

Annual Progress Report (APR)



2019 Air Quality Annual Progress Report (APR) for
North Lanarkshire Council

In fulfilment of Part IV of the
Environment Act 1995

Local Air Quality Management

August 2019

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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 of Scotland. 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 geographical location many of Scotland's trunk roads pass through North Lanarkshire, 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 (NO₂) and fine particulate matter (PM₁₀ and PM_{2.5}), as well as a large network of passive monitoring of NO₂. 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 air monitoring equipment is situated in the most relevant areas.

Significant issues were experienced in automatic monitoring in 2018 as a result of data logging issues in the Council's non-FIDAS analysers. Consequently data capture rates for these analysers was low in 2018 and therefore the results should be treated with a degree of caution.

Annual mean concentrations of Nitrogen Dioxide (NO₂) measured in 2018 were below national air quality objectives and continued the ongoing downward trend seen in recent years, however data capture was below 30% so the results should be treated with caution. All Passive Diffusion Tubes for NO₂ were below the national air quality objectives with the exception of two sites in Cumbernauld which are not located in areas of relevant public exposure.

Measured concentrations of PM₁₀ across our monitoring network have shown compliance with national air quality objectives for both annual mean and hourly mean concentrations. Again, like NO₂ the results continue the recent downward trend in levels, with the exception of the Croy monitoring station which showed an increase

since 2017, but still remained well below the objective level. As with the automatic results for NO₂ the data capture at the non-FIDAS sites was low and the results should be treated with caution.

Six PM_{2.5} monitoring sites were in place in 2018 across North Lanarkshire. All measured concentrations were substantially below (50%) the annual mean objective level.

In the coming reporting year the Council will be scrutinising the data from all our automatic analysers and our Passive Diffusion Tube network. It is the Council's intention that three of the AQMAs currently designated in North Lanarkshire will remain in place. The exception to this, however, is the Croy AQMA which the Council intends to revoke, following sustained compliance with the National Air Quality Objectives, and discussion with the Scottish Government and SEPA.

Actions to Improve Air Quality

A number of initiatives were undertaken in 2018, in line with the pledges within the Council's recently published Air Quality Action Plan. This included in-house transport measures including increasing the Council's own pool car fleet, and the introduction of fully electric vans to be used for the delivery of school meals. On-street car parking enforcement with dedicated staff has also been introduced in the town centres in North Lanarkshire to discourage car use within the town centres.

In terms of promoting sustainable travel the Council has carried out a feasibility study and consultation exercise on the possible introduction of a public cycle hire scheme for Motherwell. We also carried out a joint initiative with South Lanarkshire Council to identify and map 13 walking and cycling routes into Strathclyde Park from both North and South Lanarkshire areas. A map was produced and corresponding app developed for the routes. We also provided input to City-Deal colleagues in their proposals for an Active Travel Route in Motherwell/Strathclyde Park/Raith Interchange.

The Council was also involved in a number of projects aimed at raising awareness of air pollution, including an air quality learning event at New Stevenson Primary School for National Clean Air Day.

Local Priorities and Challenges

In 2019 North Lanarkshire Council intend to continue monitoring using our extensive network of automatic and passive air monitors. We will begin the process of revoking the Croy AQMA in line with Scottish Government advice due to consistent compliance with the national air quality objectives over the past few years.

We also intend to upgrade the ageing Particulate Analyser in the existing Whifflet air monitoring station.

Air Quality Action Plan projects the Council intend to focus on in 2019 include:-

- Undertaking an air quality awareness campaign, entitled “Choose Clean Air” to encourage alternative travel choices, namely walking and cycling;
- Traffic management improvements in Chapelhall to reduce congestion and queueing traffic, thus improving air quality;
- Increase in pool car provision within the Council, including more electric vehicles;
- Inputting into any relevant projects to encourage cycling/walking and the launch and promotion of the joint North/South Lanarkshire Council Walking and Cycling Map and corresponding app for Strathclyde Park;
- Support our colleagues in City Deal and Roads as they lead on the Active Travel Route for Motherwell Station – Strathclyde Park – Raith Interchange and the possible Active Travel Hub for Motherwell;

As has been reported in previous years, staffing and finance do continue to be a challenge for North Lanarkshire Council, particularly when running such an extensive monitoring network. We will continue to strive to carry out our LAQM responsibilities effectively and efficiently during 2019.

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 or by contacting KildonanPS@northlan.gov.uk

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1. Local Air Quality Management

This report provides an overview of air quality in North Lanarkshire during 2018. 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 ₂)	200 µg/m ³ not to be exceeded more than 18 times a year	1-hour mean	31.12.2005
	40 µg/m ³	Annual mean	31.12.2005
Particulate Matter (PM ₁₀)	50 µg/m ³ , not to be exceeded more than 7 times a year	24-hour mean	31.12.2010
	18 µg/m ³	Annual mean	31.12.2010
Particulate Matter (PM _{2.5})	10 µg/m ³	Annual mean	31.12.2020
Sulphur dioxide (SO ₂)	350 µg/m ³ , not to be exceeded more than 24 times a year	1-hour mean	31.12.2004
	125 µg/m ³ , not to be exceeded more than 3 times a year	24-hour mean	31.12.2004
	266 µg/m ³ , not to be exceeded more than 35 times a year	15-minute mean	31.12.2005
Benzene	3.25 µg/m ³	Running annual mean	31.12.2010
1,3 Butadiene	2.25 µg/m ³	Running annual mean	31.12.2003
Carbon Monoxide	10.0 mg/m ³	Running 8-Hour mean	31.12.2003
Lead	0.25 µg/m ³	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 on the Council's website at www.northlanarkshire.gov.uk/index.aspx?articleid=8183 and at <https://uk-air.defra.gov.uk/aqma/list?la=N&country=scotland&pollutant=all>.

In the coming year we propose to revoke Croy AQMA.

Table 2.1 – Declared Air Quality Management Areas

AQMA Name	Pollutants and Air Quality Objectives	City / Town	Description	Action Plan
AQMA Croy	PM ₁₀ annual mean	Croy	An area encompassing a quarry and surrounding area	www.northlanarkshire.gov.uk/CHttpHandler.ashx?id=12687&p=0
AQMA Chapelhall	NO ₂ annual mean PM ₁₀ annual mean	Chapelhall	An area encompassing a number of properties at the junction of Main Street and Lauchope Street	www.northlanarkshire.gov.uk/CHttpHandler.ashx?id=12687&p=0
AQMA Coatbridge	PM ₁₀ annual mean	Coatbridge	Whifflet Street stretching to the Shawhead roundabout. The AQMA was further extended in 2015 to include Kirkshaws Rd.	www.northlanarkshire.gov.uk/CHttpHandler.ashx?id=12687&p=0
AQMA Motherwell	PM ₁₀ annual mean	Motherwell	An area encompassing Motherwell Town Centre	www.northlanarkshire.gov.uk/CHttpHandler.ashx?id=12687&p=0

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 2018 in pursuit of improving local air quality. A summary 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:

- The Council's pool car fleet now consists of 140 cars, 24 of which are electric. A further 24 pool cars are in the process of being procured. Government grant funding has also been used to procure 7 fully electric Renault Master vans for school meals delivery.
- Five additional school buses with drivers have been added to the fleet, thereby allowing 50 ASN pupils to be taken out of taxis. The NLC Bus Section now also performs "Consortium" travel on behalf of Education, taking mainstream pupils from school to school for specialist subjects. This work was previously carried out by taxi.
- A joint initiative with South Lanarkshire Council has been undertaken which involved identifying and mapping 13 walking and cycling routes into Strathclyde Country park from both North and South Lanarkshire. The map was created and printed in 2018 and the launch process is now under way in 2019 and full details of this will be in next year's report. An app of the map was also produced.
- In 2018/19 the Council has introduced car parking on-street enforcement and staff have been employed to undertake this role in town centres in North Lanarkshire. Previously there had been no parking enforcement in these areas.
- A detailed traffic and dispersion modelling study has been carried out for the Motherwell and Airdrie/Coatbridge areas to provide accurate baseline conditions for both areas. In particular the Motherwell study will be useful in providing a baseline of information for future changes to the road network etc. as part of the Ravenscraig and other large development in the area.

In terms of slow progress,

- It was not possible to carry out the planned joint Eco Stars bus operator workshop that had been planned for North and South Lanarkshire. This was because the workshop was due to be held shortly after a similar workshop run by the Energy Savings Trust on a similar theme and so the uptake on our workshop was very low and it therefore had to be cancelled.
- Progress in 2018/19 has been slower than hoped on the pledge to increase the number of EV charging points in the area because the Council have been focussing resources on the LED street lighting programme. A new policy for EV charging is being developed and a maintenance agreement for existing chargers is also being looked at.

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

- The Council will continue to roll out its pool car fleet, with numbers expected to rise from 140 to 164 vehicles in 2019/20.
- An air quality publicity campaign is due to be launched in 2019/20 with the strap line “Choose Clean Air”. This will involve bus shelter advertising, Google display network advertising for mobile phones within North Lanarkshire, as well as the purchase of promotional air quality items for use in outreach work eg with schools.
- Air quality funding will be utilised towards a project to create an Active travel Route from the Council’s Motherwell AQMA down to Strathclyde Park and on to the new cycling/walking infrastructure at the Raith Interchange.
- Following a feasibility study traffic management improvements will be introduced in Chapelhall. This will involve the construction of chicanes along Lauchope St where the shops are to deter HGVs from using this as a through route and providing an alternative route along Lancaster Avenue. This work is planned for 2019/20 and is being led by the Council’s Roads team.

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	<p>NLC Vehicle Fleet and Work Journeys</p> <ul style="list-style-type: none"> The Council will strive to reduce car journeys for work purposes eg. By teleconferencing. For instances where work travel is necessary the Council's car fleet will be utilised with electric/hybrid vehicles provided where possible Further consideration will be given to reducing the number of private vehicles used for Council business, introducing bus/sustainable transport where possible 	Promoting Travel Alternatives	Workplace Travel Planning	NLC All Depts	2018/19	2019-2021	NA	Anticipated reduction in car travel and thus AQ improvements in AQMA	Ongoing	Ongoing initiative	Progress made in 2018/19 - Pool car fleet consists of 140 cars (24 electric). A further 24 pool cars (4x4s) are being procured. Govt grant funding has been used to procure 7 fully electric Renault Master vans for school meal delivery work.
2	<p>Vehicle Fleet Efficiency</p> <ul style="list-style-type: none"> Tracking devices will continue to be fitted to NLC fleet vehicles in order to provide info on managing idling/speeding and unnecessary journeys Driver Certificate of Professional Competence training will be provided for all Council drivers, including modules on safe and efficient driving The Council will introduce scheduling of Council vehicles eg. By coordinating school bus/minibus/community transport vehicles 	Vehicle Fleet Efficiency/Traffic Management	Driver training and ECO driving aids	NLC Fleet and Transport	2018	2018-2021	NA	Anticipated reductions in NLC vehicles fleet contributions	Ongoing	Ongoing initiative	<p>Number of vehicles with trackers increased from 180 to 400.</p> <p>All drivers covered by the DCPC legislation have now achieved their DCPC and training is ongoing,</p> <p>5 additional school buses with drivers have been added to the fleet, thereby allowing 50 ASN pupils to be taken out of taxis. The NLC bus section now also performs "Consortium" travel on behalf of Education, taking mainstream pupils from school to school for specialist subjects (previously carried out by taxis)</p>

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
3	Subject to Scottish Govt funding the Council will continue to operate the NLC Eco Stars fleet recognition scheme and use this to engage with certain vehicle sectors on route planning as appropriate to avoid AQMAs	Vehicle Fleet Efficiency	Fleet efficiency and recognition schemes	NLC Protective Services and External consultant who delivers Eco Stars	2018	2018-2021	NA	Targeted reduction of certain vehicle sectors in AQMAs leading to reduced emissions in AQMAs	Ongoing	Ongoing initiative	Progress in 2018/19 – the Eco Stars scheme continues to grow and now has 186 members (7268 vehicles)
4	The Council will continue to increase the provision of electric vehicle (EV) charging points, where possible ensuring that they are accessible to both NLC staff and the general public. The Council will engage with other public sector agencies (eg NHS Lanarkshire) to encourage similar provision to ensure adequate coverage of EV charging points across NLC area.	Promoting low emission transport	Promotion of EV recharging	NLC/other public bodies in area	2018-2021	2018-2021	NA	Greater facilities for EV should encourage uptake, reducing vehicle emissions in AQMAs	Ongoing	Ongoing	Progress in 2018/19 has been slower than hoped on this measure because the Council have been focussing resources on the LED street lighting programme. A new policy for EV charging is being developed and a maintenance agreement for existing chargers is also being looked at.
5	The Council will abide by their statutory duty of sustainable procurement and include vehicle standards in the sustainable section of the sourcing methodology documentation, which will consequently feed through into the specification/award criteria where appropriate	Promoting low emission transport	Public vehicle procurement – prioritising uptake of low emission transport	NLC procurement	2018-19	2018-2021	NA	NA	In place	Ongoing	The council replaces its fleet in line with its fleet replacement programme. 24 new bin lorries have recently been delivered and the majority of NLC heavy fleet now complies with the latest Euro 6 emissions standard.

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
6	<p>Increasing levels of sustainable travel</p> <ul style="list-style-type: none"> The Council will work with agencies such as SPT and Sustrans (among others) to develop and implement measures which will encourage Modal Shift to public transport and active travel A programme of awareness-raising and promotion initiatives will be progressed around walking and cycling in North Lanarkshire. This will incorporate information on routes to key destinations in the NLC area 	Promoting travel alternatives	Intensive active travel campaign and infrastructure	NLC Protective services, roads, city deal. Also external agencies	2018/19	2018-2021	NA	Unknown	Ongoing	Ongoing	<p>Completion of Airdrie Station Park and Ride. Completion of sustainable transport studies for Airdrie/Coatbridge and Cumbernauld/Kilsyth. These will help inform future planning and project implementation.</p> <p>Ongoing walking/cycling promotion events. Also working with schools and get Walking Lanarkshire to promote safe cycling/walking</p>
7	The Council will engage with SPT and other relevant local authorities to develop common engine standards for all tendered school bus contracts	Promoting sustainable travel	Public vehicle procurement – promoting uptake of low emission vehicles	NLC, SLC, other neighbouring authorities	2018	2018-2021	NA	Improved emissions from buses in AQMAs should improve AQ in AQMA	No progress to date	2021	No progress on this in 2018, hope to begin engagement process in 2019
8	The Council will continue to progress their Workplace Travel plan especially in view of other relevant NLC policies, such as property rationalisation, home working policy etc.	Promoting sustainable travel	Workplace Travel Planning	NLC All Services	2018-2021	2019	NA	Unknown	See comment	Ongoing	In 2018/19 a consultant was engaged to undertake a Workplace Travel Survey to update the survey from a few years ago. The results of this survey will be duly considered in the preparation of a Workplace Travel Plan for the Council.
9	The Council will continue to run and publicise Vehicle Emission Testing and Vehicle idling Enforcement campaigns in areas of known and suspected persistent idling	Traffic management	Anti-idling enforcement/testing vehicle emissions	NLC protective services	2018/19		NA		Initiatives already in place	Ongoing	Both the Vehicle Emission Testing and Vehicle Idling initiatives are ongoing in North Lanarkshire. The Council also carries out VET in other council areas.

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
10	The Council will introduce car parking on-street enforcement in town centres in North Lanarkshire in order to reduce inappropriate parking in town centres and other areas	Traffic management	Parking enforcement	NLC Protective Services and Roads	2018	2018-2019	NA	Unknown, but aim is to be a deterrent to driving in town centres	Progressed 2018/19	Ongoing	In 2018/19 the Council has introduced car parking on-street enforcement and staff have been employed to undertake this role.
11	<p>The Council will investigate options for improving bus service provision in North Lanarkshire</p> <ul style="list-style-type: none"> Encourage partnership with SPT and bus operators to ensure major new/existing developments are fully connected from the outset Investigate/implement better bus infrastructure, particularly bus priority measures to encourage greater uptake of bus travel and reduce emissions from buses, helping congestion Work with bus operators (eg. Via Eco Stars) to improve emission standards for buses operating in North Lanarkshire and particularly within AQMAs. 	<p>Transport Planning and infrastructure</p> <p>Traffic management</p> <p>Vehicle fleet efficiency</p>	<p>Bus route improvement</p> <p>Bus priority</p> <p>Promoting low emission transport</p>	NLC SPT	2018-21	2019-2021	NA	Anticipated reduction in emissions	See comment	2021	<p>Studies are underway looking at two junctions on the A73 where buses are having difficulty in joining the main road. Wider lanes/filter lanes and signal controlled crossings are being looked at in these areas to improve bus movements. Currently at feasibility stage.</p> <p>In discussion with SPT re formation of a Quality Bus Partnership for A89 corridor.</p> <p>Entered into partnership with SPT to facilitate bus shelter maintenance and provision.</p>
12	Fully support and input to where possible the planned Strategic Travel Hub for Motherwell, ensuring project objectives include air quality indicators. Part of this will include taking forward the findings of the Motherwell Cycle Hire Feasibility study recently undertaken for the town.	Transport planning and infrastructure	Public transport improvements, stations and services. Also public cycle hire schemes.	NLC City Deal Team	2018-21	2019-2021	NA	Anticipated reduction in emissions through greater modal shift and sustainable travel in Motherwell AQMA	See comment	Ongoing	Works for this are under way alongside works to improve Motherwell railway station. Being progressed by Roads and City Deal team.

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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
13	The Council will investigate all potential options for the improvement of traffic flow, and therefore air quality, through the Chapelhall AQMA	Transport planning and infrastructure	Traffic management	NLC Roads	2019	2020	NA	Anticipated reduction in emissions in Chapelhall AQMA as a result of works	See comment	2021	In 2018/19 consultation/feasibility identified solutions to traffic congestion and poor AQ in Chapelhall. From this it is proposed to introduce chicanes in Lauchope St to prevent HGV traffic from using that route, and providing an alternative route along Lancaster Avenue. This work is planned for 2019/20.
14	The Council will ensure that air quality issues are duly considered for proposed major infrastructure projects which have the potential to impact on the Council's AQMA's	Policy Guidance and Development Control	Air quality planning and policy guidance	NLC Planning	2018	2019-21	NA	Unknown	In place	Ongoing	The Planning service will continue to ensure that applications for major infrastructure projects which will have the potential to impact on the Council's AQMA's are supported by relevant supporting information on air quality. This information will duly be submitted to NLC protective Services for comment, and the subsequent response will be taken on board in the assessment and subsequent decision on such planning applications
15	The Council will ensure that all policies in relation to the Public Sector Climate Change responsibilities will take due cognisance of air quality implications as appropriate, particularly where there is potential for adverse air quality impacts.	Policy guidance and development control	Other policy	NLC Planning	2018	2018-2021	NA	Unknown	In place	Ongoing	The Council's Carbon Management Plan 2019-2022 was published in May 2019 and commits to targeted reduction in carbon emissions. The transport aspect of this is also beneficial to a reduction in air pollution emissions from the Council's own vehicle fleet
16	The Council will continue to ensure that air quality is appropriately considered in all relevant planning applications and ensure that planning decisions and policy at both strategic and local level will take due cognisance of the Cleaner Air for Scotland (CAFS) Strategy and the Council's Air Quality Action Plan	Policy Guidance and development control	Air quality planning and policy guidance	NLC planning	2018	2018-21	NA	Unknown	In place	Ongoing	The Planning Service will continue to ensure that planning applications which have the potential to impact on air quality are supported by relevant supporting information air quality and this information will be assessed by Protective Services and matters of concern are duly considered when assessing and deciding on the planning application.

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
17	<p>The Council will endeavour to ensure the highest quality of air monitoring data is produced in order to provide robust evidence for air quality decision-making. Specifically :-</p> <ul style="list-style-type: none"> • A review, including a GIS-mapping exercise will be undertaken of all NLC operated air quality monitoring sites (automatic and non-automatic) to ensure that monitoring is being carried out at the most appropriate locations in terms of receptor exposure and sources of air pollution • The automatic air monitoring unit at Motherwell Civic Centre will be relocated to a more representative location which will enable a comparison of air quality before and after the planned road infrastructure changes and other major developments in the area • In line with new statutory requirements the Council will set up a monitoring network for PM2.5 • An updated dispersion modelling exercise will be undertaken of the A73, Monklands and Motherwell areas in order to obtain an accurate picture of air quality levels in North Lanarkshire 	Public information	Awareness-raising	NLC Protective Services	2018	2019	NA	NA	Ongoing – see comment	2019	In 2018/19 a traffic and detailed dispersion modelling study was carried out for Motherwell and Airdrie/Coatbridge area. For Motherwell this provides a baseline of information for future changes to the road network etc. as part of the Ravenscraig development.
18	The Council will ensure that air quality is included within the Council's input to the NHS Lanarkshire Joint Health Protection Plan and carry out work with local health boards to improve awareness of air pollution as a public health issue	Public information	Other	NLC Protective Services NHS Lanarkshire	2018-21	2018-21	NA	NA	NA	NA	This information is requested by NHS Lanarkshire at the time they are preparing their report.
19	The Council commits to working with neighbouring authorities where appropriate on air quality projects to ensure consistency of approach as well as raising awareness of air quality issues among a wider audience	Public information	Joint/partnership working	NLC Neighbouring authorities	2018	2018-21	NA	Unknown	In place	ongoing	In 2018/19 we began a project with South Lanarkshire Council to create a map of walking/cycling routes into Strathclyde park. Initiative continued into 2019/20 and corresponding app also created.

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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	The Council pledges to carry out awareness-raising of air quality issues with communities and schools. Part of this will involve taking part in National Clean Air Day as well as other relevant air quality initiatives and events	Public information	Awareness raising	NLC protective Services NLC Roads	2018	2018-21	NA	Unknown	In place	ongoing	In 2018/19 National Clean Air Day learning session on AQ carried out at New Stevenson Primary. Attend/provide input to any relevant school projects, led by either PS or Roads, as requested.
21	<p>Planning Policy</p> <ul style="list-style-type: none"> The Council pledges to develop planning policy to reflect the increasing demand/requirement for Electric Vehicle charging points in new public and private development Planning guidance for developers will be updated to reflect current best practice including guidance on domestic wood burning, commercial heating and biomass 	Policy guidance and development control	Low emissions strategy/air quality planning and policy guidance	NLC Planning	2018	2018	NA	NA	In place	Ongoing	<p>The Modified Proposed Local Development Plan has policy provisions for the provision of EV charging points, where appropriate, as part of its Quality of Development policy.</p> <p>Any new guidance will be developed in association with the Adoption of the LDP. A commitment has been made to update guidance related to renewable technologies.</p>
22	The Council will undertake a feasibility study into strategic planting of "green wall" structures in relevant areas of North Lanarkshire	NA	NA	NLC/External agency	2018-21	2020-2021	NA	Unknown at this time	No progress to date	2021	No comment at this stage

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 <https://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 which was prepared some years ago. One of the action plan measures within the updated Air Quality Action Plan is to update this WTP and to this end in the past year an updated Workplace Travel Survey has been carried out to gather information on staff travel to work, travel at work etc. in the coming year the results of this survey will be scrutinised and taken forward as appropriate.

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's Carbon Management Plan 2019-2022 published in May commits to a further targeted reduction (21%) from the revised baseline year 2015/16. Over the period of the previous plan there was a reduction in emissions by the council's fleet and 'grey' fleet (business mileage). In part, this has been achieved via the council improving its Euro 6 compliance and increasing its electric vehicles. The low emission vehicle fleet stands at 31 (5 hybrids and 26 fully electric vehicles). On 20th June, the council declared a climate emergency and is seeking to bring forward its plans to reduce carbon emissions to zero by 2030.

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 Eco Stars. 2018 saw us build on our membership to 186 members, which includes 7268 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 concentrations of the main air pollutants compare with the objectives.

North Lanarkshire Council undertook automatic (continuous) monitoring at 10 sites during 2018, however significant issues were experienced throughout the year. Data logging issues resulted in significant loss of data for all non-FIDAS automatic monitoring sites. The data logging issues were compounded by gas supply issues. Table A.1 in Appendix A shows the details of the sites. National monitoring results are available at www.scottishairquality.co.uk

The location of the monitoring sites are provided in the interactive map on the Scottish air quality website at www.scottishairquality.scot/latest 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 NO₂ at 84 sites during 2018. Table A.2 in Appendix A shows the details of the sites.

Maps showing the location of the monitoring sites are provided in the interactive map on the Scottish air quality website at www.scottishairquality.scot/latest/diffusion-sites

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 (NO₂)

Table A.3 in Appendix A compares the ratified and adjusted monitored NO₂ annual mean concentrations for the past 5 years with the air quality objective of 40µg/m³.

Measured annualised concentrations were low in 2018, both significantly below the NAQS annual mean objective and also the lowest measured concentrations at each site over the last 5 year period. Data capture rates on which the annualised concentrations were based are each less than 30%, therefore the data should be treated with caution.

Consistent with previous years the highest measured concentrations were recorded at the automatic monitoring station in Chapelhall. The level was below national air quality objective level however the low data capture rate of <30% should be borne in mind.

Measured passive diffusion tube concentrations were broadly consistent with preceding years, although it was noted that kerbside measured concentrations were typically marginally higher in 2018. Annual mean Nitrogen Dioxide (NO₂) concentrations in excess of the annual mean objective levels were measured at two locations in 2018, passive diffusion tube sites DT61 and DT63, both newly located sites on Central Way, Cumbernauld. The sites are not located at areas of relevant public exposure for the annual mean objective and were located there to determine indicative hourly mean NO₂ concentrations relevant to the bus station at this location.

The only other locations at which monitoring indicated elevated annual mean NO₂ concentrations (within approx. 10% of the objective level) were at DT62 (further monitoring at Central Way, Cumbernauld) and at DT100, a roadside monitoring station at Civic Centre, Motherwell. The site at DT100 is located within the Motherwell AQMA and although elevated was below the air quality objective.

It is noted that a significant reduction (approx. 10%) in measured annual mean NO₂ concentrations at Lauchope Street, within the Chapelhall AQMA, was observed in 2018. Measured concentrations at Lauchope Street have returned to pre-2017 measured levels, reversing the significant increase noted in the 2017 APR.

Measured concentrations at all other sites were substantially below NAQS objective levels.

For diffusion tubes, the full 2018 dataset of monthly mean values is provided in Appendix B.

Table A.4 in Appendix A compares the ratified continuous monitored NO₂ hourly mean concentrations for the past 5 years with the air quality objective of 200µg/m³, not to be exceeded more than 18 times per year. No exceedances of the hourly mean objective level were measured in 2018. There were no measured annual mean concentrations in excess of 60 µg/m³ in 2018, indicating that further exceedance of the 1-hour mean objective is unlikely at any of the monitoring sites.

3.2.2 Particulate Matter (PM₁₀)

Table A.5 in Appendix A compares the ratified and adjusted monitored PM₁₀ annual mean concentrations for the past 5 years with the air quality objective of 18µg/m³.

There were no measured exceedances of the annual mean objective in 2018. With the exception of the Croy analyser measured concentrations were lower than in 2017, continuing the downward trend from 2013. As with NO₂, low data capture rates were experienced at a number of the automatic monitoring sites, therefore the data should be treated with caution.

Table A.6 in Appendix A compares the ratified continuous monitored PM₁₀ daily mean concentrations for the past 5 years with the air quality objective of 50µg/m³, not to be exceeded more than 7 times per year. There were no exceedances of the 24-hour objective measured in 2018.

3.2.3 Particulate Matter (PM_{2.5})

Table A.7 in Appendix A compares the ratified and adjusted monitored PM_{2.5} annual mean concentrations for the past 5 years with the air quality objective of 10µg/m³.

Monitoring of PM_{2.5} was undertaken at six sites in 2018, an increase from the single site in 2017, and measured concentrations were substantially below (50%) the annual mean objective level. The highest measured concentration was at Croy, although the concentration remained substantially below the NAQS objective level.

3.2.4 Sulphur Dioxide (SO₂)

Following a number of years of monitoring with no measured exceedances of SO₂ and with the agreement of the Scottish Government the monitoring of SO₂ in North Lanarkshire ceased at the beginning of 2018.

3.2.5 Carbon Monoxide, Lead and 1,3-Butadiene

Historically, CO monitoring was undertaken at one site, Croy, where measured concentrations were substantially below the CO objectives, with no exceedances of the standards noted. Monitoring was discontinued at the end of 2017. No monitoring was undertaken for Lead or 1,3-Butadiene concentrations within the Council area in 2018. 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 and Transportation Team were consulted on changes to traffic flows on roads within the area in 2018, 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 new 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 – Roads have not advised of any new roads that meet this criteria
- Roads with significantly changed traffic flows – Roads have not advised of any new roads that meet this criteria
- Bus or coach stations – there are no new bus or coach stations to report.

In addition to the responses above details of the following roads and transportation projects have been supplied.

- NLC Roads are currently looking to carry out works in Chapelhall aimed at reducing the through flow of heavy goods vehicles. They are intending to introduce chicanes on Lauchope Street, and to provide an alternative route via Lancaster Avenue, which would have the intention of reducing through traffic in the village centre and potential conflict with school children and village retail/amenity users. This would also reduce the volume of traffic going onto the A73 from the junction with Lauchope Street. These works will directly impact on the Chapelhall AQMA and if successful would be beneficial in reducing congestion at the junction of Main Street/Lauchope Street where the Council's automatic air monitor is situated.
- Also on the A73 the Council is looking to alter the junction of the A73 with South Biggar Road. Currently a staggered junction the proposals intend to change the junction to a straight, signalled crossroads to facilitate traffic crossing the A73 from Airdrie Town Centre towards the Petersburn area. This is a bus route and buses have traditionally been having difficulty getting out of

the junction due to the traffic, causing additional idling time. Funding has been allocated from SPT to carry out this work in 2019/20.

- Again on the A73, the Council is currently undertaking a feasibility study at the junction of Brownsburn Rd/Petersburn Rd. This is also a staggered junction and traffic is having difficulty entering the A73. It is not possible to alter the alignment of this stretch of the road however the Council is looking at creating wider lanes with filter lanes and signal controlled crossings to allow greater flow of traffic. Again this work is supported by SPT and is in feasibility stage this year, and it is hoped that some of the improvement work will be carried out next financial year (2020/21).

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 are regularly stationary for 15 minutes - no relevant sources within 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 was consulted for information in relation to industrial sources in North Lanarkshire. The following information was supplied.

- Industrial installations : new or proposed installations for which an air quality assessment has been carried out in North Lanarkshire – SEPA has advised that they have responded to two planning applications for industrial uses in the North Lanarkshire area in 2018:-
 - Planning reference 18/00736/FUL – short-term operating reserve gas powered electricity generating plant (18 MW capacity) including compound and ancillary equipment and associated works, W H Malcolm, Block 20, Edinburgh Rd, Newhouse, North Lanarkshire.
 - Planning reference 18/00180/AMD – alterations to approved plans for Energy from Waste (EfW) processing Building (planning permission ref.

09/00675/FUL), land at former Shanks & McEwan, 251 Glasgow and Edinburgh Road, Coatbridge, North Lanarkshire.

- Industrial installations : existing installations where emissions have increased substantially or new relevant exposure has been introduced – SEPA confirmed that there were no substantial variations in 2018
- Industrial installations : new or significantly changed installations with no previous AQ assessment – SEPA have advised that there were no new PPC permits recorded in 2018
- Major fuel depots storing petrol – there are no major fuel storage depots storing petrol in North Lanarkshire
- Petrol stations – information from NLC Trading Standards service has confirmed that there are 54 premises with a Petroleum Licence in North Lanarkshire. The vast majority are retail petrol stations. In addition to this there are 5 non retail forecourt filling station sites – few using fuel for own use and a couple of sites that fuel aircraft or boats. One site is new in 2018.
- Poultry farms – SEPA confirmed that there are no poultry farms in North Lanarkshire

4.4 Commercial and Domestic Sources

SEPA confirmed the following information in their response to our request for information on this.

- Biomass combustion plant (individual installations) – no information provided from SEPA regarding this. From Council perspective not aware of any relevant individual biomass combustion plant installations.
- Areas where the combined impact of several biomass combustion sources may be relevant – no information provided from SEPA regarding this. From Council perspective we are not aware of any relevant impact from several biomass combustion sources.
- Combined Heat and Power (CHP) plant - SEPA does not regulate CHP Plants less than 1 megawatt, unless burning waste and there are none in the North Lanarkshire area. SEPA believe there are a few CHP running under Part A permits as Directly Associated were provided both heat and power to the installations but they do not believe there to be any permitted in their own right.

- Areas where domestic solid fuel burning may be relevant – there are no areas in North Lanarkshire where domestic solid fuel burning is relevant.

4.5 New Developments with Fugitive or Uncontrolled Sources

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

- Landfill sites – there are no new landfill sites with fugitive or uncontrolled sources of PM
- Quarries – there are no new quarries with fugitive or uncontrolled sources of PM. A paragraph 19 exemption was registered for the existing Croy quarry in 2018.
- Unmade haulage roads on industrial sites – neither SEPA nor the Council are aware of any unmade haulage roads on industrial sites with fugitive or uncontrolled sources of PM.
- Waste transfer stations – SEPA have advised that they are aware of two new Waste Transfer Stations from 2018, details as follows
 - WML/L/1164170 – ENVO Energy, Flemington Ind Park, Motherwell, issued 12/04/2018
 - WML/L/1164188 – Pro Tyre, Unit 5 Centre Space, Shotts, issued 12/04/2018
- Other potential sources of fugitive particulate matter emissions – none.

5. Planning Applications

North Lanarkshire Council Planning and Development Management Service were consulted for details of any relevant major planning applications under consideration and planning applications which were granted planning consent in 2018 that have the potential to impact on local air quality. All relevant information is presented in Table 5.1 below.

Table 5.1 – Relevant Planning Applications from 2018

Application Number	Brief Description of Development	AQ Impact	Comments/Further info
16/02400/FUL And amendment 18/00222/AMD	Residential development (196 houses) and associated infrastructure, Main St, Chryston	AQIA requested and subsequently submitted by developer. Negligible impact predicted and not in or near AQMA	Further information available at :- https://eplanning.northlanarkshire.gov.uk/online-applications/
15/91792/PPP	Mixed use development comprising 400 houses, local retail and community/healthcare provision, associated roads and infrastructure	Outline planning permission granted. AQIA to be requested at detailed planning application stage.	Further information available at :- https://eplanning.northlanarkshire.gov.uk/online-applications/
17/00887/PPP	Residential development and associated works (in principle). Site East and West of Airdrie Rd and South of Luggie Water, Condorrat, Cumbernauld	AQIA requested and subsequently submitted by developer. Negligible impact predicted and not in/near AQMA	Further information available at :- https://eplanning.northlanarkshire.gov.uk/online-applications/
17/01090/FUL	Residential development of 111 houses at Meadowhead Rd, Craigneuk, Wishaw	No AQIA required due to size and location of development as not in/near AQMA	Further information available at :- https://eplanning.northlanarkshire.gov.uk/online-applications/
18/00498/FUL	Residential development of 122 houses with parking and amenity space at Smithstone development, Cumbernauld	Ongoing development in area. AQIA not requested as not in/near AQMA	Further information available at :- https://eplanning.northlanarkshire.gov.uk/online-applications/
17/01664/FUL	Residential development of 64 dwellings at site south of Orchid Place, Uddingston	No AQIA requested due to size of development plus location is not in/near AQMA	Further information available at :- https://eplanning.northlanarkshire.gov.uk/online-applications/
13/02351/FUL	Residential development of 90 dwellings at Lanrig Holdings, Gartferry Rd, Chryston	No AQIA requested due to size and location – not in/near AQMA	Further information available at :- https://eplanning.northlanarkshire.gov.uk/online-applications/
17/00864/PPP	Residential development in principle at Wishaw Low Road,	No AQIA requested at this stage due to	Further information available at :- https://eplanning.northlanarkshire.gov.uk/online-applications/

	Cleland	location. Likely that AQIA will be requested at detailed planning stage	applications/
18/00266/PPP	Mixed use development comprising Class 3 (Food & Drink), Class 7 (Hotel), Class 11 (Assembly/Leisure), Ancillary Retail, Roadside Fuel/charging, hot food takeaway and associated infrastructure	AQIA requested and subsequently submitted by developer. AQIA predicted not significant effect on air quality. Application granted.	Further information available at :- https://eplanning.northlanarkshire.gov.uk/online-applications/
18/00834/FUL	Residential development of 58 dwellings at Lismore Drive, Old Monkland, Coatbridge	No AQIA requested due to size of development plus location not in/near AQMA	Further information available at :- https://eplanning.northlanarkshire.gov.uk/online-applications/
17/01586/FUL	Residential development – 100 houses at Paxtane Farm, Eastfield, Harthill.	No AQIA requested due to location – not in or near AQMA	Further information available at :- https://eplanning.northlanarkshire.gov.uk/online-applications/
18/00189/PASE And 18/00180/AMD and 17/01578/AMD	Application for proposed Energy from Waste scheme at land at former Shanks and McEwan site at 251 Glasgow and Edinburgh Rd (A8), Coatbridge, ML5 4UG. See below for further detail	See below for narrative on this proposed development	Further information available at :- https://eplanning.northlanarkshire.gov.uk/online-applications/

Planning application reference number 18/00180/AMD relates to a proposed Energy from Waste (EfW) process at the former Shanks & McEwan site, Glasgow and Edinburgh Road, Carnbroe, Coatbridge. This application was refused planning permission in April 2018. Subsequently the applicant appealed and the Scottish Ministers deemed that the application needed an EIA which the appellant has now submitted for appraisal. The Council has engaged a consultant to review the EIA on our behalf given the complex nature of the proposal. The matter is still under consideration.

6. Conclusions and Proposed Actions

6.1 Conclusions from New Monitoring Data

Conclusions from the 2018 monitoring data can be summarised as follows:-

- Significant issues were experienced in automatic monitoring in 2018 as a result of data logging issues in the Council's non-FIDAS analysers. This was further compounded by gas supply issues. Consequently data capture rates in the non-FIDAS automatic analysers was low in 2018. This is noted in the tables of results.
- For NO₂ all measured annualised concentrations were below the national air quality objectives but data capture rate was less than 30% in cases so the results should be treated with caution. 2018 results continued the ongoing downward trend in annual mean levels of NO₂.
- All Passive Diffusion Tubes were below national air quality objectives with the exception of two sites (DT61 and DT63) at Central Way, Cumbernauld. Neither site are in areas of relevant public exposure. In the coming reporting year particular attention will be paid to the newer located passive diffusion tube sites and any further action will be taken as required.
- As the data logging issues are in the process of being resolved, additional scrutiny of data capture and monitoring data will be undertaken at these sites to ensure new logging system is operating effectively.
- Measured concentrations of PM₁₀ across our monitoring network have shown compliance with national air quality objectives for both annual mean and hourly mean concentrations. 2018 continued the ongoing downward trend in PM₁₀ concentrations across the area, with the exception of Croy, which showed an increase from 2017, but still remained well below the objective levels. As with the automatic results for NO₂ the data capture at the non-FIDAS monitoring stations was low and therefore the data should be treated with caution.
- In 2018 there were six sites monitoring PM_{2.5} in North Lanarkshire. All measured concentrations were substantially below (50%) the annual mean objective level. Monitoring of PM_{2.5} will continue at these locations in 2019.

6.2 Conclusions relating to New Local Developments

Due cognisance has been taken of the outcome of consultation with the planning department and in reviewing air quality impact assessments that were submitted in support of planning applications in 2018. In conclusion to this it was decided that there are no significant issues in relation to new local developments. This is as a result of the proposed developments not being located 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 colleagues in planning to identify any future developments that may present air quality issues, and take any action deemed appropriate.

6.3 Proposed Actions

North Lanarkshire Council intends to focus on the following areas of work in the coming reporting year (2019):

- One of our main priorities for 2019/20 will be to resolve the data storage/communication issue that we have had since 2018/19. We have purchased a new software package which is in the process of being installed. This will enable us to view data, run reports etc. from our non-FIDAS automatic monitoring stations.
- Automatic air quality monitoring will continue at all existing sites, with the exception of the Civic Centre site in Motherwell. This site is in the process of being relocated to a more representative location within the nearby area. Work on this should be completed by Autumn 2019. All other automatic sites will continue as they are. We are intending to purchase a new PM₁₀/PM_{2.5} analyser to replace the existing, ageing TEOM in the Whifflet monitoring station. This will further augment our existing network of PM_{2.5} analysers.
- In terms of our network of Nitrogen Dioxide (NO₂) diffusion tubes we intend to closely monitor the newer sites we have set up, and take any action necessary. We also intend to re-number all our diffusion tubes to make them easier to report on. It is hoped this will be set up in time for the new calendar year.
- We will undertake a study to verify our proposed decision to revoke the Croy AQMA. The automatic air monitor at this AQMA has consistently shown a significant and sustained decrease in air pollution levels for the past few years

and the decision to move towards revocation has been endorsed by both the Scottish Government and SEPA.

- A significant amount of work is planned for the coming year around raising awareness of air pollution and the promotion of sustainable travel choices. A publicity campaign will be undertaken using the slogan Choose Clean Air and this will involve bus shelter advertising etc. throughout the area.
- The joint North/South Lanarkshire Council map and app project of walking/cycling routes into Strathclyde Park will be further promoted, with a launch of the map/app in Summer 2019, distribution of leaflets and installation of signage for the map. In addition to this, other potential for joint projects between both authorities will be investigated and taken forward if possible.
- The Council's Eco Stars scheme will continue to be progressed in 2019/20. It is hoped that the joint workshop will be held with South Lanarkshire Council, particularly aimed at bus operators to increase their uptake of the scheme.

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) ⁽¹⁾	Distance to kerb of nearest road (m) ⁽²⁾	Inlet Height (m)
CM1	Chapelhall	Roadside	278174	663124	NO ₂ ; PM ₁₀ ;PM _{2.5}	Y	FIDAS	20	10	2
CM2	Croy	Special – by quarry	272775	675738	PM ₁₀ ;NO ₂	N	Chemiluminescent; FIDAS	30	10	2
CM3	Whifflet (Coatbridge)	Urban background	273674	663927	NO ₂ ;PM ₁₀	Y	Chemiluminescent; TEOM	20	30	2
CM4	Menteith Rd (Motherwell)	Roadside	275458	656792	NO ₂ ;PM ₁₀	Y	FIDAS	20	8	2
CM5	Shawhead (Coatbridge)	Roadside	273411	662997	NO ₂ ; PM ₁₀ ;PM _{2.5}	Y	Chemiluminescent; FIDAS	22	20	2
CM6	Kirkshaws (Coatbridge)	Roadside	272523	663030	NO ₂ ;PM ₁₀ ; PM _{2.5}	Y	Chemiluminescent; FIDAS	20	8	2
CM7	New Edinburgh Rd	Roadside	269144	661496	PM ₁₀ ;NO ₂	N	Chemiluminescent; BAM	30	10	2
CM8	Sunnyside Rd,	Roadside	273056	665234	PM ₁₀ ;NO ₂	N	Chemiluminescent;	30	10	2

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) ⁽¹⁾	Distance to kerb of nearest road (m) ⁽²⁾	Inlet Height (m)
	Coatbridge						BAM			
CM9a	Cumbernauld (before 2015)	Mobile Lab	274117	674020	PM ₁₀ ;NO ₂	N	Chemiluminescent; TEOM	NA	NA	NA
CM9b	Civic Centre, Motherwell (from 2015)	Mobile Lab	275788	656219	PM ₁₀ ;NO ₂	Y	Chemiluminescent; TEOM	50	15	3
CM10	Kenilworth Dr (Airdrie)	Roadside	277385	665837	PM ₁₀ ;NO ₂	N	Chemiluminescent; BAM	30	10	2

(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) ⁽¹⁾	Distance to kerb of nearest road (m) ⁽²⁾	Tube collocated with a Continuous Analyser?
DT10	Castle Court, Castlecary	Roadside	278528	677864	NO ₂	N	10	2	N
DT47	Layby in Stand	Roadside	276538	668899	NO ₂	N	10	2	N
DT48	Bus stop, Bron Way, Cumbernauld	Kerbside	275920	674203	NO ₂	N	10	2	N
DT49	Swimming Pool, Kilsyth	Kerbside	271514	678040	NO ₂	N	50	2	N
DT50	1791 Cumbernauld Rd, Stepps	Kerbside	265198	668204	NO ₂	N	25	2	N
DT51	131 Cumbernauld Rd, Stepps	Kerbside	265971	668567	NO ₂	N	30	2	N
DT52	Traffic lights A80, Eastbound, Moodiesburn	Kerbside	269966	670412	NO ₂	N	30	2	N
DT53	Traffic lights Westbound, A80, Moodiesburn	Kerbside	269986	670400	NO ₂	N	10	2	N
DT54	Lochend Rd/Coatbridge Rd, Gartcosh A752	Urban background	269828	668354	NO ₂	N	20	2	N
DT55	Whitelaw Rd end, Glenboig	Urban	272614	668138	NO ₂	N	50	2	N

Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA?	Distance to Relevant Exposure (m) ⁽¹⁾	Distance to kerb of nearest road (m) ⁽²⁾	Tube collocated with a Continuous Analyser?
		background							
DT56	Garnqueen Ave, lamp post LHSO, Glenboig	Urban background	271751	668432	NO ₂	N	50	2	N
DT57	Main St/Carrick View jcn, Glenboig	Urban background	272030	668564	NO ₂	N	10	2	N
DT58	Lochend Rd/Coatbridge Rd, Gartcosh (A752)	Urban background	269828	668354	NO ₂	N	20	2	N
DT59	10-16 Coronation Pl, Mount Ellen	Urban background	269356	669173	NO ₂	N	20	2	N
DT61	Under bridge Central Way East Cumbernauld	Roadside	275778	674440	NO ₂	N	10	2	N
DT62	Central Way A Westbound, Cumbernauld	Roadside	275920	674511	NO ₂	N	10	2	N
DT63	Central Way B Westbound, Cumbernauld	Roadside	275642	674271	NO ₂	N	10	2	N

Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA?	Distance to Relevant Exposure (m) ⁽¹⁾	Distance to kerb of nearest road (m) ⁽²⁾	Tube collocated with a Continuous Analyser?
DT64	Under bridge Central Way west, Cumbernauld	Roadside	275666	674293	NO ₂	N	10	2	N
DT100	Civic Centre, Motherwell	Roadside	275820	656208	NO ₂	Y	10	2	N
DT101	Shields Rd, Motherwell	Roadside	274594	655113	NO ₂	N	15	2	N
DT102	Emily Dr, Motherwell	Urban background	275437	655696	NO ₂	N	15	2	N
DT103	Kethers Lane, Motherwell	Urban background	273986	656985	NO ₂	N	10	2	N
DT104	Coursington Rd, Motherwell	Urban background	276178	657344	NO ₂	N	20	2	N
DT105	Craigneuk Rd, Carfin	Urban background	277244	658415	NO ₂	N	10	2	N
DT106	Camp St, Motherwell	Urban background	275654	656342	NO ₂	N	10	2	N
DT107	Braehead Farm, Bargeddie	Roadside	270929	663464	NO ₂	N	500	50m to A8	N

Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA?	Distance to Relevant Exposure (m) ⁽¹⁾	Distance to kerb of nearest road (m) ⁽²⁾	Tube collocated with a Continuous Analyser?
DT108	MSA Factory, Coatbridge	Roadside	273830	662676	NO ₂	N	500	50m to A8	N
DT110	New Edinburgh Rd (1), M74, Uddingston	Roadside	272789	675735	NO ₂	N	30	2	N
DT111	New Edinburgh Rd (2), M74, Uddingston	Roadside	272789	675735	NO ₂	N	15	2	N
DT112	New Edinburgh Rd (3), m74, Uddingston	Roadside	272789	675735	NO ₂	N	10	2	N
DT113	Tinkers Lane, Motherwell	Roadside	274305	656466	NO ₂	N	20	2	N
DT114	Main St, Overtown	Kerbside	280370	653072	NO ₂	N	15	2	N
DT115	Plantation Rd/ Ravenscraig Bypass, Ravenscraig	Kerbside	277282	657607	NO ₂	N	15	2	N
DT116	Delburn St, Motherwell	Urban background	275981	656111	NO ₂	Y	80	2	N
DT117	Hamilton Rd, Motherwell	Urban background	275091	656986	NO ₂	N	20	2	N

Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA?	Distance to Relevant Exposure (m) ⁽¹⁾	Distance to kerb of nearest road (m) ⁽²⁾	Tube collocated with a Continuous Analyser?
DT118	Shawhead roundabout (site changed number in 2017 to newDT119 – see later in table)	Kerbside	273432	662965	NO ₂	Y	30	2	N
DT119	Kirkshaws Rd, Coatbridge	Kerbside	273432	662965	NO ₂	Y	30	2	N
DT120	Watsonville, Motherwell	Kerbside	275237	656662	NO ₂	Y	10	2	N
DT121	Flannigan Grove, Bellshill	Urban background	273180	660350	NO ₂	N	30	2	N
DT122	Main St, Mossend	Roadside	274082	660308	NO ₂	N	60	2	N
DT123	Hamilton Rd, Orbiston, Bellshill	Kerbside	272687	659512	NO ₂	N	20	2	N
DT124	Scotmid, Tannochside	Kerbside	270073	661870	NO ₂	N	20	2	N
DT125	Main St nr Motherwell Rd, Bellshill	Kerbside	273767	660281	NO ₂	N	25	2	N
DT126	Main St nr Tesco, Bellshill	Kerbside	273541	660339	NO ₂	N	2	2	N
DT129	Newmains Police Station	Roadside	282392	656016	NO ₂	N	7	2	N

Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA?	Distance to Relevant Exposure (m) ⁽¹⁾	Distance to kerb of nearest road (m) ⁽²⁾	Tube collocated with a Continuous Analyser?
DT130	Main St (bottom), Wishaw	Roadside	279118	655327	NO ₂	N	5	2	N
DT131	Brandon Place, Bellshill	Roadside	279118	655327	NO ₂	N	5	2	N
DT132	Airdrie Rd, Caldercruix	Roadside	281713	667517	NO ₂	N	10	2	N
DT133	Coatbridge 1, Bank St	Roadside	272887	664991	NO ₂	N	2	2	N
DT134	Coatbridge 2, Whifflet Court	Kerbside	273655	664003	NO ₂	Y	10	20	N
DT135	Grahamshill St, Airdrie	Kerbside	277276	665615	NO ₂	N	10	2	N
DT136	Airdrie 3, Springwells Cres	Roadside	274162	674130	NO ₂	N	30	2	N
DT137	Auchenkilns, Cumbernauld	Roadside	274164	674130	NO ₂	N	30	2	N
DT138	Chapelhall, Main St (nr shops)	Roadside	278037	662798	NO ₂	Y	10	2	N
DT139	Lauchope St, Chapelhall jcn Main St	Roadside	278178	663111	NO ₂	Y	10	2	N
DT140	Dundyvan Rd, Coatbridge	Kerbside	273293	664120	NO ₂	N	5	1	N
DT141	Main St (1), Harhill (nr shops)	Kerbside	290652	664493	NO ₂	N	10	2	N

Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA?	Distance to Relevant Exposure (m) ⁽¹⁾	Distance to kerb of nearest road (m) ⁽²⁾	Tube collocated with a Continuous Analyser?
DT142	Salsburgh, house no 337, R15	Roadside	283850	663082	NO ₂	N	15	30	N
DT143	Harthill Main St (2), nr shops	Roadside	290482	664386	NO ₂	N	10	2	N
DT144	Lab 1, Constarry Rd, Croy	Roadside	272789	675735	NO ₂	Y	100	5	Y
DT145	Lab 2, Constarry Rd, Croy	Roadside	272789	675735	NO ₂	Y	100	5	Y
DT146	Lab 3, Constarry Rd, Croy	Roadside	272789	675735	NO ₂	Y	100	5	Y
DT147	Bank St, Coatbridge (nearest house)	Roadside	272947	665037	NO ₂	N	15	0	N
DT148	Main St, Chapelhall, R32	Kerbside	278105	663174	NO ₂	Y	15	2	N
DT149	Main St, Chapelhall, R33	Kerbside	278119	663075	NO ₂	Y	15	2	N
DT150	Eastfield Rd, Cumbernauld	Kerbside	275160	676210	NO ₂	Y	25	2	N
DT151	Main St, Holytown	Urban background	276635	660569	NO ₂	N	10	2	N
DT152	Coatbridge Rd, Townhead (shops)	Roadside	272391	665824	NO ₂	N	10	2	N
DT153	72 Townhead Rd, Coatbridge	Roadside	271720	666053	NO ₂	N	20	2	N

Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA?	Distance to Relevant Exposure (m) ⁽¹⁾	Distance to kerb of nearest road (m) ⁽²⁾	Tube collocated with a Continuous Analyser?
DT154	Sunnyside Rd, Coatbridge	Roadside	273042	665176	NO ₂	N	20	2	N
DT156	Stirling St, Airdrie	Roadside	276005	665406	NO ₂	N	50	2	N
DT157	31 Station Rd, Muirhead	Roadside	268442	669262	NO ₂	N	15	2	N
DT158a	Croftmoraig Ave, Moodiesburn	Kerbside	270281	671715	NO ₂	N	15	2	N
DT158b	Deedes St, Airdrie	Roadside	274819	665005	NO ₂	N	7	2	N
DT159	Glenview Cres, Moodiesburn	Roadside	270391	671505	NO ₂	N	10	2	N
DT160	The Cuillins, Moodiesburn	Roadside	270067	671604	NO ₂	N	10	2	N
DT161	Bridgend Cres, Moodiesburn	Roadside	269071	670889	NO ₂	N	1	1	N
DT162	Auchingoch Rd, Moodiesburn	Roadside	269022	670979	NO ₂	N	2	1	N
DT163	12 Inchwood Rd, Westfield, Cumbernauld	Roadside	273098	673321	NO ₂	N	10	1	N
DT164	12 Leckethill Ct, Westfield, Cumbernauld	Roadside	272634	672994	NO ₂	N	10	1	N

Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA?	Distance to Relevant Exposure (m) ⁽¹⁾	Distance to kerb of nearest road (m) ⁽²⁾	Tube collocated with a Continuous Analyser?
DT165	Kildonan St, Coatbridge	Roadside	273727	665285	NO ₂	N	20	2	N
DT166	22 Cumbernauld Rd, Chryston	Roadside	268392	669502	NO ₂	N	10	2	N
NewDT54	Columba Ct/Old Edin Rd, Viewpark, Uddingston	Roadside	271259	661016	NO ₂	N	15	2	N
NewDT55	Old Edinburgh Rd, Viewpark, Uddingston	Roadside	270463	661441	NO ₂	N	15	2	N
NewDT56	Bargeddie	Roadside	270201	664281	NO ₂	N	10	2	N
NewDT102	Windmillhill Street 1, Motherwell	Roadside	275738	656400	NO ₂	Y	50	1	N
NewDT103	Windmillhill Street 2, Motherwell	Roadside	275733	656439	NO ₂	Y	20	1	N
NewDT106	Civic Centre 1, Motherwell	Roadside	275911	656237	NO ₂	Y	100	30	Y
NewDT107	Civic Centre 2, Motherwell	Roadside	275911	656237	NO ₂	Y	100	30	Y
NewDT108	Civic Centre 3, Motherwell	Roadside	275911	656237	NO ₂	Y	100	30	Y
NewDT116	Airbles Rd (Electric Bar), Motherwell	Roadside	274814	656147	NO ₂	N	15	5	N

Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA?	Distance to Relevant Exposure (m) ⁽¹⁾	Distance to kerb of nearest road (m) ⁽²⁾	Tube collocated with a Continuous Analyser?
NewDT118	Merry St/Dalziel St, Motherwell	Roadside	275444	657312	NO ₂	N	15	5	N
NewDT119	Shawhead roundabout, Coatbridge (long-standing site, re-numbered from DT118 to DT119 in 2017)	Kerbside	273432	662965	NO ₂	Y	30	2	N
NewDT120	Kirkshaws Rd, Coatbridge	Roadside	271939	663179	NO ₂	Y	10	2	N
NewDT127	Matalan, Wishaw	Kerbside	278059	655368	NO ₂	N	10	2	N
NewDT128	Wishaw Cross/Stewarton St, Wishaw	Roadside	279587	655125	NO ₂	N	30	2	N
NewDT137	Main St, Village, Cumbernauld	Roadside	276710	676098	NO ₂	N	10	2	N
NewDT141	Station Rd, Shotts	Roadside	286840	656978	NO ₂	N	20	2	N
NewDT142	Stane Gdns, Shotts	Roadside	287954	659620	NO ₂	N	20	2	N
NewDT157a	Swing park, Castlecary	Roadside	278470	677901	NO ₂	N	30	2	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 NO₂ Monitoring Results

Site ID	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2018 (%) ⁽²⁾	NO ₂ Annual Mean Concentration (µg/m ³) ^{(3) (4)}				
					2014	2015	2016	2017	2018see note below
CM1 - Chapelhall	Roadside	Automatic	25.78	25.78	32.7	33.5	32	33.8	27.7
CM2 – Croy	Special – by quarry	Automatic	25.78	25.78	20	19.3	20	20.4	17.5
CM5 – Shawhead	Roadside	Automatic	29.35	29.35	32.4	36	30	28.5	20.7
CM6 – Kirkshaws	Roadside	Automatic	25.81	25.81	20.3	25	33	22	18.3
DT10 – Castle Ct, Castlecary	Roadside	Diffusion Tube	100%	100%	31.7	28.5	23.3	34.2	-
DT47 – layby in Stand	Roadside	Diffusion Tube	100%	100%	22.5	21.4	22.7	21	21.7
DT48 – Bus stop, Bron Way, Cumbernauld	Kerbside	Diffusion Tube	100%	92%	32.3	32.9	29.1	28.9	27.3
DT49 – Swimming Pool, Kilsyth	Kerbside	Diffusion Tube	100%	100%	22.1	18.8	18.3	17.4	22.5
DT50 – 1791 Cumbernauld Rd, Stepps	Kerbside	Diffusion Tube	100%	100%	25.2	24.7	21.9	22.4	21.9
DT51 – 131 Cumbernauld Rd, Stepps	Kerbside	Diffusion Tube	100%	100%	28.6	23.3	23.7	24.7	27.4
DT52-traffic lights A80 Eastbound, Moodiesburn	Kerbside	Diffusion Tube	100%	100%	25.6	22	18	17.4	25.4
DT53-traffic lights A80 Westbound, Moodiesburn	Kerbside	Diffusion Tube	100%	83%	22.6	22	20.7	20.9	22.9
DT54-Coatbridge Rd/Gartcosh Rd, Gartcosh, A752	Urban background	Diffusion Tube	-	-	24.5	24.6	21.1	22.8	-
DT55-Whitelaw Rd end, Gartcosh	Urban background	Diffusion Tube	-	-	13.6	13.6	12	9.7	-
DT56-Garnqueen Ave, Glenboig	Urban background	Diffusion Tube	-	-	14.2	14.8	12.4	14.3	-
DT57- Main St/Garrick View, Glenboig	Urban background	Diffusion Tube	100%	100%	17.1	16.7	15.9	16.2	18.1
DT58-Lochend Rd/Coatbridge Rd, Glenboig (previously called DT54, changed in	Urban background	Diffusion Tube	100%	100%	-	-	-	-	25.8

Site ID	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2018 (%) ⁽²⁾	NO ₂ Annual Mean Concentration (µg/m ³) ^{(3) (4)}				
					2014	2015	2016	2017	2018see note below
2018)									
DT59-10-16 Coronation Pl, Mount Ellen	Urban background	Diffusion Tube	100%	100%	20.8	18.8	19.3	17.2	19.8
DT61-Under bridge, Central Way, East, Cumbernauld	Roadside	Diffusion Tube	100%	100%	<u>65.1</u>	<u>74.3</u>	<u>61.5</u>	51.3	43.6
DT62-A Central Way, Westbound, Cumbernauld	Roadside	Diffusion Tube	100%	100%	41.3	44.8	38.1	38.1	39.0
DT63-B Central Way, Westbound, Cumbernauld	Roadside	Diffusion Tube	100%	100%	31.7	35.4	34.8	26.7	45.7
DT64-Under bridge, Central Way, westbound, Cumbernauld	Roadside	Diffusion Tube	100%	100%	-	-	-	-	32.2
DT100-Civic Centre, Motherwell	Roadside	Diffusion Tube	100%	100%	39.7	38.9	32.3		36.9
DT101-Shields Rd, Motherwell	Roadside	Diffusion Tube	100%	100%	23.3	24.6	24.4	23.2	24.9
DT102-Emily Dr, Motherwell	Urban background	Diffusion Tube	-	-	10.6	11.1	10	10.8	-
DT103-Kethers Lane, Motherwell	Urban background	Diffusion Tube	-	-	13.9	12.8	12.8	15.8	-
DT104-Coursington Rd, Motherwell	Urban background	Diffusion tube	100%	100%	9.6	11.6	11.7	11.9	10.5
DT105-Craigneuk Rd, Carfin	Urban background	Diffusion Tube	100%	100%	15.1	15.6	14.6	13.5	16.4
DT106-Camp St, Motherwell	Urban background	Diffusion Tube	-	-	18.1	22.6	18.7	18.2	-
DT107-Braehead Farm, Bargeddie	Roadside	Diffusion Tube	-	-	37.5	42.7	32.2	23.7	-
DT108-MSA Factory, Coatbridge	Roadside	Diffusion Tube	-	-	36.5	43.5	30.5	27.7	-
DT110-New Edinburgh Rd (1), Uddingston	Roadside	Diffusion Tube	92%	92%	33.8	31.8	33.9	33.7	33.8

Site ID	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2018 (%) ⁽²⁾	NO ₂ Annual Mean Concentration (µg/m ³) ^{(3) (4)}				
					2014	2015	2016	2017	2018 see note below
DT111-New Edinburgh Rd(2), Uddingston	Roadside	Diffusion Tube	92%	92%	36.5	38.4	29.8	31.7	30.4
DT112-New Edinburgh Rd(3), Uddingston	Roadside	Diffusion Tube	92%	92%	35	33.8	30	32.7	32.3
DT113-Tinkers Lane, Motherwell	Roadside	Diffusion Tube	100%	100%	22.6	21.5	19.2	21.8	22.0
DT114-Main St, Overtown	Kerbside	Diffusion Tube	100%	100%	17.8	17.4	17.8	19.6	17.7
DT115-Plantation Rd, Ravenscraig	Kerbside	Diffusion Tube	100%	100%	-	-	-	-	15.4
DT116-Delburn St, Motherwell	Urban background	Diffusion Tube	-	-	26.1	27.9	22.8	23.1	-
DT117-Hamilton Rd, Motherwell	Urban background	Diffusion Tube	100%	100%	53.8 (35.2)	30.2	27.5	30.3	27.4
DT118-Shawhead roundabout, Coatbridge (site changed to NewDT119 in 2018)	Kerbside	Diffusion tube	-	-	30.2	33.8	28.2	28.2	-
DT119 – Kirkshaws Rd, Coatbridge (site changed to NewDT120 in 2018)	Kerbside	Diffusion Tube	-	-	36.2	34.1	30.9	31.3	-
DT120-Watsonville, Motherwell	Kerbside	Diffusion Tube	-	-	22	17	19.4	14.8	-
DT121-Flannigan Grove, Bellshill	Urban background	Diffusion Tube	100%	100%	19.6	18.4	18.7	19.5	20.3
DT122-Main St, Mossend	Roadside	Diffusion tube	100%	100%	29.3	27.1	26.1	28.2	27.5
DT123-Hamilton Rd, Orbiston, Bellshill	Kerbside	Diffusion Tube	100%	100%	23.1	22.5	23.3	25.2	23.9
DT124-Scotmid, Tannochside	Kerbside	Diffusion Tube	91%	83%	25.8	25.4	25.9	25.6	29.5
DT125-Main St/Motherwell Rd, Bellshill	Kerbside	Diffusion Tube	100%	100%	-	-	-	-	24.4
DT126-Main St, nr Tesco, Bellshill	Kerbside	Diffusion Tube	92%	92%	21.5	18.2	22.3	19.8	20.4

Site ID	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2018 (%) ⁽²⁾	NO ₂ Annual Mean Concentration (µg/m ³) ^{(3) (4)}				
					2014	2015	2016	2017	2018see note below
DT128-Matalan, Wishaw (site number changed to NewDT127 in 2017)	Kerbside	Diffusion Tube	-	-	24.7	24.7	23.5	-	-
DT129-Newmains police Station	Roadside	Diffusion Tube	92%	92%	32.9	26.3	27	26.5	27.7
DT130-Main St, Wishaw(bottom)	Roadside	Diffusion Tube	100%	100%	15.8	14.8	15	14.4	17.1
DT131-Brandon Pl, Bellshill	Roadside	Diffusion Tube	100%	92%	-	-	18.9	19.3	19.4
DT132-Airdrie Rd, Caldercruix	Roadside	Diffusion Tube	100%	100%	-	-	-	14.3	16.8
DT133-Coatbridge 1, Bank St	Roadside	Diffusion Tube	100%	100%	32.1	27.7	26.8	33.4	30.4
DT134-Coatbridge 2, Whifflet Court	Kerbside	Diffusion Tube	100%	100%	25	20.1	23	23	19.8
DT135-Grahamshill St, Airdrie	Kerbside	Diffusion Tube	92%	92%	38.7	29	33.9	33	29.3
DT136-Airdrie 3, Springwells Crescent	Roadside	Diffusion tube	100%	100%	16.8	13.6	16.8	20.1	21.1
DT137-Auchenkilns, Cumbernauld	Roadside	Diffusion Tube	-	-	20.7	17.9	23.8	24.8	-
DT138-Chapelhall Main St (nr shops)	Roadside	Diffusion tube	100%	100%	23.6	26.9	24.3	25	22.7
DT139-Lauchope St/Chapelhall junction	Roadside	Diffusion Tube	100%	100%	35.6	33.8	30.1	39	29.4
DT140-Dundyvan Rd, Coatbridge	Kerbside	Diffusion Tube	100%	100%	23.9	20.4	21.7	23.6	21.7
DT141-Main St(1), Harthill, nr shops	Kerbside	Diffusion Tube	-	-	14.9	11.8	16.5	14.8	-
DT142-Salsburgh, house no. 337, R15	Roadside	Diffusion Tube	-	-	20.7	20.4	22	14.4	-
DT143-Main St (2), Harthill (nr shops)	Roadside	Diffusion Tube	92%	92%	19.2	17	17.8	15.9	17.8
DT144-Lab 1, Constarry Rd, Croy	Roadside	Diffusion Tube	100%	100%	15.8	14.1	16.8	17.2	17.9
DT145-Lab 2, Constarry Rd, Croy	Roadside	Diffusion Tube	100%	92%	17	14.8	18.2	17	20.4

Site ID	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2018 (%) ⁽²⁾	NO ₂ Annual Mean Concentration (µg/m ³) ^{(3) (4)}				
					2014	2015	2016	2017	2018see note below
DT146-lab 3, Constarry Rd, Croy	Roadside	Diffusion Tube	100%	100%	18.1	17.9	17	16.7	22.9
DT147-bank St, Coatbridge, nearest house	Roadside	Diffusion tube	100%	100%	31.7	26.3	30.5	31.6	28.5
DT148-Main St, Chapelhall, R32	Kerbside	Diffusion Tube	100%	100%	29.8	35.4	28.7	28.8	31.2
DT149-Main St, Chapelhall, R33	Kerbside	Diffusion tube	92%	92%	34.4	26.8	31.9	31	26.9
DT150-Eastfield Rd, Cumbernauld	Kerbside	Diffusion Tube	92%	92%	28	26.1	24.7	20.1	19.2
DT151-Main St, Holytown	Urban background	Diffusion Tube	100%	100%	20.6	19.8	21.6	24.7	24.3
DT152-Coatbridge Rd, Townhead(shops)	Roadside	Diffusion tube	100%	92%	30	32.4	25	28.9	28.6
DT153-72 Townhead Rd, Coatbridge	Roadside	Diffusion Tube	100%	100%	21.4	20.4	25	17.7	20.9
DT154-Sunnyside Rd, Coatbridge	Roadside	Diffusion tube	100%	100%	32.9	28.5	26.8	33.9	24.7
DT156-Stirling St, Airdrie	Roadside	Diffusion tube	92%	92%	37	32.9	27.5	33.8	30.9
DT157-31 Station Rd, Muirhead	Roadside	Diffusion Tube	83%	83%	27.1	25.4	22.4	25.6	34.1
DT158a-Croftmoraig Cres, Moodiesburn	Roadside	Diffusion Tube	92%	92%	27.1	-	16.7	17.9	18.4
DT158b-Deedes St, Airdrie	Roadside	Diffusion Tube	100%	100%	-	-	27.4	34.4	29.5
DT159-Glenview Cres, Moodiesburn	Roadside	Diffusion tube	92%	92%	20.4	-	16.1	15.7	17.7
DT160-The Cuillins, Moodiesburn	Roadside	Diffusion Tube	92%	92%	-	-	17	15.7	17.6
DT161-Bridgend Cres, Moodiesburn	Roadside	Diffusion tube	100%	100%	16	18.3	14.9	14.6	16.8
DT162-Auchingoch Rd, Moodiesburn	Roadside	Diffusion tube	100%	100%	19.2	17.2	17.1	19.5	19.4
DT163-12 Inchwood Rd,	Roadside	Diffusion tube	100%	100%	17.2	18.9	21.7	22.8	22.8

Site ID	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2018 (%) ⁽²⁾	NO ₂ Annual Mean Concentration (µg/m ³) ^{(3) (4)}				
					2014	2015	2016	2017	2018 see note below
Westfield, Cumbernauld									
DT164-12 Leckethill Ct, Westfield, Cumbernauld	Roadside	Diffusion Tube	92%	92%	41.3 (32.9)	31.3	17.8	18.2	19.5
DT165-Kildonan St, Coatbridge	Roadside	Diffusion Tube	100%	67%	-	-	-	-	23.4
DT166-22 Cumbernauld Rd, Chryston	Roadside	Diffusion tube	100%	58%	-	-	-	-	28.7
NewDT54-Columba Ct/Old Edin Rd, Viewpark, Uddingston	Roadside	Diffusion Tube	100%	100%	-	-	-	22.9	25.6
NewDT55-Old Edinburgh Rd, Viewpark, Uddingston	Roadside	Diffusion Tube	100%	100%	-	-	-	29.8	27.6
NewDT56-Bargeddie	Roadside	Diffusion Tube	100%	100%	-	-	-	20.3	20.6
NewDT102-Windmillhill St, Motherwell (1)	Roadside	Diffusion Tube	100%	100%	-	-	-	17.9	20.4
NewDT103-Windmillhill St (2)	Roadside	Diffusion Tube	100%	100%	-	-	-	21.1	25.9
NewDT106-Civic Centre, Motherwell (1)	Roadside	Diffusion Tube	100%	100%	-	-	-	19.6	20.7
NewDT107-Civic Centre, Motherwell (2)	Roadside	Diffusion Tube	100%	100%	-	-	-	19.6	19.6
NewDT108-Civic Centre, Motherwell (3)	Roadside	Diffusion Tube	100%	100%	-	-	-	17	17.9
NewDT116-Airbles Rd (Electric Bar), Motherwell	Roadside	Diffusion Tube	100%	100%	-	-	-	17.7	22.3
NewDT118-Merry St/Dalziel St, Motherwell	Roadside	Diffusion Tube	100%	100%	-	-	-	27.7	28.3
NewDT119-Shawhead roundabout, Coatbridge (formerly DT118, changed in 2017)	Kerbside	Diffusion Tube	100%	100%	-	-	-	28.2	27.8
NewDT120-Kirkshaws Rd, Coatbridge (formerly DT119, changed in 2017)	Roadside	Diffusion Tube	100%	100%	-	-	-	31.3	26.5

Site ID	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2018 (%) ⁽²⁾	NO ₂ Annual Mean Concentration (µg/m ³) ^{(3) (4)}				
					2014	2015	2016	2017	2018see note below
NewDT127-Matalan, Wishaw (formerly DT128, changed number in 2017)	Kerbside	Diffusion Tube	91%	83%	-	-	-	27.1	24.3
NewDT128-Wishaw Cross/Stewarton St, Wishaw	Roadside	Diffusion Tube	100%	100%	-	-	-	26.5	26.7
NewDT137-Main St, Village, Cumbernauld	Roadside	Diffusion Tube	100%	100%	-	-	-	24	20.6
NewDT141-Station Rd, Shotts	Roadside	Diffusion Tube	100%	100%	-	-	-	15	14.0
NewDT142-Stane Gdns, Shotts	Roadside	Diffusion Tube	100%	100%	-	-	-	14.8	18.4
NewDT157a-Swing park, Castlecary	Roadside	Diffusion Tube	100%	100%	-	-	-	-	28.9

Notes: Exceedances of the NO₂ annual mean objective of 40µg/m³ are shown in **bold**.

NO₂ annual means exceeding 60µg/m³, indicating a potential exceedance of the NO₂ 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.

(4) Due to the low capture at North Lanarkshire automatic monitoring sites, annualisation has been undertaken using continuous monitoring sites outside the North Lanarkshire Council area with good data capture. These were Glasgow Waulkmillglen, Glasgow Townhead and Grangemouth Moray.

Valid Data Capture for Monitoring Period (%) and Valid Data Capture 2018 (%) values which are marked “ - “ are for sites which were no longer in use for monitoring.

Table A.4 – 1-Hour Mean NO₂ Monitoring Results

Site ID	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2018 (%) ⁽²⁾	NO ₂ 1-Hour Means > 200µg/m ³ ⁽³⁾				
					2014	2015	2016	2017	2018*
CM1-Chapelhall	Roadside	Automatic	25.78	25.78	2	-	1	6	0(142)
CM2-Croy	Special-by quarry	Automatic	25.78	25.78	0	0	0	0(104)	0(93)
CM5-Shawhead (Coatbridge)	Roadside	Automatic	29.35	29.35	0	0	0	0(125)	0(114)
CM6-Kirkshaws (Coatbridge)	Roadside	Automatic	25.81	25.81	0(21)	0	0	0	0(107)

Notes: Exceedances of the NO₂ 1-hour mean objective (200µg/m³ 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 99.8th percentile of 1-hour means is provided in brackets.

*Values based on newly ratified data from Scottish Air Quality website

Table A.5 – Annual Mean PM₁₀ Monitoring Results

Site ID	Site Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2018 (%) ⁽²⁾	PM ₁₀ Annual Mean Concentration (µg/m ³) ^{(3) (4)}				
				2014	2015	2016	2017	2018*
CM1	Roadside	99.98	99.98	19.2	18.5	15.4	12	10.2
CM2	Special-by quarry	70.65	70.65	15.4	12	13	11.3	12.2
CM3	Urban background	26.15	26.15	13.1	12	12	11.4	6.9
CM4	Roadside	72.47	72.47	15.1	13	13	13	9.7
CM5	Roadside	46.59	46.59	13.3	16	12	14	4.9
CM6	Roadside	53.30	53.30	14.8	13	11	9	9.6
CM9b	Urban background	49.29	49.29	-	-	-	-	9.2

Notes: Exceedances of the PM₁₀ annual mean objective of 18µg/m³ 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.

(4) Due to the low data capture at North Lanarkshire automatic monitoring sites, annualisation has been undertaken using continuous monitoring sites outside the North Lanarkshire area with good data capture. These were Glasgow Waulkmillglen and Glasgow Townhead.

*Values based on newly ratified data from Scottish Air Quality website and annualised where data capture less than 75%

Table A.6 – 24-Hour Mean PM₁₀ Monitoring Results

Site ID	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2018 (%) (2)	PM ₁₀ 24-Hour Means > 50µg/m ³ (3)				
				2014	2015	2016	2017	2018
CM1	Roadside	99.98	99.98	1(-)	-	0(22)	0	0(24)
CM2	Special-by quarry	70.65	70.65	3	1	2(26)	1(35)	0(42)
CM3	Urban background	26.15	26.15	0	1	0(18)	0(29)	0(27)
CM4	Roadside	72.47	72.47	0	0(35)	0	0	0(23)
CM5	Roadside	46.59	46.59	0(19)	1(360)	0	0	0(19)
CM6	Roadside	53.30	53.30	0(21)	0	0	0(26)	0(21)
CM9b	Urban background	49.29	49.29					0(18)

Notes: Exceedances of the PM₁₀ 24-hour mean objective (50µg/m³ 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 98.1st percentile of 24-hour means is provided in brackets.

Table A.7 – Annual Mean PM_{2.5} Monitoring Results

Site ID	Site Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2018 (%) ⁽²⁾	PM _{2.5} Annual Mean Concentration (µg/m ³) ^{(3) (4)}				
				2014	2015	2016	2017	2018
CM1	Roadside	99.98	99.98	-	-	-	5	5.3
CM2	Special-by quarry	46.56	46.56					6.0
CM4	Roadside	47.40	47.40					5.4
CM5	Roadside	46.59	46.59					5.6
CM6	Roadside	34.45	34.45					5.4
CM?	Urban background	49.29	49.29					5.4

Notes: Exceedances of the PM₁₀ annual mean objective of 10µg/m³ 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.

(4) Due to the low data capture at North Lanarkshire automatic monitoring sites, annualisation has been undertaken using continuous monitoring sites outside the North Lanarkshire area with good data capture. These were Glasgow Waulkmillglen and Glasgow Townhead.

Appendix B: Full Monthly Diffusion Tube Results for 2018

Table B.1 – NO₂ Monthly Diffusion Tube Results for 2018

Site ID	NO ₂ Mean Concentrations (µg/m ³)													Annual Mean	
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Raw Data	Bias Adjusted ⁽¹⁾	
DT47-layby in Stand	37.4	29.1	28.9	22	21.8	14.8	18.6	18.8	18.4	10.9	30.3	31.9	23.6	21.7	
DT48 ⁽³⁾ -bus stop Bron Way, Cnauld	29.8	44.5	27.2	31.9	25.6	19.7	22.7	19.3	24.2	16.3	-	65.2	29.7	27.3	
DT49-Swimming Pool, Kilsyth	53.8	28.3	26.2	32.6	14.6	17.1	16.9	12.4	12.8	7.4	29.6	42.1	24.5	22.5	
DT50-1791 Cnauld Rd, Stepps	40.8	22.3	26.6	26.5	19.9	10.2	15.3	16.2	25.3	20	27.9	35.3	23.9	21.9	
DT51-131 Cnauld Rd, Stepps	46.4	40.1	30.7	31.3	24.7	16.7	16.1	18.2	26.3	24.1	33.3	49.3	29.8	27.4	
DT52-traffic lights A80,Eastbound, Moodiesburn	36.5	26.6	29.1	47	25.1	22.6	17.6	16.3	20.1	19	31.3	39.5	27.6	25.4	
DT53 ⁽⁴⁾ -traffic lights A80, Westbound, Moodiesburn	39.2	-	52.7	20.3	16.4	11	15.7	13.8	-	25.5	24	30.3	24.9	22.9	
DT57-Main St/Garrick View, Glenboig	32.3	26	18.6	17.2	24.9	11	15.3	12.7	13.8	15.6	20	28.4	19.7	18.1	
DT58-Lochend Rd/Coatbridge Rd,Gartcosh A752 (previously called DT54, changed in 2018)	46.2	39.1	26.6	32.1	16.5	20.4	21.8	21.2	22.4	22.9	30.8	36.8	28.1	25.8	
DT59-10-16 Coronation Pl, Mount Ellen	33.2	20.4	27.9	22.9	25.3	14.6	15.6	14.1	13.5	14.5	24.4	31.9	21.5	19.8	
DT61-under bridge, Central Way, East, Cumbernauld	69.8	63.6	46.7	48	47.5	25.9	48.3	42.5	51.3	43.1	30.8	51.3	47.4	43.6	
DT62-Central Way A, Westbound, Cumbernauld	51.3	45.8	50.7	45.6	42.7	20.6	43.4	30.8	33.4	39.1	42.9	63	42.4	39	

Site ID	NO ₂ Mean Concentrations (µg/m ³)													Annual Mean	
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Raw Data	Bias Adjusted ⁽¹⁾	
DT63-Central Way B, Westbound, Cumbernauld	59.6	63.4	47.1	47.7	53.6	37.5	36.2	46.7	50.6	53.5	39.3	61.2	49.7	45.7	
DT64-Under bridge, Central Way, Westbound, Cumbernauld	40	40.6	49.1	34.5	32.3	28.4	28.9	27.4	23.3	32.3	34.9	48.3	35	32.2	
DT100-Civic Centre, Motherwell	47.5	47.4	49.9	37.6	37.4	26.6	29.4	34.2	32.6	43.8	52.1	42.7	40.1	36.9	
DT101-Shields Rd, Motherwell	40.9	27.7	30.4	24	25.7	25	20.2	17.8	20.7	31.2	33.4	27.7	27.1	24.9	
DT104-Coursington Rd, Motherwell	2	16.8	17.8	10.6	4.2	7.4	6.5	7.9	5.2	11.6	14.8	32.3	11.4	10.5	
DT105-Craigneuk Rd, Carfin	25.1	21.2	21.8	16.9	10.2	13.1	8.7	12.1	13.5	17	21.9	32.4	17.8	16.4	
DT110-New Edinburgh Rd (1), Uddingston	44.8	53.9	41.5	34.6	30.7	21.2	21.6	26.6	NR	73.2	40	16.6	36.8	33.8	
DT111-New Edinburgh Rd (2), Uddingston	14.9	47	35.8	34.3	18.3	31.3	25.8	26.8	NR	61.3	43.2	25.2	33.1	30.4	
DT112-New Edinburgh Rd (3), Uddingston	50.4	40.2	21.6	39.1	26.5	25.6	22.7	28.6	NR	78.3	21.4	31.4	35.1	32.3	
DT113-Tinkers Lane, Motherwell	39.9	32.5	24.2	22	13.2	16	18.4	13.3	17.2	26.5	30.8	33.3	23.9	22	
DT114-Main St, Overtown	29.3	21.5	17.9	18.5	11.6	17.6	11.3	13.9	13.6	20.6	21.5	33.4	19.2	17.7	
DT115-Plantation Rd/Ravenscraig Bypass, Ravenscraig	24.7	17.8	31.4	13.7	3.7	9.7	6.9	10.7	8.6	14	16.8	43.1	16.8	15.4	
DT117-Hamilton Rd, Motherwell	45.8	40.8	16.1	29.2	19.2	22.4	19.6	24.3	23.5	32.8	38.3	45.6	29.8	27.4	
DT121-Flannigan Rd, Bellshill	34.5	35.6	24.5	23.9	12.3	16.8	10.8	10.3	6.4	26.2	31.4	32.3	22.1	20.3	
DT122-Main St, Mossend	39.1	30.1	39.3	37	19.7	34.1	18.3	20.8	15.1	32.2	36.3	36.2	29.9	27.5	
DT123-Hamilton Rd, Orbiston, Bellshill	42.1	34.8	31.5	25.4	14.2	21.1	18	21.7	16.2	24.5	11	50.8	25.9	23.9	
DT124 ⁽⁵⁾ -Scotmid, Tannochside	38.2	44.7	33.2	31	17.9	16.9	20.9	-	NR	40.4	36.8	40.6	32.1	29.5	
DT125-Main St/Motherwell Rd, Bellshill	36.4	35.9	31	24.4	18.3	24.9	13.9	13.2	13.9	24.9	31.1	50.9	26.6	24.4	

Site ID	NO ₂ Mean Concentrations (µg/m ³)													Annual Mean	
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Raw Data	Bias Adjusted ⁽¹⁾	
DT126-Main St (nr Tesco), Bellshill	32.4	32.5	23.5	18.5	12.1	20	13.6	16.6	14.9	NR	25.3	34.7	22.2	20.4	
DT129-Newmains Police Station	35.7	42.8	33.2	33.2	19.2	17.3	19.1	21.8	22.2	NR	41.5	44.9	30.1	27.7	
DT130-Main St, Wishaw(bottom)	24.8	20.4	19.9	17.5	8.9	13.6	24.7	11	11.6	17.6	24.5	28.1	18.6	17.1	
DT131 ⁽⁶⁾ -Brandon Pl, Bellshill	32.1	29.9	25	18.5	-	13.8	13.2	14.8	12.3	20.8	21.8	29.9	21.1	19.4	
DT132-Airdrie Rd, Caldercruix	29.5	24.5	19.4	16.4	15.2	11.5	14.8	11.3	17.3	15	21.7	22.6	18.3	16.8	
DT133-Coatbridge 1, Bank St	45.1	49.8	33.2	35.9	21.7	15.4	24.7	23	27.9	37.3	44.9	37.4	33	30.4	
DT134-Coatbridge 2, Whifflet	32.9	33.7	15.1	28.9	7.7	12.5	14.4	14.9	16.7	26.1	28.2	26.7	21.5	19.8	
DT135-Grahamshill St, Airdrie	NR	48.6	34	18.3	30.7	28.1	34.4	36.1	38	18.6	38.4	25.3	31.9	29.3	
DT136-Airdrie 3, Springwells Cres	31.4	20.7	22.3	39.5	9.3	9.4	11.2	17.1	15.3	43.3	21.6	34.2	22.9	21.1	
DT138-Main St, Chapelhall, nr shops	33	37.2	22.8	28.7	15.3	18.8	16.1	22	16.7	28.8	27.4	29.5	24.7	22.7	
DT139-Lauchope St/Chapelhall junction	50.9	56.4	22.9	19.7	18.4	23.1	31.6	32	32.1	36.5	35.8	24.7	32	29.4	
DT140-Dundyvan Rd, Coatbridge	35.3	38.6	18.5	26.6	13.3	20.4	16.2	13.4	15.6	24.1	33.6	27.4	23.6	21.7	
DT143-Main St (2), Harthill (nr shops)	23.3	25.5	32	20.2	10.1	18.4	NR	14.3	9.8	13.5	9.5	35.7	19.3	17.8	
DT144-Lab 1, Constarry Rd, Croy	26.2	30.5	20.6	17.5	10.4	17.7	11.2	9.6	14	21.4	24.8	30.1	19.5	17.9	
DT145 ⁽⁷⁾ -Lab 2, Constarry Rd, Croy	31.2	29.4	46.8	16.9		16.3	12	13.6	11	18.3	10.7	38.1	22.2	20.4	
DT146-Lab 3, Constarry Rd, Croy	64	28.3	56.6	19	10.5	17.1	13.1	7.8	10.5	17.7	22.1	31.7	24.9	22.9	
DT147-Bank St, Coatbridge (nearest house)	49.1	46.9	34.3	30.4	18.3	30.2	22.4	20.8	19.6	32.4	40.3	26.8	31	28.5	
DT148-Main St, Chapelhall R32	55.1	52.2	22.4	36.6	21.9	27.5	25.8	24.4	17.3	42.4	42.6	38.2	33.9	31.2	
DT149-Main St, Chapelhall R33	NR	45.9	19.9	31.8	21	28	23.9	25.4	16.7	39	40.7	29.4	29.2	26.9	

Site ID	NO ₂ Mean Concentrations (µg/m ³)													Annual Mean	
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Raw Data	Bias Adjusted ⁽¹⁾	
	DT150-Eastfield Rd, Cumbernauld	30	NR	20.9	15.2	11	17.9	11	9.5	11.6	17.7	25.1			59.1
DT151-Main St, Holytown	35.3	32.8	35.7	24.2	15.1	16.9	14.4	15.7	20.4	27	28.2	51.6	26.4	24.3	
DT152 ⁽⁸⁾ -Coatbridge Rd, Townhead, Coatbridge (shops)	43.5	37.4	40.8	24.6	-	22.2	24.7	20.7	30.2	32.5	37.8	27.7	31.1	28.6	
DT153-72 Townhead Rd, Coatbridge	35.3	27.2	35.6	18.2	7.9	13.9	10.5	5.7	21.7	23.9	30.1	42.3	22.7	20.9	
DT154-Sunnyside Rd, Coatbridge	37.4	37.9	23.8	29.7	20	20.3	16.1	19.2	21.9	32.7	38.2	25.1	26.9	24.7	
DT156-Stirling St, Airdrie	47.8	41.4	32.4	24.9	19.3	26.1	NR	33.7	27.3	36	32.6	48	33.6	30.9	
DT157-31 Station Rd	45.4	37.1	33.1	32.9	14	NR	NR	18.3	22.5	20.6	34.5	112	37	34.1	
DT158a-Croftmoraig Cres, Moodiesburn	37.1	26.6	26.4	21.5	11.7	14.1	13.3	7.1	12.2	17.4	NR	32.3	20	18.4	
DT158b-Deedes St, Airdrie	51.9	53.5	39.5	26.3	25.1	20	27.8	33.3	22	38.9	21	25.2	32	29.5	
DT159-Glenview Cres, Moodiesburn	35.5	NR	25.6	21.9	16	11.6	11.4	10.3	16	15	21	27.2	19.2	17.7	
DT160-The Cuilins, Moodiesburn	34.7	NR	23.7	19.5	13.2	14	11.1	7.8	14.9	14	24.4	33.6	19.2	17.6	
DT161-Bridgend Cres, Moodiesburn	33.2	22.6	22.4	18.8	17.2	11.4	9	8.2	11.4	14	21.7	29	18.2	16.8	
DT162-Auchingoch Rd, Moodiesburn	28.7	26.3	24.1	13.3	23	17.3	13.3	13.4	18.5	19.6	23.4	32.6	21.1	19.4	
DT163-12 inchwood Rd, Westfield, Cumbernauld	36.7	33.7	39.5	26.5	13.1	16.2	9.7	12.5	18.9	17.7	29	44.3	24.8	22.8	
DT164-12 Leckethill Ct, Westfield, Cumbernauld	NR	29.2	26.2	22.1	20.7	10.1	27.1	16.2	13.1	17.1	21.3	29.9	21.2	19.5	
DT165 Kildonan St, Coatbridge	-	-	-	-	11.1	16.5	16.4	20.2	24.3	27.7	25.2	35.9	25.4	23.4	
DT166-22 Cumbernauld Rd, Chryston	-	-	-	-	-	27.1	21	20.7	27.6	18.2	38.4	41.6	31.2	28.7	

Site ID	NO ₂ Mean Concentrations (µg/m ³)													
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean	
													Raw Data	Bias Adjusted ⁽¹⁾
NewDT54-Columba Ct/Old Edinburgh Rd, Viewpark	47.1	36.9	36.8	25.7	27.9	15.1	16.4	15	20.5	25	30.8	36.4	27.8	25.6
NewDT55-Old Edinburgh Rd, Viewpark	47.2	43.3	33.3	31.3	17.6	19.1	23.9	21.9	27.4	23.4	37.7	34	30	27.6
NewDT56-Bargeddie	38.9	33.5	19.4	19.3	12.5	11.7	18.6	16.5	21.2	20.5	24	33.2	22.4	20.6
NewDT102-Windmillhill St, Motherwell (1)	27.5	29	23.6	22.5	11.6	16.2	10.9	13.3	14.6	22.9	26.9	46.3	22.1	20.4
NewDT103-Windmillhill St, Motherwell (2)	29	42.4	38.3	29.9	18.4	23.4	22	23.9	17.1	30	32.1	31.7	28.2	25.9
NewDT106-Civic Centre, Motherwell (1)	30.5	23	25.5	19.4	13.4	14.9	15.2	18.2	11.7	23.3	27.1	47.3	22.5	20.7
NewDT107-Civic Centre, Motherwell (2)	29.4	25.4	23.8	19.6	14.3	14.7	14.3	15	16.1	22.9	23.8	35.9	21.3	19.6
NewDT108-Civic Centre, Motherwell (3)	32.5	26.5	28	21	12.8	13.4	12.9	11.4	13.8	23.2	19.3	19.2	19.5	17.9
NewDT116-Airbles Rd (Electric Bar), Motherwell	28.9	25.4	46.2	24.3	12.4	17.1	11	20.7	14.5	20.1	27.3	43.4	24.3	22.3
NewDT118-Merry St/Dalziel St, Motherwell	43.6	36.5	38.2	34.4	18.3	24.8	21.6	20.5	31.7	35	35.8	28.9	30.8	28.3
NewDT119-Shawhead roundabout, Coatbridge (formerly DT118, changed in 2017)	41.3	46.5	29.1	26	16.4	14.9	25.4	27.5	36.1	35.5	37.9	26.6	39.3	27.8
NewDT120-Kirkshaws Rd, Coatbridge (formerly DT119, changed in 2017)	30.7	47.7	33.2	30.2	18.6	19.7	17.7	22.9	13.9	33.9	41.6	35.7	28.8	26.5
NewDT127-Matalan, Wishaw	30.2	33.5	33.2	27.8	20.5	24.5	18.6	15.2	25.7	34.4	NR	1.6	26.4	24.3
NewDT128-Wishaw Cross/Stewarton St, Wishaw	32.6	36.4	39.6	34	15.2	29.1	11.1	28.5	24.6	33	33.5	30.1	29	26.7
NewDT137-Main St, Village, Cumbernauld	38.2	36.2	26.4	16.4	7	20.4	14.4	17.9	16.1	19.1	31.2	25.7	22.4	20.6
NewDT141-31 Station Rd, Shotts	22.8	18.9	10.5	14.1	8	13.8	8.6	10	8.3	18.3	20.4	28.5	15.2	14

Site ID	NO ₂ Mean Concentrations (µg/m ³)													
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean	
													Raw Data	Bias Adjusted ⁽¹⁾
NewDT142-Stane Gdns, Shotts	28.1	28	22.6	18.4	12.5	17.3	13.5	15.8	16.2	22.1	21.2	24.8	20	18.4
NewDT157a-Swing park, Castlecary	40.8	43.4	36.5	33.1	26.6	24.5	20.9	23.5	24.6	31.4	41.9	29.4	31.3	28.9

(1) See Appendix C for details on bias adjustment

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

INSTRUCTIONS

Please include here any additional information required to support the APR. This may include:

- If necessary, any screening assessment of identified new or changed sources of pollution based on DMRB, industrial nomograms, biomass tools, etc – see Chapter 7 in LAQM.TG(16)
- Any detailed dispersion modelling of emissions or results of monitoring campaign carried out to determine whether an AQMA needs to be declared, amended or revoked.
- Summary of any additional evidence gathered or being gathered in support of measures for Action Plans and links to any final reports.
- QA/QC on monitoring data, including bias adjustments etc.

Delete this box when the document is finished

Bias Correction Factor from Local Co-Location Studies

North Lanarkshire Council undertake measurements of NO₂ in triplicate at Croy automatic monitoring site however a co-location evaluation was not carried out in this case as data capture for Croy in 2018 was just above 25%, and the data has not been ratified.

Diffusion Tube Bias Adjustment Figures

The National bias adjustment factor spreadsheet 03/19 V2 was used to derive the national bias adjustment factor for diffusion tubes analysed by Glasgow Scientific Services during 2018. Using all sites, the factor was found to be 0.86. Using only those with Good Precision, the factor was 0.92. The factor of 0.92 was used in this assessment. See Figure C.1 below.

National Diffusion Tube Bias Adjustment Factor Spreadsheet						Spreadsheet Version Number: 03/19					
Follow the steps below in the correct order to show the results of relevant co-location studies						This spreadsheet will be updated at the end of June 2019 LAQM Helpdesk Website					
Data only apply to tubes exposed monthly and are not suitable for correcting individual short-term monitoring periods						Whenever presenting adjusted data, you should state the adjustment factor used and the version of the spreadsheet					
This spreadsheet will be updated every few months: the factors may therefore be subject to change. This should not discourage their immediate use.						The LAQM Helpdesk is operated on behalf of Defra and the Devolved Administrations by Bureau Veritas, in conjunction with contract partners AECOM and the National Physical Laboratory.					
Spreadsheet maintained by the National Physical Laboratory. Original compiled by Air Quality Consultants Ltd.											
Step 1:	Step 2:	Step 3:	Step 4:								
Select the Laboratory that Analyses Your Tubes from the Drop-Down List	Select a Preparation Method from the Drop-Down List	Select a Year from the Drop-Down List	Where there is only one study for a chosen combination, you should use the adjustment factor shown with caution. Where there is more than one study, use the overall factor ³ shown in blue at the foot of the final column.								
If a laboratory is not shown, we have no data for this laboratory.	If a preparation method is not shown, we have no data for this method at this laboratory.	If a year is not shown, we have no data ²	If you have your own co-location study then see footnote ¹ . If uncertain what to do then contact the Local Air Quality Management Helpdesk at LAQMHelpdesk@uk.bureauveritas.com or 0800 0327953								
Analysed By	Method	Year	Site Type	Local Authority	Length of Study (months)	Diffusion Tube Mean Conc. (Dm) (µg/m ³)	Automatic Monitor Mean Conc. (Cm) (µg/m ³)	Bias (B)	Tube Precision ⁵	Bias Adjustment Factor (A) (Cm/Dm)	
Glasgow Scientific Services	20% TEA in water	2018	R	East Dunbartonshire Council	9	21	16	26.5%	G	0.79	
Glasgow Scientific Services	20% TEA in water	2018	R	East Dunbartonshire Council	10	28	27	3.3%	G	0.97	
Glasgow Scientific Services	20% TEA in water	2018	R	East Dunbartonshire Council	12	31	28	12.9%	P	0.89	
Glasgow Scientific Services	20% TEA in water	2018	KS	Marlyebone Road Intercomparison	12	86	85	1.3%	G	0.99	
Glasgow Scientific Services	20% TEA in water	2018	KS	Glasgow City Council	12	64	59	7.3%	P	0.93	
Glasgow Scientific Services	20% TEA in water	2018	R	Glasgow City Council	11	44	34	30.4%	P	0.77	
Glasgow Scientific Services	20% TEA in water	2018	R	Glasgow City Council	12	32	29	9.8%	P	0.91	
Glasgow Scientific Services	20% TEA in water	2018	R	Glasgow City Council	10	36	30	20.0%	P	0.83	
Glasgow Scientific Services	20% TEA in water	2018	UB	Glasgow City Council	11	33	25	31.8%	P	0.76	
Glasgow Scientific Services	20% TEA in water	2018	Overall Factor³ (9 studies)						Use		0.86

Figure C.1 Glasgow Scientific Services – National Bias Adjustment Factor 2018

Particulate Matter (PM) Monitoring Adjustment

North Lanarkshire Council monitor PM10 using three types of analyser:-

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

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 PM10 concentration. All data have been provided and ratified and gravimetric equivalent by Ricardo Energy and Environment.

NO2 Monitoring Annualisation

The data capture for annual mean NO₂ was below 75% at all of the Council's automatic analysers in 2018. As previously outlined in the report this was due to the breakdown of the data storage and management software, and then further compounded by gas supply issues arising from the expiration of our maintenance contract. As a result of this the annual mean concentrations for NO₂ were annualised in accordance with the technical guidance TG(16).

The annualisation process I summarised in the Table below.

Table C.2 – Automatic Analyser Annualisation 2018

NO₂ Annualisation

														(Am)	
Automatic site	January	February	March	April	May	June	July	August	September	October	November	December	Annual Mean		
1 Glasgow Townhead	34.00	32.00	26.00	21.00	18.00	16.00	13.00	16.00	18.00	25.00	27.00	38.00	24		
2 Glasgow Waukmillglen	15.00	12.00	11.00	8.00	5.00	6.00	4.00	3.00	3.00	8.00	15.00	15.00	8.75		
3 Grangemouth Moray	23.00	22.00	23.00	16.00	15.00	14.00	9.00	8.00	9.00	17.00	19.00	25.00	16.67		
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SiteID	Site Name	January	February	March	April	May	June	July	August	September	October	November	December	Period Mean	Months Available for monitoring year	Monitoring Period	Annualisation Ratio	Annualised Data
CM1	Chapelhall	47	45	31	16									34.8	4	4	0.80	27.7
CM2	Croy	26	26	21	15									22.0	4	4	0.80	17.5
CM5	Shawhead	33	33	22	16									26.0	4	4	0.80	20.7
CM6	Kirkshaws	27	29	21	15									23.0	4	4	0.80	18.3

cells to be filled - ignore the top table if we are not annualising the data
 N/A No longer analysed
 NR No Return
 Still to be distance corrected (negatively) so may potentially exceed

Automatic Site 1		Automatic Site 2		Automatic Site 3	
B1 when D1 is available (Pm)	Am/Pm	B1 when D1 is available (Pm)	Am/Pm	B1 when D1 is available (Pm)	Am/Pm
28.25	0.84	11.5	0.760869565	21	0.793650794
28.25	0.84	11.5	0.760869565	21	0.793650794
28.25	0.84	11.5	0.760869565	21	0.793650794
28.25	0.84	11.5	0.760869565	21	0.793650794

PM₁₀ Annualisation

														(Am)	
Automatic site	January	February	March	April	May	June	July	August	September	October	November	December	Annual Mean		
1 Glasgow Townhead	15.00	14.00	12.00	11.00	13.00	14.00	10.00	7.00	8.00	9.00	10.00	11.00	11		
2 Glasgow Waukmillglen	9.00	9.00	9.00	9.00	10.00	11.00	7.00	6.00	6.00	8.00	10.00	9.00	8.583333333		
3													#DIV/0!		
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SiteID	Site Name	January	February	March	April	May	June	July	August	September	October	November	December	Period Mean	Months Available for monitoring year	Monitoring Period	Annualisation Ratio	Annualised Data
CM1	Chapelhall	9	11	12	11	14	13	10	7	8	8	10	9	10.2	12	12	-	10.2
CM2	Croy	12	11	17	15			9	8	8	11	16	15	12.2	10	10	-	12.2
CM3	Whifflet	-	13	12	13	15	-	-						13.3	4	4	0.52	6.9
CM4	Menteith Road, Mothenwell	12	15	15	7			8	6	7	8	9	10	9.7	10	10	-	9.7
CM5	Shawhead	-	-	-	-	-	-	8	6	7	8	9	9	7.8	6	6	0.63	4.9
CM6	Kirkshaws	10	13	14				7	6	7	10	9	10	9.6	9	9	-	9.6
CM7	Civic Centre							8	6	7	8	9	9	7.8	6	6	1.17	9.2

cells to be filled - ignore the top table if we are not annualising the data
 N/A No longer analysed
 NR No Return
 Still to be distance corrected (negatively) so may potentially exceed

Automatic Site 1		Automatic Site 2		Automatic Site 3	
B1 when D1 is available (Pm)	Am/Pm	B1 when D1 is available (Pm)	Am/Pm	B1 when D1 is available (Pm)	Am/Pm
10.17	1.10	10.16666667	0.844262295		
12.20	0.92	12.2	0.703551913		
22.25	0.50	16	0.536458333		
9.70	1.15	9.7	0.884879725		
17.83	0.63	13.66666667	0.62804878		
9.56	1.17	9.555555556	0.898255814		
9.17	1.22	7.666666667	1.119565217		
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PM_{2.5} Annualisation

(Am)

Automatic site	January	February	March	April	May	June	July	August	September	October	November	December	Annual Mean
1 Glasgow Townhead	10.00	9.00	8.00	7.00	10.00	8.00	5.00	4.00	4.00	5.00	7.00	7.00	7
2 Glasgow Waukmillglen	6.00	6.00	6.00	6.00	6.00	7.00	4.00	3.00	3.00	4.00	7.00	7.00	5.416666667
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B1

SiteID	Site Name	January	February	March	April	May	June	July	August	September	October	November	December	Period Mean	Months Available for monitoring year	Monitoring Period	Annualisation Ratio	Annualised Data
CM1	Chapelhall	6	6	6	6	6	7	4	3	3	4	6	6	5.3	12	12	-	5.3
CM2	Croy							4	3	3	4	7	8	4.8	6	6	1.24	6.0
CM4	Menteith Road, Motherwell							4	3	3	4	6	6	4.3	6	6	1.24	5.4
CM5	Shawhead							4	3	3	4	7	6	4.5	6	6	1.24	5.6
CM6	Kirkshaws							3	3	3	5	6	6	4.3	6	6	1.24	5.4
CM?	Civic Centre							4	3	3	4	6	6	4.3	6	6	1.24	5.4

- cells to be filled - ignore the top table if we are not annualising the data
- No longer analysed
- No Return
- Still to be distance corrected (negatively) so may potentially exceed

Automatic Site 1		Automatic Site 2		Automatic Site 3	
B1 when D1 is available (Pm)	Am/Pm	B1 when D1 is available (Pm)	Am/Pm	B1 when D1 is available (Pm)	Am/Pm
5.25	1.33	5.25	1.031746032		
5.33	1.31	4.666666667	1.160714286		
5.33	1.31	4.666666667	1.160714286		
5.33	1.31	4.666666667	1.160714286		
5.33	1.31	4.666666667	1.160714286		
5.33	1.31	4.666666667	1.160714286		

QA/QC of Diffusion Tube Data

The diffusion tubes for the year 2018 were supplied and analysed by GSS. The tubes were prepared using the 20% TEA in water preparation method. All results have been bias adjusted and annualised (where required). GSS is a UKAS accredited laboratory and participates in the AIR-PT Scheme (a continuation of the Workplace Analysis Scheme for Proficiency (WASP) for NO₂ tube analysis and the Annual Field Inter-Comparison Exercise. These provide strict performance criteria for participating laboratories to meet, thereby ensuring NO₂ concentrations reported are of a high calibre.

The latest AIR-PT results were as follows:-

- AIR-PT AR024 (January to February 2018) – 100%
- AIR-PT AR025 (April to May 2018) – 100%
- AIR-PT AR027 (July to August 2018) – 50%
- AIR-PT AR 028 (September to October 2018) – 100%
- AIR-PY AR030 (January to February 2019) – 100%

Over a rolling five round AIR-PT window, it is expected that 95% of laboratory results should be less than or equal to 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 sources of error within their analytical procedure. For the latest five round window 92% of GSS results were less than or equal to 2 therefore the diffusion tube performance over this period has been assessed as satisfactory.

QA/QC of Automatic Monitoring Data

The QA/QC of automatic monitoring sites within North Lanarkshire are managed by Ricardo Energy & Environment. The annual reports produced by Ricardo for each of the automatic monitoring sites are below.

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 ₂	Nitrogen Dioxide
NO _x	Nitrogen Oxides
PM ₁₀	Airborne particulate matter with an aerodynamic diameter of 10µm (micrometres or microns) or less
PM _{2.5}	Airborne particulate matter with an aerodynamic diameter of 2.5µm or less
QA/QC	Quality Assurance and Quality Control
SO ₂	Sulphur Dioxide

References

Local Air Quality Management Technical Guidance TG(16) (Defra)
North Lanarkshire Council Air Quality Action Plan 2018-2021