon Monoxide	The objective for CO is unlikely to be exceeded at any location in the Cookstown area.	There is no need to undertake a detailed assessment for Carbon Monoxide.
Benzene	The objective for Benzene is unlikely to be exceeded at any location in the Cookstown area.	There is no need to undertake a detailed assessment for Benzene.
1 – 3 Butadiene	The objective for 1-3 Butadiene is unlikely to be exceeded at any location in the Cookstown area.	There is no need to undertake a detailed assessment for 1-3 Butadiene.
Lead	The objective for lead is unlikely to be exceeded at any location in the Cookstown area.	There is no need to undertake a detailed assessment for Lead.
Nitrogen Dioxide	The assessment indicated that the conclusion drawn from the 1st round of review and assessment remains valid, and has indicated that the annual menu and hourly objective for Nitrogen Dioxide are unlikely to be exceeded.	There is no need to undertake a detailed assessment for Nitrogen Dioxide.
Particulate Matter PM_{10}	The assessment has indicated that both the daily and the annual mean for particulate matter are unlikely to be exceeded at any location in Cookstown area.	There is no need to undertake a detailed assessment for PM_{10}
Sulphur Dioxide SO_2	The assessment has indicated that both the annual mean and hourly objective 15 minute mean for Sulphur Dioxide are unlikely to be exceeded at any location in the Cookstown area.	There is no need to undertake a detailed assessment for Sulphur Dioxide.

5) Update And Screening Assessment Report 2012

Table 1.5

Summary findings of Update and Screening Assessment 2012.

Pollutant	Conclusion	Recommendation
Carbon Monoxide	The objective for CO is unlikely to be exceeded at any location in the Cookstown area.	There is no need to undertake a detailed assessment for Carbon Monoxide.
Benzene	The objective for Benzene is unlikely to be exceeded at any location in the Cookstown area.	There is no need to undertake a detailed assessment for Benzene.
1 – 3 Butadiene	The objective for 1-3 Butadiene is unlikely to be exceeded at any location in the Cookstown area.	There is no need to undertake a detailed assessment for 1-3 Butadiene.
Lead	The objective for lead is unlikely to be exceeded at any location in the Cookstown area.	There is no need to undertake a detailed assessment for Lead.
Nitrogen Dioxide	The assessment indicated that the conclusion drawn from the 1st round of review and assessment remains valid, and has indicated that the annual menu and hourly objective for Nitrogen Dioxide are unlikely to be exceeded.	There is no need to undertake a detailed assessment for Nitrogen Dioxide.
Particulate Matter PM_{10}	The assessment has indicated that both the daily and the annual mean for particulate matter are unlikely to be exceeded at any location in Cookstown area.	There is no need to undertake a detailed assessment for PM_{10}
Sulphur Dioxide SO_2	The assessment has indicated that both the annual mean and hourly objective 15 minute mean for Sulphur Dioxide are unlikely to be exceeded at any location in the Cookstown area.	There is no need to undertake a detailed assessment for Sulphur Dioxide.

2 New Monitoring Data

2.1 Summary of Monitoring Undertaken

2.1.1 Automatic Monitoring Sites

Automatic monitoring Automatic monitoring was carried out in the District for both PM10 and Sulphur dioxide from December 2003 to July 2011. The PM10 was monitored by a TEOM series 1400a ambient particulate monitor. The Sulphur dioxide was monitored using a Monitor Europe ML 9805B Sulphur dioxide analyser. Both of these were housed within a secure site at Gortalowry House, Church Street, Cookstown. The site was chosen because it was within the 1 x 1km grid square identified in the Stage 1 Risk and Assessment Report as having the highest concentration of coal burning properties in the Cookstown District. No other sites have started up since the previous assessment.

This was discontinued in 2011 as the results were consistently compliant with the air quality objectives and it was felt that a good background level of data had been obtained in the years the monitor was operating.

2.1.2 Non-Automatic Monitoring Sites

The Council monitors Nitrogen dioxide at 8 sites around the district using passive diffusion tubes. Diffusion tubes represent a simple and cost-effective method of monitoring air quality in an area, to give a good general indication of average pollution concentrations. They are particularly useful for assessment against annual mean objectives.

Monitoring sites are chosen to provide data on locations that are likely to give a worst case scenario of air quality in this particular area. These should be representative of likely residential exposure and, where possible, are close to the nearest receptor from the busy road or road junction of interest. The sites are subject to periodic review and where sufficient data has been gathered, some of the diffusion tubes are relocated to new locations.

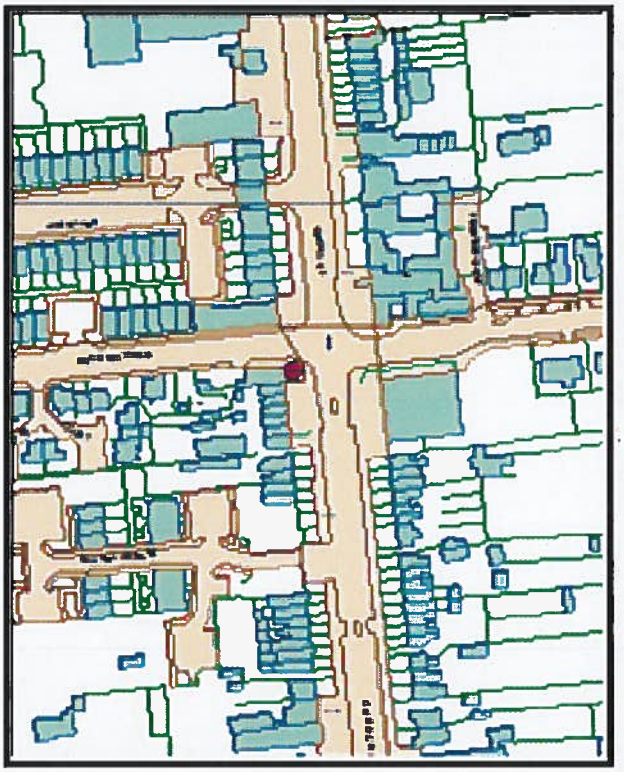
Figure 2.1 Maps of Non-Automatic Monitoring Sites

Map Showing Monitoring Locations in Moneymore (Z1, Z8, Z9, Z10)

Map Showing Monitoring Location at William Street, Cookstown (Z2)

Map Showing Monitoring Location at James Street, Cookstown (Z3)

Map Showing Monitoring Location at Church Street, Cookstown (Z4)



Map Showing Monitoring Location at Killymoon Street, Cookstown (Z5)

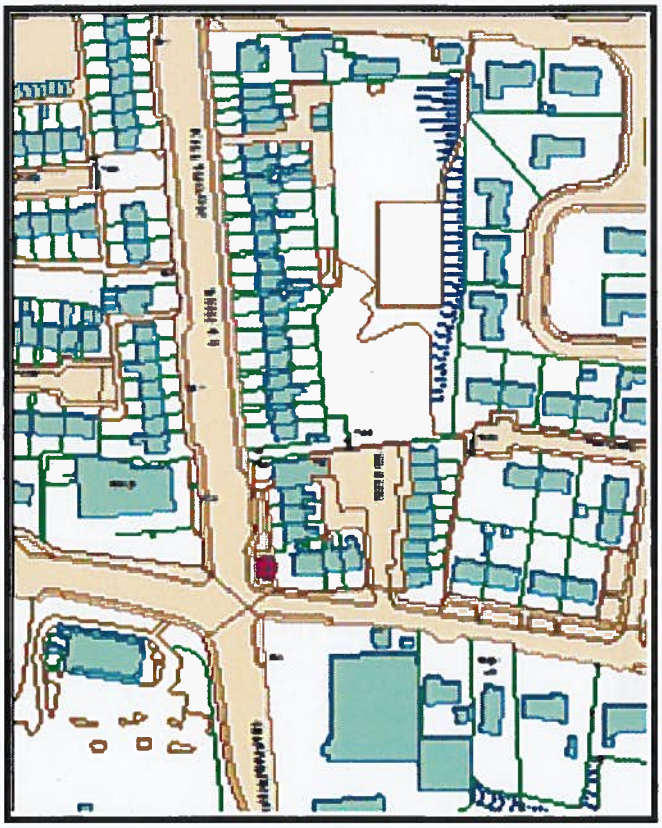


Table 2.1 Details of Non- Automatic Monitoring Sites

Site ID	Site Name	Site Type	X OS Grid Reference	Y OS Grid Reference	Site Height (m)	Pollutants Monitored	In AQMA?	Is Monitoring Co-located with a Continuous Analyser (Y/N)	Relevant Exposure? (Y/N with distance (m) from monitoring site to relevant exposure)	Distance to Kerb of Nearest Road (m) (N/A if not applicable)	Does this Location Represent Worst-Case Exposure?
Z1	Lawford Street	Roadside	285770	383510	2.5	NO2	No	No	Y	<1m	Y
Z2	William Street	Kerbside	281071	378445	2.5	NO2	No	No	Y	6m	Y
Z3	James Street	Roadside	281053	378197	2.5	NO2	No	No	Y	7m	Y
Z4	Church Street	Kerbside	281121	377537	2.5	NO2	No	No	Y	<1m	Y
Z5	Killymoon Street	Kerbside	281225	376939	2.5	NO2	No	No	Y	7m	Y
Z8	Smith Street	Kerbside	285813	383458	2.5	NO2	No	No	Y	3m	Y
Z9	High Street	Kerbside	285779	383446	2.5	NO2	No	No	Y	4m	Y
Z10	Stonyard Street	Kerbside	285759	383333	2.5	NO2	No	No	Y	5m	Y

2.2 Comparison of Monitoring Results with Air Quality Objectives

2.2.1 Nitrogen Dioxide (NO_2)

Automatic Monitoring Data

There is no automatic monitoring data for Nitrogen dioxide in the Cookstown District.

Diffusion Tube Monitoring Data

Table 2.2 Results of NO_2 Diffusion Tubes 2012

Site ID	Location	Site Type	Within AQMA?	Triplicate or Co-located Tube	Full Calendar Year Data Capture 2012 (Number of Months or %) [a]	2012 Annual Mean Concentration (µg/m^3) - Bias Adjustment factor = 0.96 [b]
Z1	Lawford Street	Roadside	N	N	12	35.2
Z2	William Street	Kerbside	N	N	12	23.3
Z3	James Street	Roadside	N	N	12	33.6
Z4	Church Street	Kerbside	N	N	12	28.1
Z5	Killymoon Street	Kerbside	N	N	12	31.7
Z8	Smith Street	Kerbside	N	N	12	27.0
Z9	High Street	Kerbside	N	N	10	18.7
Z10	Stonyard Street	Kerbside	N	N	12	34.2

Table 2.3 Results of NO_2 Diffusion Tubes (2008 to 2012)

Site ID	Site Type	Within AQMA?	Annual Mean Concentration (µg/m^3) - Adjusted for Bias [a]				
			2008 (Bias Adjustment Factor	2009 (Bias Adjustment Factor	2010 (Bias Adjustment Factor	2011 (Bias Adjustment Factor = 0.90)	2012 (Bias Adjustment Factor = 0.96)
Z1	Roadside	N	37.7	37.9	37.9	31.6	35.2
Z2	Kerbside	N	31.5	31.5	31.6	28.8	23.3
Z3	Roadside	N	39.6	39.6	39.7	33.3	33.6
Z4	Kerbside	N	39.6	39.6	32.8	29.6	28.1
Z5	Kerbside	N	35.9	35.9	36.0	31.1	31.7
Z8	Kerbside	N	N/A	N/A	28.3	26.0	27.0
Z9	Kerbside	N	N/A	N/A	20.8	19.4	18.7
Z10	Kerbside	N	N/A	N/A	39.8	32.4	34.2

The results were adjusted for bias using figures obtained from the DEFRA Website under the Local Air Quality Management Section. The website lists the bias adjustment figures that should be applied to the diffusion tubes based on individual laboratories and the type of analysis undertaken. The overall 2012 figure for Gradko Laboratories and the 20% TEA method in water was 0.96. This is based on 35 studies. This was the figure used as it seemed most representative of the method in general.

The website can be found at the following address:

http://laqm.defra.gov.uk/bias-adjustment-factors/national-bias.html

As can be seen from the results listed in Table 2.5 the bias adjusted factors were well below the air quality objective of
40 ugm-3. As a result of this, the department does not intend to declare an AQMA based on this result. When compared to the previous two years the results would seem to be slightly down for all of the monitoring points, although whether this was just a one off or part of a longer term trend is not yet clear.

2.2.2 Particulate Matter (PM_{10})

Cookstown District Council does not monitor for PM10 within the district.

2.2.3 Sulphur Dioxide (SO_2)

Cookstown District Council does not monitor for Sulphur Dioxide within the district

2.2.4 Benzene

Cookstown District Council does not monitor for Benzene within the district.

2.2.5 Other Pollutants Monitored

Cookstown District Council does not monitor for any other pollutants within the district

2.2.6 Summary of Compliance with AQS Objectives

Cookstown District Council has examined the results from monitoring in the district. Concentrations are all below the objectives, therefore there is no need to proceed to a Detailed Assessment.

3 New Local Developments

3.1 Road Traffic Sources

Cookstown District Council confirms that there are no new/newly identified road traffic sources that have not been adequately considered in previous rounds of Review and Assessment.

3.2 Other Transport Sources

Cookstown District Council confirms that there are no other transport sources that have not been adequately considered in previous rounds of Review and Assessment.

3.3 Industrial Sources

Cookstown District Council confirms that there are no new industrial sources that have not been adequately considered in previous rounds of Review and Assessment.

3.4 Commercial and Domestic Sources

Cookstown District Council confirms that there are no new commercial or domestic sources that have not been adequately considered in previous rounds of Review and Assessment.

3.5 New Developments with Fugitive or Uncontrolled Sources

Cookstown District Council confirms that there are no new developments with fugitive or uncontrolled sources that have not been adequately considered in previous rounds of Review and Assessment.

Cookstown District Council confirms that there are no new or newly identified local developments which may have an impact on air quality within the Local Authority area.

Cookstown District Council confirms that all the following have been considered:

- **Road traffic sources**
- **Other transport sources**
- **Industrial sources**
- **Commercial and domestic sources**
- **New developments with fugitive or uncontrolled sources.**

4 Planning Applications

The following are a list of planning applications submitted for approval to the local Planning Office which may need to be considered at the next updating and Screening Assessment.

Table 4.1 Henhouses & Pig Houses			
1	Application: I/2012/0012/F	For: Land to the rear of 45 Roughan Road Dungannon	Proposed additional free range poultry shed and feed bin
2	I/2012/0031/F	For: Land approx 200m North West of Killy Cottage 10 Killygargan Road Cookstown	Proposed free range poultry shed to contain 16000 free range egg laying hens with standby generator building and 2 no feed bins
3	I/2012/0066/F	Land approx 500m SE of 15 Ballymoyle Road Coagh	Proposed 2 no. pig sheds with feed bin (to contain 1950 pork pigs)
4	I/2012/0296/F	Land approx 160m North East of 72 Sessiagh Scott Road Dungannon BT70 3JU	Proposed free range poultry shed (to contain 6000 organic free range egg laying hen) with 2no. feed bins and a standby generator building
5	I/2012/0202/F	107 Tamlaghtmore Road Stewartstown	Proposed new poultry house store and packaging house adjacent to existing poultry houses on farm

Table 4.2 Anaerobic Digestors			
1	I/2012/0120/F	Land approx 100m NW of 192 Coagh Road Stewartstown	Proposed anerobic digestion plant with above ground tanks concrete silage pits and all associated site works
2	I/2012/0134/F	390m North West of 70 Kilmascally Road Dungannon Co Tyrone	Proposed 500kW anaerobic digester with combined heat and power plant and construction of new feed stock area

Table 4.3 Factories			
2	I/2012/0439/F	139 Moneymore Road Dunman Cookstown	Proposed storage tanks serving existing milk processing factory
3	I/2012/0121/F	Ballyreagh Industrial Estate Sandholes Road Cookstown	New factory unit
4	I/2012/0068/F	139 Moneymore Road Dunaman Cookstown	Proposed 2 storey extension to existing factory
5	I/2012/0057/F	Approx 300m North East of 11 Crancussy Road Dunnamore Cookstown	To be used for assembly of engineering equipment. The building is slightly higher than normal for this purpose

Table 4.4 Housing Developments			
1	I/2012/0104/O	22a Mullan Road Ballinderry Coagh	Outline planning for proposed housing development
2	I/2012/0152/F	To the rear of 34 Claggan Road Cookstown and 95m East of 23 and 25 Coolmount Drive Cookstown	Proposed amendments to layout plans of existing approved housing developments at Claggan Manor and Coolmount Drive Cookstown
3	I/2012/0182/F	Lands between 16 and 20b Claggan Road Lissan Cookstown	Proposed 4 No dwellings and garages in substitution of existing commercial garage and forecourt and I/2005/1019 (two dwellings)
4	I/2012/0318/F	43 Main Street Pomeory	Proposed conversion of existing 2 storey office block to provide 6 no 1 bedroom apartments

5 Conclusions and Proposed Actions

5.1 Conclusions from New Monitoring Data

Cookstown District Council has no Air Quality Management Areas currently declared in the District. Air quality monitoring data for the 2012 year does not indicate the need to declare an AQMA at this time.

5.2 Conclusions relating to New Local Developments

The assessment of new and existing sources did not identify any potential exceedences of air quality objectives in the district. This department does not therefore intend to conduct detailed assessments or declare any AQMA's based on the assessment of these sources.

5.3 Other Conclusions

This Progress report has not identified the need to proceed to a detailed assessment for any pollutant. This department's next course of action is to submit a Progress Report in 2014.

6 References

Publications

1.. The Environment (Northern Ireland) Order 2002

2. Air Quality Regulations (Northern Ireland) 2003

3. The Air Quality Strategy for England, Scotland, Wales and Northern Ireland 2000

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

5. Cookstown District Council 1st Stage Review and Assessment - August 2001

6. Cookstown District Council 2nd/3rd Stage Review and Assessment Report- August 2004

7. Cookstown District Council – Updating and Screening Assessment – August 2006

8. Cookstown District Council – Updating and Screening Assessment – August 2009

9. Cookstown District Council – Updating and Screening Assessment – August 2012

10. Cookstown District Council Progress Report – 2007

11. Cookstown District Council Progress Report – 2008

12. Cookstown District Council Progress Report – 2010

13. Cookstown District Council Progress Report – 2011

Websites

1.Northern Ireland Air Quality Website –

http://www.airqualityni.co.uk/

2. DEFRA website-

http://laqm.defra.gov.uk/bias-adjustment-factors/national-bias.html

Appendices

Appendix A: QA:QC Data

Diffusion Tube Bias Adjustment Factors

The diffusion tube analysis for the Council in 2012 was carried out by Gradko International, Wincester, Hampshire, England. The tubes were exposed for a month at a time before being sent for laboratory analysis. The preparation method used was an absorbent of %20 TEA (Triethanolamine)/Water. Analysis was carried out by U.V. Spectrophotometry using a UVSO4 Camspec M550.

The results were adjusted for bias using figures obtained from the DEFRA Website. under the Local Air Quality Management Section. The website lists the bias adjustment figures that should be applied to the diffusion tubes based on individual laboratories and the type of analysis undertaken. The overall 2012 figure for Gradko Laboratories and the 20% TEA method in water was 0.96. This is based on 35 overall co-location studies. This was the figure used as it seemed most representative of the method in general.

The website can be found at the following address:
http://www.uwe.ac.uk/aqm/review/R&Asupport/diffusiontube290909.xls

Factor from Local Co-location Studies (if available)

This factor is not available in the Cookstown District.

Discussion of Choice of Factor to Use

Given that no locally available relevant co-location studies were available it was decided to use the national overall lo-location figure of 0.96 as this was representative of 35 separate co-location studies and was thought to represent a good 'average' figure.