

**Annual Progress Report (APR)**



2017 Air Quality Annual Progress Report (APR) for North Lanarkshire Council

In fulfilment of Part IV of the Environment Act 1995

Local Air Quality Management

October 2017

<b>Local Authority Officer</b>	Fiona Maguire
<b>Department</b>	Environmental Health
<b>Address</b>	Municipal Buildings, Kildonan Street, Coatbridge, ML5 3LF
<b>Telephone</b>	01236 638622
<b>E-mail</b>	<a href="mailto:mauiref@northlan.gov.uk">mauiref@northlan.gov.uk</a>
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## Executive Summary: Air Quality in Our Area

### Air Quality in North Lanarkshire

North Lanarkshire Council is Scotland's fourth largest (by population) local authority, and is situated in the central belt. Traditionally an area associated with heavy industry, this has significantly declined in recent years and the economy of the area now focuses on commerce and light industry. Due to its geographic location many of Scotland's trunk roads pass through it, including the M8/A8, M74, M73 and M80/A80. There is substantial cross-boundary travel with neighbouring local authorities, particularly Glasgow, South Lanarkshire, Falkirk and West Lothian, for employment, education and leisure activities. The main source of air pollution within North Lanarkshire is road traffic emissions, with a small element as a result of small-scale quarrying activities.

North Lanarkshire Council operates an extensive air quality monitoring network, including automatic monitoring for Nitrogen Dioxide (NO<sub>2</sub>) and fine particulate matter (PM<sub>10</sub>), as well as an extensive network of passive monitoring of NO<sub>2</sub>. The Council's air quality monitoring network aims to monitor the most problematic areas of air pollution and is continually under review to ensure our monitoring equipment is situated in the most relevant areas.

Air quality monitoring in North Lanarkshire in 2016 has indicated that annual mean concentrations of Nitrogen Dioxide (NO<sub>2</sub>) recorded at all automatic monitoring sites in 2016 were below the annual mean objective level. Exceedance of the NO<sub>2</sub> annual mean objective level was identified at one diffusion tube monitoring site however on investigation it was concluded that the potential for relevant public exposure was very low at this site. In addition, imminent structural enhancements to the area will further limit public exposure in terms of both annual mean and short-term (1 hour) air quality objective for NO<sub>2</sub>.

Longer term trends for levels of NO<sub>2</sub> in North Lanarkshire show that most sites are either showing no significant change over the past few years, or are decreasing. The exception to this is some of the diffusion tube sites in Coatbridge, Chapelhall and Airdrie. This is most likely as a result of local hotspots of traffic congestion on the local road network caused by the M8/A8/M73/M74 upgrade works which were ongoing in 2016. It is the Council's intention to closely monitor air quality across the

local road network in 2017 and particularly once the trunk road improvements are complete.

In terms of Particulate Matter (PM<sub>10</sub>) monitoring, results from the Council's automatic air monitors indicate that PM<sub>10</sub> levels recorded at all automatic monitoring sites were below the annual mean objective in 2016. Data capture at Chapelhall was only 61% in 2016 as the PM<sub>10</sub> analyser was out of action on several occasions. As such the data for 2016 was annualised, as outlined in the report.

Longer term trends of all PM<sub>10</sub> automatic monitoring sites show a decrease in recent years, with the exception of Croy which increased marginally from 12µg/m<sup>3</sup> to 13µg/m<sup>3</sup> in 2016. The adjacent quarry was carrying out some crushing operations on site in 2016 so this may explain the marginal increase. The Council will continue to monitor PM<sub>10</sub> levels at this monitoring site in 2017.

### **Actions to Improve Air Quality**

In 2016 North Lanarkshire Council undertook various initiatives to improve air quality. This included the supply and installation of Electric Vehicle Charging Points at Blairhill Park and Ride station adjacent to the Coatbridge AQMA. We have also played an active role in ongoing discussions in City Deal discussions for improvements to Motherwell Town Centre in order that air quality is duly considered. In conjunction with colleagues from the Council's Roads and Transportation team and the Council's i-bikes officer cycling initiatives have been undertaken in schools in and near the Motherwell AQMA. This was greatly enhanced by the purchase of air quality promotional materials. The Council's air quality monitoring equipment has also been enhanced by the purchase of a replacement air monitor for the existing Chapelhall air station. This air monitor will monitor PM<sub>10</sub> and PM<sub>2.5</sub> simultaneously and will enable the Council to fulfil the new legislative requirement to monitor and report on PM<sub>2.5</sub> in the area.

In terms of pollution levels – the changes to the trunk road network were still ongoing in 2016 and there is no doubt that the roadworks themselves as well the resultant new road layouts will have an impact on air quality in North Lanarkshire. The Council will continue to monitor air quality once the trunk road improvements are complete in 2017. This, in conjunction with a planned overhaul of the NO<sub>2</sub> sites involving a GIS-

based exercise will ensure that all our air quality monitors are appropriately located to provide us with robust and accurate data on air quality levels in North Lanarkshire.

### **Local Priorities and Challenges**

Over the coming year (2017) in North Lanarkshire the Council's priorities in terms of local air quality will be to continue to run our extensive network of automatic air monitors and diffusion tubes in order that we have an accurate a picture as possible of air quality levels within our area. We will also be replacing some of our older particulate monitors, funding permitting. Work will also continue with cycling promotion in schools, in accordance with our Roads colleagues. We are also hoping to undertake a joint cycling promotion campaign with colleagues in South Lanarkshire Council on cycle routes in and around Strathclyde Park.

Finances continue to be a critical challenge for North Lanarkshire Council, and in particular the running and maintenance costs of our automatic air monitors. Consequently we will also be decommissioning our automatic air monitor at Moodiesburn since monitoring at this site has been consistently below the objective levels for a number of years now since the AQMA was revoked in this area.

The Council's Air Quality Action Plan will also be updated and published in 2017.

### **How to Get Involved**

Further information on air quality in North Lanarkshire can be found on the Council's website at [www.northlanarkshire.gov.uk/index.aspx?articleid=2130](http://www.northlanarkshire.gov.uk/index.aspx?articleid=2130) or by telephoning (01236) 638640.

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## 1. Local Air Quality Management

This report provides an overview of air quality in North Lanarkshire during 2016. It fulfils the requirements of Local Air Quality Management (LAQM) as set out in Part IV of the Environment Act (1995) 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 an exceedance is considered likely the local authority must 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. This Annual Progress Report (APR) summarises the work being undertaken by North Lanarkshire Council to improve air quality and any progress that has been made.

**Table 1.1 – Summary of Air Quality Objectives in Scotland**

Pollutant	Air Quality Objective		Date to be achieved by
	Concentration	Measured as	
Nitrogen dioxide (NO <sub>2</sub> )	200 µg/m <sup>3</sup> not to be exceeded more than 18 times a year	1-hour mean	31.12.2005
	40 µg/m <sup>3</sup>	Annual mean	31.12.2005
Particulate Matter (PM <sub>10</sub> )	50 µg/m <sup>3</sup> , not to be exceeded more than 7 times a year	24-hour mean	31.12.2010
	18 µg/m <sup>3</sup>	Annual mean	31.12.2010
Particulate Matter (PM <sub>2.5</sub> )	10 µg/m <sup>3</sup>	Annual mean	31.12.2020
Sulphur dioxide (SO <sub>2</sub> )	350 µg/m <sup>3</sup> , not to be exceeded more than 24 times a year	1-hour mean	31.12.2004
	125 µg/m <sup>3</sup> , not to be exceeded more than 3 times a year	24-hour mean	31.12.2004
	266 µg/m <sup>3</sup> , not to be exceeded more than 35 times a year	15-minute mean	31.12.2005
Benzene	3.25 µg/m <sup>3</sup>	Running annual mean	31.12.2010
1,3 Butadiene	2.25 µg/m <sup>3</sup>	Running annual mean	31.12.2003
Carbon Monoxide	10.0 mg/m <sup>3</sup>	Running 8-Hour mean	31.12.2003

Pollutant	Air Quality Objective		Date to be achieved by
	Concentration	Measured as	
Lead	0.25 µg/m <sup>3</sup>	Annual Mean	31.12.2008

## 2. Actions to Improve Air Quality

### 2.1 Air Quality Management Areas

Air Quality Management Areas (AQMAs) are declared when there is an exceedance or likely exceedance of an air quality objective. After declaration, the authority must prepare an Air Quality Action Plan (AQAP) within 12 months, setting out measures it intends to put in place in pursuit of the objectives.

A summary of AQMAs declared by North Lanarkshire Council can be found in Table 2.1. Further information related to declared or revoked AQMAs, including maps of AQMA boundaries are available online at <https://uk-air.defra.gov.uk/aqma/list?la=N&country=scotland&pollutant=all> and on the Council's website at [www.northlanarkshire.gov.uk/index.aspx?articleid=8183](http://www.northlanarkshire.gov.uk/index.aspx?articleid=8183)

There were no changes to the existing AQMAs in North Lanarkshire in 2016, and details of the current AQMAs can be viewed in Table 2.1

**Table 2.1 – Declared Air Quality Management Areas**

AQMA Name	Pollutants and Air Quality Objectives	City / Town	Description	Action Plan
AQMA Croy	PM <sub>10</sub> annual mean	Croy	An area encompassing a quarry and surrounding area	<a href="http://www.northlanarkshire.gov.uk/CHttpHandler.ashx?id=12687&amp;p=0">www.northlanarkshire.gov.uk/CHttpHandler.ashx?id=12687&amp;p=0</a>
AQMA Chapelhall	<ul style="list-style-type: none"> <li>• NO<sub>2</sub> annual mean</li> <li>• PM<sub>10</sub> annual mean</li> </ul>	Chapelhall	An area encompassing a number of properties at the junction of Main Street and Lauchope Street.	<a href="http://www.northlanarkshire.gov.uk/CHttpHandler.ashx?id=12687&amp;p=0">www.northlanarkshire.gov.uk/CHttpHandler.ashx?id=12687&amp;p=0</a>
AQMA Coatbridge	PM <sub>10</sub> annual mean	Coatbridge	Whifflet Street stretching to the Shawhead roundabout. The AQMA was further extended in 2015 to include Kirkshaws Rd.	<a href="http://www.northlanarkshire.gov.uk/CHttpHandler.ashx?id=12687&amp;p=0">www.northlanarkshire.gov.uk/CHttpHandler.ashx?id=12687&amp;p=0</a>
AQMA Motherwell	PM <sub>10</sub> annual mean	Motherwell	An area encompassing Motherwell Town Centre	<a href="http://www.northlanarkshire.gov.uk/CHttpHandler.ashx?id=12687&amp;p=0">www.northlanarkshire.gov.uk/CHttpHandler.ashx?id=12687&amp;p=0</a>

## 2.2 Progress and Impact of Measures to address Air Quality in North Lanarkshire Council

North Lanarkshire Council has taken forward a number of measures during the current reporting year of 2016 in pursuit of improving local air quality. Details of all measures completed, in progress or planned are set out in Table 2.2. More detail on these measures can be found in the Air Quality Action Plan relating to each AQMA. Key completed measures are:

- Overhaul of the changing of NO<sub>2</sub> diffusion tubes to ensure improved geographical alignment
- EV charging points installed at Blairhill Station Park and Ride, adjacent to Coatbridge AQMA
- Ongoing involvement in City Deal discussions for plans for Motherwell Town Centre and the Chapelhall area to ensure Air Quality is duly considered in any planned changes.
- Cycling initiatives took place in schools in Motherwell in conjunction with the i-bikes officer employed by the Council in 2016

Progress on the following measures has been slower than expected due to :-

- Purchase and installation of a PM<sub>2.5</sub> analyser at the Chapelhall air monitoring site – small space within existing air monitoring enclosure meant that the procurement process only yielded one suitable air monitor – the FIDAS 200E, which did not obtain certification until late in the year.

North Lanarkshire Council expects the following measures to be completed over the course of the next reporting year:

- Update of the Council's Air Quality Action Plan
- Purchase and installation of further PM<sub>10</sub>/PM<sub>2.5</sub> analysers at some of our existing air stations
- Lease of a further three electric pool cars paid for via Scottish Government air quality budget
- Continuation of cycling promotion work with schools, with cycling displays, purchase and distribution of air quality promotional materials

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- Cycling promotion work to be undertaken as joint project with South Lanarkshire Council
- Schools situated within or adjacent to AQMAs will be written to, offering the chance of School Travel Plans.
- Continuation with the ongoing programme of Vehicle Emission testing in AQMAs and vehicle idling patrols at schools in or near AQMAs.

Table 2.2 – Progress on Measures to Improve Air Quality

Measure No.	Measure	Category	Focus	Lead Authority	Planning Phase	Implementation Phase	Key Performance Indicator	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
1	Purchase and installation of rev-limiters on Council vehicles following assessment of initial trial of 30 vehicles	Vehicle fleet efficiency	NA	Transport	2013	2013-2016	NA	Anticipated reduction in concentration, based on the result of quantitative appraisal	Completed	2016	Further information available at <a href="http://www.northlanarkshire.gov.uk/CHttpHandler.aspx?id=12687&amp;p=0">www.northlanarkshire.gov.uk/CHttpHandler.aspx?id=12687&amp;p=0</a>
2	Programme of emissions diagnostic testing on Council vehicles	Vehicle fleet efficiency	NA	Transport	2013	2013-2016	NA	Anticipated reduction in emissions from NLC fleet	Completed	2016	Further information available at <a href="http://www.northlanarkshire.gov.uk/CHttpHandler.aspx?id=12687&amp;p=0">www.northlanarkshire.gov.uk/CHttpHandler.aspx?id=12687&amp;p=0</a>
3	Purchase of electric minibus for use as school bus in AQMA	Promoting low emission transport	NA	Transport	2013	2013-2016	NA	Anticipated reduction in emissions within AQMA	Completed	2016	Further information available at <a href="http://www.northlanarkshire.gov.uk/CHttpHandler.aspx?id=12687&amp;p=0">www.northlanarkshire.gov.uk/CHttpHandler.aspx?id=12687&amp;p=0</a>

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Measure No.	Measure	Category	Focus	Lead Authority	Planning Phase	Implementation Phase	Key Performance Indicator	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
4	Extension to Council pool car fleet	Alternative to private vehicle use	NA	All departments	2013	2013-2016	NA	Anticipated reduction in road traffic emissions across NLC, having positive benefit to air quality in AQMAs	Completed	2016	Further information available at <a href="http://www.northlanarkshire.gov.uk/CHttpHandler.aspx?id=12687&amp;p=0">www.northlanarkshire.gov.uk/CHttpHandler.aspx?id=12687&amp;p=0</a>
5	Introduction of electric powered street sweepers in 2 AQMAs	Vehicle fleet efficiency	NA	Transport	2013	2013-2016	NA	Anticipated reduction in vehicle emissions in AQMAs where sweepers operate	Completed	2016	Further information available at <a href="http://www.northlanarkshire.gov.uk/CHttpHandler.aspx?id=12687&amp;p=0">www.northlanarkshire.gov.uk/CHttpHandler.aspx?id=12687&amp;p=0</a>
6	Introduction of vehicle emission standards into procurement policy, and ensure that 50% of Council vehicle fleet to be Euro 5 or better	Vehicle fleet efficiency	NA	Transport	2013	2013-2016	NA	Anticipated reduction in emissions from NLC vehicle fleet	Ongoing	2016	Further information available at <a href="http://www.northlanarkshire.gov.uk/CHttpHandler.aspx?id=12687&amp;p=0">www.northlanarkshire.gov.uk/CHttpHandler.aspx?id=12687&amp;p=0</a>
7	Council will ensure that 50% of their vehicle fleet will be fitted with Automatic Vehicle Logging System (AVLS) technology by 2014	Vehicle fleet efficiency	NA	Transport	2013	2013-2016	NA	Anticipated reduction in emissions from NLC vehicle fleet	Completed	2014	Further information available at <a href="http://www.northlanarkshire.gov.uk/CHttpHandler.aspx?id=12687&amp;p=0">www.northlanarkshire.gov.uk/CHttpHandler.aspx?id=12687&amp;p=0</a>

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Measure No.	Measure	Category	Focus	Lead Authority	Planning Phase	Implementation Phase	Key Performance Indicator	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
8	Subject to govt funding the Council will continue to roll out electric vehicle fleet	Promoting low emission transport	NA	Transport/All departments	2013	2013-2016	NA	Anticipated reductions in NLC vehicle fleet contributions to overall AQ	Completed	2016	Further information available at <a href="http://www.northlanarkshire.gov.uk/C/HttpHandler.aspx?id=12687&amp;p=0">www.northlanarkshire.gov.uk/C/HttpHandler.aspx?id=12687&amp;p=0</a>
9	Purchase and installation of electric vehicle charging points at main Council buildings	Promoting low emission transport	NA	Roads	2013	2013-2016	NA	Anticipated increase in low emission vehicles in AQMA's	Completed	2016	Further information available at <a href="http://www.northlanarkshire.gov.uk/C/HttpHandler.aspx?id=12687&amp;p=0">www.northlanarkshire.gov.uk/C/HttpHandler.aspx?id=12687&amp;p=0</a>
10	Council will continue to work with Transport Scotland via the STEP group to identify possible solutions to air quality issues attributable to the trunk road network in NL	Policy guidance and development control	NA	Protective Services	2013	2013-2016	NA	NA	Completed	2016	Further information available at <a href="http://www.northlanarkshire.gov.uk/C/HttpHandler.aspx?id=12687&amp;p=0">www.northlanarkshire.gov.uk/C/HttpHandler.aspx?id=12687&amp;p=0</a>
11	The Council will continue to conduct Vehicle Emissions Testing within the AQMA's	Promoting low emission transport	NA	Protective Services	2013	2013-2016	NA	NA	Ongoing	2016	Further information available at <a href="http://www.northlanarkshire.gov.uk/C/HttpHandler.aspx?id=12687&amp;p=0">www.northlanarkshire.gov.uk/C/HttpHandler.aspx?id=12687&amp;p=0</a>



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Measure No.	Measure	Category	Focus	Lead Authority	Planning Phase	Implementation Phase	Key Performance Indicator	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
12	Continue the Vehicle idling Enforcement programme particularly at schools in/near AQMAs	Public Information	NA	Protective Services	2013	2013-2016	NA	NA	Ongoing	2016	Further information available at <a href="http://www.northlanarkshire.gov.uk/CHttpHandler.aspx?id=12687&amp;p=0">www.northlanarkshire.gov.uk/CHttpHandler.aspx?id=12687&amp;p=0</a>
13	Comprehensive review of air quality monitoring network to ensure monitoring locations are appropriate	Public information	NA	Protective Services	2013	2013-2016	NA	NA	Completed	2016	Further information available at <a href="http://www.northlanarkshire.gov.uk/CHttpHandler.aspx?id=12687&amp;p=0">www.northlanarkshire.gov.uk/CHttpHandler.aspx?id=12687&amp;p=0</a>
14	LAQM will be included in the agenda at the Council's Sustainability and Climate Change group to ensure alignment of AQ and carbon reduction measures	Policy guidance and development control	NA	Planning	2013	2013-2016	NA	NA	Completed	2016	Further information available at <a href="http://www.northlanarkshire.gov.uk/CHttpHandler.aspx?id=12687&amp;p=0">www.northlanarkshire.gov.uk/CHttpHandler.aspx?id=12687&amp;p=0</a>
15	The Council will continue its programme of producing sustainable energy provision in schools and Council buildings	Promoting low emission plants	NA	Learning and Leisure Services	2013	2013-2016	NA	NA	Completed	2016	Further information available at <a href="http://www.northlanarkshire.gov.uk/CHttpHandler.aspx?id=12687&amp;p=0">www.northlanarkshire.gov.uk/CHttpHandler.aspx?id=12687&amp;p=0</a>

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Measure No.	Measure	Category	Focus	Lead Authority	Planning Phase	Implementation Phase	Key Performance Indicator	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
16	An updated Emissions Inventory will be prepared and published incorporating LAQM and greenhouse gas pollutants	Public information	NA	Protective Services	2013	2013-2016	NA	NA	Completed	2016	Further information available at <a href="http://www.northlanarkshire.gov.uk/CHttpHandler.aspx?id=12687&amp;p=0">www.northlanarkshire.gov.uk/CHttpHandler.aspx?id=12687&amp;p=0</a>
17	A web-based learning tool on air quality for school pupils will be prepared	Public information	NA	Protective Services/Learning and Leisure Services	2013	2013-2016	NA	NA	Completed	2016	Further information available at <a href="http://www.northlanarkshire.gov.uk/CHttpHandler.aspx?id=12687&amp;p=0">www.northlanarkshire.gov.uk/CHttpHandler.aspx?id=12687&amp;p=0</a>
18	Updated Air Quality Guidance for Developers will be produced	Policy guidance and development control	NA	Protective Services/Planning	2013	2013-2016	NA	NA	Completed	2016	Further information available at <a href="http://www.northlanarkshire.gov.uk/CHttpHandler.aspx?id=12687&amp;p=0">www.northlanarkshire.gov.uk/CHttpHandler.aspx?id=12687&amp;p=0</a>
19	AQ will be given due consideration in town centre improvement stakeholder meetings	Policy guidance and development control	NA	Protective Services/Planning	2013	2013-2016	NA	NA	Completed	2016	Further information available at <a href="http://www.northlanarkshire.gov.uk/CHttpHandler.aspx?id=12687&amp;p=0">www.northlanarkshire.gov.uk/CHttpHandler.aspx?id=12687&amp;p=0</a>

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Measure No.	Measure	Category	Focus	Lead Authority	Planning Phase	Implementation Phase	Key Performance Indicator	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
20	Air quality training will be provided for NLC planners	Policy guidance and development control	NA	Protective Services/Planning	2013	2013-2016	NA	NA	Completed	2016	Further information available at <a href="http://www.northlanarkshire.gov.uk/C/HttpHandler.aspx?id=12687&amp;p=0">www.northlanarkshire.gov.uk/C/HttpHandler.aspx?id=12687&amp;p=0</a>
21	The Council's Workplace travel plan will be progressed, focusing on sustainable transport and travel to work	Promoting travel alternative	NA	Roads	2013	2013-2016	NA	NA	Completed	2016	Further information available at <a href="http://www.northlanarkshire.gov.uk/C/HttpHandler.aspx?id=12687&amp;p=0">www.northlanarkshire.gov.uk/C/HttpHandler.aspx?id=12687&amp;p=0</a>
22	Council will run cycling promotion initiatives	Promoting travel alternative	NA	Roads	2013	2013-2016	NA	NA	Completed	2016	Further information available at <a href="http://www.northlanarkshire.gov.uk/C/HttpHandler.aspx?id=12687&amp;p=0">www.northlanarkshire.gov.uk/C/HttpHandler.aspx?id=12687&amp;p=0</a>
23	Write to all primary schools within/adjacent to AQMAs to encourage uptake of School Travel Plans	Promoting travel alternative	NA	Roads	2013	2013-2016	NA	NA	Completed	2016	Further information available at <a href="http://www.northlanarkshire.gov.uk/C/HttpHandler.aspx?id=12687&amp;p=0">www.northlanarkshire.gov.uk/C/HttpHandler.aspx?id=12687&amp;p=0</a>

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Measure No.	Measure	Category	Focus	Lead Authority	Planning Phase	Implementation Phase	Key Performance Indicator	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
24	Consider outcome of feasibility study into potential for Statutory Quality Partnership for Motherwell	Promoting low emission transport	NA	Roads	2013	2013-2016	NA	Anticipated improvement in AQ in Motherwell AQMA as a result of improved buses operating in area through the SQP.	Ongoing		Further information available at <a href="http://www.northlanarkshire.gov.uk/CHttpHandler.aspx?id=12687&amp;p=0">www.northlanarkshire.gov.uk/CHttpHandler.aspx?id=12687&amp;p=0</a>
25	Install CCTV in Muir St, Motherwell to investigate excessive idling of buses in area	Traffic management	NA	Roads	2013	2013-2016	NA	Anticipated improvement in AQ in Motherwell AQMA	Completed	2016	Further information available at <a href="http://www.northlanarkshire.gov.uk/CHttpHandler.aspx?id=12687&amp;p=0">www.northlanarkshire.gov.uk/CHttpHandler.aspx?id=12687&amp;p=0</a>
26	Design and build 2 park and ride sites adjacent to Motherwell train station	Traffic planning and infrastructure	NA	Roads	2013	2013-2016	NA	Anticipated improvement in AQ in Motherwell AQMA	Completed	2016	Further information available at <a href="http://www.northlanarkshire.gov.uk/CHttpHandler.aspx?id=12687&amp;p=0">www.northlanarkshire.gov.uk/CHttpHandler.aspx?id=12687&amp;p=0</a>
27	Consider design and cost of widening Windmillhill Street, Motherwell	Transport planning and infrastructure	NA	Roads/Planning	2013	2013-2016	NA	Anticipated reduction in congestion and therefore AQ in Motherwell AQMA	Completed	2016	Further information available at <a href="http://www.northlanarkshire.gov.uk/CHttpHandler.aspx?id=12687&amp;p=0">www.northlanarkshire.gov.uk/CHttpHandler.aspx?id=12687&amp;p=0</a>

## North Lanarkshire Council

Measure No.	Measure	Category	Focus	Lead Authority	Planning Phase	Implementation Phase	Key Performance Indicator	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
28	Consider implications for access proposals for Ravenscraig development site	Transport planning and infrastructure	NA	Roads/planning	2013	2013-2016	NA	NA	Ongoing	2016	Further information available at <a href="http://www.northlanarkshire.gov.uk/C/HttpHandler.aspx?id=12687&amp;p=0">www.northlanarkshire.gov.uk/C/HttpHandler.aspx?id=12687&amp;p=0</a>
29	Subject to funding, NLC will support and progress plans for dualing of A723 between Motherwell and M8 motorway	Transport planning and infrastructure	NA	Roads	2013	2013-2016	NA	Anticipated reduction in congestion and consequently improvement in AQ in Motherwell AQMA	Ongoing	2016	Further information available at <a href="http://www.northlanarkshire.gov.uk/C/HttpHandler.aspx?id=12687&amp;p=0">www.northlanarkshire.gov.uk/C/HttpHandler.aspx?id=12687&amp;p=0</a>
30	NLC will seek funding to progress viable junction improvements at Chapelhall	Transport planning and infrastructure	NA	Roads	2013	2013-2016	NA	Anticipated reduction in congestion leading to improvement in AQ in Chapelhall AQMA	Ongoing	2016	Further information available at <a href="http://www.northlanarkshire.gov.uk/C/HttpHandler.aspx?id=12687&amp;p=0">www.northlanarkshire.gov.uk/C/HttpHandler.aspx?id=12687&amp;p=0</a>
31	Detailed Assessment will be undertaken on air quality along A73 corridor to identify problems and solutions for congestion in this area	Transport planning and infrastructure	NA	Protective Services	2013	2013-2016	NA	NA	Completed	2016	Further information available at <a href="http://www.northlanarkshire.gov.uk/C/HttpHandler.aspx?id=12687&amp;p=0">www.northlanarkshire.gov.uk/C/HttpHandler.aspx?id=12687&amp;p=0</a>

## North Lanarkshire Council

Measure No.	Measure	Category	Focus	Lead Authority	Planning Phase	Implementation Phase	Key Performance Indicator	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
32	Subject to funding, NLC will introduce an Environmental Fleet Recognition Scheme	Freight and delivery management	NA	Protective Services	2013	2013-2016	NA	Anticipated improvements to HGV vehicle fleet operating in NLC leading to overall increase in AQ in all AQMAs	Completed	2016	Further information available at <a href="http://www.northlanarkshire.gov.uk/CHttpHandler.aspx?id=12687&amp;p=0">www.northlanarkshire.gov.uk/CHttpHandler.aspx?id=12687&amp;p=0</a>
33	Amend Whifflet AQMA to include further areas of exceedance	Public information	NA	Protective Services	2013	2013-2016	NA	NA	Completed	2016	Further information available at <a href="http://www.northlanarkshire.gov.uk/CHttpHandler.aspx?id=12687&amp;p=0">www.northlanarkshire.gov.uk/CHttpHandler.aspx?id=12687&amp;p=0</a>
34	Undertake additional air monitoring in Coatbridge	Public information	NA	Protective Services	2013	2013-2016	NA	NA	Completed	2016	Further information available at <a href="http://www.northlanarkshire.gov.uk/CHttpHandler.aspx?id=12687&amp;p=0">www.northlanarkshire.gov.uk/CHttpHandler.aspx?id=12687&amp;p=0</a>
35	NLC will endorse developer-led road link in Coatbridge to alleviate congestion in/near AQMA	Transport planning and infrastructure	NA	Roads	2013	2013-2016	NA	Diversion of traffic through new road link should reduce traffic in Coatbridge AQMA	Ongoing	2016	Further information available at <a href="http://www.northlanarkshire.gov.uk/CHttpHandler.aspx?id=12687&amp;p=0">www.northlanarkshire.gov.uk/CHttpHandler.aspx?id=12687&amp;p=0</a>

## North Lanarkshire Council

Measure No.	Measure	Category	Focus	Lead Authority	Planning Phase	Implementation Phase	Key Performance Indicator	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
36	Optimise traffic signals at main junction within Moodiesburn AQMA	Transport planning and infrastructure	NA	Roads	2013	2013-2016	NA	NA	Completed	2016	Further information available at <a href="http://www.northlanarkshire.gov.uk/CHttpHandler.aspx?id=12687&amp;p=0">www.northlanarkshire.gov.uk/CHttpHandler.aspx?id=12687&amp;p=0</a>
37	Consider air quality impact of development adjacent to M80	Policy guidance and development control	NA	Planning	2013	2013-2016	NA	NA	Completed	2016	Further information available at <a href="http://www.northlanarkshire.gov.uk/CHttpHandler.aspx?id=12687&amp;p=0">www.northlanarkshire.gov.uk/CHttpHandler.aspx?id=12687&amp;p=0</a>
38	Continue to monitor air quality in Croy AQMA	Public information	NA	Protective Services	2013	2013-2016	NA	NA	Completed	2016	Further information available at <a href="http://www.northlanarkshire.gov.uk/CHttpHandler.aspx?id=12687&amp;p=0">www.northlanarkshire.gov.uk/CHttpHandler.aspx?id=12687&amp;p=0</a>
39	Re-assess air quality in Croy if quarry re-opens	Public information	NA	Protective Services	2013	2013-2016	NA	NA	Completed 2016		Further information available at <a href="http://www.northlanarkshire.gov.uk/CHttpHandler.aspx?id=12687&amp;p=0">www.northlanarkshire.gov.uk/CHttpHandler.aspx?id=12687&amp;p=0</a>

### **2.3 Cleaner Air for Scotland**

Cleaner Air for Scotland – The Road to a Healthier Future (CAFS) is a national cross-government strategy that sets out how the Scottish Government and its partner organisations propose to reduce air pollution further to protect human health and fulfil Scotland’s legal responsibilities as soon as possible. A series of actions across a range of policy areas are outlined, a summary of which is available at <http://www.gov.scot/Publications/2015/11/5671/17>. Progress by North Lanarkshire Council against relevant actions within this strategy is demonstrated below.

#### **2.3.1 Transport – Avoiding travel – T1**

All local authorities should ensure that they have a corporate travel plan (perhaps within a carbon management plan) which is consistent with any local air quality action plan. North Lanarkshire Council has a draft Workplace Travel Plan and an Air Quality Action Plan.

#### **2.3.2 Climate Change – Effective co-ordination of climate change and air quality policies to deliver co-benefits – CC2**

Scottish Government expects any Scottish local authority which has or is currently developing a Sustainable Energy Action Plan to ensure that air quality considerations are covered. North Lanarkshire Council has a draft Carbon Management Plan which looks at emissions from the Council’s assets via fuel/energy use and business mileage.

#### **2.3.3 Environmental Fleet Recognition Scheme**

In line with CAFS, North Lanarkshire Council continues to run (via the consultancy TRL Ltd) an environmental fleet recognition scheme, known as Ecostars. 2016 saw us build on our membership to 115 members, which includes 5056 vehicles.



### **3. Air Quality Monitoring Data and Comparison with Air Quality Objectives**

#### **3.1 Summary of Monitoring Undertaken**

##### **3.1.1 Automatic Monitoring Sites**

This section sets out what monitoring has taken place and how local measured concentrations of the main air pollutants compare with the objectives.

North Lanarkshire Council undertook automatic (continuous) monitoring at 11 sites during 2016. Table A.1 in Appendix A shows the details of the sites. National monitoring results are available at [www.scottishairquality.co.uk](http://www.scottishairquality.co.uk)

A map showing the location of the monitoring sites are provided in a supplementary document to this report. Further details on how the monitors are calibrated and how the data has been adjusted are included in Appendix C.

##### **3.1.2 Non-Automatic Monitoring Sites**

North Lanarkshire Council undertook non- automatic (passive) monitoring of NO<sub>2</sub> at 81 sites during 2016. Table A.2 in Appendix A shows the details of the sites.

Maps showing the location of the monitoring sites are provided in the supplementary document to this report. Further details on Quality Assurance/Quality Control (QA/QC) and bias adjustment for the diffusion tubes are included in Appendix C.

#### **3.2 Individual pollutants**

The air quality monitoring results presented in this section are, where relevant, adjusted for annualisation and bias. Further details on adjustments are provided in Appendix C.

##### **3.2.1 Nitrogen Dioxide (NO<sub>2</sub>)**

Table A.3 in Appendix A compares the ratified and adjusted monitored NO<sub>2</sub> annual mean concentrations for the past 5 years with the air quality objective of 40µg/m<sup>3</sup>.

Annual mean Nitrogen Dioxide (NO<sub>2</sub>) concentrations recorded at all automatic monitoring sites in 2016 were below the annual mean objective level.

There was one exceedance of the NO<sub>2</sub> annual mean objective (after bias adjustment and distance correction) at the following diffusion tube monitoring location :-

- DT61 – Central Way Eastbound, Cumbernauld (61.5 µg/m<sup>3</sup>)

This diffusion tube location has been consistent with areas of exceedance in previous years however the level in 2016 is lower than those measured in 2015 ( $74.3 \mu\text{g}/\text{m}^3$ ). It has been recognised that the annual mean level at site 61 is in excess of the  $60 \mu\text{g}/\text{m}^3$  threshold at which TG(16) recommends that there may be a risk of the  $\text{NO}_2$  1-hour objective being exceeded. As such an investigation into exposure at this site has been undertaken during 2016 and it has been confirmed that there is no relevant public exposure directly at this site. A visit to the site in 2016 identified that there are currently no doors on the bus waiting area however the waiting area will shortly undergo renovation and part of this will include doors on the bus waiting area which will prevent public exposure to air pollutants. A further three visits to the area confirmed that people tended to be present in the area for much less than the one hour period specified in the objective with the average wait being noted as less than 15 minutes due to the frequency of the bus service in this area.

For diffusion tubes, the full 2016 dataset of monthly mean values is provided in Appendix B.

Table A.4 in Appendix A compares the ratified continuous monitored  $\text{NO}_2$  hourly mean concentrations for the past 5 years with the air quality objective of  $200 \mu\text{g}/\text{m}^3$ , not to be exceeded more than 18 times per year. Monitoring results have confirmed that no automatic monitoring sites in North Lanarkshire exceeded the maximum allowed hourly mean objective for  $\text{NO}_2$ .

### **3.2.2 Particulate Matter ( $\text{PM}_{10}$ )**

mean concentrations for the past 5 years with the air quality objective of  $18 \mu\text{g}/\text{m}^3$ .

Table A.6 in Appendix A compares the ratified continuous monitored  $\text{PM}_{10}$  daily mean concentrations for the past 5 years with the air quality objective of  $50 \mu\text{g}/\text{m}^3$ , not to be exceeded more than 7 times per year.

All automatic monitoring results for  $\text{PM}_{10}$  were below the annual mean objective. Chapelhall showed the highest level at  $15.4 \mu\text{g}/\text{m}^3$  however this was still below the annual mean objective. The trend was a decrease across all sites over the past few years with the exception of Croy which increased by  $1 \mu\text{g}/\text{m}^3$  in 2016 to  $13 \mu\text{g}/\text{m}^3$ .

Automatic monitoring results also showed compliance with the 24 hour mean PM<sub>10</sub> levels at all monitoring stations in North Lanarkshire in 2016.

### **3.2.3 Particulate Matter (PM<sub>2.5</sub>)**

North Lanarkshire Council did not monitor PM<sub>2.5</sub> annual mean concentrations at any location in 2016. A FIDAS automatic monitor, monitoring both PM<sub>10</sub> and PM<sub>2.5</sub> simultaneously has now been installed at the Chapelhall air monitoring station.

### **3.2.4 Sulphur Dioxide (SO<sub>2</sub>)**

North Lanarkshire Council undertakes automatic monitoring of Sulphur Dioxide (SO<sub>2</sub>) concentrations at Croy. Table A.7 in Appendix A compares the ratified continuous monitored SO<sub>2</sub> concentrations for year 2016 with the air quality objectives for SO<sub>2</sub>. All measured SO<sub>2</sub> concentrations are significantly below the relevant objectives, with a high data capture rate of 93.41%.

### **3.2.5 Carbon Monoxide, Lead and 1,3-Butadiene**

North Lanarkshire Council does not currently measure Carbon Monoxide, Lead or 1,3-Butadiene concentrations within the Council area. No significant sources of these pollutants have been identified in the previous round of review and assessment.

## 4. New Local Developments

### 4.1 Road Traffic Sources

North Lanarkshire Council Roads were consulted on changes to traffic flows on roads within the area in 2016, and the following information is reported.

- Narrow congested streets with residential properties close to the kerb – there are no new roads that meet this criteria.
- Busy streets where people may spend one hour or more close to traffic – there are no roads that meet this criteria.
- Roads with a high flow of buses and/or HGVs – there are no new roads that meet this criteria.
- New roads constructed or proposed – there are no new roads that meet this criteria.
- Roads with significantly changed traffic flows – there are no new roads that meet this criteria.
- Bus or coach stations – there are no new bus or coach stations to report.

In 2016 there were a number of major road infrastructure changes that took place which had the potential to impact on the surrounding road network. Details of the trunk road upgrades are as follows:-

- Shawhead Interchange – construction works ongoing in 2016
- Eurocentral Interchange – construction works ongoing in 2016
- Newhouse Interchange – construction works ongoing in 2016
- Raith Interchange – construction works ongoing in 2016
- Chapelhall Interchange – construction works ongoing in 2016
- A89 Coatbridge Road – new roundabout under construction in 2016
- A89/A752 Bargeddie – roundabout improvements

Air quality had been duly considered during the planning process for these roads projects. Despite considering air quality, however, the works will have inevitably resulted in increases in traffic volumes at peak journey times on a number of

surrounding roads, as a result of traffic management, diversions etc. to enable the trunk road upgrades. During 2016 the main roads impacted on include:-

- A73 Bellside Road, Chapelhall
- Lancaster Avenue, Chapelhall
- A725 Gartcosh Rd / Aitkenhead Rd
- A721 Gartcosh Walk
- North Road, Coatbridge (A725)
- B802 Calderbank
- A775 Edinburgh Road

Close observation of measured air quality levels at receptor locations adjacent to major road infrastructure changes will continue to be undertaken and any impact on air quality duly noted and appropriate action taken.

#### **4.2 Other Transport Sources**

North Lanarkshire Council has considered the relevant criteria set out in the template and can confirm that there are no other significant transport sources to be considered in this report.

- Airports – no relevant sources in North Lanarkshire
- Locations where diesel/steam trains regularly stationary for 15 minutes – no relevant sources in North Lanarkshire
- Locations with large numbers of movements of diesel locomotives – no relevant sources in North Lanarkshire
- Ports for shipping – no relevant sources in North Lanarkshire

#### **4.3 Industrial Sources**

SEPA were consulted for information in relation to industrial sources in North Lanarkshire. The following was identified.

- Industrial installations : new or proposed installations for which an air quality assessment has been carried out in North Lanarkshire – no new or proposed installations have submitted an Air Quality Assessment to SEPA in 2016

- Industrial installations : existing installations where emissions have increased substantially or new relevant exposure has been introduced – no sites which SEPA regulate under the Pollution Prevention and Control (Scotland) Regulations 2012 (PPC), located within the North Lanarkshire area have applied to SEPA in 2016 to substantially increase their emissions to atmosphere
- Industrial installations : new or significantly changed installations with no previous air quality assessment – there are no new or significantly changed installations with no previous air quality assessments within the North Lanarkshire Council area in 2016.
- Major fuel storage depots – SEPA has confirmed that they regard this as a fuel terminal, and that they do not hold any records of a fuel terminal in the North Lanarkshire area.
- Petrol stations – SEPA have confirmed that there are currently 34 petrol stations which are regulated under SEPA's PPC regulatory scheme
- Poultry farms – SEPA has confirmed that they do not hold any record of active poultry farms that hold a PPC permit in North Lanarkshire

#### **4.4 Commercial and Domestic Sources**

- Biomass Combustion Plant – SEPA have confirmed that in 2016 there were no new SEPA-regulated combustion plants in North Lanarkshire.
- Areas where the combined impact of several biomass combustion sources may be relevant – there are no new areas which meet the criteria.
- Areas where domestic solid fuel burning may be relevant – there are no new areas which meet the criteria.
- Combined Heat and Power (CHP) plant – there are no new SEPA regulated Combined Heat and Power (CHP) that have started to operate in the North Lanarkshire area in 2016

#### **4.5 New Developments with Fugitive or Uncontrolled Sources**

North Lanarkshire Council, in conjunction with correspondence from SEPA can confirm the following update in terms of new developments with fugitive or uncontrolled sources of particulate matter:-

- Landfill sites – no new landfill sites started operating in the North Lanarkshire Council area in 2016
- Quarries – SEPA has responded that they do not regulate quarrying activities directly through the PPC regulations, therefore they advise they do not hold information relating to the operation of any new quarries in the North Lanarkshire area
- Unmade haulage roads on industrial sites – there are no sites which meet this criteria
- Waste transfer stations etc – SEPA has confirmed that no new waste transfer stations regulated either through the PPC Regulations (hazardous waste transfer stations which accept more than 10 tonnes of waste per day) or the Waste Management Licensing (Scotland) Regulations 2011 started operating in the North Lanarkshire council area in 2016.
- Other potential sources of fugitive particulate matter emissions- SEPA has advised that there are currently no sites in the North Lanarkshire council area that SEPA regulate that have ongoing fugitive particulate matter issues.

## 5. Planning Applications

North Lanarkshire Council Planning and Development Control Service were consulted for details of any relevant major planning applications under consideration and planning applications which were granted planning consent in 2016 were identified. All relevant information is presented in Table 5.1 below.

**Table 5.1 – Relevant Planning Applications from 2016**

<b>Application Number</b>	<b>Brief description of development</b>	<b>AQ Impact</b>	<b>Comment/further info</b>
16/01468/FUL	Construction of primary school, access and associated works at St Edwards/Tollbrae joint campus school, South Biggar Rd, Airdrie - granted	Location is not within/near AQMA	Further info available at :- <a href="https://eplanning.northlanarkshire.gov.uk/online-applications/">https://eplanning.northlanarkshire.gov.uk/online-applications/</a>
16/01384/FUL	Construction of primary school (inc nursery and learning support unit) at Dunrobin Primary School, Petersburn Rd, Airdrie - granted	Location is not within/near AQMA	Further info available at :- <a href="https://eplanning.northlanarkshire.gov.uk/online-applications/">https://eplanning.northlanarkshire.gov.uk/online-applications/</a>
15/02632/FUL	Erection of 92 dwellinghouses, access roads, SUDS and landscaping, Airbles Rd, Motherwell - granted	Location is adjacent to Motherwell AQMA.	AQ impact assessment predicted no adverse impact on AQMA Further info available at :- <a href="https://eplanning.northlanarkshire.gov.uk/online-applications/">https://eplanning.northlanarkshire.gov.uk/online-applications/</a>
15/02582/FUL	Erection of 100 homes at former bus depot, Tinkers Lane, Motherwell - granted	Location is adjacent to Motherwell AQMA	AQ impact assessment predicted no adverse impact on AQMA. Further info available at :- <a href="https://eplanning.northlanarkshire.gov.uk/online-applications/">https://eplanning.northlanarkshire.gov.uk/online-applications/</a>
15/02484/FUL	Construction of school and theatre facility with car parking, playground areas, sports pitches and energy centre, Cumbernauld Academy School, Kildrum Rd, Cumbernauld - granted	Location is not in/near AQMA	Further info available at :- <a href="https://eplanning.northlanarkshire.gov.uk/online-applications/">https://eplanning.northlanarkshire.gov.uk/online-applications/</a>
15/01276/FUL	Construction of potato processing factory with associated water treatment plans, offices, access roads, site south of Greengairs Rd, ML6 7SP - granted	Location is not within/near AQMA	Further info available at :- <a href="https://eplanning.northlanarkshire.gov.uk/online-applications/">https://eplanning.northlanarkshire.gov.uk/online-applications/</a>



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14/02445/FUL	Construction of link road with roundabout and SUDS feature, Glenboig - granted	Location is not within/near AQMA	Further info available at :- <a href="https://eplanning.northlanarkshire.gov.uk/online-applications/">https://eplanning.northlanarkshire.gov.uk/online-applications/</a>
16/01019/PPP	Residential development in principle at Morningside Rd, Wishaw - granted	Location is not within/near AQMA. Granted subject to conditions	Further info available at :- <a href="https://eplanning.northlanarkshire.gov.uk/online-applications/">https://eplanning.northlanarkshire.gov.uk/online-applications/</a>
16/00508/MSC	Residential development at Calder St, Coatbridge - granted	Adjacent to Coatbridge AQMA	Further info available at :- <a href="https://eplanning.northlanarkshire.gov.uk/online-applications/">https://eplanning.northlanarkshire.gov.uk/online-applications/</a>
16/00698/PPP	Residential development (in principle) with local retail/services & ancillary works inc access roads, SUDS, landscaping – under consideration	Not within or near an AQMA	Further info available at :- <a href="https://eplanning.northlanarkshire.gov.uk/online-applications/">https://eplanning.northlanarkshire.gov.uk/online-applications/</a>
17/01578/AMD (section 42 variation of planning permission 15/01820/AMD)	Alterations to approved plans for Energy from Waste (EfW) Processing building incorporating reduction in building footprint, increase in height of ventilation stack to 80m, increase in throughput of waste fuel to 240,000 dry tonnes per annum & associated access improvements to junction with A8	Air quality impact assessment requested – still under consideration	Further info available at :- <a href="https://eplanning.northlanarkshire.gov.uk/online-applications/">https://eplanning.northlanarkshire.gov.uk/online-applications/</a>

## **6. Conclusions and Proposed Actions**

### **6.1 Conclusions from New Monitoring Data**

The conclusions drawn from the monitoring data identified in 2016 can be summarised as follows:-

- Annual mean concentrations of Nitrogen Dioxide (NO<sub>2</sub>) recorded at all automatic monitoring sites in 2016 were below the annual mean objective level of 40 µg/m<sup>3</sup>.
- One NO<sub>2</sub> diffusion tube was identified as exceeding the annual mean objective for NO<sub>2</sub> in 2016. This site is within a semi-enclosed bus waiting area in Cumbernauld Town Centre where a dual carriageway (A8011) passes underneath the shopping centre itself. Bus waiting provision is soon to be upgraded in this area which will prevent relevant public exposure. As such the Council proposes to continue to monitor in this area but possibly move the site to a more representative location for public exposure, once the improvement works have been carried out to assess the impact on air quality. Once analysed any necessary action in terms of Detailed Assessment or Dispersion Modelling will be carried out.
- Ongoing trends in NO<sub>2</sub> levels in North Lanarkshire have shown a decrease across most sites, with the exception of some of the sites in Coatbridge, Airdrie and Chapelhall. This is likely due to local hotspots of traffic congestion on the local road network which is caused by the M8/A8/M74/M73 upgrade works which were ongoing in 2016. It is the Council's intention to closely monitor air quality in the local road network in 2017 after the trunk road improvements are complete.

### **6.2 Conclusions relating to New Local Developments**

Having consulted with the planning department and in reviewing supporting air quality impact assessments that were submitted in support of planning applications in 2016 it was concluded that there are no significant issues in relation to new local developments. This was as a result of the proposed developments not being in areas where air quality levels are close to the objective and/or the developments themselves did not present air quality issues to surrounding sensitive receptors. The Pollution Control team will continue to work with our colleagues in planning to identify

any future developments that may present air quality issues, and take any action deemed appropriate.

### **6.3 Proposed Actions**

Over the coming reporting year (2017) North Lanarkshire Council intends to focus on the following areas of work:-

- Air quality monitoring will continue at all automatic monitoring sites with the exception of Moodiesburn which is in the process of being decommissioned due to consistently low pollution levels and the fact it is no longer an AQMA.
- A review of the Council's diffusion tube monitoring network will be undertaken to rationalise the network, ensuring appropriate coverage is maintained in identified sensitive locations but reducing the coverage in areas of consistently low measured levels.
- The Council's Air Quality Action Plan will be updated in 2017 and a steering group set up to progress this. In addition, a GIS-based review of the Council's current monitoring locations will be undertaken and also an update of the dispersion modelling exercise carried out a few years ago for the Motherwell, Coatbridge and Chapelhall areas. It is intended that these exercises will better inform the actions within the updated Air Quality Action Plan.
- The Council does not propose to make any changes to the current four AQMAs
- Purchase of more air quality monitoring equipment to replace older particulate monitoring equipment in existing air stations.
- Cycling promotional activities in schools in AQMAs.
- Continue to request that all of our automatic monitoring sites are added to the official validation process carried out by Ricardo on behalf of the Scottish Government.

## Appendix A: Monitoring Results

Table A.1 – Details of Automatic Monitoring Sites

Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA?	Monitoring Technique	Distance to Relevant Exposure (m) <sup>(1)</sup>	Distance to kerb of nearest road (m) <sup>(2)</sup>	Inlet Height (m)
CM1	Chapelhall	Roadside	278174	663124	NO <sub>2</sub> ; PM <sub>10</sub>	Y	Chemiluminescent; TEOM	20	5	2.0
CM2	Croy	Special – by quarry	272775	675738	PM <sub>10</sub> ,NO <sub>2</sub> , SO <sub>2</sub>	N	Chemiluminescent TEOM	30	10	2.0
CM3	Whifflet (Coatbridge)	Urban background	273674	663927	PM <sub>10</sub>	Y	TEOM	20	30	2.0
CM4	Menteith Rd, Motherwell	Roadside	275458	656792	PM <sub>10</sub>	Y	TEOM	20	10	2.0
CM5	Shawhead (Coatbridge)	Roadside	273411	662997	PM <sub>10</sub> , NO <sub>2</sub>	Y	Chemiluminescent, BAM	22	9	2.0
CM6	Kirkshaws (Coatbridge)	Roadside	272523	663030	PM <sub>10</sub> , NO <sub>2</sub>	Y	Chemiluminescent, BAM	20	8	2.0
CM7	New Edinburgh Rd (Uddingston)	Roadside	269144	661496	PM <sub>10</sub> , NO <sub>2</sub>	N	Chemiluminescent	30	10	2.0

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Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA?	Monitoring Technique	Distance to Relevant Exposure (m) <sup>(1)</sup>	Distance to kerb of nearest road (m) <sup>(2)</sup>	Inlet Height (m)
CM8	Sunnyside Rd (Coatbridge)	Roadside	269921	670389	PM <sub>10</sub> , NO <sub>2</sub>	N	Chemiluminescent, BAM	30	10	2.0
CM9a	Civic Centre (Cumbernauld) Before 2015	Mobile lab	274178	674066	PM <sub>10</sub> , NO <sub>2</sub>	N	Chemiluminescent, BAM	30	2	3.0
CM9b	Civic Centre (Motherwell) From 2015	Mobile lab	275788	656219	PM <sub>10</sub> , NO <sub>2</sub>	Y	Chemiluminescent, BAM	50	15	3.0
CM10	Kenilworth Dr (Airdrie)	Roadside	277385	665837	PM <sub>10</sub> , NO <sub>2</sub>	N	Chemiluminescent, BAM	30	10	2.0
CM11	Moodiesburn	Roadside	269921	670389	PM <sub>10</sub> , NO <sub>2</sub>	N	Chemiluminescent, BAM	50	5	2.0

(1) 0 if the monitoring site is at a location of exposure (e.g. installed on the façade of a residential property).

(2) N/A if not applicable.

Table A.2 – Details of Non-Automatic Monitoring Sites

Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA?	Distance to Relevant Exposure (m) <sup>(1)</sup>	Distance to kerb of nearest road (m) <sup>(2)</sup>	Tube collocated with a Continuous Analyser?
DT10	Castle Court, Castlecary	Roadside	278528	677864	NO <sub>2</sub>	N	10	2	N
DT47	Layby in Stand	Roadside	276538	668899	NO <sub>2</sub>	N	10	2	N
DT48	Bus stop, Bron Way, Cumbernauld	Kerbside	275920	674203	NO <sub>2</sub>	N	10	2	N
DT49	Swimming Pool, Kilsyth	Kerbside	271514	678040	NO <sub>2</sub>	N	50	2	N
DT50	1791 Cumbernauld Rd, Stepps	Kerbside	265198	668024	NO <sub>2</sub>	N	25	2	N
DT51	131 Cumbernauld Rd, Stepps	Kerbside	265971	668567	NO <sub>2</sub>	N	30	2	N
DT52	Traffic lights A80 Eastbound, Moodiesburn	Kerbside	269966	670412	NO <sub>2</sub>	N	30	30	N
DT53	Traffic lights A80, westbound, Moodiesburn	Kerbside	269986	670400	NO <sub>2</sub>	N	10	2	N
DT54	Gartcosh, Lochend Rd & Cb jct A752	Urban background	269828	668354	NO <sub>2</sub>	N	20	2	N
DT55	Whitelaw Rd, Glenboig	Urban	272614	668138	NO <sub>2</sub>	N	50	2	N

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Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA?	Distance to Relevant Exposure (m) <sup>(1)</sup>	Distance to kerb of nearest road (m) <sup>(2)</sup>	Tube collocated with a Continuous Analyser?
		background							
DT56	Garnqueen Ave, Glenboig	Urban background	271751	668432	NO <sub>2</sub>	N	50	2	N
DT57	Main St/Carrick View, Glenboig	Urban background	272030	668564	NO <sub>2</sub>	N	10	2	N
DT58	115 Coatbridge Rd, Glenboig	Urban background	272743	668103	NO <sub>2</sub>	N	2	2	N
DT59	10-16 Coronation Pl, Mount Ellen	Urban background	269356	669173	NO <sub>2</sub>	N	20	2	N
DT61	Under bridge, Central Way Eastbound, Cumbernauld	Roadside	275778	674440	NO <sub>2</sub>	N	10	2	N
DT62	Under bridge, Central Way, Westbound A, Cumbernauld	Roadside	275920	674511	NO <sub>2</sub>	N	10	2	N
DT63	Under bridge, Central Way westbound B, Cumbernauld	Roadside	275642	674271	NO <sub>2</sub>	N	10	2	N

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Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA?	Distance to Relevant Exposure (m) <sup>(1)</sup>	Distance to kerb of nearest road (m) <sup>(2)</sup>	Tube collocated with a Continuous Analyser?
DT100	Civic Centre, Motherwell	Roadside	275820	656208	NO <sub>2</sub>	Y	10	2	N
DT101	Shields Rd, Motherwell	Roadside	276594	655113	NO <sub>2</sub>	N	15	2	N
DT102	Emily Dr, Motherwell	Urban background	275437	655696	NO <sub>2</sub>	N	15	2	N
DT103	Kethers Lane, Motherwell	Urban background	273986	656985	NO <sub>2</sub>	N	10	2	N
DT104	Coursington Rd, Motherwell	Urban background	276178	657344	NO <sub>2</sub>	N	20	2	N
DT105	Craigneuk Rd, Carfin	Urban background	277244	658415	NO <sub>2</sub>	N	10	2	N
DT106	Camp St, Motherwell	Urban background	275654	656342	NO <sub>2</sub>	N	10	2	N
DT107	Braehead Farm, Bargeddie	Roadside	270929	663464	NO <sub>2</sub>	N	500	50m to A8	N
DT108	MSA factory, Shawhead	Roadside	273830	662676	NO <sub>2</sub>	N	500	50m to A8	N
DT110	New Edinburgh Rd (1), nr M74,	Roadside	272789	675735	NO <sub>2</sub>	N	30	2	N



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Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA?	Distance to Relevant Exposure (m) <sup>(1)</sup>	Distance to kerb of nearest road (m) <sup>(2)</sup>	Tube collocated with a Continuous Analyser?
	Uddingston								
DT111	New Edinburgh Rd (2), nr M74, Uddingston	Roadside	272789	675735	NO <sub>2</sub>	N	15	2	N
DT112	New Edinburgh Rd (3), nr M74, Uddingston	Roadside	272789	675735	NO <sub>2</sub>	N	10	2	N
DT113	Tinkers Lane, Motherwell	Roadside	274305	656466	NO <sub>2</sub>	N	20	2	N
DT114	Main St, Overtown	Kerbside	280370	653072	NO <sub>2</sub>	N	15	2	N
DT115	Ravenscraig Bypass	Roadside	276868	657027	NO <sub>2</sub>	N	500	2	N
DT116	Delburn St, Motherwell	Urban background	275981	656111	NO <sub>2</sub>	Y	80	2	N
DT117	Hamilton Rd, Motherwell	Urban background	275091	656986	NO <sub>2</sub>	N	20	2	N
DT118	Shawhead roundabout, Coatbridge	Kerbside	273432	662965	NO <sub>2</sub>	Y	30	2	N
DT119	Kirkshaws Rd, Coatbridge	Roadside	271939	663179	NO <sub>2</sub>	Y	10	2	N

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Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA?	Distance to Relevant Exposure (m) <sup>(1)</sup>	Distance to kerb of nearest road (m) <sup>(2)</sup>	Tube collocated with a Continuous Analyser?
DT120	Watsonville, Motherwell	Kerbside	275237	656662	NO <sub>2</sub>	Y	10	2	N
DT121	Flannigan Grove, Bellshill	Urban background	273180	660350	NO <sub>2</sub>	N	30	30	N
DT122	Main St, Mossend	Roadside	274082	660308	NO <sub>2</sub>	N	50	2	N
DT123	Hamilton Rd, Orbiston, Bellshill	Kerbside	272687	659512	NO <sub>2</sub>	N	20	2	N
DT124	Scotmid, Tannochside	Kerbside	270073	661870	NO <sub>2</sub>	N	20	2	N
DT125	Main St, Bellshill (nr Bellshill Academy)	Kerbside	273767	660281	NO <sub>2</sub>	N	5	5	N
DT126	Main St/Motherwell Rd, Bellshill	Roadside	273133	660117	NO <sub>2</sub>	N	20	5	N
DT127	Main St, tesco delivery rd, Bellshill	Roadside	273541	660339	NO <sub>2</sub>	N	1	2	N
DT128	Matalan, Wishaw	Roadside	278059	655368	NO <sub>2</sub>	N	10	2	N
DT129	Newmains Police Station	Roadside	282392	656016	NO <sub>2</sub>	N	7	2	N
DT130	Main St, (bottom), Wishaw	Roadside	279118	655327	NO <sub>2</sub>	N	5	2	N

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Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA?	Distance to Relevant Exposure (m) <sup>(1)</sup>	Distance to kerb of nearest road (m) <sup>(2)</sup>	Tube collocated with a Continuous Analyser?
DT131	Brandon Place, Bellshill	Roadside	272281	659188	NO <sub>2</sub>	N	10	2	N
DT132	Airdrie Rd, Caldercruix	Roadside	281719	667495	NO <sub>2</sub>	N	10	2	N
DT133	Coatbridge 1, Bank St	Roadside	272887	664991	NO <sub>2</sub>	N	2	2	N
DT134	Coatbridge 2, Whifflet Court	Kerbside	273655	664003	NO <sub>2</sub>	Y	10	20	N
DT135	Grahamshill St, Airdrie	Kerbside	277276	665615	NO <sub>2</sub>	N	10	2	N
DT136	Airdrie 3, Springwells Cres	Roadside	274162	674130	NO <sub>2</sub>	N	30	2	N
DT137	Auchenjilns, Cumbernauld	Roadside	274164	674130	NO <sub>2</sub>	N	30	2	N
DT138	Main St, Chapehall (nr shops)	Roadside	278037	662798	NO <sub>2</sub>	Y	10	2	N
DT139	Lauchope St/Main St, Chapehall	Roadside	278178	663111	NO <sub>2</sub>	Y	10	2	N
DT140	Dundyvan Rd, Coatbridge	Kerbside	273293	664120	NO <sub>2</sub>	N	5	1	N
DT141	Main St (1), Harthill (near shops)	Kerbside	290652	664493	NO <sub>2</sub>	N	10	2	N
DT142	Salsburgh, house 337, R15	Roadside	283850	663082	NO <sub>2</sub>	N	15	30	N
DT143	Main St (2), Harthill (near shops)	Roadside	290482	664386	NO <sub>2</sub>	N	10	2	N

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Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA?	Distance to Relevant Exposure (m) <sup>(1)</sup>	Distance to kerb of nearest road (m) <sup>(2)</sup>	Tube collocated with a Continuous Analyser?
DT144	Croy lab (1), Constarry Rd	Roadside	272789	675735	NO <sub>2</sub>	Y	100	5	Y
DT145	Croy lab 2, Constarry Rd	Roadside	272789	675735	NO <sub>2</sub>	Y	100	5	Y
DT146	Croy lab 3, Constarry Rd	Roadside	272789	675735	NO <sub>2</sub>	Y	100	5	Y
DT147	Bank St, Coatbridge	Roadside	272947	665037	NO <sub>2</sub>	N	15	0	N
DT148	Main St, Chapelhall, lamp post R32	Kerbside	278105	663174	NO <sub>2</sub>	Y	15	2	N
DT149	Main St, Chapelhall, lamp post R33	Kerbside	278119	663075	NO <sub>2</sub>	Y	15	2	N
DT150	Eastfield Rd, (lamp post R6P783), Cumbernauld	Kerbside	275160	676210	NO <sub>2</sub>	Y	25	2	N
DT151	Main St, Holytown	Urban background	276635	660569	NO <sub>2</sub>	N	10	2	N
DT152	Coatbridge Rd, Townhead (near shops)	Roadside	272391	665824	NO <sub>2</sub>	N	10	2	N
DT153	72 Townhead Rd, Coatbridge	Roadside	271720	666053	NO <sub>2</sub>	N	20	2	N

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Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA?	Distance to Relevant Exposure (m) <sup>(1)</sup>	Distance to kerb of nearest road (m) <sup>(2)</sup>	Tube collocated with a Continuous Analyser?
DT154	Sunnyside Rd, Coatbridge	Roadside	273042	665176	NO <sub>2</sub>	N	20	2	N
DT156	Stirling St, Airdrie	Roadside	276005	665406	NO <sub>2</sub>	N	50	2	N
DT157	31 Station Rd, Muirhead	Roadside	268442	669262	NO <sub>2</sub>	N	15	2	N
DT158	Croftmoraig Ave, Moodiesburn	Roadside	270311	671702	NO <sub>2</sub>	N	10	2	N
DT159	Glenview Cres, Moodiesburn	Roadside	270391	671505	NO <sub>2</sub>	N	10	2	N
DT160	The Cuillins, Moodiesburn	Roadside	270067	671604	NO <sub>2</sub>	N	10	2	N
DT161	Bridgend Cres, Moodiesburn	Roadside	269071	670889	NO <sub>2</sub>	N	1	1	N
DT162	Auchingoch Rd, Moodiesburn	Roadside	269022	670979	NO <sub>2</sub>	N	2	1	N
DT163	191 Carfin St, New Stevenson	Roadside	276700	658972	NO <sub>2</sub>	N	112	2	N
DT164	Deedes St, Airdrie	Roadside	274819	665005	NO <sub>2</sub>	N	7	2	N
DT165	12 Morar Way, Carfin	Roadside	277161	659335	NO <sub>2</sub>	N	10	1	N
DT166	12 Inchwood Rd, Westfield, Cumbernauld	Roadside	273098	673321	NO <sub>2</sub>	N	10	1	N

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Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA?	Distance to Relevant Exposure (m) <sup>(1)</sup>	Distance to kerb of nearest road (m) <sup>(2)</sup>	Tube collocated with a Continuous Analyser?
DT167	12 Leckethill Ct, Westfield, Cumbernauld	Roadside	272634	672994	NO <sub>2</sub>	N	10	1	N

(1) 0 if the monitoring site is at a location of exposure (e.g. installed on/adjacent to the façade of a residential property).

(2) N/A if not applicable.

Table A.3 – Annual Mean NO<sub>2</sub> Monitoring Results

Site ID	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) <sup>(1)</sup>	Valid Data Capture 2016 (%) <sup>(2)</sup>	NO <sub>2</sub> Annual Mean Concentration (µg/m <sup>3</sup> ) <sup>(3)</sup>				
					2012	2013	2014	2015	2016
CM1 (Chapelhall)	Roadside	Automatic	93%	93%	35	33.8	32.7	33.5	32
CM2 (Croy)	Special – by quarry	Automatic	95%	95%	23	20.6	20	19.3	20
CM4 Mentieth Rd, Motherwell	Roadside	Automatic							
CM5 Shawhead, Coatbridge	Roadside	Automatic	99%	99%	35	34.3	32.4	36.0	30
CM6 Kirkshaws, Coatbridge	Roadside	Automatic	99%	99%	-	-	20.3	25.0	33
CM7 New Edinburgh Rd, Uddingston	Roadside	Automatic							
CM8 Sunnyside Rd, Coatbridge	Roadside	Automatic							
CM9a Auchenkilns, Cumbernauld	Roadside	Automatic							
CM9b Civic Centre, Motherwell	Roadside	Automatic							
CM10 Kenilworth Dr, Airdrie	Roadside	Automatic							21
CM11 Moodiesburn	Roadside	Automatic	94%	94%	25	20.2	21.8	18	21
DT10	Roadside	Diffusion Tube	100%	100%	29.0	27.0	31.7	28.5	23.3
DT47 Layby (Stand)	Roadside	Diffusion Tube	100%	100%	23.0	23.0	22.5	21.4	22.7
DT48 Bus stop, Bron Way, Cnauld	Kerbside	Diffusion Tube	100%	100%	32.4	33.8	32.3	32.9	29.1
DT49	Kerbside	Diffusion Tube	100%	100%	24.5	21.3	22.1	18.8	18.3

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Site ID	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) <sup>(1)</sup>	Valid Data Capture 2016 (%) <sup>(2)</sup>	NO <sub>2</sub> Annual Mean Concentration (µg/m <sup>3</sup> ) <sup>(3)</sup>				
					2012	2013	2014	2015	2016
Swimming pool, Kiilsyth									
DT50 1791 Cumbernauld Rd, Stepps	Kerbside	Diffusion Tube	100%	100%	27.1	22.7	25.2	24.7	21.9
DT51 131 Cumbernauld Rd, Stepps	Kerbside	Diffusion Tube	100%	100%	30.2	27.5	28.6	23.3	23.7
DT52 Eastbound A80 traffic lights Moodiesburn	Kerbside	Diffusion Tube	100%	100%	28.5	24.5	25.6	22.0	18.0
DT53 Westbound A80 traffic lights Moodiesburn	Kerbside	Diffusion Tube	100%	100%	22.6	19.2	22.6	22.0	20.7
DT54 (Lochend Rd/A752, Gartcosh)	Urban background	Diffusion Tube	100%	100%	30.8	24.6	24.5	24.6	21.1
DT55 Whitelaw Rd end, Glenboig	Urban Background	Diffusion Tube	100%	100%	16.2	21.3	13.6	13.6	12.0
DT56 Garnqueen Ave, Glenboig	Urban background	Diffusion Tube	100%	100%	17	16	14.2	14.8	12.4
DT57 Main St/CarrickView, Glenboig	Urban background	Diffusion Tube	100%	100%	20.4	18.4	17.1	16.7	15.9
DT58 115 Glenboig Rd	Urban background	Diffusion Tube	100%	100%	18.4	17.7	16.2	16.0	15.0
DT59 10-16 Coronation Pl, Mount Ellen	Urban background	Diffusion Tube	100%	100%	24.7	19.8	20.8	18.8	19.3
DT61 Central Way, Eastbound, Cumbernauld	Roadside	Diffusion Tube	100%	100%	<b>47.2</b>	<b>56</b>	<b><u>65.1</u></b>	<b><u>74.3</u></b>	<b><u>61.5</u></b>
DT62 Central Way,	Roadside	Diffusion Tube	100%	100%	<b>40.8</b>	<b>41.4</b>	<b>41.3</b>	<b>44.8</b>	38.1



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Site ID	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) <sup>(1)</sup>	Valid Data Capture 2016 (%) <sup>(2)</sup>	NO <sub>2</sub> Annual Mean Concentration (µg/m <sup>3</sup> ) <sup>(3)</sup>				
					2012	2013	2014	2015	2016
Westbound, Cumbernauld									
DT63 Under Central Way, Westbound, Cumbernauld	Roadside	Diffusion Tube	100%	100%	34.7	37.3	31.7	35.4	34.8
DT100 Civic Centre, Motherwell	Roadside	Diffusion Tube	100%	100%	30.0	34.1	39.7	38.9	32.3
DT101 Shields Rd, Motherwell	Roadside	Diffusion Tube	100%	100%	26.7	28.9	23.3	24.6	24.4
DT102 Emily Drive, Motherwell	Urban background	Diffusion Tube	100%	100%	13.7	12.2	10.6	11.1	10.0
DT103 Kethers Lane, Motherwell	Urban background	Diffusion Tube	100%	100%	15.8	17	13.9	12.8	12.8
DT104 Coursington Rd, Motherwell	Urban background	Diffusion Tube	100%	100%	13	10.5	9.6	11.6	11.7
DT105 Craigneuk Rd, Carfin	Urban background	Diffusion Tube	100%	100%	16.1	17.3	15.1	15.6	14.6
DT106 Camp St, Motherwell	Urban background	Diffusion Tube	100%	100%	22.2	19.5	18.1	22.6	18.7
DT107 Braehead Farm, Bargeddie	Roadside	Diffusion Tube	100%	100%	<b>40.9</b>	<b>44.4</b>	37.5	<b>42.7</b>	32.3
DT108 MSA Factory. Shawhead	Roadside	Diffusion Tube	100%	100%	38.2	<b>40</b>	36.5	<b>43.5</b>	30.5
DT110 New Edinburgh Rd (1)	Roadside	Diffusion Tube	100%	100%	38.1	35.6	33.8	31.8	33.9
DT111 New Edinburgh Rd (2)	Roadside	Diffusion Tube	100%	100%	38.6	39.2	36.5	38.4	29.8
DT112 New Edinburgh Rd (3)	Roadside	Diffusion Tube	100%	100%	39.6	37.7	35.0	33.8	30.0
DT113	Roadside	Diffusion Tube	100%	100%	24.3	24.5	22.6	21.5	19.2

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Site ID	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) <sup>(1)</sup>	Valid Data Capture 2016 (%) <sup>(2)</sup>	NO <sub>2</sub> Annual Mean Concentration (µg/m <sup>3</sup> ) <sup>(3)</sup>				
					2012	2013	2014	2015	2016
Tinkers Lane, Motherwell									
DT114 Main St, Overtown	Kerbside	Diffusion Tube	100%	100%	23.3	21.6	17.8	17.4	17.8
DT115 Ravenscraig Bypass	Roadside	Diffusion Tube	100%	100%	19.5	16.5	16.4	15.7	14.6
DT116 Delburn St, Motherwell	Urban background	Diffusion Tube	100%	100%	24.6	28.1	26.1	27.9	22.8
DT117 Hamilton Rd, Motherwell	Urban background	Diffusion Tube	100%	100%	39	35.9	53.8(35.2)	30.2	27.5
DT118 Shawhead roundabout, Coatbridge	Kerbside	Diffusion Tube	92%	92%	34.2	35.3	30.2	33.8	28.2
DT119 Kirkshaws Rd, Coatbridge	Roadside	Diffusion Tube	92%	92%	<b>41.5</b>	39.9	36.2	34.1	30.9
DT120 Watsonville, Motherwell	Kerbside	Diffusion Tube	92%	92%	28.5	26.9	22.0	17.0	19.4
DT121 Flannigan Grove, Bellshill	Urban background	Diffusion Tube	100%	100%	24.1	25	19.6	18.4	18.7
DT122 Main St, Mossend	Roadside	Diffusion Tube	100%	100%	34.3	35.7	29.3	27.1	26.1
DT123 Hamilton Rd, Bellshill	Kerbside	Diffusion Tube	100%	100%	27	29.6	23.1	22.5	23.3
DT124 Scotmid, Tannochside	Kerbside	Diffusion Tube	100%	100%	30.2	38.7	25.8	25.4	25.9
DT125 Main St, nr Academy, Bellshill	Kerbside	Diffusion Tube	100%	100%	21.1	20.8	17.3	16.0	17.2
DT126 Main St/Motherwell rd jcn Bellshill	Roadside	Diffusion Tube	100%	100%	25.6	28.7	21.5	18.2	22.3
DT127 Main St (Tesco Delivery rd), Bellshill	Roadside	Diffusion Tube	100%	100%	24.1	23.7	18.5	19.8	17.5

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Site ID	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) <sup>(1)</sup>	Valid Data Capture 2016 (%) <sup>(2)</sup>	NO <sub>2</sub> Annual Mean Concentration (µg/m <sup>3</sup> ) <sup>(3)</sup>				
					2012	2013	2014	2015	2016
DT128 Matalan, Wishaw	Roadside	Diffusion Tube	100%	100%	31.1	29.3	24.7	24.7	23.5
DT129 Newmains Police Station	Roadside	Diffusion Tube	100%	100%	29.6	34.7	32.9	26.3	27.0
DT130 Bottom Main St, Wishaw	Roadside	Diffusion Tube	100%	100%	19.6	17.9	15.8	14.8	15.0
DT131 Brandon Pl, Bellshill (started Aug 2016)	Roadside	Diffusion Tube	100%	42%					18.9
DT132 Airdrie Rd, Caldercruix (Started Dec 2016)	Roadside	Diffusion Tube	100%						24.6
DT133 Coatbridge (1), Bank St	Roadside	Diffusion Tube	100%	100%	34.3	37.2	32.1	27.7	26.8
DT134 Coatbridge (2), Whifflet Court	Kerbside	Diffusion Tube	75%	75%	28.9	25.5	25.0	20.1	23.0
DT135 Grahamshill St, Airdrie	Kerbside	Diffusion Tube	100%	100%	38.3	37.9	38.7	29.0	33.9
DT136 Airdrie (3), Springwells Cres	Roadside	Diffusion Tube	100%	100%	24.5	18.5	16.8	13.6	16.8
DT137 Auchenkilns, Cumbernauld	Roadside	Diffusion Tube	92%	92%	25.0	22.0	20.7	17.9	23.8
DT138 Main St, Chapelhall nr shops	Roadside	Diffusion Tube	83%	83%	29.8	27.9	23.6	26.9	24.3
DT139 Main St/LLauchope St, Chapelhall	Roadside	Diffusion Tube	100%	100%	34.3	<b>42.9</b>	35.6	33.8	30.1
DT140 Dundyvan Rd, Coatbridge	Kerbside	Diffusion Tube	100%	100%	31.4	29.4	23.9	20.4	21.7
DT141	Kerbside	Diffusion Tube	100%	100%	21.4	20.3	14.9	11.8	16.5

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Site ID	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) <sup>(1)</sup>	Valid Data Capture 2016 (%) <sup>(2)</sup>	NO <sub>2</sub> Annual Mean Concentration (µg/m <sup>3</sup> ) <sup>(3)</sup>				
					2012	2013	2014	2015	2016
Main St (1), Harthill									
DT142 House no 337 Salsburgh, R15	Roadside	Diffusion Tube	92%	92%	23.6	26.0	20.7	20.4	22.0
DT143 Main St (2), Harthill	Roadside	Diffusion Tube	100%	100%	22.6	21.1	19.2	17.0	17.8
DT144 Mobile lab, Constarry Rd (1), Croy	Roadside	Diffusion Tube	100%	100%	20.2	19.2	15.8	14.1	16.8
DT145 Mobile Lab, Constarry Rd (2), Croy	Roadside	Diffusion Tube	100%	100%	20.7	19.9	17.0	14.8	18.2
DT146 Mobile lab (3), Constarry Rd, Croy	Roadside	Diffusion Tube	100%	100%	19.4	18.5	18.1	17.9	17.0
DT147 Bank St, Coatbridge	Roadside	Diffusion Tube	100%	100%	36.1	30.9	31.7	26.3	30.5
DT148 Main St, Chapelhall, R32	Kerbside	Diffusion Tube	100%	100%	37.2	37.7	29.8	35.4	28.7
DT149 Main St, Chapelhall, R33	Kerbside	Diffusion Tube	100%	100%	34.8	36.4	34.4	26.8	31.9
DT150 Eastfield Rd, Cumbernauld, R6P783	Kerbside	Diffusion Tube	100%	100%	28.7	29.6	28.0	26.1	24.7
DT151 Main St, Holytown	Urban background	Diffusion Tube	100%	100%	25.1	26.4	20.6	19.8	21.6
DT152 Coatbridge Rd (shops), Townhead	Roadside	Diffusion Tube	100%	100%	33.6	32.2	30.0	32.4	25.0
DT153 Townhead Rd, Coatbridge	Roadside	Diffusion Tube	100%	100%	26.9	23.5	21.4	20.4	25.0
DT154 Sunnyside Rd,	Roadside	Diffusion Tube	100%	100%	32.9	37.3	32.9	28.5	26.8

Site ID	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) <sup>(1)</sup>	Valid Data Capture 2016 (%) <sup>(2)</sup>	NO <sub>2</sub> Annual Mean Concentration (µg/m <sup>3</sup> ) <sup>(3)</sup>				
					2012	2013	2014	2015	2016
Coatbridge									
DT156 Stirling Rd, Airdrie	Roadside	Diffusion Tube	92%	92%	39.4	<b>42.2</b>	37.0	32.9	27.5
DT157 31 Station Rd, Muirhead	Roadside	Diffusion Tube	83%	83%	27.1	24.2	27.1	25.4	22.4
DT158 Croftmoraig Ave Moodiesburn	Roadside	Diffusion Tube	100%	100%	21.5	21.9	27.1	-	16.1
DT159 Glenview Cres Moodiesburn	Roadside	Diffusion Tube	100%	100%	21.5	21.5	20.4	-	17.0
DT160 The Cuillins , Moodiesburn	Roadside	Diffusion Tube			.				
DT161 Bridgend Cres, Moodiesburn	Roadside	Diffusion Tube	100%	100%	-	18.5	16.0	18.3	14.9
DT162 Auchingoch Rd, Moodiesburn	Roadside	Diffusion Tube	100%	100%	-	21.4	19.2	17.2	17.1
DT163 191 Carfin Rd, New Stevenson	Roadside	Diffusion Tube	100%	50%	-	16.3	17.2	18.9	13.4
DT164 Deedes St, Airdrie	Roadside	Diffusion Tube	75%	75%	-	28.8	41.3(32.9)	31.3	29.8
DT165 12 Morar Way, Carfin	Roadside	Diffusion Tube	100%	50%	-	-	18.4	28.6	13.5
DT166 12 Inchwood Rd, Cumbernauld	Roadside	Diffusion Tube	100%	100%	-	-	-	-	21.7
DT167 12 Leckethill Ct, Cumbernauld	Roadside	Diffusion Tube	100%	100%	-	-	-	-	17.8

Notes: Exceedences of the NO<sub>2</sub> annual mean objective of 40µg/m<sup>3</sup> are shown in **bold**.

Concentrations in exceedance of the annual mean objective and not representative of a sensitive receptor have been distance corrected – distance corrected concentrations are presented in brackets.

NO<sub>2</sub> annual means exceeding 60µg/m<sup>3</sup>, indicating a potential exceedance of the NO<sub>2</sub> 1-hour mean objective are shown in **bold and underlined**.

(1) data capture for the monitoring period, in cases where monitoring was only carried out for part of the year.

(2) data capture for the full calendar year (e.g. if monitoring was carried out for 6 months, the maximum data capture for the full calendar year is 50%).

(3) Means for diffusion tubes have been corrected for bias. All means have been “annualised” as per LAQM.TG(16) if valid data capture for the full calendar year is less than 75%. See Appendix C for details.

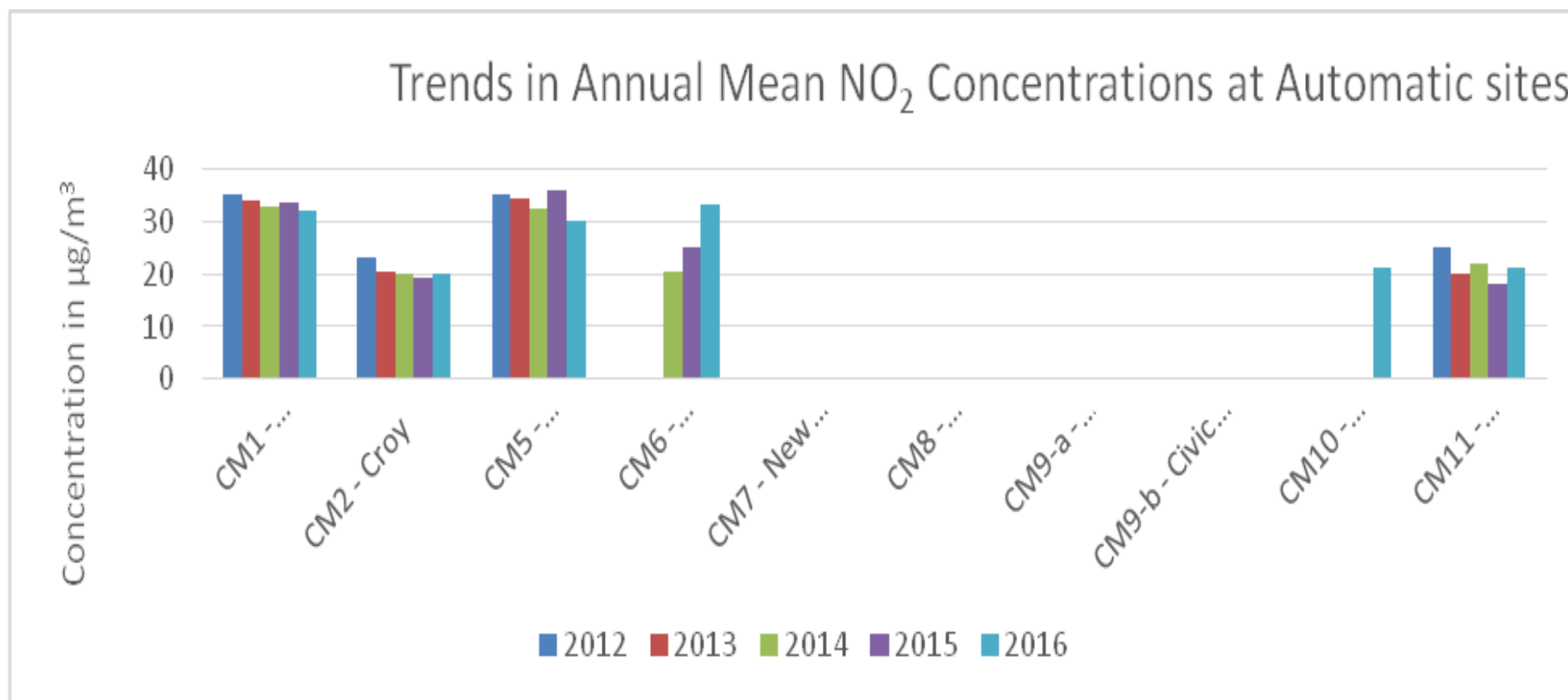


Figure A.1 – Trends in Annual Mean NO<sub>2</sub> Concentration at Automatic Sites

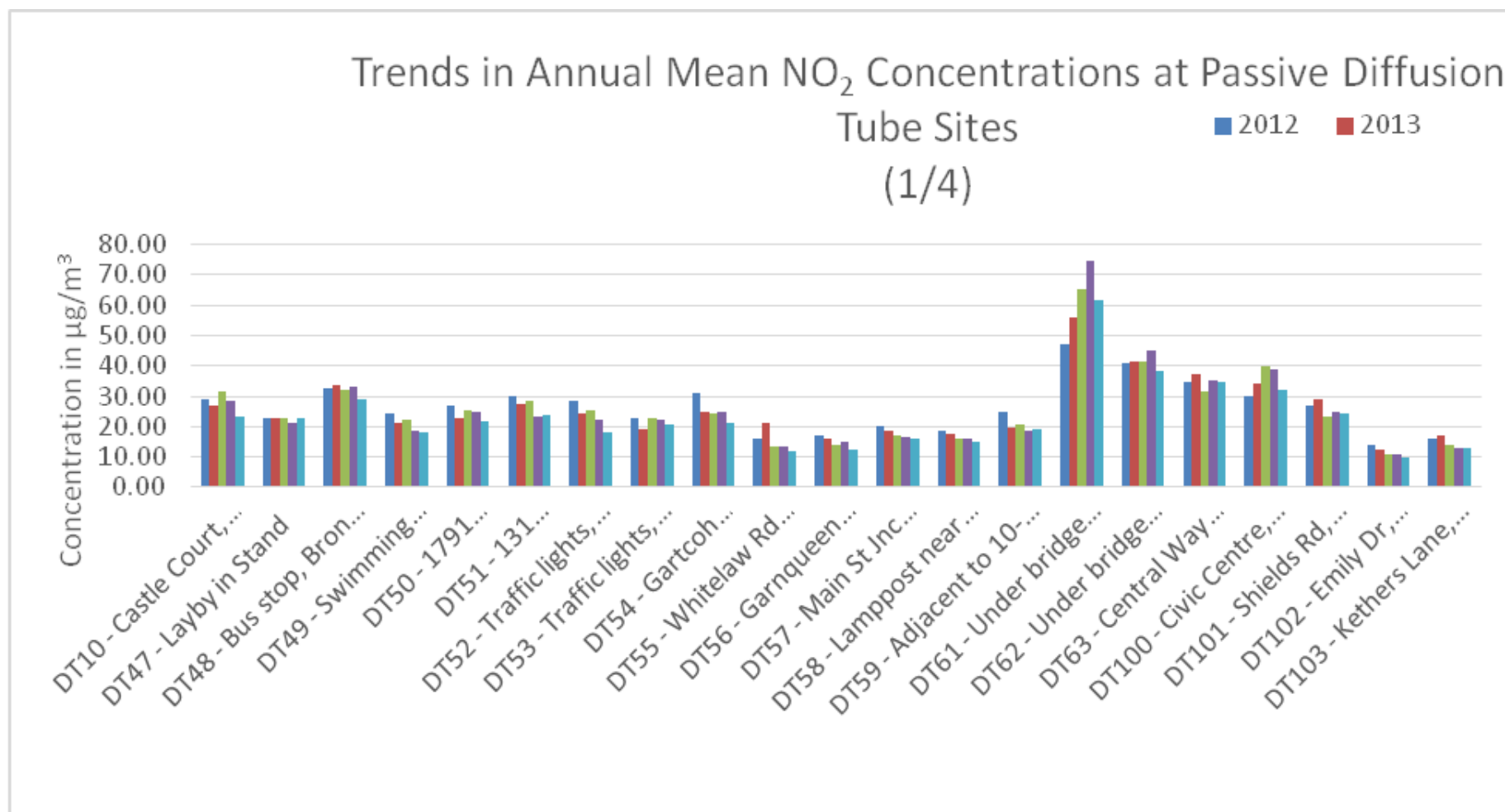


Figure A.2 – Trends in Annual Mean NO<sub>2</sub> Concentrations at Passive Diffusion Tube Sites (1)



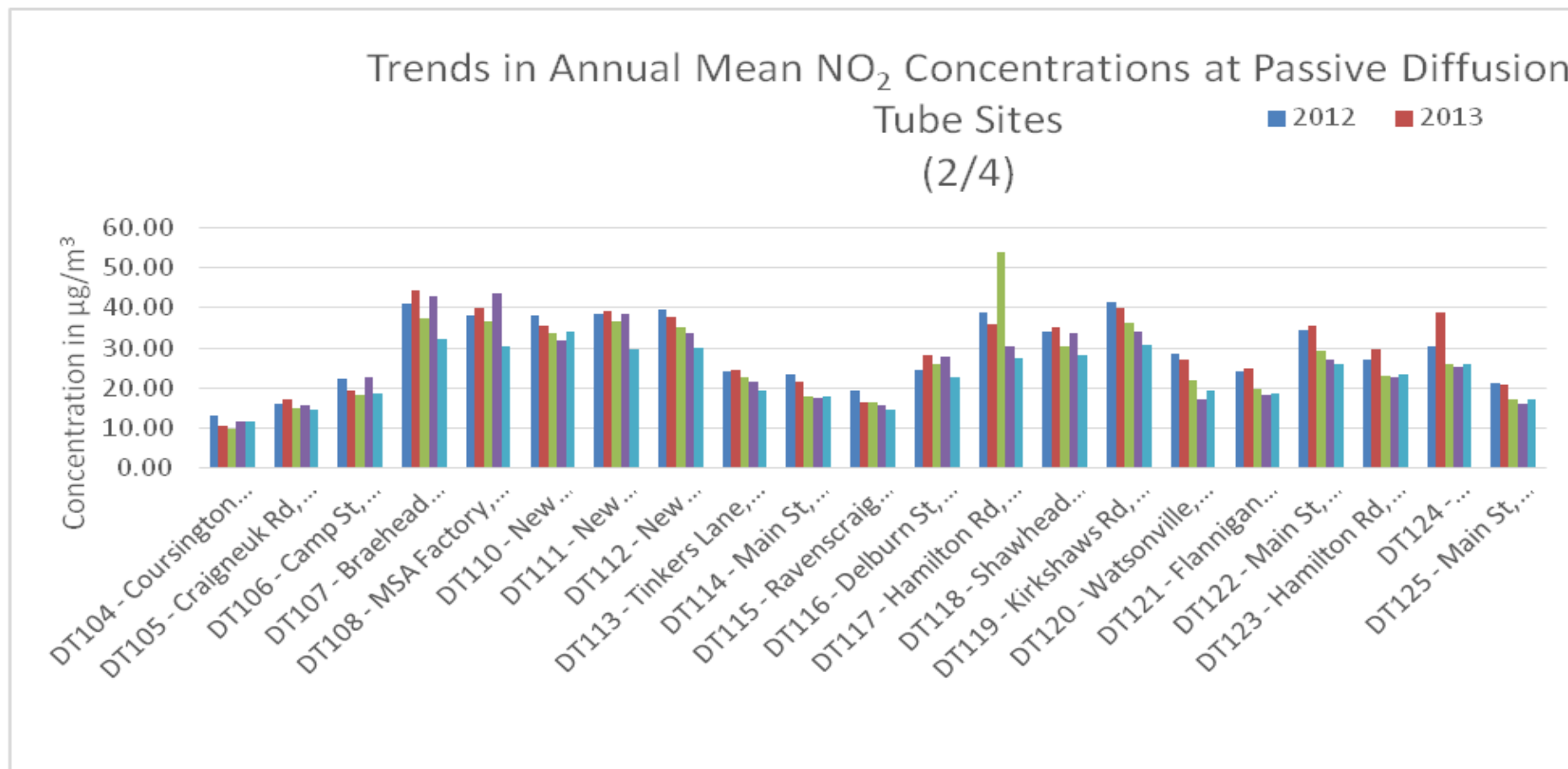


Figure A.3 – Trends in Annual Mean NO<sub>2</sub> Concentrations at Passive Diffusion Tube Sites (2)

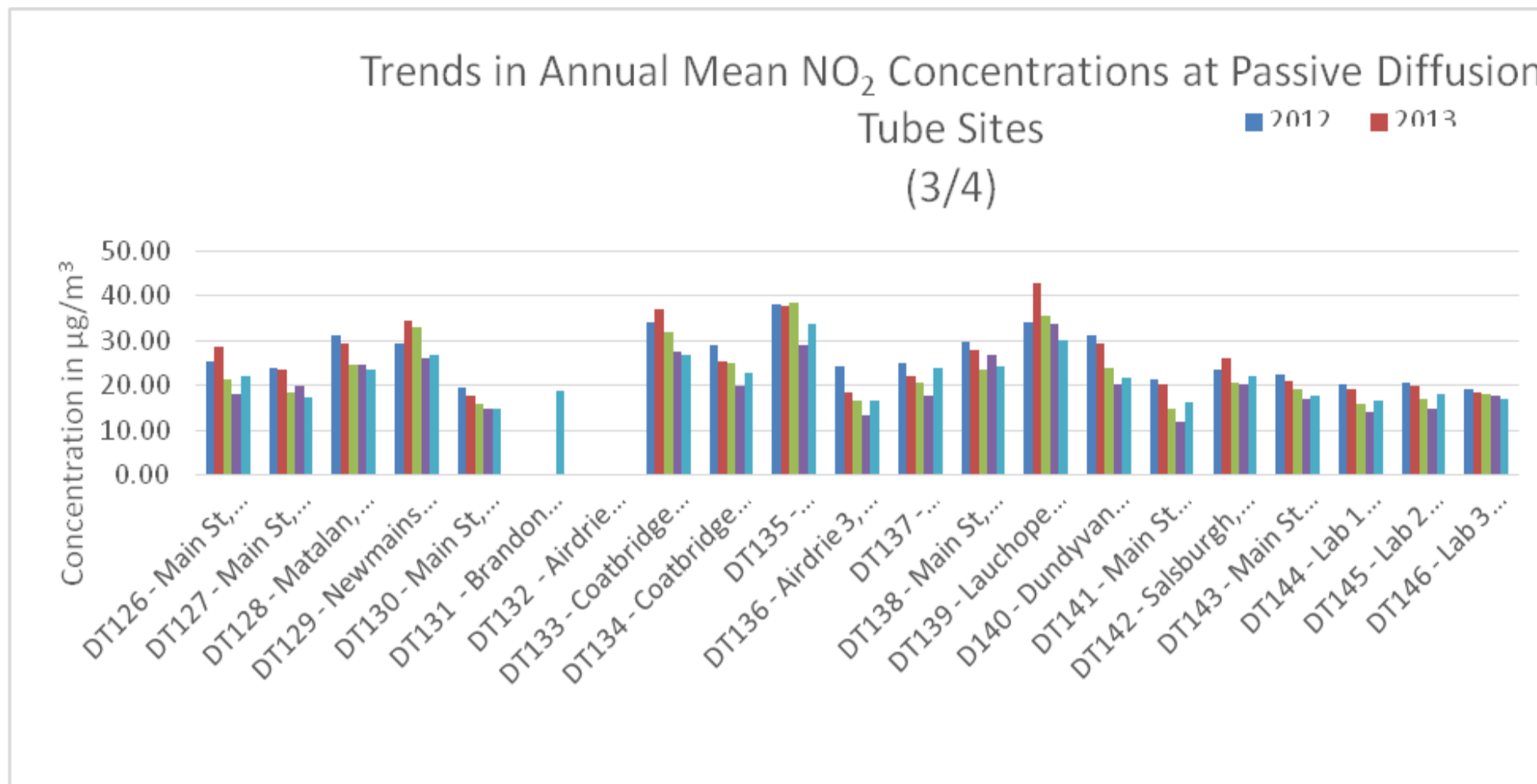


Figure A.4 – Trends in Annual Mean NO<sub>2</sub> Concentrations at Passive Diffusion Tube Sites (3)

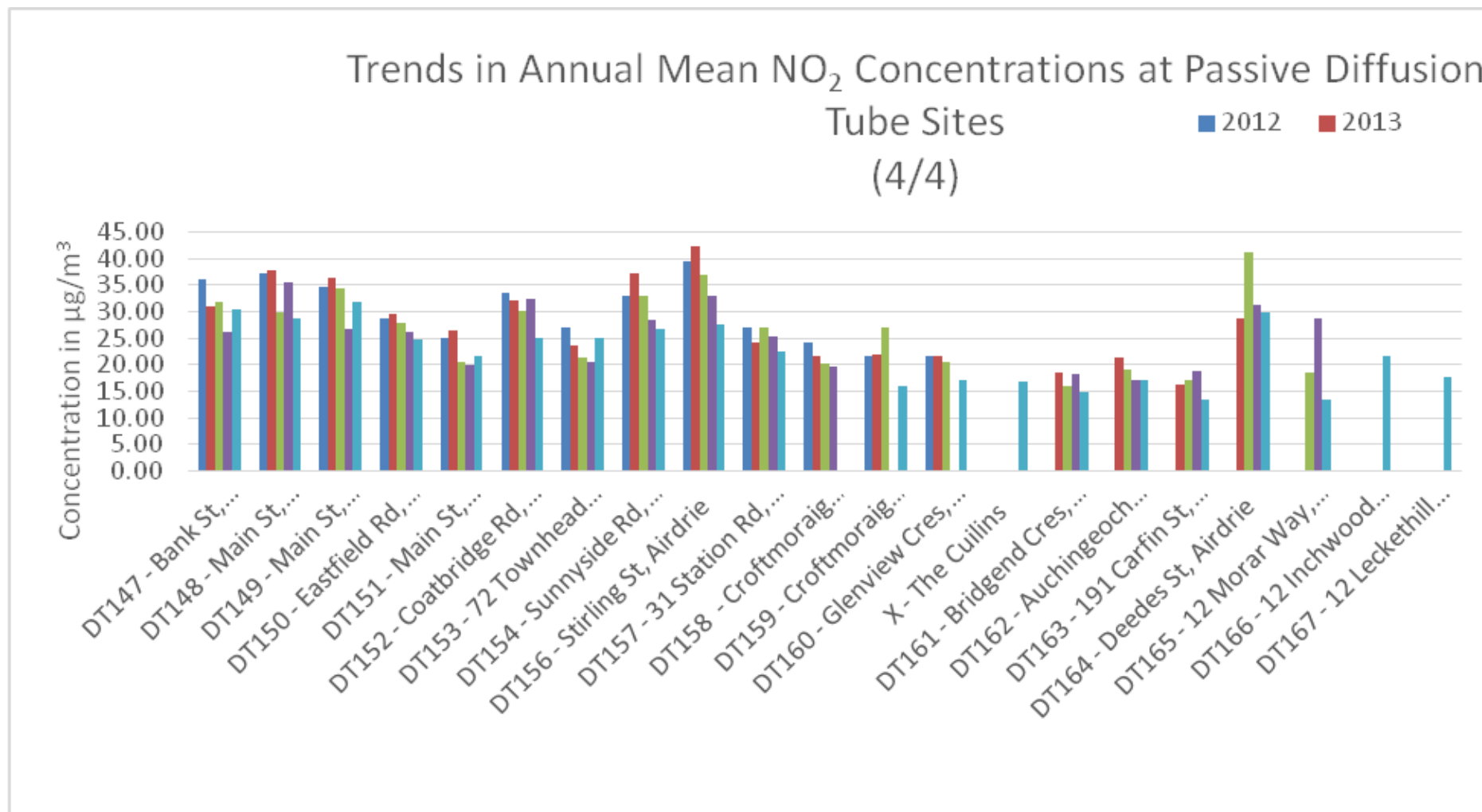


Figure A.5 – Trends in Annual Mean NO<sub>2</sub> Concentrations at Passive Diffusion Tube Sites (4)

Table A.4 – 1-Hour Mean NO<sub>2</sub> Monitoring Results

Site ID	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) <sup>(1)</sup>	Valid Data Capture 2016 (%) <sup>(2)</sup>	NO <sub>2</sub> 1-Hour Means > 200µg/m <sup>3</sup> <sup>(3)</sup>				
					2012	2013	2014	2015	2016
CM1-Chapelhall	Roadside	Automatic	93%	93%	0	0	2	-	1
CM2-Croy	Special-by quarry	Automatic	95%	95%	0	0	0	0	0
CM4-Menteith Rd, Mwell	Roadside	Automatic							
CM5-Shawhead, Coatbridge	Roadside	Automatic	99%	99%	0	0	0	0	0
CM6-Kirkshaws, Coatbridge	Roadside	Automatic	99%	99%	-	-	0(99)	0	3
CM7-New Edinburgh Rd, Uddingston	Roadside	Automatic							
CM8-Sunnyside Rd, Coatbridge	Roadside	Automatic							
CM9a - Cumbernauld	Mobile lab	Automatic			1	0	0(100)	-	-
CM9b-Civic Centre, Motherwell	Mobile lab	Automatic			-	-	-		
CM10-	Roadside	Automatic			-	-	-	-	

Site ID	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) <sup>(1)</sup>	Valid Data Capture 2016 (%) <sup>(2)</sup>	NO <sub>2</sub> 1-Hour Means > 200µg/m <sup>3</sup> <sup>(3)</sup>				
					2012	2013	2014	2015	2016
Kenilworth Dr, Airdrie									
CM11-Moodiesburn	Roadside	Diffusion Tube	94%	94%	0	0	0	0	1

Notes: Exceedences of the NO<sub>2</sub> 1-hour mean objective (200µg/m<sup>3</sup> not to be exceeded more than 18 times/year) are shown in **bold**.

(1) data capture for the monitoring period, in cases where monitoring was only carried out for part of the year.

(2) data capture for the full calendar year (e.g. if monitoring was carried out for 6 months, the maximum data capture for the full calendar year is 50%).

(3) If the period of valid data is less than 85%, the 99.8<sup>th</sup> percentile of 1-hour means is provided in brackets.

Table A.5 – Annual Mean PM<sub>10</sub> Monitoring Results

Site ID	Site Type	Valid Data Capture for Monitoring Period (%) <sup>(1)</sup>	Valid Data Capture 2016 (%) <sup>(2)</sup>	PM <sub>10</sub> Annual Mean Concentration (µg/m <sup>3</sup> ) <sup>(3)</sup>				
				2012	2013	2014	2015	2016
CM-Chapelhall	Roadside	73%	61%	16	<b>19.1</b>	<b>19.2</b>	<b>18.5</b>	15.4
CM2-Croy	Special-by quarry	85%	85%	13	17.6	15.4	12	13
CM3-Whifflet, Coatbridge	Urban background	82%	61%	13	15.1	13.1	12	12
CM4-Menteith Rd, Motherwell	Roadside	97%	97%	15	<b>18.2</b>	15.1	13	13
CM5-Shawhead, Coatbridge	Roadside	91%	91%	11	14.0	13.3	16	12
CM6-Kirkshaws, Coatbridge	Roadside	97%	97%	-	-	14.8	13	11
CM7-New Edinburgh Rd, Uddingston	Roadside							
CM8-Sunnyside Rd, Coatbridge	Roadside							
CM9a – Cumbernauld	Roadside			13	15.7	15.1	Moved to Civic Centre	Moved to Civic Centre
CM9-Civic Centre, Motherwell	Roadside			-	-	-		
CM10-	Roadside							

Site ID	Site Type	Valid Data Capture for Monitoring Period (%) <sup>(1)</sup>	Valid Data Capture 2016 (%) <sup>(2)</sup>	PM <sub>10</sub> Annual Mean Concentration (µg/m <sup>3</sup> ) <sup>(3)</sup>				
				2012	2013	2014	2015	2016
Kenilworth Dr, Airdrie								
CM11-Moodiesburn	Roadside	82%	82%	16	15.5	10.8	10	11

Notes: Exceedences of the PM<sub>10</sub> annual mean objective of 18µg/m<sup>3</sup> are shown in **bold**.

(1) data capture for the monitoring period, in cases where monitoring was only carried out for part of the year.

(2) data capture for the full calendar year (e.g. if monitoring was carried out for 6 months, the maximum data capture for the full calendar year is 50%).

(3) All means have been “annualised” as per LAQM.TG(16), valid data capture for the full calendar year is less than 75%. See Appendix C for details.

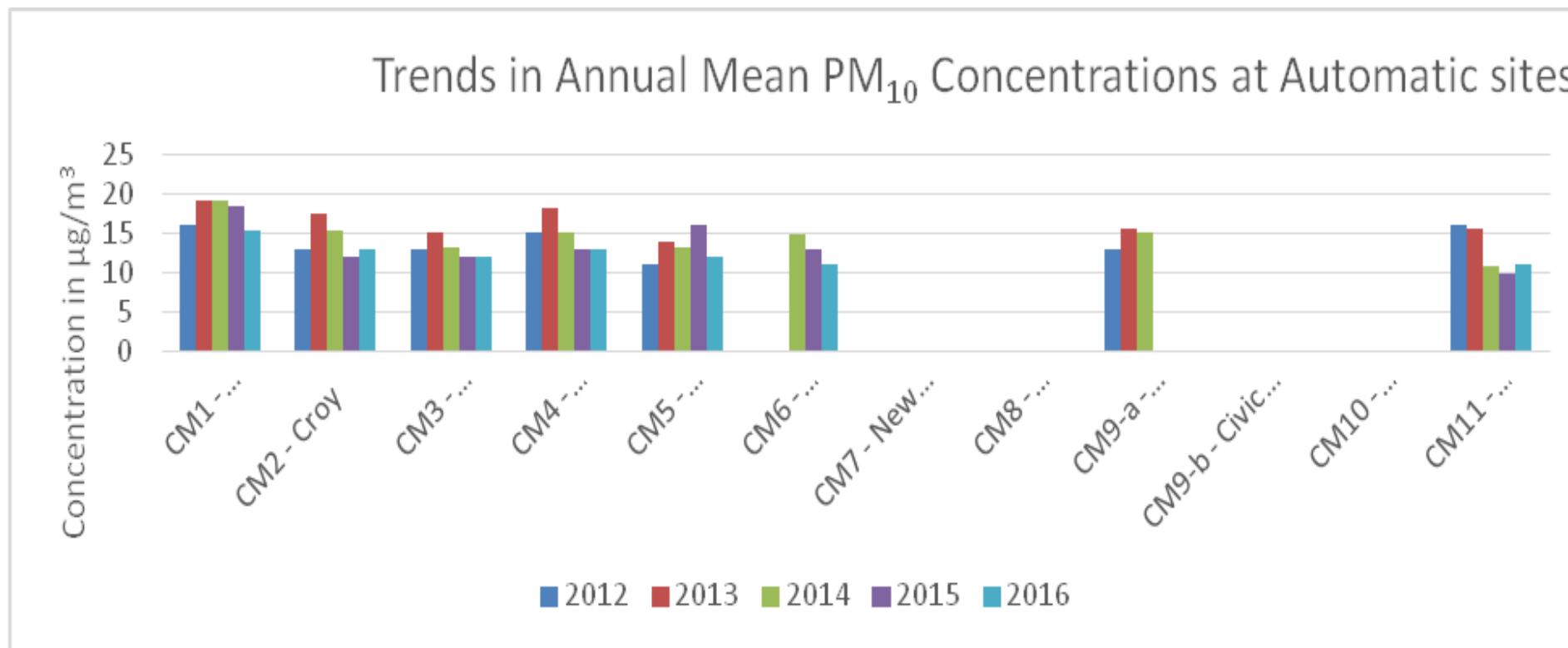


Table A.6 – Trends in Annual Mean PM<sub>10</sub> Concentration at Automatic Sites



Table A.6 – 24-Hour Mean PM<sub>10</sub> Monitoring Results

Site ID	Site Type	Valid Data Capture for Monitoring Period (%) <sup>(1)</sup>	Valid Data Capture 2016 (%) <sup>(2)</sup>	PM <sub>10</sub> 24-Hour Means > 50µg/m <sup>3</sup> <sup>(3)</sup>				
				2012	2013	2014	2015	2016
CM1-Chapelhall	Roadside	73%	61%	0(46)	0	1(-)	-	0(22)
CM2-Croy	Special-by quarry	85%	85%	1(39)	4(46)	3	1	2(26)
CM3-Whifflet, Coatbridge	Urban background	82%	61%	1	0	0	1	0(18)
CM4-Menteith Rd, Motherwell	Roadside	97%	97%	3(35)	2(38)	0	0(35)	0
CM5-Shawhead, Coatbridge	Roadside		90.68%	0(31)	1(31)	0(19)	1(36)	
CM6-Kirkshaws, Coatbridge	Roadside			-	-	0(21)	0	
CM7-New Edinburgh Rd, Uddingston	Roadside							
CM8-Sunnyside Rd, Coatbridge	Roadside							
CM9a-Cumbernauld	Mobile lab			1	0(33)	0(25)	Moved to Civic Centre	Moved to Civic Centre
CM9b-Civic Centre,	Mobile lab							

Site ID	Site Type	Valid Data Capture for Monitoring Period (%) <sup>(1)</sup>	Valid Data Capture 2016 (%) <sup>(2)</sup>	PM <sub>10</sub> 24-Hour Means > 50µg/m <sup>3</sup> <sup>(3)</sup>				
				2012	2013	2014	2015	2016
Motherwell								
CM10-Kenilworth Dr, Airdrie	Roadside							
CM11-Moodiesburn	Roadside	82%	82%	3(38)	2(37)	0	0(30)	2(20)

Notes: Exceedences of the PM<sub>10</sub> 24-hour mean objective (50µg/m<sup>3</sup> not to be exceeded more than 7 times/year) are shown in **bold**.

(1) data capture for the monitoring period, in cases where monitoring was only carried out for part of the year.

(2) data capture for the full calendar year (e.g. if monitoring was carried out for 6 months, the maximum data capture for the full calendar year is 50%).

(3) If the period of valid data is less than 85%, the 90.4<sup>th</sup> percentile of 24-hour means is provided in brackets.

Table A.7 – SO<sub>2</sub> Monitoring Results

Site ID	Site Type	Valid Data Capture for monitoring Period (%) <sup>(1)</sup>	Valid Data Capture 2016 (%) <sup>(2)</sup>	Number of Exceedences (percentile in bracket) <sup>(3)</sup>		
				15-minute Objective (266 µg/m <sup>3</sup> )	1-hour Objective (350 µg/m <sup>3</sup> )	24-hour Objective (125 µg/m <sup>3</sup> )
CM2-Croy	Special-by quarry	93.41%	93.41%	0	0	0

Notes: Exceedences of the SO<sub>2</sub> objectives are shown in **bold** (15-min mean = 35 allowed a year, 1-hour mean = 24 allowed a year, 24-hour mean = 3 allowed a year)

(1) data capture for the monitoring period, in cases where monitoring was only carried out for part of the year.

(2) data capture for the full calendar year (e.g. if monitoring was carried out for 6 months, the maximum data capture for the full calendar year is 50%)

(3) If the period of valid data is less than 85%, the relevant percentiles are provided in brackets.

## Appendix B: Full Monthly Diffusion Tube Results for 2016

Table B.1 – NO<sub>2</sub> Monthly Diffusion Tube Results for 2016

Site ID	NO <sub>2</sub> Mean Concentrations (µg/m <sup>3</sup> )													
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean	
													Raw Data	Bias Adjusted <sup>(1)</sup>
DT10-Castle Ct, Castlecary	32.6	39.9	17.6	14.3	19.9	21.8	12.3	21.5	26.6	36.7	39.8	5.5	24.0	23.3
DT47-Layby in Stand	21.4	31.2	13.5	19.2	14.5	14	15.1	25.3	23.3	30.8	43.4	29.3	23.4	22.7
DT48-Bron Way	31.7	41.8	16.1	26.4	15.6	20.4	20.2	27.4	32.6	32.9	52.3	42.1	30.0	29.1
DT49-Swimming pool, Kilsyth	18.5	31.3	13.9	18.5	7	10.3	10.8	16.5	16.6	27.3	35.5	20.7	18.9	18.3
DT50-1791 Cumbernauld Rd, Steps	28.8	21.8	14.5	8.4	14.5	16.9	13.4	22.8	23	34.2	38.6	34.5	22.6	21.9
DT51-131 Cumbernauld Rd, Steps	28.1	24.1	15.6	9.1	16.5	19.3	15.2	23	20.8	37.6	47.1	36.3	24.4	23.7
DT52-A80 eastbound, Moodiesburn	21.6	14.2	16.1	10.9	10.8	10.1	11	18.3	20.6	20.2	40.1	29.3	18.6	18.0

Site ID	NO <sub>2</sub> Mean Concentrations (µg/m <sup>3</sup> )													
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean	
													Raw Data	Bias Adjusted <sup>(1)</sup>
DT53-A80 westbound, Moodiesburn	21.9	16.2	13.7	12.5	13.1	13.4	12.6	21.2	29.8	31.9	36.4	34	21.4	20.7
DT54-Lochend Rd/A752 jcn, Gartcosh	20.3	22.3	16	27.5	18.8	14.6	13.1	22.3	26.4	33.4	44.3	2.6	21.8	21.1
DT55-Whitelaw Rd, Glenboig	9.4	19	7.2	9.7	7.5	5	4.6	9.5	11.7	20.4	27.5	17.1	12.4	12.0
DT56-Garnqueen Ave, Glenboig	16.7	18.7	7	11.7	9.2	4.4	3.1	12.1	12.7	26.9	29.1	2	12.8	12.4
DT57-Carrick View/Main St, Glenboig	18.2	19.6	7.2	12	10.8	9.1	9.8	13.4	13.8	30.9	28.6	23	16.4	15.9
DT58-115 Coatbridge Rd, Glenboig	5.8	20.9	11.7	12.4	10.6	7.6	5.9	12.9	16.5	27.7	32.7	21.4	15.5	15.0
DT59-10-16 Coronation Pl, Mount Ellen	17.2	23.6	19.7	18.2	10.5	11	7	15.8	19.9	39.2	32.8	23.6	19.9	19.3

Site ID	NO <sub>2</sub> Mean Concentrations (µg/m <sup>3</sup> )													
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean	
													Raw Data	Bias Adjusted <sup>(1)</sup>
DT61-Central Way, east, Cumbernauld	34.7	91.1	46.9	59	61.4	54.1	67.8	56.6	52.3	77.4	86.1	73.9	63.4	61.5
DT62-Central Way, west A, Cumbernauld	30.2	67.8	20	35.9	45.4	33.4	31.1	41.2	41.6	47.6	45.9	30.9	39.3	38.1
DT63-Central Way, west B, Cumbernauld	42.4	46.4	22.7	35.4	33.6	24.1	26.6	33.8	30.9	45.9	51	37.8	35.9	34.8
DT100-Civic Centre, Motherwell	31.8	32.3	23.3	15.7	26.4	27.6	24.5	39.6	27.9	50.1	57.1	43.3	33.3	32.3
DT101-Shields Rd, Motherwell	30.1	29.8	29.3	15.3	15.4	20.5	13.8	24.9	18.2	33.3	42.5	28.9	25.2	24.4
DT102-Emily Dr, Motherwell	12.1	11.8	13.9	4.8	5.2	8.5	2.6	7.9	6.2	15.2	21.1	14.9	10.4	10.0
DT103-Kethers Lane, Motherwell	14.7	18.5	14.6	7.7	8.2	6.9	2.6	11	9	19.1	22	23.7	13.2	12.8
DT104-Coursington Rd, Motherwell	19.7	11.1	9.3	9.5	12.3	3.6	2.6	8	5.5	11.3	20.6	31.6	12.1	11.7

Site ID	NO <sub>2</sub> Mean Concentrations (µg/m <sup>3</sup> )													
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean	
													Raw Data	Bias Adjusted <sup>(1)</sup>
DT105-Craigneuk Rd, Carfin	16.7	18	15.8	11.4	10	11.4	5.9	13.9	9.5	16	28	24	15.1	14.6
DT106-Camp St, Motherwell	13.7	18.1	14.6	41.4	10.9	12.2	5.7	14.5	12.7	24.1	33.7	30.3	19.3	18.7
DT107-Braehead Farm, Bargeddie	31.8	34.2	46.3	24.4	23.4	22.4	22.8	35.2	37.3	25.5	53	43.3	33.3	32.3
DT108-MSA Factory, Shawhead	38.1	39.2	33.3	25.6	20	16.6	24.8	32.9	31.2	28.2	44.4	43.6	31.5	30.5
DT110-New Edinburgh Rd (1), Uddingston	29.3	27.7	41.2	26.4	21.7	29	17.6	34.5	38	43.4	64.1	46	34.9	33.9
DT111-New Edinburgh Rd (2), Uddingston	26.2	25	31.6	23.6	17.8	23.6	24.3	36.7	33.9	35.9	50.8	39.3	30.7	29.8
DT112-New Edinburgh Rd (3), Uddingston	24.6	31.5	30.2	22.5	20.6	27.2	19	38.2	35.5	28.8	51.9	41.1	30.9	30.0
DT113-Tinkers Lane, Motherwell	18.5	22.5	23.1	10.2	11.6	13.7	12.4	18.9	15.7	26.1	35.8	28.8	19.8	19.2

Site ID	NO <sub>2</sub> Mean Concentrations (µg/m <sup>3</sup> )													
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean	
													Raw Data	Bias Adjusted <sup>(1)</sup>
DT114-Main St, Overtown	16.9	21	9.9	13	12.9	14.1	9.7	14.5	13.4	24.1	32.8	38.3	18.4	17.8
DT115-Ravenscraig bypass	20.8	18.6	12	10.9	10.7	12	3.1	13.2	10.9	18.5	26.8	22.9	15.0	14.6
DT116-Delburn St, Motherwell	23.1	20.5	24.9	13.9	16.1	20.4	16.1	25.2	19.7	27.5	43.4	31.2	23.5	22.8
DT117-Hamilton Rd, Motherwell	26.4	31	17.4	19.2	25.1	26.9	17.5	26.5	22.8	46.9	39.7	40.4	28.3	27.5
DT118-Shawhead roundabout, Coatbridge	27.2	27.4	22.5	16.1	20.6	22.6	24.8	30.9	27.6	31.9	48.1	45.4	29.1	28.2
DT119-Kirkshaws Rd, Coatbridge	35.1	32.6	32.6	25.7	22	20.5	13.4	Tube missing	32.1	41.8	49.3	45	31.8	30.9
DT120-Watsonville, Motherwell	17.3	25.8	15.5	14.7	11.2	18.6	Tube missing	10.2	14.3	31	31.8	29.6	20.0	19.4
DT121-Flannigan Grove, Bellshill	21.3	17.5	12.6	13.8	13.4	16.9	7.5	17.9	16.4	34.6	30.4	28.6	19.2	18.7
DT122-Main St, Mossend	20.4	28.1	25.2	24	13.6	27.1	15	28.9	19.3	50.9	35.5	35.2	26.9	26.1



Site ID	NO <sub>2</sub> Mean Concentrations (µg/m <sup>3</sup> )													
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean	
													Raw Data	Bias Adjusted <sup>(1)</sup>
DT123-Hamilton Rd, Bellshill	24.1	34.9	22.2	21.3	5.4	17.2	12.4	27.8	16.3	28.8	38.5	39.6	24.0	23.3
DT124-Scotmid, Tannochside	35	30.9	23.1	23.9	15.4	23.6	13.8	25.3	16.3	41.1	46	25.8	26.7	25.9
DT125-Main St, Bellshill (nr Academy)	27.2	18.5	16.1	12.8	13.2	6.7	5.9	12.6	12.3	27.9	31.9	28.1	17.8	17.2
DT126-Main St/Motherwell Rd, Bellshill	35.6	28.1	18.2	22.3	18.4	2.9	13.9	21.3	19	28	32.4	35.3	23.0	22.3
DT127-Main St, Bellshill (nr Tesco delivery)	27.6	24.3	21.2	10.1	12.4	2.6	8.5	17.1	13.7	19.8	31.5	27.4	18.0	17.5
DT128-Matalan, Wishaw	36.2	24.1	21	21.7	21.9	3.4	15.2	26.1	16.1	23.9	40.8	39.9	24.2	23.5
DT129-Newmains Police Station	36.7	35.6	26.7	19.7	23.5	3.2	15.1	33	21.2	51	41	26.9	27.8	27.0
DT130-Main St, Wishaw(bottom)	21.8	17.8	11.5	10.8	12.3	9.6	5.3	15.2	9.3	25.9	28.1	17.8	15.5	15.0

Site ID	NO <sub>2</sub> Mean Concentrations (µg/m <sup>3</sup> )													
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean	
													Raw Data	Bias Adjusted <sup>(1)</sup>
DT131-Brandon Pl, Bellshill (started Aug 2016)	-	-	-	-	-	-	-	9	15.6	20.4	35.4	23.5	19.5	18.9
DT132-Airdrie Rd, Caldercruix (started Dec 2016)	-	-	-	-	-	-	-	-	-	-	-	24.6	-	-
DT133-Coatbridge1, Bank St	34.3	33.2	21.1	35.4	16.5	6.4	25.8	2.1	48.5	31.7	49.1	27.3	27.6	26.8
DT134-Coatbridge 2, Bank St	24.6	29.9	18.3	20.1	9.3	-	-	-	19.8	20.6	33	38	23.7	23.0
DT135-Grahamshill St, Airdrie	45.6	52.8	24.7	27.7	18.8	20.1	33.1	31.3	40.5	35.7	58.8	30.6	35.0	33.9
DT136-Airdrie 3, Springwells Cres	28.4	25.2	15.1	12.9	7.3	6.4	9.3	13.8	14.9	18.4	29.3	27	17.3	16.8
DT137-Auchenkilns, Cumbernauld	30.2	20	17.6	18.6	10.1	4	2.7	17.4	Tube missing	78	35.4	35.5	24.5	23.8

Site ID	NO <sub>2</sub> Mean Concentrations (µg/m <sup>3</sup> )													
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean	
													Raw Data	Bias Adjusted <sup>(1)</sup>
DT138-Main St, Chapelhall (nr shops)	25.7	24.7	27.6	10.6	Tube missing	Tube missing	15.9	24.1	24.7	29.5	34.1	33.4	25.0	24.3
DT139-Lauchope St, Chapelhall	26	40.6	32.6	17.5	22.2	3	31.3	40.9	32.2	32	45.5	48.1	31.0	30.1
DT140-Dundyvan Rd, Coatbridge	29.1	11	21.3	17.2	18.5	17.7	10.7	21.8	21.8	29.6	36.1	33.1	22.3	21.7
DT141-Main St, Harthill (1)	21.4	6.7	15.6	9.7	12.3	13.7	8.1	18.8	12.8	31.5	28.6	25.1	17.0	16.5
DT142-Salsburgh, house 337, R15	24.1	22.8		52	16.7	20.2	8.9	17.1	13.5	25.8	27.3	20.8	22.7	22.0
DT143-Main St, Harthill (2)	23	21.7	19.6	9.6	12.4	13.4	9.9	19.5	17.9	25.9	27	20.6	18.4	17.8
DT144-Mobile lab (1), Constarry Rd, Croy	17.2	17.5	13.6	9	15	15.8	6.5	16	17.6	26.2	28.8	25	17.4	16.8
DT145-Mobile lab (2), Constarry Rd, Croy	25.1	24.9	14.2	13.4	12.8	15.3	6.9	16.1	16	28.7	26.9	25.1	18.8	18.2

Site ID	NO <sub>2</sub> Mean Concentrations (µg/m <sup>3</sup> )													
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean	
													Raw Data	Bias Adjusted <sup>(1)</sup>
DT146-Mobile lab (3), Constarry Rd, Croy	25.9	16	12.6	13.7	12.4	14	5.1	15.3	15.4	27.7	28.2	24	17.5	17.0
DT147-Bank St, Coatbridge	27.9	46.8	26.6	21.6	23.2	24.4	12.9	28.7	25.8	39.2	55.3	44.5	31.4	30.5
DT148-Main St, Chapelhall, R32	43.7	24	27.4	17.5	24.3	22	16.3	26.5	33.7	41.6	43.4	34.4	29.6	28.7
DT149-Main St, Chapehall, R33	34.6	27.8	40.6	23.5	21.4	24.6	21.7	32.2	31.3	46.5	49.3	41.1	32.9	31.9
DT150-Eastfield Rd, Cumbernauld R6P783	31.1	24.6	40.9	12.4	19.1	20.5	25.7	30.1	20.9	22.6	30.6	26.7	25.4	24.7
DT151-Main St, Holytown	24.3	9	21.5	10.8	18.8	21.1	13.6	24.7	22.2	38.5	37.1	26.1	22.3	21.6
DT152-Coatbridge Rd, Townhead	34.2	5.8	29.5	10.4	10	27.5	12.8	29.6	27.5	35.5	48.1	38.1	25.8	25.0
DT153-72 Townhead Rd, Coatbridge	22.5	21.2	18.7	17.5	18.6	26.5	9.5	17.9	22.8	93.5	33.7	7.1	25.8	25.0

Site ID	NO <sub>2</sub> Mean Concentrations (µg/m <sup>3</sup> )													
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean	
													Raw Data	Bias Adjusted <sup>(1)</sup>
DT154-Sunnyside Rd, Coatbridge	31.3	37.7	25	27.7	20.8	28.3	18.9	26.1	1.4	23.7	47.6	42.7	27.6	26.8
DT156-Stirling St, Airdrie	32	11	26.4	18.4	20.2	29.6	27	34.3		30.7	45.7	45.7	28.4	27.5
DT157-31 Station Rd, Muirhead	8.7	19.8	25.1	20		15.4	11.8	18.6		33.1	46.8	31.9	23.1	22.4
DT158-Croftmoraig Ave, Moodiesburn	29.7	6.6	13.1	18.4	11.1	13.3	7.7	6.7	15.6	18.6	24.7	40.5	17.2	16.7
DT159-Glenview Cres, Moodiesburn	6.6	13.1	18.4	11.1	13.3	7.7	6.7	15.6	18.6	24.7	40.5	22.7	16.6	16.1
DT160-The Cuillins, Moodiesburn	22.5	13.6	15.6	9	12.1	7.5	4.1	14.7	-	25.3	41.5	26.2	17.5	17.0
DT161-Bridgend Cres, Moodiesburn	27.8	15.5	9.6	8.3	10.5	2.2	16	13.6	15.2	22.3	29.8	23.7	15.4	14.9
DT162-Auchingoch Rd, Moodiesburn	15.8	17.1	19	9.6	15.4	8.6	7.4	16.4	17.9	21.5	36.9	25.4	17.6	17.1

Site ID	NO <sub>2</sub> Mean Concentrations (µg/m <sup>3</sup> )													
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean	
													Raw Data	Bias Adjusted <sup>(1)</sup>
DT163-189 Carfin rd, new Stevenson	20.7	25.7	7.5	14.1	10.2	6.9	7.6	21	25.9	30	39.9	27.9	19.8	19.2
DT164-Deedes St, Airdrie	18.4	15.1	18.3	12.8	25.6	-	19.1	35.1	30	45.9	51.1	38.3	28.2	27.4
DT165-12 Morar Way, Carfin (re-located July 2016)	14.5	25.2	11	13.3	11.3	10.2	-	-	-	-	-	-	13.9	13.5
DT166-12 Inchwood Rd, Westfield, Cumbernauld	24.8	21.1	30.2	8.7	19.9	11.3	7.6	21	25.9	30	39.9	27.9	22.4	21.7
DT167-12 Leckethill Ct, Cumbernauld	15.1	18.3	17	14.4	9.6	8.6	10.5	14.6	17.9	22.1	35.4	36.9	18.4	17.8

(1) See Appendix C for details on bias adjustment

## **Appendix C: Supporting Technical Information / Air Quality Monitoring Data QA/QC**

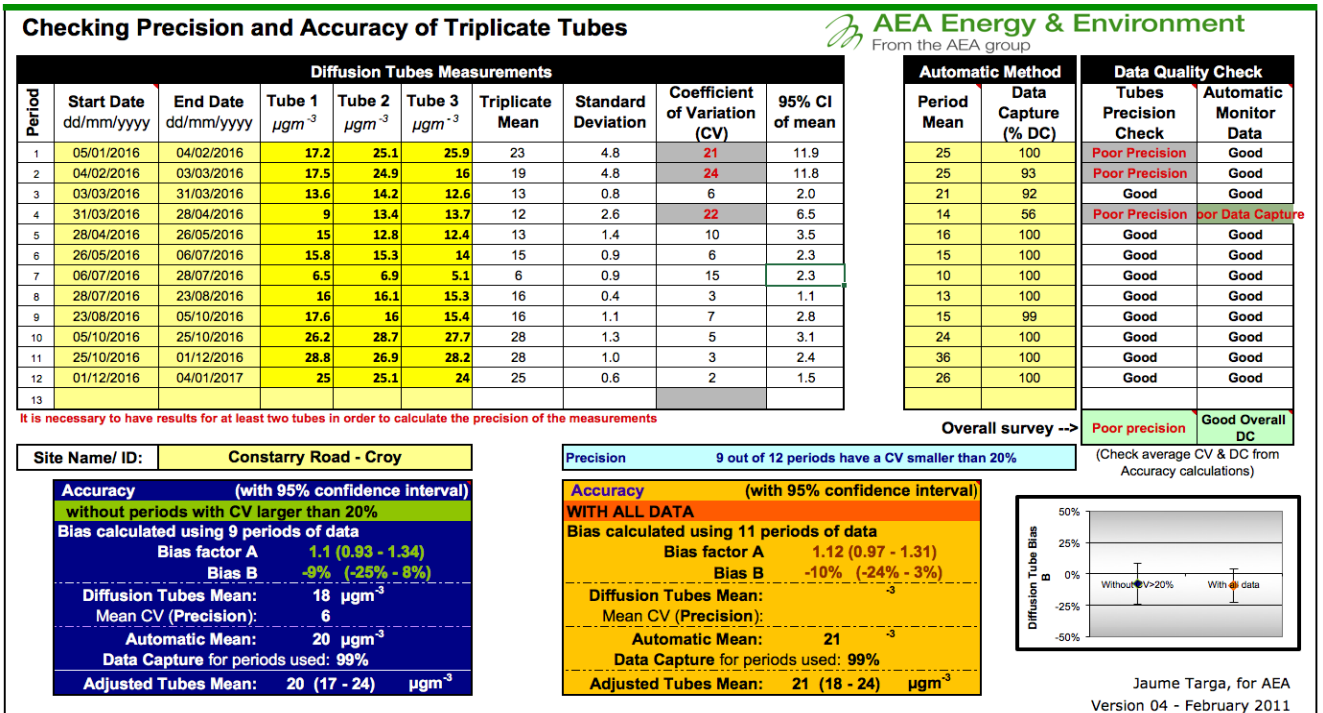
### **Bias Correction Factor from Local Co-Location Studies**

North Lanarkshire Council undertake co-location measurements of NO<sub>2</sub> at Croy automatic monitoring site. Details of the co-location factor calculations, including the precision checks are presented in Figure C.1. The bias factor from the national database is presented in Figure C.2.

The co-location study gives a bias correction factor of 1.12 while the national adjustment factor is 0.97

### **Discussion of Choice of Factor to Use**

The national co-location bias adjustment factor of 0.97 was considered more appropriate as it was based on a single co-location study and this included both roadside and kerbside sites. In contrast the Croy co-location site is specially sited close to a quarry and would be best described as urban (semi-rural) background site on the edge of Croy village. Consequently, it is judged that the national bias adjustment factor more accurately reflects the majority of the urban environment within North Lanarkshire. This is consistent with previous LAQM reports for North Lanarkshire Council.



If you have any enquiries about this spreadsheet please contact the LAQM Helpdesk at:

[LAQMHelpdesk@uk.bureauveritas.com](mailto:LAQMHelpdesk@uk.bureauveritas.com)

Figure C.1 – Co-location Study Croy 2016

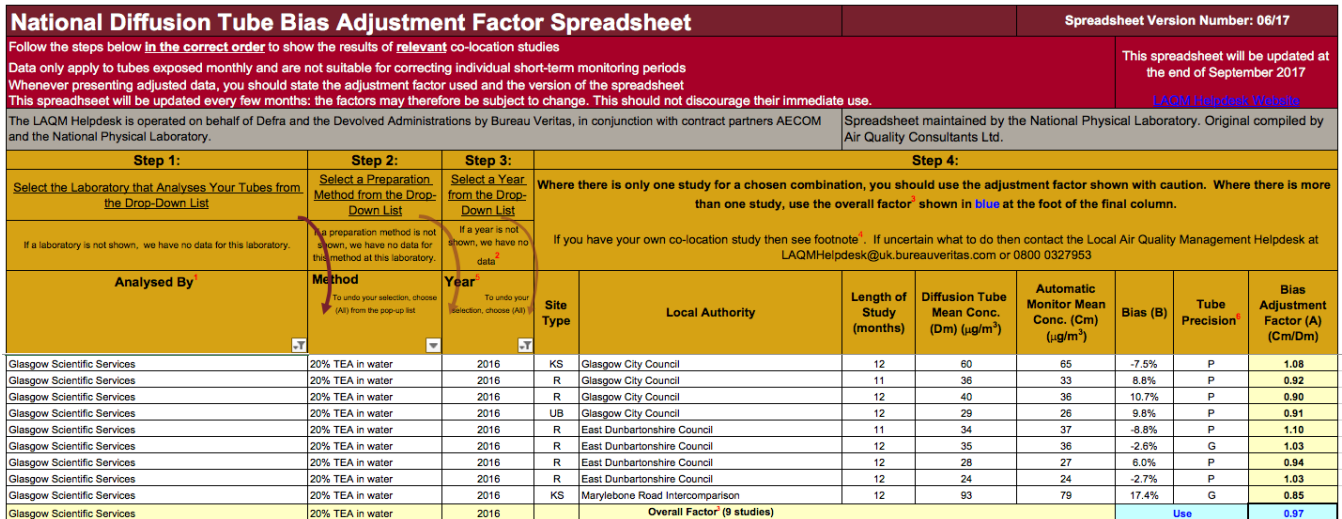


Figure C.2 Glasgow Scientific Services – National average bias adjustment factor 2016



### **Particulate Matter (PM) Monitoring Adjustment**

North Lanarkshire Council monitor PM<sub>10</sub> using two types of analyser :-

- Beta-attenuation monitor (BAM); and
- Tapered Element Oscillating Microbalance (TEOM)

Both BAM and TEOM analysers are maintained by Horiba and undergo regular calibration. The beta-attenuation monitors (BAMs) used by the Council have a heated inlet which has been found to cause evaporation of some semi-volatile particles thereby reducing the measured PM<sub>10</sub> concentration. All data have been provided ratified and gravimetric equivalent by Ricardo Energy and Environment.

### **NO<sub>2</sub> Monitoring Annualisation**

The data capture for annual mean NO<sub>2</sub> was below 75% at three diffusion tube sites in 2016. As a result of this the annual mean concentrations were annualised in accordance with the technical guidance TG (16). The three sites with below 75% data capture are as follows:-

- DT131 – Brandon Place, Bellshill
- DT163 – 189 Carfin Rd, New Stevenson
- DT165 – 12 Morar Way, Carfin

The annual mean concentrations at these locations were annualised in accordance with the technical guidance TG. 16. The results are shown in Tables C.1 – C. 3.

**Table C.1 – Annualisation of NO<sub>2</sub> Concentration at Site 131 – Brandon Place, Bellshill**

Month	Brandon Pl, Bellshill	Grangemouth	Waukmillglen	Glasgow, Townhead
Jan	-	24	21	32
Feb	-	22	13	36
March	-	18	11	29
April	-	15	9	23
May	-	18	8	18
June	-	8	7	17
July	-	10	4	16
August	9	11	8	19
September	15.6	12	5	19
October	20.4	22	16	29
November	35.4	25	19	45
December	23.5	19	14	32
Annual Mean		17.67	11.25	26.25
Period Mean	20.8			
Ratio AM/PM				
Annualisation Ratio	0.94			
Annualised Mean	19.5			

**Table C.2 – Annualisation of NO<sub>2</sub> Concentration at Site 163 - Carfin Rd, New Stevenson**

Month	Carfin Rd, New Stevenson	Grangemouth	Waukmillglen	Glasgow, Townhead
Jan	20.7	24	21	32
Feb	25.7	22	13	36
March	7.5	18	11	29
April	14.1	15	9	23
May	10.2	18	8	18
June	6.9	16	7	17
July		10	4	16
August		11	8	19
September		12	5	19
October		22	16	29
November		25	19	45
December		19	14	32
Annual Mean		17.67	11.25	26.25
Period Mean	14.2			
Ratio AM/PM				
Average Ratio	0.98			
Annualised Mean	13.9			

**Table C.3 Annualisation of NO<sub>2</sub> concentration at site 165 - Morar Way, Carfin**

Month	Morar Way, Carfin	Grangemouth	Waukmillglen	Glasgow, Townhead
Jan	14.5	24	21	32
Feb	25.2	22	13	36
March	11	18	11	29
April	13.3	15	9	23
May	11.3	18	8	18
June	10.2	16	7	17
July		10	4	16
August		11	8	19
September		12	5	19
October		22	16	29
November		25	19	45
December		19	14	32
Annual Mean		17.67	11.25	26.25
Period Mean	14.3			
Ratio AM/PM				
Annualisation Ratio	0.98			
Annualised Mean	13.9			

**Table C.4 Annualisation of PM<sub>10</sub> concentrations at Automatic monitoring site  
CM 1 – Chapelhall**

Month	Chapelhall	Grangemouth	Glasgow, Townhead
Jan	-	12	10
Feb	-	10	10
March	17	12	10
April	14	13	10
May	22	20	15
June	14	15	13
July	13	10	9
August	14	13	12
September	15	11	10
October	19	13	13
November	15	12	14
December	15	12	16
Annual mean		12.8	11.8
Period Mean	15.8	13.1	12.2
Ratio AM/PM		0.97	0.97
Annualisation Data	0.97		
Annualised Mean	15.4		

**Table C. 5 Annualisation of PM<sub>10</sub> Concentrations at site CM 3 – Whifflet (Coatbridge)**

Month	Whifflet, Coatbridge	Grangemouth	Glasgow, Townhead
Jan	10	12	10
Feb	10	10	10
March	12	12	10
April	11	13	10
May	15	20	15
June	-	15	13
July	-	10	9
August	-	13	12
September	12	11	10
October	13	13	13
November	12	12	14
December	13	12	16
Annual Mean		12.8	11.8
Period Mean	12.0	12.8	12.0
Ratio AM/PM		1.0	0.97
Annualisation Ratio	0.99		
Annualised Mean	12.0		

### QA/QC of Diffusion Tube Monitoring

NO<sub>2</sub> diffusion tubes are supplied and analysed by Glasgow Scientific Services using a preparation mixture of 20% triethanolamine (TEA) in water. Glasgow Scientific Services is a UKAS accredited laboratory with documented Quality Assurance/Quality Control (QA/QC) procedures for diffusion tube analysis. The laboratory prepares the diffusion tubes using the 20% triethanolamine (TEA) in water method.

Glasgow Scientific Services have participated in recent AIR NO<sub>2</sub> PT rounds and the percentage (%) of results submitted which were subsequently determined to be satisfactory during the previous five round in 2014 and 2015 based on a z-score of <+2 were as follows:-

- October to November 2014 : 100%
- January to February 2015 : 100%
- April to May 2015 : 100%
- July to August 2015 : 100%
- October to November 2015 : 100%

Over a rolling five round WASP window, it is expected that 95% of laboratory results should be less than or equal to plus or minus 2. If this percentage is substantially lower than 95% for a particular laboratory, within this five round window, then one can conclude that the laboratory in question may have significant systematic sources of bias in their assay. In this case the average percentage over the last five rounds up to the end of 2015 is 100%.

### **Supplementary Screening Assessments for Biomass Applications**

A small number of biomass plants have been installed in premises in North Lanarkshire in 2016. All of these are below the threshold at which SEPA would be involved. All of them were duly considered for their appropriate stack height and impact on local receptors during the development control process and for their impact on local air quality and none of them are situated in AQMAs.

Details of the plants are as follows.

- Greenfaulds High School, Cumbernauld
- CMS Window Systems, Castlecary
- Taylor High School, Carfin



## Glossary of Terms

Abbreviation	Description
AQAP	Air Quality Action Plan - A detailed description of measures, outcomes, achievement dates and implementation methods, showing how the LA intends to achieve air quality limit values'
AQMA	Air Quality Management Area – An area where air pollutant concentrations exceed / are likely to exceed the relevant air quality objectives. AQMAs are declared for specific pollutants and objectives
APR	Air quality Annual Progress Report
AURN	Automatic Urban and Rural Network (UK air quality monitoring network)
Defra	Department for Environment, Food and Rural Affairs
DMRB	Design Manual for Roads and Bridges – Air quality screening tool produced by Highways England
FDMS	Filter Dynamics Measurement System
LAQM	Local Air Quality Management
NO <sub>2</sub>	Nitrogen Dioxide
NO <sub>x</sub>	Nitrogen Oxides
PM <sub>10</sub>	Airborne particulate matter with an aerodynamic diameter of 10µm (micrometres or microns) or less
PM <sub>2.5</sub>	Airborne particulate matter with an aerodynamic diameter of 2.5µm or less
QA/QC	Quality Assurance and Quality Control
SO <sub>2</sub>	Sulphur Dioxide

## **References**

Local Air Quality Management Technical Guidance TG (16)

North Lanarkshire Council Air Quality Action Plan 2013-2016