BOROUGH COUNCIL

LIMAVADY

Comhairle Bhuirg
Léim an Mhadaidh

2012
Air Quality Updating and Screening Assessment for

Limavady Borough Council

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

April 2012

Local Authority Officer	Joanne O'Kane
Department	Environmental Health Department
Address	7 Connell Street Limavady
Telephone	028 777 60302
e-mail	joanne.o'kane@limavady.gov.uk
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Executive Summary

This report has been compiled to assess current pollutant levels throughout Limavady Borough and to determine if there is a need for additional work to be undertaken with regard to any of the pollutants of concern. Within Limavady Borough there is currently one AQMA within Main Street Dungiven. This AQMA was declared as previous monitoring indicated significant levels of nitrogen dioxide from traffic emissions. Previous assessments, modelling and monitoring had indicated that no other pollutants exceeded the national air quality objectives.

This update and screening assessment has indicated that apart from the ongoing issue of elevated levels of nitrogen dioxide within Dungiven Main Street no other pollutants are giving cause for concern. There have been no developments within the Borough that would have adversely impacted on pollutant levels. Levels remain within the national air quality objectives and no additional exceedences have occurred.

Assessment of pollutants will continue and any changes/new developments which may impact on pollutant levels will be assessed as and when they occur. Monitoring will continue within the existing AQMA and the relevant authorities will be advised of any findings.

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1 Introduction

1.1 Description of Local Authority Area

Limavady Borough

The Borough of Limavady is situated in the north-west of the Province. The map below shows its location in relation to the rest of the Province. It covers an area of approximately 239 square miles and has a resident population of almost 33,000 people. The main centre of population within the Borough is Limavady town itself. Its population is in the region of 13,000 and is mainly residential in character with a small commercial base. Limavady was previously a market town but in recent years has developed into a commuter base for residents working in the neighbouring towns of Coleraine and Londonderry. Outside Limavady town are the smaller communities of Dungiven, Ballykelly, Greysteel, Bellarena and Drumsurn. These smaller areas predominately rely on agriculture as a source of revenue. Limavady Borough Council is bounded to the west by Derry City Council, one of the largest authorities in Northern Ireland, Coleraine Borough Council to the east and Magherafelt District Council to the south.

MAJOR SOURCES

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 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.

The objective of this Updating and Screening Assessment is to identify any matters that have changed which may lead to risk of an air quality objective being exceeded. A checklist approach and screening tools are used to identify significant new sources or changes and whether there is a need for a Detailed Assessment. The USA report should provide an update of any outstanding information requested previously in Review and Assessment reports.

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 $\mu g/m^3$ (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 $\mu g/m^3$	Running annual mean	31.12.2003
	3.25 $\mu g/m^3$	Running annual mean	31.12.2010
1,3-Butadiene	2.25 $\mu g/m^3$	Running annual mean	31.12.2003
Carbon monoxide	10.0 mg/m^3	Running 8-hour mean	31.12.2003
Lead	0.5 $\mu g/m^3$	Annual mean	31.12.2004
	0.25 $\mu g/m^3$	Annual mean	31.12.2008
Nitrogen dioxide	200 $\mu g/m^3$ not to be exceeded more than 18 times a year	1-hour mean	31.12.2005
	40 $\mu g/m^3$	Annual mean	31.12.2005
Particles (PM_{10}) (gravimetric)	50 $\mu g/m^3$, not to be exceeded more than 35 times a year	24-hour mean	31.12.2004
	40 $\mu g/m^3$	Annual mean	31.12.2004
Sulphur dioxide	350 $\mu g/m^3$, not to be exceeded more than 24 times a year	1-hour mean	31.12.2004
	125 $\mu g/m^3$, not to be exceeded more than 3 times a year	24-hour mean	31.12.2004
	266 $\mu g/m^3$, not to be exceeded more than 35 times a year	15-minute mean	31.12.2005

1.4 Summary of Previous Review and Assessments

Figure 1.1 Map of AQMA Boundaries (if applicable)

Stage 1 Review and Assessment

In 1998 Limavady Borough Council completed stage 1 of its Review and Assessment. This desktop exercise evaluated the position with regard to air quality within the Borough and established if there were any areas where pollutant levels required further investigation. In line with the technical guidance at that time it was determined that further investigation of nitrogen dioxide, sulphur dioxide and particulate matter was required.

Stage 2 Review and Assessment

Modelling

Nitrogen dioxide (NO_2)

Traffic emissions were identified as a source of nitrogen dioxide within the Borough. Several roadways were seen as possible areas where the national air quality objectives for nitrogen dioxide could be exceeded. Council employed consultants to carry out DMRB modelling to determine if exceedences of the national air quality objectives existed. The modelling indicated that no exceedences were likely in the vicinity of several of these roads where relevant exposure was of concern.

Sulphur dioxide (SO_2) and Particulate matter (PM_{10})

The desktop exercise indicated that there was the possibility of sulphur dioxide and particulate matter objectives being exceeded in several housing developments where solid/smokeless fuel was being burnt. Council commissioned a fuel use survey within three residential areas within Limavady town and Dungiven. The information gleaned from this survey was then used to model emissions and determine if the areas concerned were experiencing problems with pollution. The modelling determined that none of the areas surveyed were affected by elevated levels of sulphur dioxide or particulate matter. This modelling was carried out in accordance with the technical guidance available at that time. The guidance required assessment of pollutant levels within a 1km x 1km area. It was felt that if less than 100 dwellings within this area were burning solid/smokeless fuel then there was unlikely to be exceedences of the national air quality objectives. This guidance was then

changed and Councils were again required to reassess the situation. The revised guidance required Councils to look at 500m x500m square areas and determine if there were more than 50 properties within the square using solid/smokeless fuel as a source of fuel. On reassessing the situation it was determined that pollutant levels within Dungiven and one of the areas within Limavady were satisfactory and were below the thresholds for both pollutants. There was a suggestion however that PM_{10} levels within the remaining area in Limavady were high and that further investigation was required.

Monitoring

Nitrogen Dioxide

As no monitoring of nitrogen dioxide had been undertaken within the Borough passive diffusion tubes were erected at various locations within the Borough. They were located along several of the main arteriole routes within the Borough where housing/relevant exposure was in close proximity to the kerbside. Areas monitored included Greysteel, Ballykelly, Limavady & Dungiven. The monitoring indicated two areas of concern:

Linenhall Street, Limavady

At the time all traffic using the A2 (Londonderry to Limavady) to access the A37(Limavady to Coleraine) road came through Linenhall Street. In addition local traffic used this road to access other parts of the town centre. At the time traffic volumes would have been in the region of 13000 vehicles per day. Housing in this street is within 1 metre of the kerbside. Relevant exposure was probable.

Main Street, Dungiven

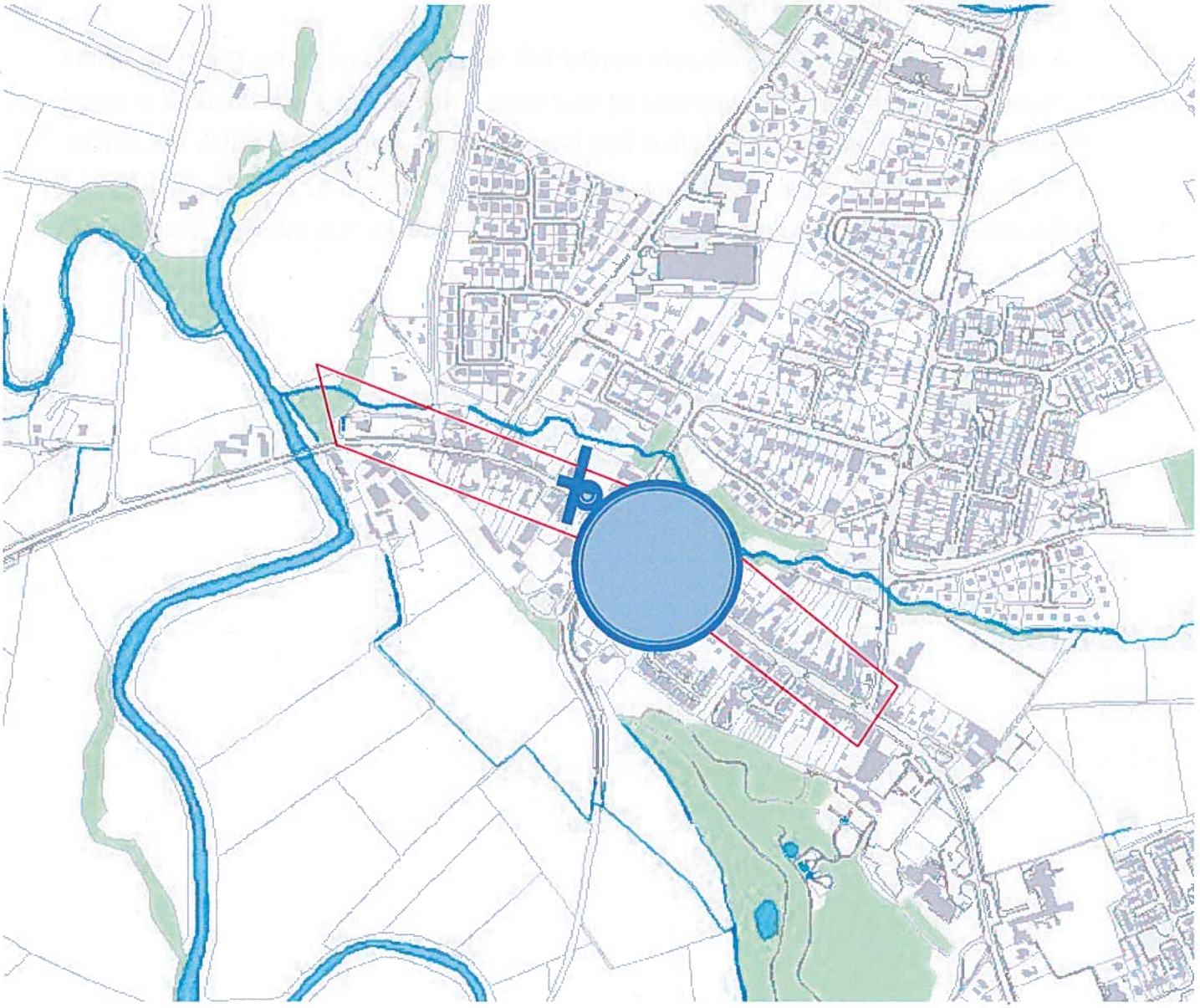
Passive monitoring indicated levels in excess of the annual mean concentration of $40ugm^{-3}$. The volume of traffic along this road which forms part of the main A6 road from Londonderry to Belfast was estimated at 13500 vehicles per day and housing again was, in places, within 1m of the kerbside.

The problem in Linenhall Street, Limavady was dramatically improved by the construction of the Limavady bypass which opened in June 2004. Traffic volumes have reduced significantly and now it is mostly local traffic which accesses this street.

The elevated levels in Main Street Dungiven led to it being declared an Air Quality Management Area (AQMA) in 2006. The AQMA, shown below, initially covered the area from

the Roe Bridge to 89/102 Main Street Dungiven. This has since been extended to include the area from the Roe Bridge to the Main Street/ Garvagh Road junction.

Map illustrating AQMA, Main Street, Dungiven



2 New Monitoring Data

Summary of Monitoring Undertaken

Automatic Monitoring Sites

A chemiluminescence nitrogen dioxide monitor has been located within the Dungiven AQMA since 2010. This monitor operates on a 24 hour basis. The monitor is sited to close to where passive diffusion monitoring indicated that levels of NO_2 were highest within the AQMA. QA/QC and data management are carried out on Council's behalf by AEA Technology and Supporting U conduct equipment support at the site. In addition the site is calibrated every month.

Figure 2.1 Map(s) of Automatic Monitoring Sites

Map of Continuous Nitrogen Dioxide Monitor, Main Street, Dungiven

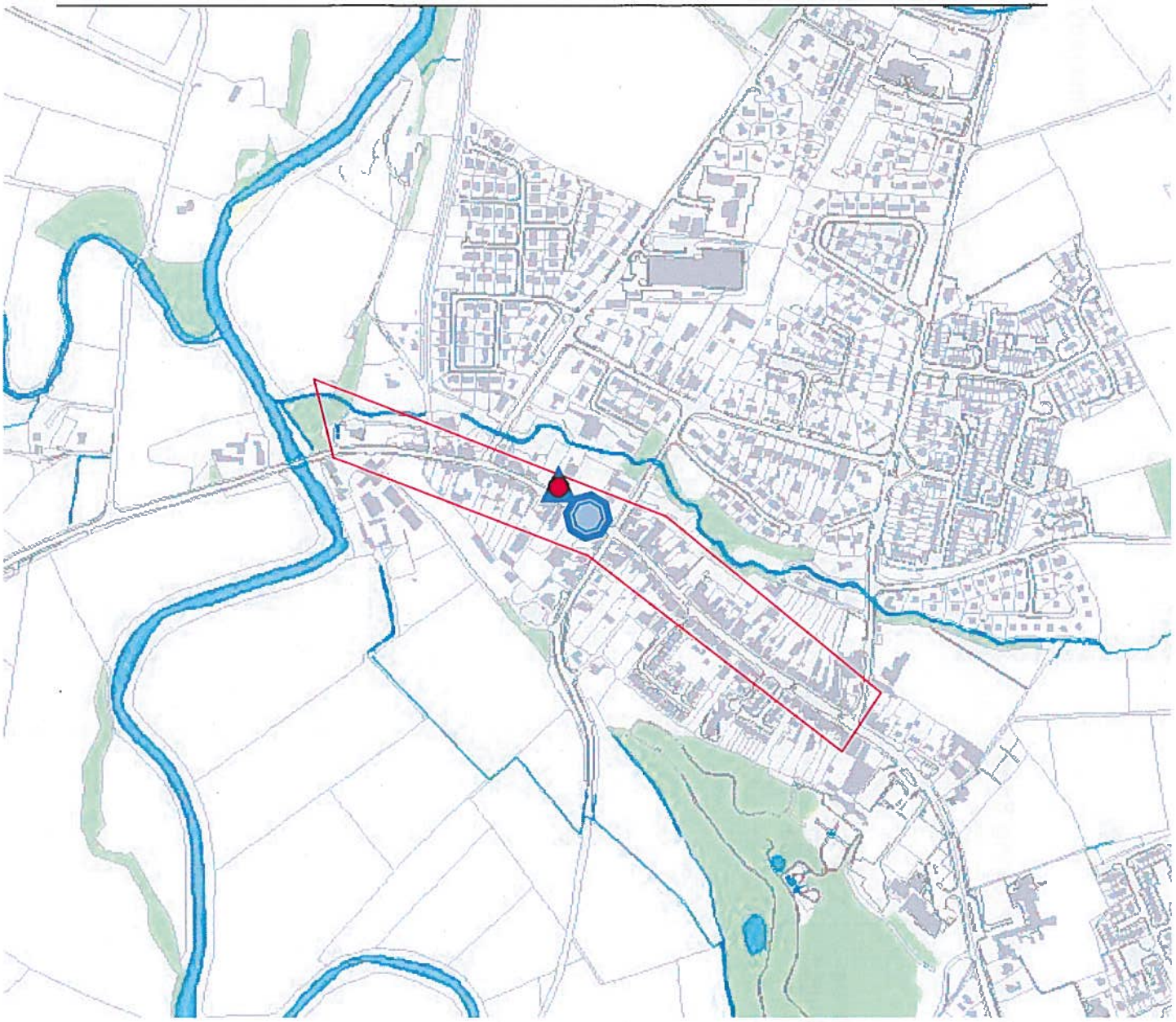


Table 2.1 Details of Automatic Monitoring Sites

Site Name	Site Type	X OS GridRef	Y OS Grid Ref	Pollutants Monitored	In AQMA?	Monitoring Technique	Relevant Exposure? *(Y/N with distance (m) to relevant exposure)*	Distance to kerb of nearest road *(N/A if not applicable)*	Does this location represent worst-case exposure?
Dungiven	urban	6887	0949	NO_2	Y	chemiluminescence	Y	1M	Y

1.4.1 Non-Automatic Monitoring Sites

In addition to the continuous monitor passive monitoring of NO_2 levels has continued within the Dungiven AQMA. Triplicate NO2 diffusion tubes have been located at several sites within the AQMA to provide additional data with regard to the annual mean concentrations within the AQMA. The tubes used are supplied by Gradko via Envirotechnology plc. The preparation method is 20% TEA in water and they are analysed by Gradko. The laboratory which analyses the tubes is accredited, follows the procedure as set out in the Practical Guidance and participates in the WASP scheme. The precision of the tubes used is 'good'. The bias adjustment factors are stated below (www.defra.gov.uk)

YEAR	BIAS ADJUSTMENT FACTOR
2006	0.98
2007	0.89
2008	0.90
2009	0.90
2010	0.85
2011	0.91

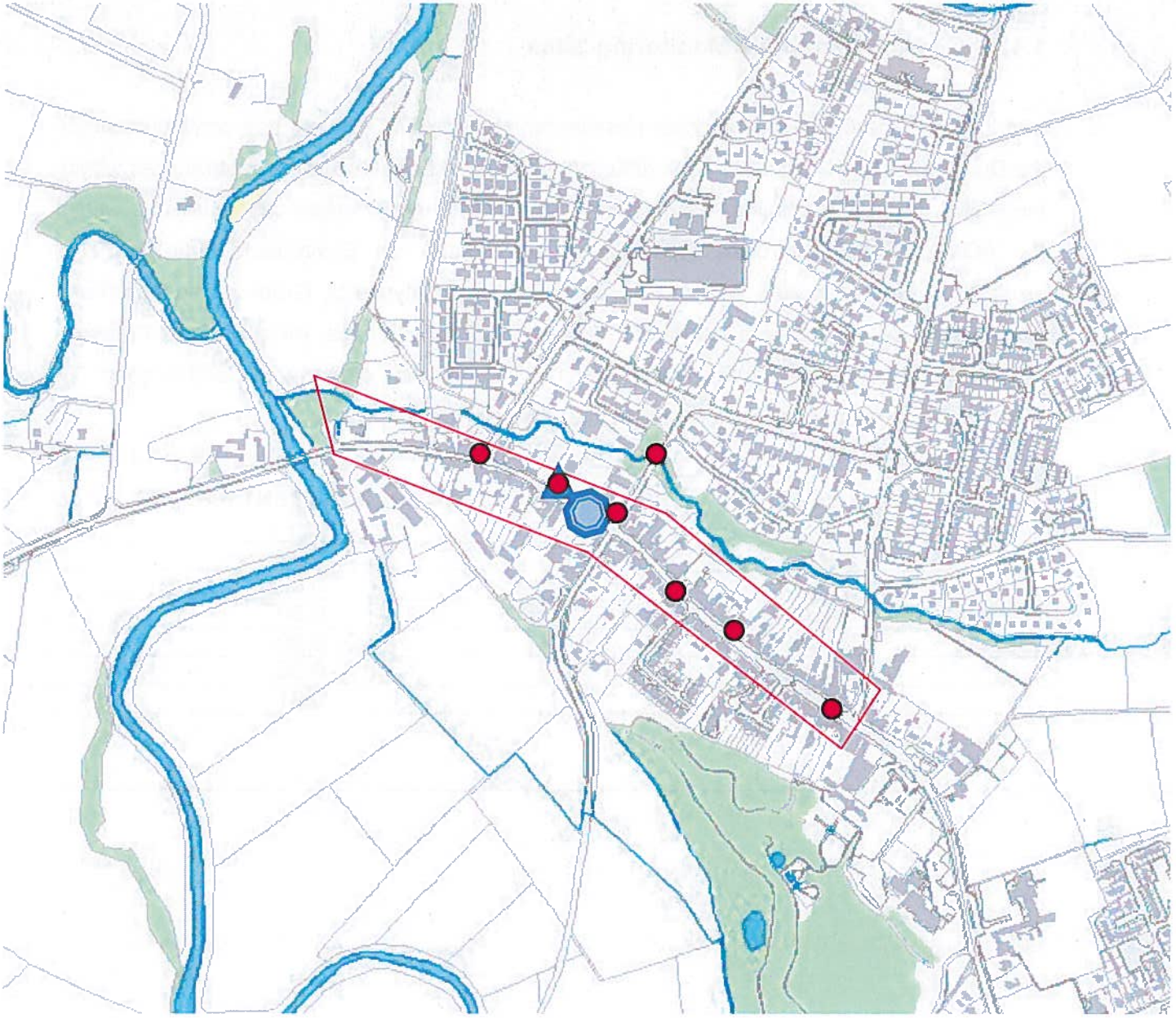


Figure 2.2 Map (s) of Non-Automatic Monitoring Sites (if applicable)

Table 2.2 Details of Non-Automatic Monitoring Sites

Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA?	Is monitoring collocated with a Continuous Analyser (Y/N)	Relevant Exposure? *(Y/N with distance (m) to relevant exposure)*	Distance to kerb of nearest road *(N/A if not applicable)*	Does this location represent worst-case exposure?
A	Urban background	268957	409535	NO_2	Y	N	Y (1m	1m	Y
B	Roadside	268887	409482	NO_2	Y	N	Y (1m)	1m	Y
C	Roadside	268852	409502	NO_2	Y	Y	Y (1m)	1m	Y
D	Roadside	268742	409543	NO_2	Y	N	Y (1m)	1m	Y
E	Roadside	268981	409387	NO_2	Y	N	Y (1m)	2m	Y
F	Roadside	269190	409219	NO_2	Y	N	Y (1m)	2m	Y
G	Roadside	269051	409338	NO_2	Y	N	Y (1m)	2m	Y

1.5 Comparison of Monitoring Results with AQ Objectives

1.5.1 Nitrogen Dioxide

Automatic Monitoring Data

Monthly Statistics for 2011
Units for monthly data are μgm^{-3}.
Data are Ratified
Data Capture (DC) statistics are shown as %

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
49	38	50	64	40	41	38	37	25	33	33	25
94%	94%	94%	73%	93%	87%	91%	93%	89%	90%	90%	39%

Annual Statistics for 2011

Annual Mean	40	μgm^{-3}	R
Max Daily Mean	101	μgm^{-3}	R
Max Hourly Mean	185	μgm^{-3}	R
Annual data capture	86	%	R

Key:

- DC - Data capture
- P - Provisional Data
- R - Ratified Data

LIMAVADY DUNGIVEN
01 January to 31 December 2011

These data have been fully ratified by AEA

POLLUTANT	NO_X	NO	NO_2
Number Very High	-	-	0
Number High	-	-	0
Number Moderate	-	-	0
Number Low	-	-	7490
Maximum 15-minute mean	1706 $\mu g\ m^{-3}$	1051 $\mu g\ m^{-3}$	233 $\mu g\ m^{-3}$
Maximum hourly mean	1620 $\mu g\ m^{-3}$	1004 $\mu g\ m^{-3}$	185 $\mu g\ m^{-3}$
Maximum running 8-hour mean	1137 $\mu g\ m^{-3}$	688 $\mu g\ m^{-3}$	143 $\mu g\ m^{-3}$
Maximum running 24-hour mean	618 $\mu g\ m^{-3}$	361 $\mu g\ m^{-3}$	110 $\mu g\ m^{-3}$
Maximum daily mean	579 $\mu g\ m^{-3}$	336 $\mu g\ m^{-3}$	101 $\mu g\ m^{-3}$
Average	122 $\mu g\ m^{-3}$	54 $\mu g\ m^{-3}$	40 $\mu g\ m^{-3}$
Data capture	85.5 %	85.5 %	85.5 %

All gaseous pollutant mass units are at 20'C and 1013mb. Particulate matter concentrations are reported at ambient temperature and pressure.
NO_X mass units are NO_X as NO_2 µg m-3

Pollutant	Air Quality Regulations (Northern Ireland) 2003	Exceedences	Days
Nitrogen Dioxide	Annual mean > 40 µg m^{-3}	0	-
Nitrogen Dioxide	Hourly mean > 200 µg m^{-3}	0	0

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Limavady Dungiven
Hourly Mean Data for 01 January to 31 December 2011

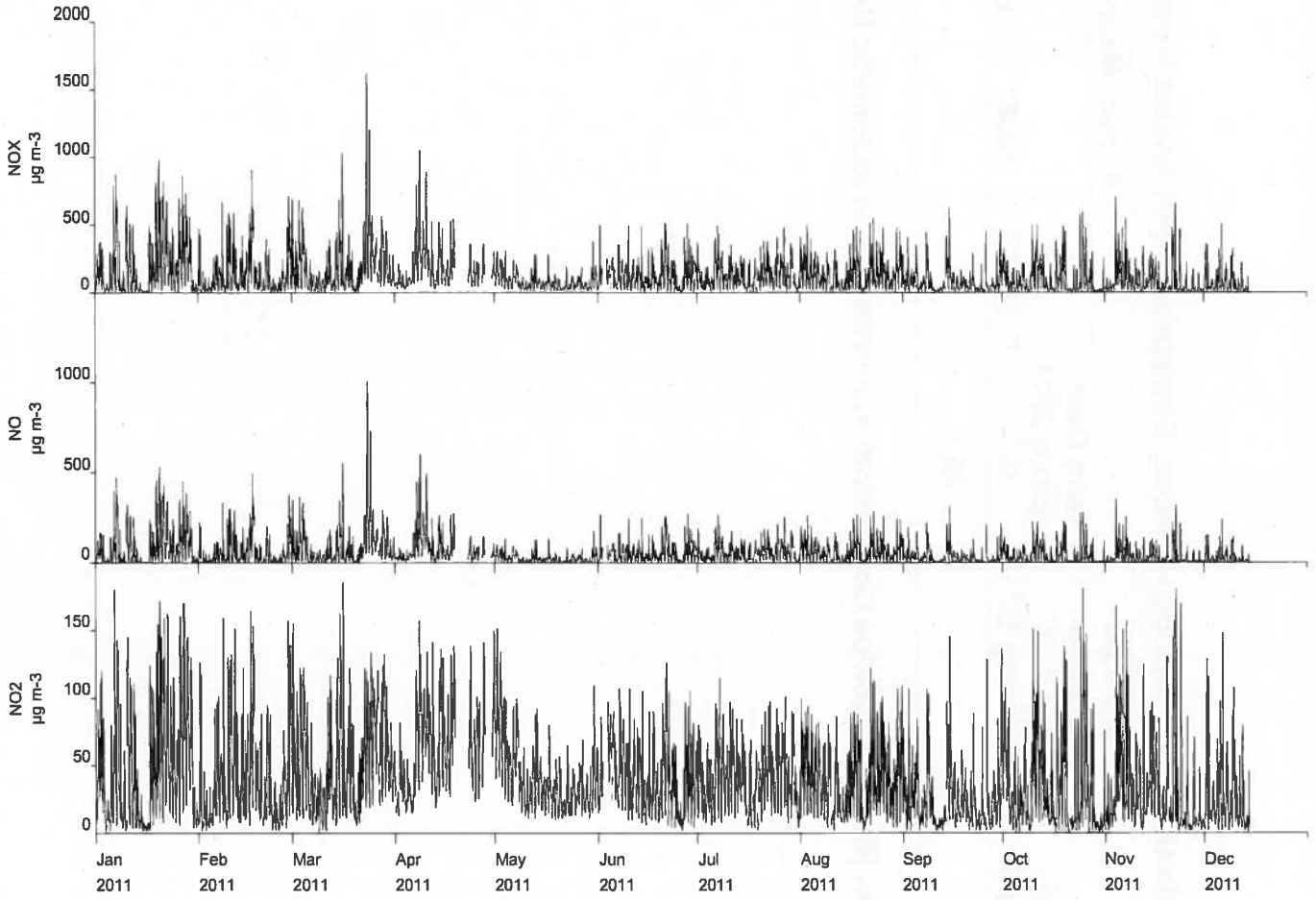


Table 2.3 Results of Automatic Monitoring of Nitrogen Dioxide: Comparison with Annual Mean Objective

Site ID	Site Type	Within AQMA?	Valid Data Capture for period of monitoring %[a]	Valid Data Capture 2011 % [b]	Annual Mean Concentration µg/m^3				
					2007*[c]	2008* [c]	2009* [c]	2010* [c]	2011 [c]
AQMA Dungiven	Roadside	Y		85.5	-	-	-	-	40

Figure 2.3 Trends in Annual Mean Nitrogen Dioxide Concentrations measures at Automatic Monitoring Sites

Table 2.4 Results of Automatic Monitoring for Nitrogen Dioxide: Comparison with 1-hour mean Objective

Site ID	Site Type	Within AQMA?	Valid Data Capture for period of monitoring %[a]	Valid Data Capture 2011 %[b]	Number of Exceedences of Hourly Mean (200 µg/m^3)				
					2007*[c]	2008*[c]	2009*[c]	2010*[c]	2011[c]
AQMA Dungiven	Roadside	Y	-	85.5	-	-	-	-	0

Diffusion Tube Monitoring Data

The current phase of non-automated monitoring has only commenced in the last two months. There is insufficient data at present to conclude that annual mean and hourly mean concentrations are being exceeded.

Table 2.5 Results of Nitrogen Dioxide Diffusion Tubes in 2011

Site ID	Location	Site Type	Within AQMA?	Triplicate or Collocated Tube	Data Capture 2011 (Number of Months or %)	Data with less than 9 months has been annualised (Y/N)	Confirm if data has been distance corrected (Y/N)	Annual m concentra (Bias Adjustm factor = 2011 (µg/
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

There is insufficient data at present to determine if annual mean and hourly mean concentrations of NO_2 are being exceeded.

Table 2.6 Results of Nitrogen Dioxide Diffusion Tubes (2007 to 2011)

Site ID	Site Type	Within AQMA?	Annual mean concentration (adjusted for bias) µg				
			2007* (Bias Adjustment Factor = XX)	2008* (Bias Adjustment Factor = XX)	2009* (Bias Adjustment Factor = XX)	2010* (Bias Adjustment Factor = XX)	2011 Bias Adju Factor =
A	Roadside	Y	48.13	49.65			37.23
B	Roadside	Y	49.50	59.93			44.05
C	Roadside	Y	59.65	54.86			46.81
D	Roadside	Y	45.87	46.50			39.19
E	Roadside	Y	49.66	48.97			35.36
F	Roadside	Y	47.08	38.98			25.86
G	Roadside	Y	40.79	44.04			18.83 (ba
H	Roadside	Y	50.44	51.47			38.25
I	Roadside	Y	40.77	48.07			
J	Background	N	20.43	21.44			
K	Roadside	Y		37.99			
L	Roadside	Y		47.87			
M	Roadside	Y		23.74			

*Optional

Figure 2.4 Trends in Annual Mean Nitrogen Dioxide Concentrations measured at Diffusion Tube Monitoring Sites

The data below indicates that within the AQMA the annual mean concentration of NO2 for 2011 is 40ugm-3. This is the threshold level for NO2. There have been no exceedences of the hourly mean throughout 2011.

LIMAVADY DUNGIVEN
01 January to 31 December 2011

These data have been fully ratified by AEA

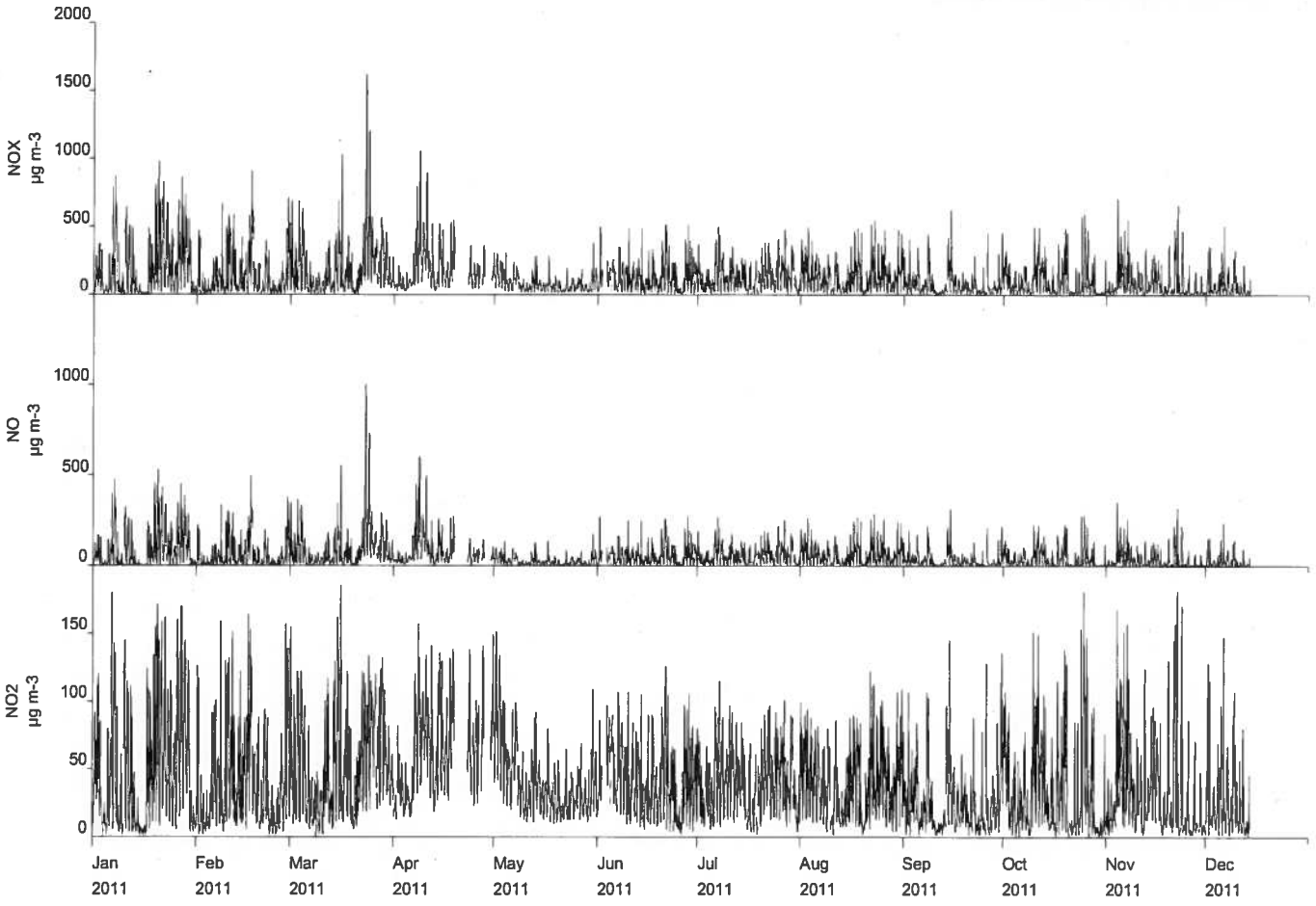
POLLUTANT	NO_X	NO	NO_2
Number Very High	-	-	0
Number High	-	-	0
Number Moderate	-	-	0
Number Low	-	-	7490
Maximum 15-minute mean	1706 µg m^{-3}	1051 µg m^{-3}	233 µg m^{-3}
Maximum hourly mean	1620 µg m^{-3}	1004 µg m^{-3}	185 µg m^{-3}
Maximum running 8-hour mean	1137 µg m^{-3}	688 µg m^{-3}	143 µg m^{-3}
Maximum running 24-hour mean	618 µg m^{-3}	361 µg m^{-3}	110 µg m^{-3}
Maximum daily mean	579 µg m^{-3}	336 µg m^{-3}	101 µg m^{-3}
Average	122 µg m^{-3}	54 µg m^{-3}	40 µg m^{-3}
Data capture	85.5 %	85.5 %	85.5 %

All gaseous pollutant mass units are at 20'C and 1013mb. Particulate matter concentrations are reported at ambient temperature and pressure.
NO_X mass units are NO_X as NO_2 µg m-3

Pollutant	Air Quality Regulations (Northern Ireland) 2003	Exceedences	Days
Nitrogen Dioxide	Annual mean > 40 µg m^{-3}	0	-
Nitrogen Dioxide	Hourly mean > 200 µg m^{-3}	0	0

Produced by AEA on behalf of Limavady BC

Limavady Dungiven
Hourly Mean Data for 01 January to 31 December 2011



1.5.2 PM_{10}

Not applicable – previous assessments have not identified exceedences of the National air quality objectives for PM10

Table 2.7 Results of Automatic Monitoring of PM_{10}: Comparison with Annual Mean Objective

NOT APPLICABLE

Figure 2.5 Trends in Annual Mean PM_{10} Concentrations

Not applicable

1.5.3 Sulphur Dioxide

Not applicable – previous assessments have not identified exceedences of the national air quality objectives for SO2

Table 2.9 Results of Automatic Monitoring of SO_2: Comparison with Annual Mean Objective

NOT APPLICABLE

1.5.4 Benzene

Not applicable – previous assessments have not identified exceedences of the national air quality objectives for benzene

1.5.5 Other pollutants monitored

Not applicable

1.5.6 Summary of Compliance with AQS Objectives

Limavady Borough Council has examined the results from monitoring in the borough. Concentrations outside of the AQMA are all below the objectives at relevant locations, therefore there is no need to proceed to a Detailed Assessment.

2 Road Traffic Sources

2.1 Narrow Congested Streets with Residential Properties Close to the Kerb

Three narrow congested streets within Limavady and Ballykelly were reassessed for NO_2 concentrations in a detailed assessment submitted last year. They were reassessed as the technical guidance had been amended in 2009. The monitoring indicated that levels of NO_2 in all three streets were below the annual mean threshold of 40 ugm^{-3}.

Limavady Borough 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.

2.2 Busy Streets Where People May Spend 1-hour or More Close to Traffic

The technical guidance indicates that consideration should be given to busy streets where there are many shops, outdoor cafes, bars etc where persons are likely to be exposed within 5m of the kerb for 1-hour or more. 'Busy streets are those where there are 10000 or more vehicles per day. Consideration should be given to the traffic flow, the vehicle speed and the percentage of vehicle types. No such areas have been identified within Limavady Borough

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

2.3 Roads with a High Flow of Buses and/or HGVs.

The Technical Guidance indicates that consideration should be given to roads where the traffic flows are less than 20000 vehicles per day and there is an unusually high percentage of HGV and/or buses. An unusually high proportion is considered to be in the region of 20%. Roads with relevant exposure within 10m should be considered.

Traffic and Travel data (2007) indicates that there are no roads within Limavady Borough which convey 20000 vehicles per day and have an unusually high percentage of HGV's. The largest percentage of HGV's was recorded on the A6 to the west of Dungiven. The percentage here was 10.9%

Limavady Borough Council confirms that there are no new/newly identified roads with high flows of buses/HDVs.

2.4 Junctions

Pollutant concentrations are usually higher close to junctions where the combined impact of traffic emissions from two roads and/or the elevated emissions due to stopping and starting. The technical guidance suggests identifying busy junctions and determining if they are new or have been previously assessed. A 'busy' junction is defined as one which experiences 10000 vehicles per day or more. Relevant exposure is deemed to be within 10m of the kerb. Information such as traffic speed, %HDV's including HGV'S and buses should be considered.

Limavady Borough Council confirms that there are no new/newly identified busy junctions/busy roads.

2.5 New Roads Constructed or Proposed Since the Last Round of Review and Assessment

Nitrogen dioxide and particulate matter

The technical guidance suggests examining those roads which have been constructed since the last assessment. Within Limavady Borough no new roads have been constructed where relevant exposure is within 10m and the road conveys more than 10000 vehicles per day

Limavady Borough Council confirms that there are no new/proposed roads.

2.6 Roads with Significantly Changed Traffic Flows

This assessment looks at the impact of traffic flows on nitrogen dioxide and particulate matter levels. The technical guidance requires consideration of roads with significant changes in flow. The guidance indicates roads where the volume of traffic is in excess of 10000 vehicles per day where volumes have increased by 25 %. From the traffic data available for 2007 there are no roads within the borough where volumes have increased by 25 %

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

2.7 Bus and Coach Stations

Technical guidance TG(09) indicates that assessment is required where bus stations or sections of bus stations are not enclosed and where there is relevant exposure, including at nearby residential properties. The guidance requires assessment where there is relevant exposure within 10m of any part of the bus station where buses are present and where the number of bus movements is greater than 2500 per day. There is only one bus station in Limavady and bus movements would not exceed 25oo per day and there are no dwellings within 10m of the station. There is therefore no requirement to assess this station for nitrogen dioxide.

Limavady Borough Council confirms that there are no relevant bus stations in the Local Authority area.

3 Other Transport Sources

3.1 Airports

City of Derry airport partially falls within Limavady Borough. This small regional airport is within 1000m of residential properties. The Technical Guidance indicates that assessment is required where:

- There is relevant exposure within 1000m of the airport boundary and
- the annual throughput of passengers/freight equates to 10million passengers per year

City of Derry airport's website indicates that in 2009 350000 passengers passed through the airport. In 2011 this increased to 405697 passengers (source UK AIP at NATS/ Statistics from UK Civil Aviation Authority). There is currently no freight transport in or out of the airport.

There is therefore no requirement to assess nitrogen dioxide levels originating from the airport.

Limavady Borough Council confirms that there is no relevant exposure from the one airport that is partly within the borough.

3.2 Railways (Diesel and Steam Trains)

3.2.1 Stationary Trains

The main Belfast to Londonderry railway line passes through Limavady Borough along its northern coastline. There is one halt at Bellarena which is a request stop for passengers.

The technical guidance requires Council to identify locations where diesel or steam locomotives regularly stop for periods of 15 minutes or more, where relevant exposure is within 15m of the stationary locomotive and to establish the number of trains per day which might affect these locations and the typical duration that engines may be left running when stationary. The guidance indicates that a detailed assessment may be required where there are three or more occasions when there might be a stationary locomotive with its engine running for 15 minutes or more.

All trains in Northern Ireland are diesel; there are no steam trains operated by Translink the rail service provider. Trains stop at the Bellarena halt 9 times per day Monday to Friday, 8 times on a Saturday and 5 times on Sundays. They only stop at this halt for a matter of a few minutes to allow passengers to disembark. None would stop at the halt for 15 minutes. It is a single track railway line so there is no requirement for trains to wait at the station to allow other trains to pass.

Limavady Borough Council confirms that there are no locations where diesel or steam trains are regularly stationary for periods of 15 minutes or more, with potential for relevant exposure within 15m.

3.2.2 Moving Trains

Table 5:1 within technical guidance TG(09) lists those rail lines with heavy traffic of diesel trains. None of these required for consideration is within Limavady Borough Council.

Limavady Borough Council confirms that there are no locations with a large number of movements of diesel locomotives, and potential long-term relevant exposure within 30m.

3.3 Ports (Shipping)

There are no ports within the Limavady Borough Council area

Limavady Borough Council confirms that there are no ports or shipping that meet the specified criteria within the Local Authority area.

Industrial Sources

3.4 Industrial Installations

3.4.1 New or Proposed Installations for which an Air Quality Assessment has been Carried Out

There have been no new PPC Part C installations permitted within the borough since last USA.

Limavady Borough 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.

3.4.2 Existing Installations where Emissions have Increased Substantially or New Relevant Exposure has been Introduced

There are no existing installations where emissions have increased substantially or new relevant exposure has been introduced

Limavady Borough 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.

3.4.3 New or Significantly Changed Installations with No Previous Air Quality Assessment

There have been no new installations within the Borough and no significant changes made to any existing installations.

Limavady Borough 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.

3.5 Major Fuel (Petrol) Storage Depots

There are no major fuel (petrol) storage depots within the Limavady Borough Council area.

3.6 Petrol Stations

Technical guidance TG(09) requires identification of all petrol stations with an annual throughput of more than 2000m3 of petrol with a busy road nearby. A busy road is defined as one with more than 30000 vehicles per day. There are no petrol stations within Limavady Borough which have a throughput in excess of 2000m3 per year or a busy road nearby

Limavady Borough Council confirms that there are no petrol stations meeting the specified criteria.

3.7 Poultry Farms

Technical guidance TG(09) states that the following farms should be considered for PM_{10} if there is relevant exposure within 100m:

- Those with 400000 birds if mechanically ventilated
- Those with 200000 birds if naturally ventilated, and
- Those with 100000 turkeys

There are no poultry houses within the Borough which fall into any of the above categories

Limavady Borough Council confirms that there are no poultry farms meeting the specified criteria.

4 Commercial and Domestic Sources

4.1 Biomass Combustion – Individual Installations

Technical guidance TG(09) recommends identification of all plant burning biomass in 50kW to 20 MW units. Consultation with Council's Building Control department indicates that there are no such burners within the borough.

Limavady Borough Council confirms that there are no biomass combustion plant in the Local Authority area.

4.2 Biomass Combustion – Combined Impacts

The technical guidance states that there may be the potential that many small combustion units including domestic solid fuel burners may attribute to elevated levels of pollutants. Whilst acceptable individually they could in combination lead to unacceptably high PM_{10} levels in areas where PM_{10} levels are close to or above the national air quality objective.

Councils are required to identify 500mx500m grid squares where housing densities are highest and there are service sector biomass combustion appliances. To quantify the impact of domestic appliances within the grid square each type of appliance should be identified. Once identified calculations should be used in conjunction with Table 5.3 within the guidance to determine the annual domestic emission level for each grid square.

With regard to those units in the service sector the floorspace occupied within each grid square for each of solid fuel burning plants identified. Again the annual service sector emission level per hectare should be calculated and this along with the domestic emission level will indicate the total emission level within the grid square.

Estimations of the fraction of space within the grid square occupied by solid fuel burning premises can then be used to determine the emission density for each grid square (kg emissions/500x500m square).

If the source exceeds the threshold as set out nomogram Fig 5.22 detailed assessment is required.

Having considered the information which this department and Building Control retain Limavady Borough Council do not foresee that emissions from biomass combustion will be excessive.

Limavady Borough Council has assessed the biomass combustion plant, and concluded that it will not be necessary to proceed to a Detailed Assessment.

4.3 Domestic Solid-Fuel Burning

Technical Guidance TG(09) states that areas of significant domestic coal burning should be considered. Previous monitoring/modelling and fuel use surveys of such significant areas ie any area of 500x500m with more than 50 houses burning coal/smokeless fuel have indicated that no exceedence of sulphur dioxide (SO_2) and particulate matter (PM_{10}) were likely. Many of these areas have since moved over to gas usage.

Limavady Borough Council confirms that there are no areas of significant domestic fuel use in the Local Authority area.

5 Fugitive or Uncontrolled Sources

Particulate matter (PM_{10})

Dust emissions can give rise to elevated levels of PM_{10}. These emissions may arise from operations such as quarries, landfills, coal and material stockpiles, major construction works and waste management sites. Consideration should be given to any air quality studies which have been carried out with regard to such operations and if there is relevant exposure. The distance of any receptor should be assessed from source as opposed to the site boundary.

To determine accurately the impact such activities would have on PM_{10} emissions local authorities should assess any existing air quality assessments carried out in relation to specific sites and determine if exposure falls under the definition of 'near'. 'Near' is defined in relation to local background PM_{10} concentrations. For the 2004 National air quality objective level 'near' is defined as

- 1000m if [background] > $28ugm^{-3}$
- 400m if [background] > $26ugm^{-3}$
- 200m for any [background]

These distances are from source which may not always coincide with the site boundary.

If the relevant exposure is within 50m of an off-site road used to access the site and there are visible deposits on the road then these sections of road which may extend up to 1000m from the site entrance are considered as 'near' as long as the background concentration is above 25 ugm^{-3} for the 2004 objective levels.

History of complaint regarding dust and visual inspection of emissions and evidence of dust being carried out onto roadways from such sites should be considered.

If there is relevant exposure and if there is either a history of complaint and/or visual emissions detailed assessment is required.

Within Limavady Borough there are several quarries but they are in remote locations and there would be no relevant exposure in the vicinity. These would have been assessed in previous rounds. Council's landfill site is now closed and there are no privately operated landfills in the Borough. There are no coal or material stockpiles within the Borough and no

major construction sites. Council are not aware of any new proposals for these types of development within the borough for which planning approval has been granted

Limavady Borough Council confirms that there are no potential sources of fugitive particulate matter emissions in the Local Authority area.

6 Conclusions and Proposed Actions

6.1 Conclusions from New Monitoring Data

With regard to the pollutants assessed within this report the only one which requires ongoing assessment is nitrogen dioxide. This only relates to levels as measured within the existing AQMA in Dungiven. The annual mean is 40ugm^{-3} (2011) which is on the limit value. A continuous monitor is located within this AQMA and passive monitoring is ongoing. The AQMA will remain in place. There are no issues elsewhere within the Borough. No detailed assessments are required for any of the pollutants assessed.

6.2 Conclusions from Assessment of Sources

The Department of Rural Development Roads Service are the relevant authority with responsibility for traffic management and infrastructure within Northern Ireland. They are aware of the ongoing issues with regard to NO2 levels within Dungiven. The department has indicated that the proposed dualling of the A6 will incorporate a bypass of Dungiven. It is their intention to hold a public inquiry into this proposal in September. On the basis of the findings of this inquiry they will then determine the most appropriate course of action to pursue.

Council is not aware at present of any current or proposed developments that are likely to adversely affect or introduce new pollutant sources.

6.3 Proposed Actions

The update and screening assessment does not indicate the need for a detailed assessment of any of the pollutants. The only issue remains the elevated levels of NO_2 within Dungiven which are already the subject of an existing AQMA and an action plan has been implemented. There is no indication at this stage that the boundary of the existing AQMA requires extension. The current monitoring strategy will continue and no additional monitoring sites/ adaptation are required. Submission of a progress report in 2013 is proposed

7 References

AEA Energy & Environment (2008) Diffusion Tubes for Ambient NO_2 Monitoring: Practical Guidance for Laboratories and Users, AEA/ENV/R/2504 – Issue 1a

AEA Energy & Environment (2009) Technical Guidance: Screening Assessment for Biomass Boilers.

Air Quality Archive (http://www.airquality.co.uk/archive/index.php)

Defra (2009) Local Air Quality Management, Technical Guidance LAQM.TG (09)

Appendices

Appendix A: QA/QC Data

Appendix B: DMRB Calculations

Appendix A: QA:QC Data

Diffusion Tube Bias Adjustment Factors

The nitrogen dioxide diffusion tubes which Limavady Borough Council uses are manufactured by Gradko, supplied by Envirotechnology plc and analysed by Gradko. The preparation method is 20% TEA in water and the bias adjustment factors are stated below.

YEAR	BIAS ADJUSTMENT FACTOR
2006	0.98
2007	0.89
2008	0.90
2009	0.90
2010	0.85
2011	0.91

QA/QC of diffusion tube monitoring

The diffusion tubes used are listed in the University of West England website as having 'good precision' and over the three years for which data is provided they have been consistently 'good'. The Envirotechnology Plc laboratory participates in the field inter-comparison scheme and the Workplace Analysis Scheme for Proficiency (WASP) programme

PM Monitoring Adjustment

Not applicable

QA/QC of automatic monitoring

QA/QC and data management for the continuous monitor is carried out on Councils behalf by AEA Technology. The monitor is calibrated by AEA Technology twice yearly and on a monthly basis by Council staff. No issues have been identified which would compromise the accuracy of the data obtained

QA/QC of diffusion tube monitoring

The diffusion tubes used are listed in the University of West England website as having 'good precision' and over the three years for which data is provided they have been consistently 'good'. The Envirotechnology Plc laboratory participates in the field inter-comparison scheme and the Workplace Analysis Scheme for Proficiency (WASP) programme

Appendix B: DMRB Calculations

Not applicable

Input Data

Location/ Receptor	Grid Ref	Background Concentrations			
		Year	NOx	NO_2	PM_{10}
A		2008			
B		2008			
C					

Location/ Receptor	Link number	Distance from link centre to receptor (m)	Traffic flow & speed		Traffic composition		
			AADT (combined, veh/day)	Annual average speed (km/h)	Road type (A,B,C,D)	Total % LDV (<3.5t GVW)	Total % HDV (>3.5t GVW)
A	1						
	2						
	3						
	4						
B	1						
	2						
	3						
	4						

Verification

Not applicable

Results

Not applicable

Maps of Locations

Not applicable