Annual Progress Report (APR)

2021 Air Quality Annual Progress Report (APR) for North Lanarkshire Council

In fulfilment of Part IV of the Environment Act 1995

Local Air Quality Management

September 2021

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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,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 also 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.

In reporting on air quality activities in North Lanarkshire in 2020 it must be recognised that the Covid-19 pandemic has had a significant impact on our work activities in terms of Local Air Quality Management as we are part of a very busy Environmental Health service covering all Pollution and Public Health work in North Lanarkshire. With some staff shielding, various additional safety measures, as well as staff being required to undertake reactive work directly relating to the Covid-19 pandemic, 2020/21 has been a challenge. I am pleased to say, however, that, although we had to reshape our work practices to comply with Government regulations and guidance, and engage additional assistance from other members of staff we were able to continue our air quality monitoring and reporting during 2020.

North Lanarkshire Council operate an extensive network of air monitoring equipment. This comprises automatic monitoring for Nitrogen Dioxide (NO_2) and fine Particulate Matter (PM_{10} and $PM_{2.5}$), as well as an extensive network of passive diffusion tubes monitoring NO_2. Our monitoring locations, both automatic and diffusion tubes are reviewed on a regular basis to ensure we target the most appropriate areas for monitoring in terms of air pollution sources and also the potential for receptor exposure. In 2020/21 we have relocated the Civic Centre, Motherwell automatic monitor to Adele Street, Motherwell, and also the Sunnyside Rd, Coatbridge automatic monitor has been decommissioned and relocated to a new monitoring site at Whifflet Cross, Coatbridge. Both Adele Street and Whifflet Cross are locations more representative of receptor exposure and will provide more meaningful air quality monitoring

in these areas. A new automatic monitoring site is currently being installed at Ravenscraig. This site will be operational in Autumn 2021 and will provide useful air quality information as the Ravenscraig site is redeveloped over the coming years. Using air quality funding from the Scottish Government, one of the Council's ageing particulate analysers has been replaced in 2020, and in 2021 we hope to use the funding to purchase a new Particulate Monitor and two Nitrogen Dioxide Monitors.

The ongoing Covid-19 pandemic and consequent associated restrictions and lockdown has had an impact on air quality levels in North Lanarkshire since March 2020. All automatic and passive Diffusion Tube monitoring of NO_2 indicated ambient levels below the annual mean and short-term statutory objectives in 2020. Levels were approximately 30% lower than those measured in2019, most likely as a result of reductions in road traffic due to the pandemic.

All automatic PM_{10} monitoring in 2020 measured comfortably below the annual mean and short-term statutory objectives. As with NO_2 there was a reduction in monitored levels in 2020 when compared with 2019 levels, this was not as significant as for NO_2. This may indicate that measured levels of PM_{10} now mainly comprise the background PM_{10} in the area, however continued monitoring over the coming years should confirm if this is the case.

North Lanarkshire Council now operate seven $PM_{2.5}$ monitoring sites, with a further site due to come into operation in 2021. In 2020 all measurements at $PM_{2.5}$ monitoring sites complied with the annual mean statutory objective.

Given the huge change in travel associated with the Covid-19 pandemic, and its assumed knock-on effect on emission from road traffic in North Lanarkshire, a key task of 2021 will be to compare both automatic and diffusion tube monitoring data for 2020 with that experienced in 2021. This will be reported on in the next APR in 2022. It remains to be seen how the transport landscape will evolve, as the pandemic continues, and how people's travel habits will change going forward and the future impacts this will have on local air quality.

In 2021 we will finalise the revocation of the Croy AQMA. This was delayed from 2020 due to changed priorities in workload resulting from the Covid-19 pandemic, however it is scheduled to now be completed in 2021/22.

The Council's Air Quality Action Plan is also due to be updated in 2022, so preparatory work for this will begin in 2021.

Actions to Improve Air Quality

March 2020 saw the beginning of the Covid-19 pandemic and consequent national lockdown and “work from home” instruction from the Government. This had, and continues to have, an impact on some of the air quality work we do, however I am pleased to report that in 2020 we were still able to progress some successful initiatives and actions aimed at improving air quality in North Lanarkshire, in line with the pledges within the Council’s Air Quality Action Plan. These included providing funding for the installation of a number of EV charging points within two Council depots in North Lanarkshire, to assist with the infrastructure to facilitate the Council’s move to electric vehicles in the coming years. Twelve new e-bikes were also purchased using the Scottish Government air quality grant, and once the Covid-19 restrictions permit, these e-bikes will be brought into use either for staff or public use.

The Walking and Cycling in Strathclyde Park map and APP, previously created in conjunction with colleagues at South Lanarkshire Council underwent a refresh in 2020/21 with the creation of a Treasure Trail route with questions at various stages of the route and a prize draw for those completing the trail. All aimed at promoting walking and cycling for leisure and/or work in the North and South Lanarkshire area.

Due to the restrictions in place to deal with the Covid-19 pandemic, including the closure of schools, several of the activities we had planned for 2020 were not able to go ahead, including some bike repair workshops and school talks on air quality. We did, however, manage to run a design-an-air-quality-banner competition for national Clean Air Day in Chapelhall Primary School (adjacent to the Chapelhall AQMA), and the school benefited from new eye-catching kiddie signs with “no parking” and “no idling” messages, as well as the winning design being made into a banner and a host of air quality promotional items for the children taking part in the competition.

The Council’s Air Quality Planning Guidance was updated in 2020/21 and will be formally adopted once the required consultation has been undertaken. We have continued to work with our colleagues in Planning and Regeneration to highlight air quality matters forrelevant applications and major infrastructure projects.

Local Priorities and Challenges

In the year 2021/22 North Lanarkshire Council will continue to monitor air quality using our extensive network of automatic and passive air monitors. We will upgrade some of our monitoring equipment using funding obtained from the Scottish Government. The new automatic monitoring station will be set up in Ravenscraig, and close scrutiny will be undertaken of air quality monitoring data obtained from the new monitoring sites at Whifflet Cross, Coatbridge and Adele Street, Motherwell. We will continue to observe our monitoring data for 2021 to determine the impact of the ongoing Covid-19 pandemic and make any observations/changes as necessary.

The revocation of the Croy AQMA will be completed, subject to a consultation and subsequent approval by committee.

Protective Services will continue to have input to major planning and infrastructure projects including the Pan Lan roads projects and ensure air quality impacts are duly considered in each project.

In terms of the Council's Air Quality Action Plan, subject to the ongoing Covid-19 pandemic and its subsequent restrictions the following projects will be undertaken in 2021/22:-

- The Council's Eco Stars environmental fleet recognition scheme will continue to operate in 2021/22 through our contractors TRL Ltd. The focus for this year will be on encouraging Council suppliers/contractors to sign up for the Eco Stars scheme.
- We will support the Motherwell Active Travel Infrastructure Improvements by contributing funding from the Scottish Government air quality grant towards complementing the ongoing improvements to the Motherwell Transport Interchange. Briefly, this will include additional directional signage and footway widening to enable shared use and encourage active travel.
- We will continue to work with South Lanarkshire Council in the promotion of the Walking and Cycling in Strathclyde Park map and APP. At the time of writing we have just completed the Treasure Hunt style game and the winners will shortly be notified. It is our intention to meet over the coming weeks to look at ways to further promote the map and APP.
- We are hoping to use the Scottish Government air quality funding to run some cycle awareness training sessions. This will obviously be subject to all Covid-19 government regulation and guidance and the availability of a contractor, and we are

still working on the finer details of such a project. If possible, we hope to carry this out in Spring 2022.

- As our current Air Quality Action Plan is due to be updated and published in 2022 we will also be undertaking the preparatory work for this in late 2021/early 2022.

How to Get Involved

Further information on air quality in North Lanarkshire can be found on the Council's website at https://www.northlanarkshire.gov.uk/pests-and-pollution/pollution/air-quality 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 2020. 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 Concentration	Air Quality Objective Measured as	Date to be Achieved by
Nitrogen dioxide (NO_2)	200 µg/m^3 not to be exceeded more than 18 times a year	1-hour mean	31.12.2005
Nitrogen dioxide (NO_2)	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
Particulate Matter (PM_{10})	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
Sulphur dioxide (SO_2)	125 µg/m^3, not to be exceeded more than 3 times a year	24-hour mean	31.12.2004
Sulphur dioxide (SO_2)	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

2 Actions to Improve Air Quality

2.1 Air Quality Management Areas

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

A summary of AQMAs declared by North Lanarkshire Council can be found in Table 2.1. Further information related to declared or revoked AQMAs, including maps of AQMA boundaries are available online at https://www.northlanarkshire.gov.uk/pests-and-pollution/pollution/air-quality/air-quality-management-areas

We are currently going through the consultation process to revoke Croy AQMA (see monitoring section).

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	http://www.northlanarkshire.gov.uk/pests-and-pollution/pollution/air-quality/air-quality-management-areas
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	https://www.northlanarkshire.gov.uk/pests-and-pollution/pollution/air-quality/air-quality-management-areas
AQMA Coatbridge	PM_{10} annual mean	Coatbridge	Whifflet Street stretching to the Shawhead roundabout. The AQMA was further extended in 2015 to include Kirkshaws Road	https://www.northlanarkshire.gov.uk/pests-and-pollution/pollution/air-quality/air-quality-management-areas
AQMA Motherwell	PM_{10} annual mean	Motherwell	An area encompassing Motherwell Town Centre	https://www.northlanarkshire.gov.uk/pests-and-pollution/pollution/air-quality/air-quality-management-areas

2.2 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 on the Scottish Government's website. Progress by North Lanarkshire Council against relevant actions within this strategy is demonstrated below.

2.2.1 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. A few years ago North Lanarkshire Council commissioned a Workplace Travel Survey which provided a useful insight into staff travel to and from work, as well as travel during work. The plan had been to use this information to create a Workplace Travel Plan in line with one of our Action Plan measures, however a combination of resource and staffing issues meant this had not yet happened by the start of the Covid-19 pandemic. There have been major changes in working practices within the Council in line with Scottish Government guidance due to Covid-19 most staff are working from home, and initiatives such as car-sharing and the use of pool cars are currently largely on hold. Consequently, the initial Workplace Travel Survey will require to be repeated once the pandemic is over and current restrictions are lifted.

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

The Scottish Government expects any Scottish local authority which has or is currently developing a Sustainable Energy Action Plan to ensure that air quality considerations are covered. North Lanarkshire Council has declared a climate emergency committing itself to a net zero carbon target by 2030, setting itself more ambitious targets for carbon reduction than those set within the Climate Change (Emission Reduction Targets)(Scotland) Act 2019. This has required a new approach to the council's own emission reductions as well as recognising the need for an area-based strategy to incorporate the full intent of the Climate Change (Scotland) Act 2009. Targeting transport emissions is key to the delivery of this ambitious target as within the North Lanarkshire area road emissions accounts for 39.5% of total

carbon emissions. Work is progressing in its development and is supported by current and future planned activity:

- The increased implementation of the smarter working policy to allow home working, supported by the increased capacity and reliability of connections and digital technology, continues to reduce the need to travel for meetings and other unnecessary journeys through the use of software such as 'MSTeams'. As the digitalisation programme progresses, it will further support mobile and home working, and other activities within the council such as the Asset Rationalisation Strategy.

- The use of pool vehicles by council staff has greatly reduced as a result of the ongoing coronavirus pandemic, as most employees are working from home and onlymaking essential visits/journeys. Meetings are now held remotely where possible. The council's pool car fleet currently comprises 137 vehicles – 8 electric, 125 petrol,4 diesel. In addition to the pool cars the council's overall fleet includes 1 electric Refuse Collection Vehicle, 26 people carriers, 7 panel vans and 22 Nissan Acenta vans.

- Following on from the previous paragraph, all North Lanarkshire Council fleet cars and vehicles up to 3.5t GVW will be converted to electric by 2025 and vehicles over 3.5t GVW by 2030. The council has entered into a strategic partnership for electric vehicle charging infrastructure with Transport Scotland, Scottish Power Energy Networks and South Lanarkshire Council. The project will see creation of a network of community charging stations at key locations, available for community use, free of charge in the first instance. Other than improving the vehicle charging provision, the council has no direct influence on consumer behaviour however the council have committed to increasing its Low Emission fleet and so are visibly supporting this agenda.

- The Efficient and Cleaner Operations (ECO) Stars Fleet Recognition Scheme which is delivered by councils aims to support organisations who are making changes to their fleet (buses, coaches and goods vehicles) in order to improve their efficiency and emissions by reducing fuel consumption. Scheme members' participation contributes to improvements in air quality, a reduction in overall emissions and to the climate change agenda. The continued promotion of this scheme facilitates the reduction of transport emissions however is reliant on private business participation.

2.2.3 Environmental Fleet Recognition Scheme

In line with CAFS, North Lanarkshire Council continues to run the Eco Stars environmental fleet recognition scheme. Funded through the Scottish Government airquality action plan grant the Eco Stars scheme is run by TRL Ltd. At the time of writing thisreport (September 2021) our scheme consists of 250 members, which equates to 8,480 vehicles. It had been our intention to re-run the successful Eco Stars workshop in February2021, again focussing on bus operators, however this event could not go ahead due to thenational lockdown as a result of the Covid-19 pandemic. It is hoped that a similar event canbe run in early 2022.

2.3 Progress and Impacts of Measures to address Air Quality in North Lanarkshire

North Lanarkshire Council has taken forward a number of measures during the current reporting year of 2020 in pursuit of improving local air quality. Details of all measures completed, in progress or planned are set out in Table 2.2. More detail on these measures can be found in the air quality Action Plan relating to each AQMA. Key completed measures are:

- Installation of electric vehicle charging points in two NLC depots, for use by Council electric vehicles and to improve EV infrastructure to facilitate the Council's commitment to transition to an EV fleet over the coming years.
- New automatic monitoring sites have been set up at Whifflet Cross, within the Coatbridge AQMA and also at Adele Street, Motherwell. Both new sites are more representative of receptor exposure and closer to the source of air pollution in the area (road traffic emissions).
- A green wall feasibility study was carried out looking at possible species of plant and possible locations for their use.
- The Scottish Government air quality grant enabled the purchase of 12 new ebikes, which, following the relaxation of covid-19 restrictions will be used either by Council staff, or possibly as part of a cycle hire scheme.
- The creation of a Treasure Trail map and APP to add to the Walking and Cycling in Strathclyde Park map and APP. Work done in conjunction with South Lanarkshire Council.
- In 2020 the council commissioned a large, regional-scale dispersion modelling study of the main populated areas of North Lanarkshire within which AQMAs have been

designated and impact of future known development scenarios on these areas. The report built on an earlier report carried out in 2018 which looked at the impacts of the new M8 and A8 roads and amended layouts. It included verification of model-predicted concentrations from this earlier report within NLC monitoring data for the baseline year 2019 and provided predictions of local air quality in the future years of 2022 and 2028.This 2020 study looked at three distinct areas:-

- Expansion and update of the A8/M8 model;
- Development of the Bargeddie area model (including the Glenboig-Gartcosh Community Growth Area); and
- Assessment of the potential effects of major infrastructure projects.

The conclusions and recommendations within the 2020 dispersion modelling study report will be fully considered in 2021 and any relevant actions taken.

- Air quality Planning Guidance was updated but is still going through the consultation process prior to being formally adopted
- As part of the response to national Clean Air Day 2020 we ran a design-an-air-quality banner competition in Chapelhall Primary School (adjacent to the Chapelhall AQMA). The winning design was made into a banner for display outside the school, and the school also benefitted from new eye-catching kiddie signs with “no parking” and “no idling” messages, as well as air quality promotional gifts for the children who took part in the design competition.

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

- The purchase of a low-cost air quality sensor did not go ahead in 2020 as a result of workload having to be prioritised to respond to work associated with the Covid-19 pandemic. The time it takes to undergo the procurement process for the purchase was also a factor. Funding has been secured to purchase the low-cost sensor in 2021/22.
- The proposed new air monitoring site at Ravenscraig was not carried out in 2020 although the site equipment (enclosure etc) was purchased and is currently in storage. This was due to staff shielding as a result of the Covid-19 pandemic and workload pressures. A suitable site has now been identified and preparatory works are underway for the site to be fully commissioned in 2021/22.
- The planned Eco Stars workshop could not go ahead in March 2021 because of the national lockdown in response to the Covid-19 pandemic.

- The revocation of the AQMA at Croy was not finalised in 2020 as had been planned due to the prioritisation of work directly associated with the coronavirus pandemic

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

- The revocation of the Croy AQMA will be completed
- Installation of a new air monitoring site at Ravenscraig will be completed
- New equipment will be purchased, to upgrade monitors in existing sites. This will comprise one Particulate analyser, two Nitrogen Dioxide analysers and a low-cost air quality sensor
- The updated Air Quality Planning Guidance will be formalised and adopted for use in development management in North Lanarkshire
- The Treasure Trail in Strathclyde Park will be launched and will run throughout Summer 2021
- Air quality funding awarded for cycling promotional activities will be utilised for a project with this aim. Exact details on this still require to be finalised and will be subject to change due to the ongoing Covid-19 pandemic. It is thought it could involvee-bike taster sessions, or bike proficiency training sessions for families
- Action Plan Measure 12 – Motherwell Active Travel Hub – a potential location has been identified in Motherwell Town Centre for the planned Active Travel Hub. Interest has also been expressed by a local social enterprise and partner agency in developing a bike skills and maintenance hub at nearby Ravenscraig. There are also plans for cycle facility improvements in Strathclyde Country Park. These initiatives could both support and alter the role of an active travel hub in Motherwell Town Centre. A further commission is therefore being procured this financial year (2021/22) which will look at the three potential facilities at Ravenscraig, Motherwell Town Centre and Strathclyde Country Park, the role of each facility and how they can be linked together. It will also further explore market demand, including for cycle hire/bike library uses, develop business and operational plans and develop site and unit layouts. It is intended to award this commission in November 2021 with completion in Spring/Summer 2022. Further engagement will also be undertaken with SUSTRANS to discuss funding and other support opportunities for an active travel hub in Motherwell Town Centre.

- With sustainable travel being a key focus behind a number of the action plan measures the Council is progressing a project to encourage the uptake of sustainable travel in Motherwell, including the Motherwell AQMA. Funding from the Scottish Government has been granted and will be used to assist with this project, known as the Motherwell Town Centre Transport Interchange.
    - Aimed at improving public transport infrastructure on Muir Street, Motherwell, to encourage modal shift and to reduce traffic congestion by providing more capacity for buses and taxis;
    - Coordinated with investment by Scotrail Abellio, Transport Scotland and SPT in the redevelopment of Motherwell Railway Station;
    - It will improve air quality in this area of Motherwell Town Centre by reducing traffic congestion and making public transport a more attractive and accessible alternative to the car;
    - The current stage is that the Motherwell Railway Station works are under way, due to be completed by June 2022. The Muir Street works are being procured, with the aim to coordinate delivery with the station works for completion by June 2022;
    - Designs for complementary active travel routes work linking Motherwell Railway Station with Strathclyde Country Park and through Motherwell Town Centre are being developed. The first phase of works will be delivered during 2021/22.
- Scottish Government air quality funding has also been secured in 2021 to expand the large scale, regional dispersion modelling study carried out in 2020, to include the Wishaw/Newmains area which feeds directly down past the ongoing Ravenscraig development site into Motherwell Town Centre and the Motherwell AQMA.

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	NLC Vehicle Fleet and Work Journeys • The Council will strive to reduce car journey for work purpose e.g. 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	See comment	Ongoing	Current pool car fleet in North Lanarkshire consists of 137 vehicles • 8 electric • 125 petrol • 4 diesel Also an additional 56 electric vehicles in NLC fleet (not pool cars) • 1 electric RCV • 26 people carriers • 7 panel vans • 22 Nissan Acenta vans Since Covid-19 there has been a reduction in use of pool cars due to home working and buildings closed, which led to transferring vehicles to users on a permanent basis. Also less work-journeys due to home-working and remote meetings.
2	Vehicle Fleet Efficiency • 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	Vehicle Fleet Efficiency/Traffic Management	Driver training and Eco Driving Skills	NLC Fleet and Transport	2018	2018-2021	NA	Anticipated reductions in NLC vehicles fleet contributions	Ongoing	Ongoing	380 NLC vehicles are fitted with tracker telematics, which provides live information on vehicle and driver performance. DCPC training continues to be carried out for all staff covered by DCPC legislation.

	• The Council will introduce scheduling of Council vehicles eg. By coordinating school bus/minibus/community transport vehicles										Optimal routing of NLC buses has been put on hold in 2020 due to covid-19 pandemic, however waste still use Fleetroute to manage their street routing and the efficiency of vehicles.
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 (TRL Ltd)	2018	2018-2021	NA	Targeted reduction of certain vehicle sectors in AQMAs leading to reduced emission in AQMAs	Ongoing	Ongoing	In 2020 we continued to run our Eco Stars fleet recognition scheme, through TRL Ltd. Although this was impacted on by the Covid-19 pandemic our total membership now stands at 250 members, equating to 8480 vehicles. Due to the pandemic we were unable to run the Eco Stars bus operator workshop but it is hoped we can run this in 2021/22.
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 (e.g. NHS Lanarkshire)to encourage similar provision to ensure adequate coverage of EV charging points across NLC area	Promoting low emission transport	Promotion of EV charging	NLC/other public bodies in area	2018-2021	2018-2021	NA	Greater facilities for EV should encourage uptake, reducing vehicle emission in AQMAs	Ongoing	Ongoing	In 2020 air quality grant funding was used to purchase and install EV charging points in two council depots. These complement some already there and will be used to support the Council's transition to ULEV over the coming years. The Council's PACE project was completed in March 2021. Details on the EV charging points installed along with SPEN can be found in the Committee report at https://mars.northlanark

											shire.gov.uk/egenda/images/att95518.pdf
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	NLC is working towards the decarbonisation of our fleet to achieve our commitment to replace the fleet with ULEV by 2025. At this time we are finalising the vehicle procurement for the coming 5 years and identifying which vehicles can be replaced by electric vehicles by 2025. 2020 saw the addition to our fleet of a fully electric 26t electric compaction refuse collection vehicle.
6	Increasing levels of sustainable travel • 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 activities 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 campaigns	NLC Protective Services, roads, City Deal. Also external agencies.	2018/19	2018-2021	NA	Unknown	Ongoing	Ongoing	Although cycling training and bike repair sessions had been arranged for Spring 2020 this was unable to be carried out as a result of the Covid-19 pandemic. NLC Draft Active Travel Strategy was developed in 2020/21 and is being considered at the Council's Environment and Transportation Committee in August 2021 for approval. In 2020/21 the Council have engaged consultants to develop design proposals for improved active travel routes between Cumbernauld and Croy station, and between Ravenscraig and Wishaw station. It is the intention to commence construction on these projects in 2021/22.

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 travelling in AQMAs should improve overall AQ in AQMAs	Initial meeting held with SPT in early 2020 just prior to start of pandemic	Ongoing	Held an initial meeting with SPT in early 2020 however the mattercould not be taken forward because of the Covid-19 pandemic
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	Initiative already in place and ongoing	Ongoing	A consultant was engaged in 2018/19 to undertake a Workplace Travel Survey. With the convid-19 pandemic this Workplace Travel Survey will require to be updated to reflect changed working practices once the pandemic is over. There was no further action on this in 2020.
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	2018-2021	NA	Unknown	Ongoing	Ongoing	North Lanarkshire Council continued its programmes for Vehicle Emission Testing and Vehicle Idling patrols in 2020.
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	2018-19	NA	Unknown, but aim is to be a deterrent to driving in town centres	Completed and ongoing	Ongoing	Parking wardens were employed by NLC in 2018. During 2020 they were not operating due to the Covid-19 pandemic. They resumed activities later in 2020 and continue to operate in NLC town centres.
11	The Council will investigate options for improving bus service provision in North Lanarkshire • Encourage partnership with SPT and bus operators to ensure major developments are fully connected from the outset • Investigate/implement better bus infrastructure, particularly bus priority measures to ensure greater uptake of bus travel and reduce emissions from buses, helping congestion	Transport Planning and infrastructure Traffic management Vehicle fleet efficiency	Bus route improvement Bus priority Promoting low emission transport	NLC SPT	2018-2021	2019-2021	NA	Anticipated reduction in emissions		Ongoing	NLC has been in discussion with SPT in 2020 to identify bus infrastructure improvements on the A89 between Airdrie and Caldercruix corridor and intend to design and implement some of these measures in 2021.

	• Work with bus operators (e.g. via Eco Stars) to improve emission standards for buses operating in North Lanarkshire and particularly within AQMAs										In early March 2020 we held, in conjunction with TRL Ltd and South Lanarkshire Council, an Eco Stars workshop for bus operators. This was aimed at raising awareness of the bus retrofitting grants/opportunities for upgrading their fleet. As a result of the workshop three local bus companies were awarded funding to upgrade their fleet.
12	Fully support and input to where possible the planned Strategic Travel Hub for Motherwell, ensuring project objectives including 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 improvement-interchanges, stations and services. Also public cycle hire schemes	NLC City Deal	2018-2021	2019-2021	NA	Anticipated reduction in emissions in Motherwell through modal shift and greater options for sustainable travel	Ongoing	Ongoing	In 2020 a location has been identified for the planned Strategic Travel Hub for Motherwell in the town centre. Please see below for further information on this.
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 traffic and therefore emissions in Chapelhall	See comment	2021	A public consultation was undertaken in respect of the recently installed chicanes in Chapelhall (aimed at reducing HGV traffic through the village). The public consultation returned a majority vote for the removal of the chicanes and their replacement with speed tables. This work will commence in 2021.
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 AQMAs.	Policy guidance and development control	Air Quality Planning and policy guidance	NLC Planning	2018	2019-2021	NA	Unknown	In place	Ongoing	In 2020 we continued to raise and discuss the issue of air pollution in relation to proposed major infrastructure projects to ensure that AQ Impact Assessments are carried out where necessary.

											Air quality continued to be recognised as a significant factor when assessing City Deal major road infrastructure projects.
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	2018	2018-2021	NA	Unknown	In place	Ongoing	See update in section 2.2.2 of main report
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	2018-2021	NA	Unknown	In place	Ongoing	In 2020 we have continued to ensure that air quality is appropriately considered in all relevant planning applications and policy.
17	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:- • 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 Civic Centre, Motherwell, 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 $PM_{2.5}$ • An updated dispersion modelling exercise will be undertaken of the A73, Monklands and Motherwell area in order to obtain an accurate picture of air quality levels in North Lanarkshire	Public information	Awarenes s raising	NLC Protective Services	2018	2019	NA	NA	Ongoing	Ongoing	In 2020 the following projects were completed:- Civic Centre monitoring unit was moved to Adele St, Motherwell New Particulate Matter analyser (FIDAS) was purchased to replace an ageing BAM. Measuring PM10 and PM2.5 it was installed in 2020. Dispersion modelling studies carried out to look at the potential impact of major road infrastructure changes that are taking place and their likely impact on the existing AQMAs.
18	The Council will ensure that air quality is included within the Council's input to the NHS Lanarkshire Joint Health Protection Plan and	Public information	Other	NLC Protective Services	2018-2021	2018-2021	NA	NA	NA	NA	This information is requested by NHS Lanarkshire at the time

	carry out work with local health boards to improve awareness of air pollution as a public health issue.			NHS							they are preparing their report. No request for information from Protective Services was requested in 2020.
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	2018-2021	NA	Unknown	In place	Ongoing	In 2020 we worked with South Lanarkshire Council to commission an update to the Strathclyde Park walking and cycling routes map. This involved creating a Treasure Trail route. Development of this onto the app began in 2020 and continued into 2021.
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	2018-2021	•	Unknown	In place	Ongoing	With the Covid-19 pandemic and the subsequent closure of schools it was very difficult to undertake any awareness-raising of air quality in schools. That said, however, in 2020 we worked with Chapelhall Primary School to
21	Planning policy • 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 and Regeneration Service	2018	2018	NA	NA	In place	Ongoing	Update of Planning Guidance is ongoing. The new draft guidance has been prepared and will now undergo consultation with relevant stakeholders before being formally adopted. The modified NLC Local Development Plan provides support for EV charging infrastructure in the development management process. Specifically this is covered in sections EDQ1 – Policy – Site Appraisal, and EDQ3-Policy – Quality of Development

22	The Council will undertake a feasibility study into strategic planting of “green wall” structures in relevant areas of North Lanarkshire	NA	NA	NC/External agency	2018-2021	2020 - 2021	NA	Unknown at this time		2021	A desktop literature review study was carried out in 2020 into green wall infrastructure with regard to its suitability for use within North Lanarkshire.

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 2020. Table A.1 in Appendix A shows the details of the sites. National monitoring results are available at http://www.scottishairquality.scot/

Maps showing the location of the monitoring sites are provided at http://www.scottishairquality.scot website. Further details on how the monitors are calibrated and how the data has been adjusted are included in Appendix C.

3.1.2 Non-Automatic Monitoring Sites

North Lanarkshire Council undertook non- automatic (passive) monitoring of NO_2 at 84 sites during 2020. Table A.2 in Appendix A shows the details of the sites.

Maps showing the location of the monitoring sites are provided on the http://www.scottishairquality.scot/ website. Further details on Quality Assurance/Quality Control (QA/QC) and bias adjustment for the diffusion tubes are included in Appendix C.

3.2 Individual Pollutants

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

3.2.1 Nitrogen Dioxide (NO_2)

Table A.3 in Appendix A compares the ratified and adjusted monitored NO_2 annual mean concentrations for the past five years with the air quality objective of 40 µg/m^3.

In 2020 the annual mean NO_2 concentrations measured at all continuous automatic monitoring sites in North Lanarkshire were all significantly below the air quality objective of 40 µg/m^3. It has not been possible to identify a trend in the data due to NO_2 levels in 2020 being considerably lower than usual due to the ongoing Covid-19 pandemic and the resulting substantial reduction in road traffic emissions, which is the principle source of NO_2 in North Lanarkshire. In comparing NO_2 in the past two years all monitored NO_2 levels at the continuous monitoring sites in 2020 were approximately a third less than levels measured in 2019.

Measured NO_2 concentrations at passive diffusion tube sites in 2020 show all sites complying comfortably with the annual mean air quality objective of 40 µg/m^3. The highest measured NO_2 concentration in 2020 was 25.8 µg/m^3. This was at Central Way, Cumbernauld (DT61), and is still significantly below the air quality objective of 40 µg/m^3. As is the case with the automatic monitoring results for NO_2 it is not possible to identify any trends in the diffusion tube data from 2020, due to the reduced NO_2 levels as a result of the ongoing Covid-19 pandemic and associated reduction in road traffic emissions. Similar to the automatic NO_2 results however, the diffusion tube results for 2020 show a reduction ranging from approximately 30-40% from 2019 levels.

For diffusion tubes, the full 2020 dataset of monthly mean values is provided in Appendix B.

Table A.4 in Appendix A compares the ratified continuous monitored NO_2 hourly mean concentrations for the past five years with the air quality objective of 200 µg/m^3, not to be exceeded more than 18 times per year. No exceedances of the hourly mean objective level were measured in 2020. In addition, there were no measured annual mean concentrations in excess of 60 µg/m^3 at non-automatic (diffusion tube) monitoring sites in 2020, indicating that exceedance of the 1-hour mean objective is also unlikely at these sites.

3.2.2 Particulate Matter (PM_{10})

Table A.5 in Appendix A compares the ratified and adjusted monitored PM_{10} annual mean concentrations for the past five years with the air quality objective of 18 µg/m^3.

One new automatic monitoring station was set up in 2020. This is in Adele Street, Motherwell, and was relocated from the adjacent Civic Centre car park, Motherwell site, as it was felt that Adele Street was more representative of receptor exposure in the area. The new Adele Street site is within the Motherwell AQMA and monitors PM_{10} , $PM_{2.5}$ and NO_2.

In 2020 all automatic continuous monitoring sites measuring PM_{10} in North Lanarkshire comfortably complied with the annual mean air quality objective of 18µg/m^3, with all sites showing an annual mean within the range 7.8-9.0 µg/m^3. A high rate of data capture was achieved at all automatic monitoring sites in 2020 for PM_{10}. Elevated levels of PM_{10} noted at the Kirkshaws automatic monitoring station (CM6) in 2019 reduced significantly in 2020 thus confirming that the exceedances of the annual mean objective seen in 2019 were likely caused by local building works immediately adjacent to the monitoring station for part of the year. Monitored levels of PM_{10} in 2020 were noted to be lower than 2019 but not greatly. It is evident that the reduction in PM_{10} levels as a result of the Covid-19 pandemic is not as significant as the reductions seen in measured levels of NO_2. A conclusion that can be drawn from this is that residual background PM_{10} remains the main component of total PM_{10} in North Lanarkshire at this time.

Table A.6 in Appendix A compares the ratified continuous monitored PM_{10} daily mean concentrations for the past five years with the air quality objective of 50 µg/m^3, not to be exceeded more than seven times per year. There were no measured annual mean concentrations in excess of 60 µg/m^3 at non-automatic sites in 2020, indicating that exceedance of the 1-hour mean objective is also unlikely at these sites.

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 five years with the air quality objective of 10 µg/m^3.

There were no exceedances of the annual mean objective for $PM_{2.5}$ recorded at any of the monitoring sites in North Lanarkshire in 2020. Data capture at all sites was found to be high, with the exception of Adele Street, Motherwell, which is the new site, and was only operational for part of 2020. Across all sites there was a slight decrease in measured levels of $PM_{2.5}$ in 2020, from 2019 levels. It is unclear if this is related to reduced road traffic as result of the ongoing Covid-19 pandemic.

3.2.4 Sulphur Dioxide (SO_2)

Following a number of years with no measured exceedances of SO_2 and with the agreement of the Scottish Government the monitoring of SO_2 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 air quality objectives 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 2020. No significant sources of these pollutants have been identified in the previous round of review and assessment. Should any sources become known to the Council then discussions around the monitoring of these pollutants would be undertaken to decide on the most appropriate course of action.

4 New Local Developments

4.1 Road Traffic Sources

North Lanarkshire Council Roads and Transportation Team were consulted in relation to changes in traffic flows on roads within the area in 2020 and the following information was reported.

- Narrow, congested streets with residential properties close to the kerb – there are no new/changed streets that meet this criteria.
- Busy streets where people may spend one hour or more close to traffic – there are no new/changed streets that meet this criteria.
- Roads with a high flow of buses and/or HGVs – there are no new/changed roads that meet this criteria.
- Junctions – the ongoing housing development at Meadowhead Rd, Carfin has generated additional traffic using the newly opened Meadowhead Rd arm of the roundabout at the junction with A721, Craigneuk Rd. This area is not an AQMA. Roads will continue to monitor the impact of the additional traffic in this area.
- New roads constructed or proposed – any new roads constructed have been residential streets within new housing developments,
- Roads with significantly changed traffic flows – there are no new/changed roads that meet this criteria.
- Bus or coach stations – there are no new/altered bus or coach stations.

In addition to the above information, the following projects are of interest in terms of air quality in North Lanarkshire.

- Chapelhall – following the introduction of chicanes aimed at reducing HGV traffic through the village of Chapelhall, which proved to be locally unpopular, a public consultation was undertaken on the matter. The result of this was a majority vote for the removal of the chicanes and the replacement with speed tables. This work is scheduled to be carried out in summer 2021.
- Junction of A73 and South Biggar Road – the 4-way signalised junction that had previously been considered for this junction is no longer being taken forward. At time of writing a new design is being finalised for the construction of two mini roundabouts

at the Craigneuk Avenue and South Biggar Road junctions. This project should be ready for consultation in 2021, dependent on design constraints.

- Junction of Brownsburn Road and Petersburn Road – similar to South Biggar Road project, a new design layout is being considered. The project will now include a mini roundabout at Petersburn Road junction and a pedestrian crossing facility between Petersburn Road and Brownsburn Road junctions. The Council is currently looking at obtaining additional land at this location and, once acquired, the design will be further detailed to allow for construction in 2022 (dependant on budgets).
- As detailed in the 2020 APR, changes to the existing road network within and immediately adjacent to the Motherwell AQMA are planned over the next few years. These changes form part of the pan-Lanarkshire orbital route and include the dualling of the A723 in the north of Motherwell to create access from the Ravenscraig development site to the M8 motorway, as well as the dualling of Airbles Road at the southern end of Motherwell which will facilitate access to the Ravenscraig site from the town of Motherwell and also the M74 motorway. Details are provided below.

City Deal Road Infrastructure Projects

Glasgow City Region City Deal is an agreement between the UK Government, Scottish Government and 8 local authorities, including North Lanarkshire Council. The City Deal consists of a £1.13 billion Infrastructure Fund to create economic growth by improving transport and regenerating or developing sites over the next 20 years. In North Lanarkshire, City Deal aim to provide major road infrastructure to support the redevelopment of Ravenscraig, as this is a nationally important development site. The main focus will be to deliver the Pan Lanarkshire Orbital Transport Corridor, or Pan Lan as it is known.

The Pan Lan, is a £190 million pound project linking the M74 in the south with the M80 in the north on a route through Ravenscraig. Pan Lan will create new and upgraded transport infrastructure in North Lanarkshire. Along with similar works in South Lanarkshire it will support the economic regeneration of the area.

Pan Lan is made up of 3 projects, as follows.

<u>East Airdrie Link Road (EALR)</u>

- Creating a new link road between Newhouse and Stand which will reduce traffic congestion;

- Will link in with the Ravenscraig access infrastructure;
- Will improve air quality in the Chapelhall AQMA by relieving congestion along the A73 and the Chapelhall AQMA;
- The road will have limited connections to the local road network in order to optimise traffic flow. It will be a new single carriageway road link together with an independent pedestrian and cycle path from north of the M8 (A723/Newhouse Interchange) to the A73, north of Stand;
- Current stage is that the Stage 2 Public Engagement outlining the options appraisal process and sharing the emerging preferred route concluded on 23rd June 2021;
- The expected timetable for the EALR is to finalise feedback and confirm the route (Summer 2021), followed by the development of the design, with a view to submitting a planning application in Autumn 2022.

Ravenscraig Access Infrastructure North

- Plans for access to the north section of Ravenscraig involve upgrading 3km of the A723 to provide a dual carriageway and shared footway/cycleway from the New Craig Road junction at Ravenscraig to the M8 at Holytown;
- The current status is that an outline business case was approved by North Lanarkshire Council and Glasgow City Region City Deal in 2020. The delivery programme, as per the approved outline business case, is for works to start on site in 2024 and be completed in 2025.

Ravenscraig Access South

- Creating a new road link and pedestrian and cycle paths into Ravenscraig from Airbles Road, and continuing to the Ravenscraig Regional Sports Facility;
- Proposals for the scheme were developed during 2020/21 leading to a detailed planning application, submitted in April 2021. This application sought planning permission for the new dual carriageway from Ravenscraig Regional Sports Facility to Motherwell, including a new bridge crossing under the West Coast Main Line Railway, an improved junction at Airbles Rd/Windmillhill St and improved walking and

cycling links. Subject to gaining planning permission and completing a successful procurement process, works are planned to begin in Spring 2023.

- A planning application for completing the dualling of Airbles Road will follow later in 2021.

4.2 Other Transport Sources

North Lanarkshire Council 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 – there are no relevant sources in North Lanarkshire
- Locations where diesel or steam trains are regularly stationary for periods of 15 minutes or more, with potential for relevant exposure within 15m – there are no relevant sources in North Lanarkshire
- Locations with large numbers of movements of diesel locomotives – no relevant sources in North Lanarkshire
- Ports for shipping – there are no relevant sources within North Lanarkshire.

4.3 Industrial Sources

On consulting with SEPA for this section they advised that due to a significant security breach on their IT systems they were unable to provide the information they would normally provide to assist in detailing this section.

- Industrial installations : new or proposed installations for which an air quality assessment has been carried out – no new information provided by SEPA, due to data processing restrictions.
- Industrial installations : existing installations where emissions have increased substantially or new relevant exposure has been introduced – no new information provided by SEPA.
- Industrial installations : new or significantly changed installations with no previous air quality assessment – no new information provided by SEPA.
- Major fuel storage depots storing petrol – no new information provided by SEPA, however, as of 2019 there were no major fuel storage depots storing petrol in North Lanarkshire

- Petrol stations - information from NLC Trading Standards service has confirmed that there are 52 premises with a Petroleum Licence in North Lanarkshire. The vast majority of these are retail petrol stations.
- Poultry farms – no new information provided by SEPA.

4.4 Commercial and Domestic Sources

On consulting with SEPA for details of any new commercial and domestic sources they have advised that due to a security breach on their IT systems they are unable to provide any information on this.

- Biomass combustion plant – individual installations. SEPA response as detailed above, and NLC are not aware of any new biomass combustion plant that would be relevant in this case.
- Areas where the combined impact of several biomass combustion sources may be relevant – no information provided by SEPA and NLC not aware of anything relevant in respect of this.
- Combined Heat and Power (CHP) Plant no information provided by SEPA on this
- 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

Due to a security breach SEPA were unable to provide the information they would normally provide to assist in detailing this section. As such the information provided below in relation to new developments with fugitive or uncontrolled sources is solely based on knowledge from NLC Pollution Control staff.

- Landfill sites – as far as NLC is aware there are no new landfill sites with fugitive or uncontrolled sources of PM.
- Quarries – as far as NLC is aware there are no new quarries with fugitive or uncontrolled sources of PM.
- Unmade haulage roads on industrial sites – as far as NLC is aware there are no new unmade haulage roads on industrial sites with fugitive or uncontrolled sources of PM.

- Waste transfer stations – as far as NLC is aware there are no new waste transfer stations.
- Other potential sources of fugitive particulate matter emissions - none.

5 Planning Applications

North Lanarkshire Council Planning and Regeneration Service was consulted for details of any relevant planning applications under consideration and planning applications granted consent during 2020 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 2020

Application Number	Brief Description of Development	AQ Impact	Comments/Further Info
17/01248/PPP	Residential development at Main St, Newmains	AQ Impact Assessment requested, reviewed, and all ok. Not within/near AQMA	Further information available at:- https://eplanning.northlanarkshire.gov.uk/online-applications
18/00444/FUL	Residential development (291 houses) at former Stoneyetts Hospital, Moodiesburn	AQ Impact Assessment submitted, reviewed and all ok. Not within/near AQMA	Further information available at:- https://eplanning.northlanarkshire.gov.uk/online-applications
18/00463/PPP	Revision of mixed use development at Ravenscraig APB 4&5. Previous application 01/00758/OUT	AQ Impact Assessment submitted, reviewed and all ok. Applicant advised to be mindful of the AQ impact of creeping development as site progresses. Near Motherwell AQMA	Further information available at:- https://eplanning.northlanarkshire.gov.uk/online-applications
18/01785/PPP	Residential development including 523 units, Greengairs.	AQ Impact Assessment submitted,	Further information available at:-

		reviewed and all ok. Not in/near AQMA	https://eplanning.northlanarkshire.gov.uk/online-applications
19/00124/FUL	Residential development (638 units) and neighbourhood facility at Torrance Park, Holytown	AQ Impact Assessment submitted, reviewed and all ok. Not in/near AQMA	Further information available at:- https://eplanning.northlanarkshire.gov.uk/online-applications
19/00274/PPP	Residential development (750 units) at Mount Ellen, Gartcosh	AQ Impact Assessment submitted, reviewed and all ok. Not in/near AQMA	Further information available at:- https://eplanning.northlanarkshire.gov.uk/online-applications
19/01284/FUL	Energy Recovery Centre with associated mechanical pre-treatment, incinerator, re-organisation of existing infrastructure area etc.	EIA development. This development falls within the SEPA pollution permitting process	Further information available at:- https://eplanning.northlanarkshire.gov.uk/online-applications
19/01506/FUL	4 industrial units, Eurocentral	AQ Impact Assessment not required. Not in/near AQMA	Further information available at:- https://eplanning.northlanarkshire.gov.uk/online-applications
20/00035/MSC	Residential development (523 houses), Glenboig	Environmental Statement submitted, includes AQ information	Further information available at:- https://eplanning.northlanarkshire.gov.uk/online-applications
20/00045/AMD, amendment to existing permission 19/00353/FUL	Demolition of high rise properties and erection of 76 flats for social housing, Burns Rd, Cumbernauld	No AQ Impact Assessment required due to size of development, and	Further information available at:- https://eplanning.northlanarkshire.gov.uk/online-applications

		also not in/near AQMA	
20/00110/MSC, amendment to existing permission 17/00389/PPP	Residential development (104 dwellings) at Springfield Farm, Shotts	AQ Impact Assessment submitted and approved in respect of original application (17/00389/PPP)	Further information available at:- https://eplanning.northlanarkshire.gov.uk/online-applications
20/00235/MSC	Masterplan and phasing of residential development – 350 units. Covers matters in earlier application 17/00389/PPP	AQ Impact Assessment submitted, reviewed and ok.	Further information available at:- https://eplanning.northlanarkshire.gov.uk/online-applications
20/00360/PPP	Residential development, application in principle, Overtown, Wishaw	AQ Impact Assessment submitted, reviewed and ok. Not in/near AQMA	Further information available at:- https://eplanning.northlanarkshire.gov.uk/online-applications
20/00412/PPP	Mixed-use development including cinema, hotel, commercial leisure etc. Cumbernauld	AQ Impact Assessment submitted, reviewed and ok. Not in/near AQMA	Further information available at:- https://eplanning.northlanarkshire.gov.uk/online-applications
20/00418/FUL	Demolition of flats and construction of 150 houses at Holehills, Airdrie	AQ Impact Assessment submitted, reviewed and ok. Not in AQMA	Further information available at:- https://eplanning.northlanarkshire.gov.uk/online-applications

6 Impact of COVID-19 upon LAQM

There is no doubt that the ongoing Covid-19 pandemic, and the consequent national lockdown and restrictions has had a significant impact on the Environmental Health service in North Lanarkshire. With a number of staff members immediately having to shield, and the Government advice to stay at home the early stages of the pandemic (from March 2020) were very challenging and the way we normally worked required to be assessed and modified to ensure we worked safely in line with Government legislation and guidance. In addition with trying to fulfil our usual work commitments, including LAQM, we were required to prioritise work directly associated with the pandemic, including enforcement and offering guidance and support to commercial premises as well as assisting in the investigation of cases of Covid-19 in businesses in North Lanarkshire. In prioritising this work there was a knock-on effect which resulted in delays in some LAQM work. In addition to this, some of the planned air quality action plan projects could not proceed due to the Covid-19 pandemic. This included work with local schools, awareness raising initiatives and the planned Eco Stars bus operator workshop.

In terms of air quality monitoring, I can confirm that in North Lanarkshire the impact of the Covid-19 pandemic specifically on air quality monitoring and LAQM was as follows:-

- With some staff shielding, other members of staff were redeployed to undertake the changeover of the Council's 84 diffusion tubes. Although challenging, other staff members worked together to ensure the changeover of the diffusion tubes at the relevant times, even during the lockdown period. Government guidancein relation to social distancing, the use of PPE etc. was observed at all times.
- The automatic air monitoring stations continued to operate in 2020, including during the lockdown period. As with the diffusion tubes another member of staff assisted with this along with our equipment suppliers under the ongoing maintenance and servicing contracts we have in place. In addition to the existing automatic monitoring stations I can confirm that it was during 2020 that the new automatic monitoring site at Adele Street, Motherwell, was installed.
- No low cost air quality monitoring was carried out in North Lanarkshire in 2020. There was no requirement to undertake such monitoring during that period.
- As a general observation, as discussed fully in chapter 3 the levels of NO_2 measured across all our diffusion tubes in 2020 was markedly 30-40% below levels from the

previous year (2019). As we go through 2021 and restrictions ease it will be interesting to make comparisons with levels both before, and during the pandemic.

7 Conclusions and Proposed Actions

7.1 Conclusions from New Monitoring Data

Conclusions from the 2020 monitoring data presented in this report can be summarised as follows:-

- Measured NO_2 at all automatic monitoring stations in 2020 was comfortably below the statutory air quality objectives for both annual mean and short-term statutory objectives. A high level of data capture was achieved at all sites. Monitored levels of NO_2 were down on 2019 levels by on average by 30%. This is most likely as a result of the ongoing Covid-19 pandemic and subsequent reduction in road traffic.
- All passive diffusion tubes also measured NO_2 well below the statutory annual mean objective, with the highest reading being 25.8 µg/m^3 at DT61, Central Way, Cumbernauld. All diffusion tube sites showed a reduction of 30-40% on 2019 results, again most likely due to a marked reduction in road traffic as a result of the Covid-19 pandemic.
- No NO_2 monitoring sites breached the short-term statutory objective.
- All automatic PM_{10} monitoring in 2020 measured below the annual mean objective, with all but one site measuring 7.8-9.0 µg/m^3. Although as with NO_2 there was a marked reduction on 2019 levels this was not so significant for PM_{10}. This could indicate that the measured levels of PM_{10} now mainly comprise the background PM_{10} in the area. Further monitoring over the coming years should confirm if this is the case.
- North Lanarkshire Council monitors $PM_{2.5}$ at seven automatic air monitoring stations. All measured annual mean $PM_{2.5}$ was found to comply with air quality objectives in 2020. Monitoring of $PM_{2.5}$ will continue in 2021 and a further new monitoring site will be operational once new equipment is purchased and installed.
- The automatic air station at Sunnyside Road, Coatbridge, has consistently measured below national air quality objectives for all pollutants over the past few years and so a decision has been taken to relocate the site to Whifflet Cross. Although we have operated a monitoring site for a long number of years at Calder Court in Whifflet it has long been recognised that this is now not the most appropriate site to monitor relevant public exposure. A new site that is closer to the source (road traffic) and

relevant receptors has been identified and the monitoring unit will be relocated in 2021. This site is within the Coatbridge AQMA.

- Further automatic monitoring at the Croy AQMA has again indicated levels far below the statutory air quality objectives for both annual mean and short-term exposure. The Croy AQMA is in the process of being revoked however this process has been delayed as a result of workload pressures arising from the Covid-19 pandemic. It is anticipated that the revocation of the Croy AQMA will be completed in 2021/2022.

7.2 Conclusions relating to New Local Developments

North Lanarkshire Council's Environmental Health team has taken due cognisance of the information provided by the council's Development Management and Strategic Planning Teams in relation to developments in 2020, and also in reviewing Air Quality Impact Assessments that were submitted in support of planning applications in 2020. Consequently, the Council has concluded that there are no significant issues in relation to new local developments. This is due to the developments not located in areas where air quality levels are close to the statutory objective and/or the developments themselves did not lead to significant effects on local air quality or result in exceedances of air quality objectives at nearby sensitive receptors.

The Pollution and Public Health Team will continue to work with the Planning and Regeneration Service to identify any future developments that may present airquality issues and take any action deemed appropriate at that time.

7.3 Proposed Actions

The focus of air quality work in North Lanarkshire in 2021/22 will be as follows.

- Our existing network of NO_2 diffusion tubes will continue to operate and we will closely scrutinise levels as we travel on through the Covid-19 pandemic and its associated restrictions. As is always the case diffusion tube locations will continue tobe reviewed and any relevant alterations will be implemented.
- The Council's network of automatic monitoring stations will also continue to operate in 2021/22, incorporating the new, more representative monitoring site at Whifflet Cross, Coatbridge, and the recently installed monitoring site at Adele Street, Motherwell. In addition to this a new automatic monitoring site is currently being installed at

Ravenscraig. This site is expected to be fully operational in Autumn 2021 and will provide air quality monitoring information as the Ravenscraig site is developed.

- A new Particulate Automatic monitoring capable of monitoring PM_{10} and $PM_{2.5}$ will be purchased (subject to the Council's Procurement Process) and installed in 2021/22. In addition, two new NO_2analysers will be purchased.
- The revocation of the Croy AQMA (delayed from 2020 as a result of work pressures associated with the Covid-19 pandemic) will be completed in 2021/22.
- Preparatory work will be undertaken in 2021, for updating the Council's Air Quality Action Plan, which is due for completion and publication in 2022.
- The Council will continue to operate the environmental fleet recognition scheme – Eco Stars North Lanarkshire through our contractor TRL Ltd. A focus in 2021 will be to encourage all Council suppliers and contractors to enlist with Eco Stars North Lanarkshire.
- In 2021 we will support the Motherwell Active Travel Infrastructure Improvements by contributing funding received from the Scottish Government Air Quality grant towards complementing the ongoing improvements to the Motherwell Transport Interchange. Specifically, this will contribute towards the costs of widening the footways to enable shared use and new directional signage to the existing off-road travel network in and around Motherwell Town Centre and the Ravenscraig Greenlink off-road link.
- In terms of planning applications and major infrastructure projects, particularly those involving the Pan Lanarkshire Orbital Transport Corridor, we will continue to ensure that air quality associated with such projects is fully considered in each of the individual aspects of the project.

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? Which 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};$PM_{2.5}$	YES AQMA 1	FIDAS	20	10	2
CM2	Croy	Special-by quarry	272775	675738	NO_2; PM_{10};$PM_{2.5}$	YES, CROY AQMA(in process of being revoked)	FIDAS	30	10	2
CM3	Whifflet, Coatbridge	Urban background	273674	663927	NO_2;PM_{10}	YES COATBRIDGE AQMA	FIDAS(3)	20	30	2
CM4	Motherwell	Roadside	275458	656792	PM_{10};$PM_{2.5}$	YES MOTHERWELL AQMA	FIDAS	20	8	2
CM5	Shawhead, Coatbridge	Roadside	273411	662997	NO_2; PM_{10};$PM_{2.5}$	YES COATBRIDGE AQMA	FIDAS	22	20	2
CM6	Kirkshaws	Roadside	272523	663030	NO_2; PM_{10};$PM_{2.5}$	YES COATBRIDGE AQMA	FIDAS	20	8	2
CM7	New Edinburgh Rd, Uddingston	Roadside	269144	661496	NO_2;PM_{10}	NO	Chemiluminescent; BAM Gravimetric Equivalent	30	10	2
CM8(4)	Sunnyside Rd, Coatbridge	Roadside	273056	665234	NO_2;PM_{10}	NO	Chemiluminescent; BAM Gravimetric Equivalent	30	10	2

Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA? Which AQMA?	Monitoring Technique	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Inlet Height (m)
CM9(5)	Civic Centre, Motherwell (from 2015)	Mobile Lab	275788	656219	PM_{10};$PM_{2.5}$	YES MOTHERWELL AQMA	Chemiluminescent TEOM	50	15	3
CM10	Kenilworth Drive, Airdrie	Roadside	277385	665837	NO_2;PM_{10}	NO	Chemiluminescent; BAM Gravimetric Equivalent	30	10	2
CM11	Adele Street, Motherwell	Roadside	275642	656148	NO_2; PM_{10};$PM_{2.5}$	YES MOTHERWELL AQMA	Chemiluminescent FIDAS	20	0.75m	2

Notes:

(1) 0m 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.

(3) CM3 Whifflet Coatbridge – as stated in Annual Statistics Report for 2020, PM_{10} was monitored using Conventional TEOM Gravimetric Equivalence technique for the month of January. From 28th January 202 onwards, PM_{10} was monitored using the FIDAS technique.

(4) CM8 – Sunnyside Rd, Coatbridge was turned off in September 2020 as the equipment was being relocated to a new, more representative site at Whifflet Cross.

(5) CM9b not utilised in 2020

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? Which AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube co-located with a Continuous Analyser?	Tube Height (m)
DT10	Castle Court, Castlecary	Roadside	278528	677864	NO_2	N	10	2	N	2.5
DT47	Lay-by in Stand	Roadside	276538	668899	NO_2	N	10	2	N	2.5
DT48	Bus stop, Bron Way, Cumbernauld	Kerbside	275920	674203	NO_2	N	10	2	N	2.5
DT49	Swimming pool, Kilsyth	Kerbside	271514	678040	NO_2	N	50	2	N	2.5
DT50	1791 Cumbernauld Rd, Stepps	Kerbside	265198	668204	NO_2	N	25	2	N	2.5
DT51	131 Cumbernauld Rd, Stepps	Kerbside	265971	668567	NO_2	N	30	2	N	2.5
DT52	Traffic lights A80 Eastbound, Moodiesburn	Kerbside	269966	670412	NO_2	N	30	2	N	2.5
DT53	Traffic lights A80 Westbound, Moodiesburn	Kerbside	269986	670400	NO_2	N	10	2	N	2.5
DT54 (site renamed DT58 in 2018)	Lochend Rd/Coatbridge Rd, Gartcosh (A752)	Urban background	269828	668354	NO_2	N	20	2	N	2.5
DT55	Whitelaw Rd end, Glenboig	Urban background	272614	668138	NO_2	N	50	2	N	2.5
DT56	Garnqueen Cr, lamp post LHSO, Glenboig	Urban background	271751	668432	NO_2	N	50	2	N	2.5

Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube co-located with a Continuous Analyser?	Tube Height (m)
DT57	Main St/Carrick View jcn, Glenboig	Urban background	272030	668564	NO_2	N	10	2	N	2.5
DT58 (site was DT54 until renamed DT58 in 2018)	Lochend Rd/Coatbridge Rd, Gartcosh (A752)	Urban background	269828	668354	NO_2	N	20	2	N	2.5
DT59	10-16 Coronation Pl, Mount Ellen	Urban background	269356	669173	NO_2	N	20	2	N	2.5
DT61	Under bridge Central Way Eastbound, Cumbernauld	Roadside	275778	674440	NO_2	N	10	2	N	2.5
DT62	Central Way A Westbound, Cumbernauld	Roadside	275920	674511	NO_2	N	10	2	N	2.5
DT63	Central Way B, Westbound, Cumbernauld	Roadside	275642	674271	NO_2	N	10	2	\n	2.5
DT64	Under bridge Central Way West, Cumbernauld	Roadside	275666	674293	NO_2	N	10	2	N	2.5
DT100	Civic Centre, Motherwell	Roadside	275820	656208	NO_2	Y	10	2	N	2.5
DT101	Shields Rd, Motherwell	Roadside	274594	655113	NO_2	N	15	2	N	2.5
DT102	Emily Dr, Motherwell	Urban background	275437	655969	NO_2	N	15	2	N	2.5
DT103	Kethers Lane, Motherwell	Urban background	273986	656985	NO_2	N	10	2	N	2.5

Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube co-located with a Continuous Analyser?	Tube Height (m)
DT104	Coursington Rd, Motherwell	Urban background	276178	657344	NO_2	N	20	2	N	2.5
DT105	Craigneuk Rd, Carfin	Urban background	277244	658415	NO_2	N	10	2	N	2.5
DT106	Camp St, Motherwell	Urban background	275654	656342	NO_2	N	10	2	N	2.5
DT107	Braehead Farm, Bargeddie	Roadside	270929	663464	NO_2	N	500	50m to A8	N	2.5
DT108	MSA Factory, Shawhead, Coatbridge	Roadside	273830	662676	NO_2	N	500	50m to A8	N	2.5
DT110	New Edinburgh Rd(1), M74, Uddingston	Roadside	272789	675735	NO_2	N	30	2	N	2.5
DT111	New Edinburgh Rd(2), M74, Uddingston	Roadside	272789	675735	NO_2	N	15	2	N	2.5
DT112	New Edinburgh Rd(3), M74, Uddingston	Roadside	272789	675735	NO_2	N	10	2	N	2.5
DT113	Tinkers Lane, Motherwell	Roadside	274305	656466	NO_2	N	20	2	N	2.5
DT114	Main St, Overtown	Kerbside	280370	653072	NO_2	N	15	2	N	2.5
DT115	Plantation Rd/Ravenscraig Spine Rd	Kerbside	277282	657607	NO_2	N	15	2	N	2.5
DT116	Dellburn St, Motherwell	Urban background	275981	656111	NO_2	Y Motherwell AQMA	80	2	N	2.5
DT117	Hamilton Rd, Motherwell	Urban background	275091	656986	NO_2	N	20	2	N	2.5
DT118 (site changed number in	Shawhead roundabout	Kerbside	273432	662965	NO_2	Y	30	2	N	2.5

Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube co-located with a Continuous Analyser?	Tube Height (m)
2017 to newDT119 – see later in table)										
DT119	Kirkshaws Rd, Coatbridge	Kerbside	272495	663002	NO_2	Y	30	2	N	2.5
DT120	Watsonville, Motherwell	Kerbside	275237	656662	NO_2	Y	10	2	N	2.5
DT121	Flannigan Grove, Bellshill	Urban background	273180	660350	NO_2	N	30	2	N	2.5
DT122	Main St, Mossend	Roadside	274082	660308	NO_2	N	60	2	N	2.5
DT123	Hamilton Rd, Orbiston, Bellshill	Kerbside	272687	659512	NO_2	N	20	2	N	2.5
DT124	Scotmid, Tannochside	Kerbside	270073	661870	NO_2	N	20	2	N	2.5
DT125	Main St nr Motherwell Rd, Bellshill	Kerbside	273767	660281	NO_2	N	25	2	N	2.5
DT126	Main St nr Tesco, Bellshill	Kerbside	273541	660339	NO_2	N	2	2	N	2.5
DT129	Newmains Police Station	Roadside	282392	656016	NO_2	N	7	2	N	2.5
DT130	Main St (bottom), Wishaw	Roadside	279118	655327	NO_2	N	5	2	N	2.5
DT131	Brandon Pl, Bellshill	Roadside	272302	659237	NO_2	N	5	2	N	2.5
DT132	Airdrie Rd, Caldercruix	Roadside	281713	667517	NO_2	N	10	2	N	2.5
DT133	Coatbridge 1, Bank Street	Roadside	272887	664991	NO_2	N	2	2	N	2.5
DT134	Coatbridge 2, Whifflet Court	Kerbside	273655	664003	NO_2	Y	10	20	N	2.5

Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube co-located with a Continuous Analyser?	Tube Height (m)
DT135	Grahamshill St, Airdrie	Kerbside	277276	665615	NO_2	N	10	2	N	2.5
DT136	Airdrie 3, Springwells Cres	Roadside	274162	674130	NO_2	N	30	2	N	2.5
DT137	Auchenkilns, Cumbernauld	Roadside	274164	674130	NO_2	N	30	2	N	2.5
DT138	Main St (near shops), Chapelhall	Roadside	278037	662798	NO_2	Y	10	2	N	2.5
DT139	Lauchope St/Main St jcn, Chapelhall	Roadside	278178	663111	NO_2	Y	10	2	N	2.5
DT140	Dundyvan Rd, Coatbridge	Kerbside	273293	664120	NO_2	N	5	1	N	2.5
DT141	Main St (1), Harthill (nr shops)	Kerbside	290652	664493	NO_2	N	10	2	N	2.5
DT142	Salsburgh, house no 337, R15	Roadside	283850	663082	NO_2	N	15	30	N	2.5
DT143	Main St (2), Harthill (nr shops)	Roadside	290482	6643186	NO_2	N	10	2	N	2.5
DT144	Lab 1, Constarry Rd, Croy	Roadside	272789	675735	NO_2	Y	100	5	Y	2.5
DT145	Lab 2, Constarry Rd, Croy	Roadside	272789	675735	NO_2	Y	100	5	Y	2.5
DT146	Lab 3, Constarry Rd, Croy	Roadside	272789	675735	NO_2	Y	100	5	Y	2.5
DT147	Bank St, Coatbridge (nearest house)	Roadside	272947	665037	NO_2	N	15	0	N	2.5
DT148	Main St (R22), Chapelhall	Kerbside	278105	663174	NO_2	Y	15	2	N	2.5

Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube co-located with a Continuous Analyser?	Tube Height (m)
DT149	Main St (R33), Chapelhall	Kerbside	278119	663075	NO_2	Y	15	2	N	2.5
DT150	Eastfield Rd, Cumbernauld	Kerbside	275160	676210	NO_2	N	25	2	N	2.5
DT151	Main St, Holytown	Urban Background	276635	660569	NO_2	N	10	2	N	2.5
DT152	Coatbridge Rd, (shops), Townhead	Roadside	272391	665824	NO_2	N	10	2	N	2.5
DT153	72 Townhead Rd, Coatbridge	Roadside	271720	666053	NO_2	N	20	2	N	2.5
DT154	Sunnyside Rd, Coatbridge	Roadside	273042	665176	NO_2	N	20	2	N	2.5
DT156	Stirling St, Airdrie	Roadside	276005	665406	NO_2	N	50	2	N	2.5
DT157	31 Station Rd, Muirhead	Roadside	268442	669262	NO_2	N	15	2	N	2.5
DT158a	Croftmoraig Ave, Moodiesburn	Kerbside	270281	671715	NO_2	N	15	2	N	2.5
DT158b	Deedes St, Airdrie	Roadside	274819	665005	NO_2	N	7	2	N	2.5
DT159	Glenview Cres, Moodiesburn	Roadside	270391	671505	NO_2	N	10	2	N	2.5
DT160	The Cuillins, Moodiesburn	Roadside	270067	671604	NO_2	N	10	2	N	2.5
DT161	Bridgend Cres, Moodiesburn	Roadside	269071	670889	NO_2	N	1	1	N	2.5
DT162	Auchingeoch Rd, Moodiesburn	Roadside	269022	670979	NO_2	N	2	1	N	2.5
DT163	12 Inchwood Rd, Westfield, Cumbernauld	Roadside	273098	673321	NO_2	N	10	1	N	2.5

Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube co-located with a Continuous Analyser?	Tube Height (m)
DT164	12 Leckethill Ct, Westfield, Cumbernauld	Roadside	272634	672994	NO_2	N	10	1	N	2.5
DT165	Kildonan St, Coatbridge	Roadside	273727	665285	NO_2	N	20	2	N	2.5
DT166	22 Cumbernauld Rd, Chryston	Roadside	268392	669502	NO_2	N	10	2	N	2.5
NewDT54	Columba Ct/Old Edinburgh Rd, Viewpark	Roadside	271259	661016	NO_2	N	15	2	N	2.5
NewDT55	Old Edinburgh Rd, Viewpark	Roadside	270463	661441	NO_2	N	15	2	N	2.5
NewDT56	Bargeddie	Roadside	270201	664281	NO_2	N	10	2	N	2.5
NewDT102	Windmillhill St (1), Motherwell	Roadside	275738	656400	NO_2	Y	50	1	N	2.5
NewDT103	Windmillhill St (2), Motherwell	Roadside	275733	656439	NO_2	Y	20	1	N	2.5
NewDT106	Civic Centre (1), Motherwell	Roadside	275911	656237	NO_2	Y	100	30	N	2.5
NewDT107	Civic Centre (2), Motherwell	Roadside	275911	656237	NO_2	Y	100	30	N	2.5
NewDT108	Civic Centre (3), Motherwell	Roadside	275911	656237	NO_2	Y	100	30	Y	2.5
NewDT116	Airbles Rd (Electric Bar), Motherwell	Roadside	274814	656147	NO_2	N	15	5	N	2.5
NewDT118	Merry St/Dalziel St, Motherwell	Roadside	275444	657312	NO_2	N	15	5	N	2.5
NewDT119 (long-standing site, re-numbered from DT118	Shawhead roundabout, Coatbridge	Kerbside	273465	662965	NO_2	Y	30	2	N	2.5

Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube co-located with a Continuous Analyser?	Tube Height (m)
to DT119 in 2017)										
NewDT120	Kirkshaws Rd, Coatbridge	Roadside	271939	663179	NO_2	Y	10	2	N	2.5
NewDT127	Matalan, Wishaw	Kerbside	278059	655368	NO_2	N	10	2	N	2.5
NewDT128	Wishaw Cross/Stewarton St, Wishaw	Roadside	279587	655125	NO_2	N	30	2	N	2.5
NewDT137	Main St, Village, Cumbernauld	Roadside	276710	676098	NO_2	N	10	2	N	2.5
NewDT141	Station Rd, Shotts	Roadside	286840	656978	NO_2	N	20	2	N	2.5
NewDT142	Stane Gdns, Shotts	Roadside	287954	659620	NO_2	N	20	2	N	2.5
NewDT157a	Swing park, Castlecary	Roadside	278470	677901	NO_2	N	30	2	N	2.5

Notes:

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

(2) N/A if not applicable.

Table A.3 – Annual Mean NO_2 Monitoring Results ($\mu g/m^3$)

Site ID	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2020 (%) (2)	2016	2017	2018	2019	2020
CM1	Roadside	Automatic	99.53%	99.53%	32.0	33.8	27.7	21.7	18.0
CM2	Special – by quarry	Automatic	76.37%	76.37%	20.0	20.4	17.5	19.0	12.0
CM3	Urban background	Automatic	97.30%	97.30%	-	-	-	17.2	12.0
CM5	Roadside	Automatic	92.91%	92.91%	30.0	28.5	20.7	20.3	16.0
CM6	Roadside	Automatic	97.99%	97.99%	33.0	22.0	18.3	20.3	13.0
CM7	Roadside	Automatic	99.64%	99.64%	-	-	-	24.4	17.0
CM8	Roadside	Automatic	-	-	-	-	-	22.6	-
CM10	Roadside	Automatic	99.33%	99.33%	-	-	-	16.9	14.0
DT10-Castle Court, Castlecary	Roadside	Diffusion Tube	-	-	23.3	34.2	-	-	-
DT47 – Lay by in Stand	Roadside	Diffusion Tube	100%	100%	22.7	21	21.7	21.4	14.7
DT48-bus stop, Bron Way, Cumbernauld	Kerbside	Diffusion Tube	100%	100%	29.1	28.9	27.3	25.7	17.8
DT49-Swimming pool, Kilsyth	Kerbside	Diffusion Tube	92%	92%	18.3	17.4	22.5	18.3	11.2
DT50-1791 Cumbernauld Rd, Stepps	Kerbside	Diffusion Tube	100%	100%	21.9	22.4	21.9	20.2	12.4
DT51- 131 Cumbernauld Rd, Stepps	Kerbside	Diffusion Tube	100%	100%	23.7	24.7	27.4	21.0	14.6
DT52-traffic lights A80 Eastbound, Moodiesburn	Kerbside	Diffusion Tube	100%	100%	18	17.4	25.4	22.6	14.6
DT53-traffic lights A80 Westbound, Moodiesburn	Kerbside	Diffusion Tube	100%	100%	20.7	20.9	22.9	18.3	10.5

Site ID	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) [1]	Valid Data Capture 2020 (%) [2]	2016	2017	2018	2019	2020
DT54-Coatbridge Rd/Gartcosh Rd, Gartcosh, A752 (name changed to DT58 in 2018)	Urban background	Diffusion Tube	-	-	21.1	22.8	-	-	-
DT55-Whitelaw Rd end, Gartcosh	Urban background	Diffusion Tube	-	-	12	9.7	-	-	-
DT56-Garnqueen Cr, Glenboig	Urban background	Diffusion Tube	-	-	12.4	14.3	-	-	-
DT57-Main St/Garrick View, Glenboig	Urban background	Diffusion Tube	100%	100%	15.9	16.2	18.1	16.6	-
DT58-Lochend Rd/Coatbridge Rd Glenboig(previously called DT54, changed in 2018)	Urban background	Diffusion Tube	100%	100%	-	-	25.8	22.9	9.8
DT59-10-16 Coronation Pl, Mount Ellen	Urban background	Diffusion Tube	92%	92%	19.3	17.2	19.8	17.7	14.3
DT61-under Central Way.Eastbound, Cumbernauld	Roadside	Diffusion Tube	83%	835	61.5	51.3	43.6	40.5	12.6
DT62-Central Way Westbound(A), Cumbernauld	Roadside	Diffusion Tube	83%	83%	38.1	38.1	39.0	32.9	25.8
DT63-Central Way	Roadside	Diffusion Tube	92%	92%	34.8	26.7	45.7	37.5	17.9

Site ID	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2020 (%) (2)	2016	2017	2018	2019	2020
Westbound(B), Cumbernauld									
DT64-Under bridge.Central Way, Westbound, Cumbernauld	Roadside	Diffusion Tube	92%	92%	-	-	32.2	28.7	21.2
DT100-Civic Centre, Motherwell	Roadside	Diffusion Tube	83%	83%	32.3	-	36.9	36.9	15.6
DT101-Shields Rd, Motherwell	Roadside	Diffusion Tube	92%	92%	24.4	23.2	24.9	20.1	22.4
DT102-Emily Dr, Motherwell	Urban background	Diffusion Tube	-	-	10	10.8	-	-	-
DT103-Kethers Lane, Motherwell	Urban background	Diffusion Tube	-	-	12.8	15.8	-	-	-
DT104-Coursington Rd, Motherwell	Urban background	Diffusion Tube	92%	92%	11.7	11.9	10.5	10.5	10.2
DT105-Craigneuk Rd, Carfin	Urban background	Diffusion Tube	92%	92%	14.6	13.5	16.4	12.6	11.5
DT106-Camp St, Motherwell	Urban background	Diffusion Tube	-	-	18.7	18.2	-	-	-
DT107-Braehead Farm, Bargeddie	Roadside	Diffusion Tube	-	-	32.2	23.7	-	-	-
DT108-MSA Factory, Shawhead	Roadside	Diffusion Tube	-	-	30.5	27.7	-	-	-
DT110-New Edinburgh Rd(1), Uddingston	Roadside	Diffusion Tube	83%	83%	33.9	33.7	33.8	28.9	20.2
DT111-New Edinburgh	Roadside	Diffusion Tube	83%	83%	29.8	31.7	30.4	31.1	22.2

Site ID	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2020 (%) (2)	2016	2017	2018	2019	2020
Rd(2), Uddingston									
DT112-New Edinburgh Rd(3), Uddingston	Roadside	Diffusion Tube	83%	83%	30	32.7	32.3	28.6	20.3
DT113-Tinkers Lane, Motherwell	Roadside	Diffusion Tube	92%	92%	19.2	21.8	22.0	17.9	14.1
DT114-Main St, Overtown	Kerbside	Diffusion Tube	75%	75%	17.8	19.6	17.7	15.0	14.1
DT115-Plantation Rd, Ravenscraig	Kerbside	Diffusion Tube	92%	92%	-	-	15.4	13.8	10.7
DT116-Dellburn St, Motherwell	Urban background	Diffusion Tube	-	-	22.8	23.1	-	-	-
DT117-Hamilton Rd, Motherwell	Urban background	Diffusion Tube	92%	92%	27.5	30.3	27.4	26.8	18.6
DT118-Shawhead roundabout, Coatbridge(changed to NewDT119 in 2018)	Kerbside	Diffusion Tube	-	-	28.2	28.2	-	-	-
DT119-Kirkshaws Rd, Coatbridge (site changed to NewDT120 in 2018)	Kerbside	Diffusion Tube	-	-	30.9	31.3	-	-	-
DT120-Watsonville, Motherwell	Kerbside	Diffusion Tube	-	-	19.4	14.8	-	-	-
DT121-Flannigan Grove, Bellshill	Urban background	Diffusion Tube	83%	83%	18.7	19.5	20.3	20.2	13.8

Site ID	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) [1]	Valid Data Capture 2020 (%) [2]	2016	2017	2018	2019	2020
DT122-Main St, Mossend	Roadside	Diffusion Tube	75%	75%	26.1	28.2	27.5	24.0	17.1
DT123-Hamilton Rd, Orbiston, Bellshill	Kerbside	Diffusion tube	92%	92%	23.3	25.2	23.9	21.4	16.7
DT124-Scotmid, Tannochside	Kerbside	Diffusion Tube	83%	83%	25.9	25.6	29.5	23.5	15.7
DT125-Main St/Motherwell Rd, Bellshill	Kerbside	Diffusion tube	92%	92%	-	-	24.4	18.8	15.2
DT126-Main St, nr Tesco delivery rd,Bellshill	Kerbside	Diffusion Tube	92%	92%	22.3	19.8	20.4	21.4	14.6
DT128-Matalan, Wishaw (site number changed to NewDT127 in 2017)	Kerbside	Diffusion Tube	-	-	23.5	-	-	-	-
DT129-Newmains Police Station	Roadside	Diffusion Tube	92%	92%	27	26.5	27.7	27.3	17.7
DT130-Main St, Wishaw(bottom)	Roadside	Diffusion Tube	83%	83%	15	14.4	17.1	15.8	12.5
DT131-Brandon Pl, Bellshill	Roadside	Diffusion Tube	92%	92%	18.9	19.3	19.4	14.6	14.1
DT132-Airdrie Rd, Caldercruix	Roadside	Diffusion Tube	100%	100%	-	14.3	16.8	15.8	10.2
DT133-Coatbridge, Bank St(1)	Roadside	Diffusion Tube	100%	100%	26.8	33.4	30.4	30.1	17.5
DT134-Coatbridge, Whifflet Ct, Coatbridge(2)	Kerbside	Diffusion Tube	100%	100%	23	23	19.8	20.4	12.8

Site ID	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) [1]	Valid Data Capture 2020 (%) [2]	2016	2017	2018	2019	2020
DT135-Grahamshill St, Airdrie	Kerbside	Diffusion Tube	100%	100%	33.9	33	29.3	28.3	22.1
DT136-Airdrie 3, Springwells Cres	Roadside	Diffusion Tube	100%	100%	16.8	20.1	21.1	17.9	11.0
DT137-Auchenkilns, Cumbernauld	Roadside	Diffusion Tube	-	-	23.8	24.8	-	-	-
DT138-Main St, Chapelhall (nr shops)	Roadside	Diffusion Tube	100%	100%	24.3	25	22.7	23.1	12.3
DT139-Lauchope St/Main St jcn, Chapelhall	Roadside	Diffusion Tube	100%	100%	30.1	39	29.4	28.1	18.1
DT140-Dundyvan Rd, Coatbridge	Kerbside	Diffusion Tube	92%	92%	21.7	23.6	21.7	23.2	14.8
DT141-Main St(1), Harthill, nr shops	Kerbside	Diffusion Tube	-	-	16.5	14.8	-	-	-
DT142-House no 337, Salsburgh, R15`	Roadside	Diffusion Tube	-	-	22	14.4	-	-	-
DT143-Main St(2), Harthill(nr shops)	Roadside	Diffusion Tube	83%	83%	17.8	15.9	17.8	15.4	11.6
DT144-Lab 1, Constarry Rd, Croy	Roadside	Diffusion Tube	50%	50%	16.8	17.2	17.9	16.7	9.5
DT145-Lab 2, Constarry Rd, Croy	Roadside	Diffusion Tube	50%	50%	18.2	17	20.4	16.4	9.9
DT146-Lab 3, Constarry Rd, Croy	Roadside	Diffusion Tube	58%	58%	17	16.7	22.9	15.8	11.6

Site ID	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2020 (%) (2)	2016	2017	2018	2019	2020
DT147-Bank St, Coatbridge (nearest house)	Roadside	Diffusion Tube	92%	92%	30.5	31.6	28.5	27.4	13.7
DT148-Main St, Chapelhall, R32	Kerbside	Diffusion Tube	83%	83%	28.7	28.8	31.2	28.0	17.6
DT149-Main St, Chapelhall, R33	Kerbside	Diffusion Tube	92%	92%	31.9	31	26.9	29.1	17.2
DT150-Eastfield Rd, Cumbernauld	Kerbside	Diffusion Tube	100%	100%	24.7	20.1	19.2	18.7	11.2
DT151-Main St, Holytown	Urban background	Diffusion Tube	100%	100%	21.6	24.7	24.3	17.5	12.0
DT152-Coatbridge Rd, Townhead (shops)	Roadside	Diffusion Tube	67%	67%	25	28.9	28.6	30.3	20.7
DT153-72 Townhead Rd, Coatbridge	Roadside	Diffusion Tube	100%	100%	25	17.7	20.9	19.5	13.1
DT154-Sunnyside Rd, Coatbridge	Roadside	Diffusion Tube	100%	100%	26.8	33.9	24.7	27.4	18.3
DT156-Stirling Rd, Airdrie	Roadside	Diffusion Tube	100%	100%	27.5	33.8	30.9	28.4	18.9
DT157-Station Rd, Muirhead	Roadside	Diffusion Tube	92%	92%	22.4	25.6	34.1	22.3	14.4
DT158a-Croftmoraig Cres, Moodiesburn	Roadside	Diffusion Tube	92%	92%	16.7	17.9	18.4	17.8	11.2
DT158b-Deedes St, Airdrie	Roadside	Diffusion Tube	100%	100%	27.4	34.4	29.5	30.3	22.0
DT159-Glenview Cres, Moodiesburn	Roadside	Diffusion Tube	100%	100%	16.1	15.7	17.7	18.4	11.1

Site ID	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) [1]	Valid Data Capture 2020 (%) [2]	2016	2017	2018	2019	2020
DT160-The Cuillins, Moodiesburn	Roadside	Diffusion tube	100%	100%	17	15.7	17.6	18.4	10.7
DT161-Bridgend Cres, Moodiesburn	Roadside	Diffusion Tube	100%	100%	14.9	14.6	16.8	15.7	10.4
DT162-Auchengeoch Rd, Moodiesburn	Roadside	Diffusion Tube	100%	100%	17.1	19.5	19.4	18.3	11.6
DT163-12 Inchwood Rd, Westfield, Cumbernauld	Roadside	Diffusion Tube	100%	100%	21.7	22.8	22.8	21.7	14.2
DT164-12 Leckethill Ct, Westfield, Cumbernauld	Roadside	Diffusion Tube	100%	100%	17.8	18.2	19.5	19.0	11.2
DT165-Kildonan St, Coatbridge	Roadside	Diffusion Tube	92%	92%	-	-	23.4	23.2	14.5
DT166-22 Cumbernauld Rd, Chryston	Roadside	Diffusion Tube	100%	100%	-	-	28.7	26.0	14.7
NewDT54-Columba Ct/Old Edin Rd, Viewpark	Roadside	Diffusion Tube	92%	92%	-	22.9	25.6	23.6	14.0
NewDT55-Old Edin Rd, Viewpark	Roadside	Diffusion Tube	100%	100%	-	29.8	27.6	24.7	13.6
NewDT56-Bargeddie	Roadside	Diffusion Tube	92%	92%	-	20.3	20.6	20.0	12.2
NewDT102-Windmillhill St(1), Motherwell	Roadside	Diffusion Tube	92%	92%	-	17.9	20.4	18.3	14.1

Site ID	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) [1]	Valid Data Capture 2020 (%) [2]	2016	2017	2018	2019	2020
NewDT103, Windmillhill St(2), Motherwell	Roadside	Diffusion Tube	92%	92%	-	21.1	25.9	20.7	16.6
NewDT106-Civic Centre(1), Motherwell	Roadside	Diffusion Tube	8%	8%	-	19.6	20.7	15.8	8.7
NewDT107-Civic Centre(2), Motherwell	Roadside	Diffusion Tube	8%	8%	-	19.6	19.6	18.2	11.9
NewDT108-Civic Centre(3), Motherwell	Roadside	Diffusion Tube	8%	8%	-	17	17.9	19.8	11.4
NewDT116-Airbles Rd(Electric Bar), Motherwell	Roadside	Diffusion Tube	83%	83%	-	17.7	22.3	17.2	13.3
NewDT118-Merry St/Dalziel St, Motherwell	Roadside	Diffusion Tube	92%	92%	-	27.7	28.3	24.1	17.1
NewDT119-Shawhead roundabout, Coatbridge (formerly DT118, changed in 2017)	Kerbside	Diffusion Tube	83%	83%	-	28.2	27.8	23.7	18.5
NewDT120-Kirkshaws Rd, Coatbridge(formerly DT119, changed in 2017)	Roadside	Diffusion Tube	92%	92%	-	31.3	26.5	24.4	18.9
NewDT127-Matalan, Wishaw(formerly DT128,	Kerbside	Diffusion Tube	92%	92%	-	27.1	24.3	26.6	18.9

Site ID	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2020 (%) (2)	2016	2017	2018	2019	2020
changed number in 2017)									
NewDT128-Wishaw Cross/Stewarton St, Wishaw	Roadside	Diffusion Tube	92%	92%	-	26.5	26.7	27.9	21.8
NewDT137-Main St, Village, Cumbernauld	Roadside	Diffusion Tube	100%	100%	-	24	20.6	22.5	13.9
NewDT141-Station Rd, Shotts	Roadside	Diffusion Tube	83%	83%	-	15	14.0	12.7	9.6
NewDT142-Stane Gdns, Shotts	Roadside	Diffusion Tube	92%	92%	-	14.8	18.4	16.9	11.8
NewDT157a	Roadside	Diffusion Tube	100%	100%	-	-	28.9	25.4	18.5

Notes:

Exceedances of the NO_2 annual mean objective of 40µg/m^3 are shown in bold.

NO_2 annual means exceeding 60µg/m^3, indicating a potential exceedance of the NO_2 1-hour mean objective are shown in **bold and underlined**.

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.

(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%).

Table A.4 – 1-Hour Mean NO_2 Monitoring Results, Number of 1-Hour Means > 200µg/m^3

Site ID	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2020 (%) (2)	2016	2017	2018	2019	2020
CM1	Roadside	Automatic	99.53%	99.53%	**1**	6	0(142)	0(112)	0
CM2	Special-by quarry	Automatic	76.37%	76.37%	0	0(104)	0(93)	0(77)	0(73)
CM3	Urban background	Automatic	97.30%	97.30%	-	-	-	0(78)	0
CM5	Roadside	Automatic	92.91%	92.91%	0	0(125)	0(114)	0(113)	0
CM6	Roadside	Automatic	97.99%	97.99%	0	0	0(107)	0(114)	0
CM7	Roadside	Automatic	99.64%	99.64%	-	-	-	0(87)	0
CM8	Roadside	Automatic	-	-	-	-	-	0(105)	-
CM10	Roadside	Automatic	99.33%	99.33%	-	-	-	0(83)	0

Notes:

Exceedances of the NO_2 1-hour mean objective (200 µg/m^3 not to be exceeded more than 18 times/year) are shown in bold.

If the period of valid data is less than 85%, the 99.8th percentile of 1-hour means is provided in brackets.

(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%).

Table A.5 – Annual Mean PM_{10} Monitoring Results (µg/m^3)

Site ID	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2020 (%) (2)	2016	2017	2018	2019	2020
CM1	Roadside	99.67%	99.67%	15.4	12.0	10.2	10.0	9.0
CM2	Special-by quarry	77.02%	77.02%	13.0	11.3	12.2	11.0	8.0
CM3	Urban background	94.72%	94.72%	12.0	11.4	6.9	13.5	8.0
CM4	Roadside	87.61%	87.61%	13.0	13.0	9.7	11.0	9.0
CM5	Roadside	99.89%	99.89%	12.0	14.0	4.9	10.0	8.0
CM6	Roadside	96.65%	96.65%	11.0	9.0	9.6	20.0	9.0
CM7	Roadside	9.32%	9.32%	-	-	-	13.5	9.0
CM9b	Mobile Lab	-	-	-	-	9.2	10.0	-
CM10	Roadside	52.12%	52.12%	-	-	-	12.2	7.8
CM11	Roadside	39.99%	29.99%	-	-	-	-	8.0

Notes:

Exceedances of the PM_{10} annual mean objective of 18 µg/m^3 are shown in bold.

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.

(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%).

Table A.6 – 24-Hour Mean PM_{10} Monitoring Results, Number of PM_{10} 24-Hour Means > 50µg/m^3

Site ID	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2020 (%) (2)	2016	2017	2018	2019	2020
CM1	Roadside	99.67%	99.67%	0(22)	0.0	0(24)	1	0
CM2	Special-by quarry	77.02%	77.02%	2(26)	1(35)	0(42)	3	0(18)
CM3	Urban background	94.72%	94.72%	0(18)	0(29)	0(27)	0(22)	0
CM4	Roadside	87.61%	87.61%	0.0	0.0	0(23)	2	0
CM5	Roadside	99.89%	99.89%	0.0	0.0	0(19)	2	0
CM6	Roadside	99.65%	99.65%	0.0	0(26)	0(21)	1	0
CM7	Roadside	9.32%	9.32%	-	-	-	0(21)	0(15)
CM9b	Mobile Lab	-	-	-	-	0(18)	1(41.1)	-
CM10	Roadside	52.12%	52.12%	-	-	-	0(21)	0(23)
CM11	Roadside	39.99%	39.99%	-	-	-	-	0(18)

Notes:

Exceedances of the PM_{10} 24-hour mean objective (50 µg/m^3 not to be exceeded more than seven times/year) are shown in bold.

If the period of valid data is less than 85%, the 98.1st percentile of 24-hour means is provided in brackets.

(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%).

Table A.7 – Annual Mean $PM_{2.5}$ Monitoring Results (µg/m^3)

Site ID	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2020 (%) (2)	2016	2017	2018	2019	2020
CM1	Roadside	99.67%	99.67%	-	5.0	5.3	6.0	5.0
CM2	Special-by quarry	77.02%	77.02%	-	-	6.0	6.0	4.0
CM4	Roadside	87.61%	87.61%	-	-	5.4	6.0	5.0
CM5	Roadside	99.89%	99.89%	-	-	5.6	6.0	5.0
CM6	Roadside	96.65%	96.65%	-	-	5.4	6.0	5.0
CM9b	Mobile Lab	-	-	-	-	5.4	6.8	-
CM11	Roadside	39.99%	39.99%	-	-	-	-	4.5

Notes:

Exceedances of the $PM_{2.5}$ annual mean objective of 10 µg/m^3 are shown in bold.

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.

(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%).

Appendix B: Full Monthly Diffusion Tube Results for 2020

Table B.1 – NO_2 2020 Monthly Diffusion Tube Results ($\mu g/m^3$)

Site ID	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Bias Adjusted (1)
DT47	12	16.4	20.7	7.1	9.2	12.2	3.8	15.8	16.1	17.9	24.4	43.2	16.6	14.7
DT48	22.2	28.6	29.1	7.4	11.4	11.7	12.2	17.1	19	18	26.3	36.6	20.0	17.8
DT49	13.6		15.5	6.8	6.5	10.4	5.5	9.4	13.1	10.9	22	25.2	25.2	12.6
DT50	18	22.4	22.3	8.1	6.5	10.4	5.3	15.4	16.6	17	10.4	14.3	13.9	12.4
DT51	20	30.1	24.8	7	8.5	13.9	6.4	14.9	18.8	17.8	17.6	16.5	16.4	14.6
DT52	18.2	28.2	25.3	7.2	10	15.1	11.4	12.2	18.2	22	11.6	16.9	16.4	14.6
DT53	5.9	18	18.7	6.7	7.2	9.6	8.5	14.6	12.6	15.7	8.3	15.5	11.8	10.5
DT57	10.3	16.9	15.7	7.3	8.8	1.8	5.9	17.5	11.8	16.8	7.4	11.5	11.0	9.8
DT58	20.3	24.1	23.1	11.8	9.5	14.9	10.5	11.2	17.6	19.4	7.4	23	16.1	14.3
DT59	11.6	16.5	17.9	5.1	6.7	13.2	Not analysed	36.8	11.9	11.1	11.8	13.1	14.2	12.6
DT61	31.9	49.8	55.1	9.9	18.1	21.6	23.9	36.8	16.2	Not analysed	24.1		28.9	25.8
DT62	28.5	36.4		1.6(3)	1.8(3)	1.6(3)	11.9	Not analysed	16.7(2)	16.7(2)	24.2	28.6	20.1	17.9
DT63	28.8	49.9		12.4	16.1	23.8	17.4	38.4	13.9(2)	13.9(2)	27.7	19.2	23.8	21.2
DT64	17	29.3		8.1	8.9	14.1	11.6	31.2	14.9(2)	14.9(2)	19.5	23.2	17.5	15.6
DT100	No return	35.6	26.5		13	15.6	14.1	25.4	21.4	10.1	36	43.5	25.1	22.4
DT101	19.2	22.2	21.7		9.8	12.2	13.9	16.7	16.2	10.3	40.4	26.2	19.0	16.9
DT104	11	12.3	15.1		4.6	5.7	7.9	5,8	6.9	2.7	33.3	19.1	11.3	10.1
DT105	13.8	13.9	15.7		6.1	7.7	22.7	11.9	10.1	6.6	16.7	16.5	12.9	11.5
DT110	30.4	25.2	5.1		16.8	No return	18.9	25.3	23.9	15.2	32.5	33.4	22.7	20.2
DT111	24.9	35.4	28.2		17.4	No return	12.8	22.3	29.3	11.8	36.5	41.3	25.0	22.2

Site ID	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Bias Adjusted (1)
DT112	24.9	34.8	33.2		14.7	No return	11	22.9	19.7	10.1	33.6	4.4(3)	22.8	20.3
DT113	23.3	16.9	18.8		8.4	11.6	5.1	13.6	13.3	11.9	25.5	26.1	15.9	14.1
DT114	18.3	No return			17.1	10.4	11.1	12.1	10.7	7.3	28.7	27.2	15.9	14.1
DT115	11	14.7	17.9		6.1	9	15.5	7.2	9.3	6.1	14.2	21.2	12.0	10.7
DT117	30.4	25.2	5.1		16.8	No return	18.9	25.3	23.9	15.2	32.5	33.4	22.7	20.2
DT121	17.5	19.5			12	13.4	13	13.1	9.7	10.7	25	21.7	15.6	13.8
DT122	25.3	27.5	26.8		18.4	18.5	5.2	27.3	14.7	9.3		No return	19.2	17.1
DT123	26.9	18.2	23.1		10.9	13.2	6	20.1	17.9	8	26.9	34.7	18.7	16.7
DT124	22.2	21.1	22.4		12.8	12.8	No return	19.4	15.6	10.2	28.7	11.4	17.7	15.7
DT125	2.1(3)	25	16.9		11.2	14.1	8.9	18	14	9.9	25	28.2	17.1	15.2
DT126	17.8	19.5	20.8		14.2	9	12.1	12.9	11.8	10.7	26.5	24.7	16.4	14.6
DT129	38.9	31.2	13.1	13.1	12.5	17.4	14.9	26.6	15.6	15.4	13.8	23.5	19.7	17.5
DT130	26.7	24.7	8.6	8.6	9.6	9.9	6	14.1	13.1	9.5	22.7	19.3	14.4	12.8
DT131	39.8	46.6	11	11	19.9	23.1	8	21.7	27.4	19.4	39.8	30.1	24.8	22.1
DT132	23.4	21.9	6.3	6.3	6	10	7.5	12.4	15	7.9	19.2	12.3	12.4	11.0
DT133	38.9	31.2	13.1(2)	13.1(2)	12.5	17.4	14.9	26.6	15.6	15.4	13.8	23.5	19.7	17.5
DT134	26.7	24.7	8.6(2)	8.6(2)	9.6	9.9	6	14.1	13.1	9.5	22.7	19.3	14.4	12.8
DT135	39.8	46.6	11(2)	11(2)	19.9	23.1	8	21.7	27.4	19.4	39.8	30.1	24.8	11.0
DT136	23.4	21.9	6.3(2)	6.3(2)	6	10	7.5	12.4	15	7.9	19.2	12.3	12.4	11.0
DT138	23.3	27.2	8.3(2)	8.3(2)	8.4	12.6	6.3	15.8	22.5	13.4	1.7	18	13.8	12.3
DT139	12.9	36	12.8(2)	12.8(2)	17.9	15.4	6	22.4	19.1	30.2	32.8	26.3	20.4	18.1
DT140	27.3	28.1	7.7(2)	7.7(2)	9.2	13.8	8.8	No return	16.2	13	23.9	27.1	16.6	14.8
DT143	10.8	21.6		No return	9.3	13.3	15.4	15.5	13.7	6	7.5	16.8	13.0	11.6
DT144	16.3	17		No return	No return	No return	No return	No return	13	9.5	16.4	7.7	10.7	9.5
DT145	16.2	2.1		No return	No return	No return	No return	No return	12.6	6.4	13.5	22.3	11.1	9.9
DT146	11.9	15.6		No return	No return	No return	No return	16.3	11	10.9	18.4	24.7	13.0	11.6

Site ID	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Bias Adjusted (1)
DT147	38.1	23.6	7.5(2)	7.5(2)	8.5	16.8	No return	21.2	11.1	9.2	21.2	4.5	15.4	13.7
DT148	32.5	32	10(2)	10(2)	9	18.9	No return	Not analysed	14.1	16.7	26.3	28.2	19.8	17.6
DT149	38.1	30.1	12.9(2)	12.9(2)	10.8	18.9	8.3	26.2	17.2	14.9		22.8	19.4	17.2
DT150	18.9	17.8	6.5(2)	6.5(2)	5.3	2.6	10.3	16.3	11.4	11.4	28.4	15.5	12.6	11.2
DT151	15.6	18.5	8.3(2)	8.3(2)	7.7	16.1	8	19.6	9.9	8.3	16.6	25.5	13.5	12.0
DT152	31.7	35.3		No return	No return	13.4	No return	17.9	19.7	10.7	27.9	51.6	23.3	20.7
DT153	22.1	20.6	8.4(2)	8.4(2)	3.9	10.5	12.7	13,4	17.6	15.4	21.1	22.7	14.7	13.1
DT154	32.9	30.6	15(2)	15(2)	8.9	17	13.9	19.9	21.3	9.7	26.5	35.5	20.5	18.3
DT156	39.9	36.9	10.4(2)	10.4(2)	10	13.7	6.8	25.5	26	14.3	30.9	30.3	21.3	18.9
DT157	17.8	25.9	25.7	9.2	9.9	No return	5.2	13	13.1	21	12.7	24.1	16.1	14.4
DT158a	19.3	18.1	18.5	5.9	6.8	8.7	3.3		14.6	16.4	9.9	17.1	12.6	11.2
DT158b	37.3	37.7	12.4(2)	12.4(2)	11.6	26	16.2	27.1	27.8	18.9	33.4	36.5	24.8	22.0
DT159	12.4	16.7	20.7	6	8.8	10.2	3.5	7.5	15.6	18.1	6.4	23.2	12.4	11.1
DT160	12.2	18.4	16.9	5.6	5.7	9.9	4.5	11.1	13.6	15	9.8	21.9	12.1	10.7
DT161	13.7	13.4	18	5	6.5	10.1	4.8	10.6	10.5	12.9	11.2	23.9	11.7	10.4
DT162	12.4	15.8	19.9	6.9	6.1	10.7	6.5	13.6	13.6	15.3	9.4	25.8	13.0	11.6
DT163	14.9	22.9	25.7	9.7	9.3	13.5	8.9	16.6	15	19.2	17.4	19	16.0	14.2
DT164	17.3	15.3	19.9	8.7	6.4	9.9	5	18.8	13.2	10.2	12	14	12.6	11.2
DT165	23.3	25	9.8(2)	9.8(2)	6.5	10	13.4	14.4	25.7	No sample received	14.4	27.4	16.3	14.5
DT166	15.6	27.8	28.4	7.5	11.2	15.7	7.6	9.8	20.6	23.3	11.9	18.3	16.5	14.7
NewDT54	13.7	21.2	23.6	13.5	10.7	15.4		16.2	13.6	19.4	11.1	14.7	15.7	14.0
NewDT55	17	19.4	29.6	13.7	12	14.9	7.2	9.9	19.9	20.1	7.7	12.2	15.3	13.6
NewDT56	No return	17.9	21.4	10.1	9.6	16.1	11.2	8.5	15.1	19.2	11.3	10.6	13.7	12.2
NewDT102	17.7	19.4	21		9.1	10.1	9.7	13.2	15.2	8.6	25.3	24.5	15.8	14.1
NewDT103	15.2	17.9	39.1		12.7	14.4	13.1	18.2	13	11.3	24.1	25.8	18.6	16.6
NewDT106	No return	No return			No return	9.8	No return	No return	No return	No return	No return	No return	9.8	8.7
NewDT107	No return	No return			No return	13.4	No return	No return	No return	No return	No return	No return	13.4	11.9

Site ID	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Bias Adjusted (1)
NewDT108	No return	No return			No return	12.8	No return	No return	No return	No return	No return	No return	12.8	11.4
NewDT116	10	23.3			8.3	12.4	10.3	15.6	9.9	9.1	17	33.2	14.9	13.3
NewDT118	26.5	19.4	27.8		9.5	14.3	10.2	22	16.5	13.1	30	21.5	19.2	17.1
NewDT119	34.7	24.6	31.1		11	No return	8.3	16.4	20.4	7.2	33	3.4(3)	20.7	18.5
NewDT120	29	30.2	31.6		14.3	15.1	14.2	16.7	12.5	6.6	30.9	32.7	21.3	18.9
NewDT127	28.3	22.3	25.9		15	12.1	9.1	18.8	23.2	16.2	26.2	36.5	21.2	18.9
NewDT128	29.3	29.1	29.6		20.4	22.3	4	28	28	23.7	20.2	34.5	24.5	21.8
NewDT137	22.7	20.3	8.9(3)	8.9(3)	7.6	15.6	19	20.5	14	14.2	19.3	16.5	15.6	13.9
NewDT141	10.7	13.6	4.5(2)	4.5(2)	8.2	13.2	11.9	11.3	14.5	No sample received	15.2	No return	10.8	9.6
NewDT142	18.1	16.5	7.3(2)	7.3(2)	6.3	13.5	9.9	16.5	13.3	No sample received	18.5	18.7	13.3	11.8
NewDT157a	40.1	31.1	8.5(2)	8.5(2)	6.5	17.5	21.4	19.2	25.2	19.7	22.8	28.2	20.7	18.5

Notes:

(1) See Appendix C for details on bias adjustment

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

New or Changed Sources Identified Within North Lanarkshire During 2020

North Lanarkshire Council has not identified any new sources relating to air quality within the reporting year of 2020.

Additional Air Quality Works Undertaken by North Lanarkshire Council During 2020

In 2020/21 a large-scale dispersion modelling study of future air quality scenarios, taking into account the major committed development, and their projected impact on Motherwell, Chapelhall and Coatbridge AQMAs was commissioned. This involved three dispersion modelling projects were undertaken, building on a previous study carried out in 2018/19 which looked at the impact of the newly upgraded M8 and A8 on the existing road layout and local AQMAs. This 2020 study looked at three distinct areas:-

- Expansion and update of the A8/M8 model;
- Development of the Bargeddie are model (including the Glenboig-Gartcosh Community Growth Area); and
- Assessment of the potential effects of major infrastructure projects.

Essentially the study can be summarised as a large, regional-scale model of the main populated areas of North Lanarkshire within which AQMAs have been designated. The report includes verification of model-predicted concentrations within NLC monitoring data for the updated baseline year or 2019, and provides predictions of local air quality in the future years of 2022 and 2028 across the study.

Scottish Government air quality funding has been secured in 2021 to expand this study to include the Wishaw/Newmains area as these areas feed directly down past the ongoing Ravenscraig development and into Motherwell Town Centre and the Motherwell AQMA.

QA/QC of Diffusion Tube Monitoring

The diffusion tubes for the year 2020 were supplied and analysed by Glasgow Scientific Services (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 NO_2 tube analysis and the Annual Field Inter-Comparison Exercise. These provide strict performance criteria for participating laboratories to meet, thereby ensuring NO_2 concentrations reported are of a high calibre.

The latest AIR-PT results are as follows:-

- AIR-PT AR030 (January to February 2019) – 100%
- AIR-PT AR031 (April to May 2019) – 100%
- AIR-PT AR033 (July to August 2019) – 100%
- AIR-PT AR034 (September to November 2019) – 50%
- AIR-PT AR036 (January to February 2020) – 100%
- AIR-PT AR037 (May to June 2020) – no results
- AIR-PT AR039 (July to August 2020) – no results
- AIR-PT AR040 (September to October 2020) – 100%

Over a rolling five round AIR-PT window, it is expected that 95% of laboratory results should be _<+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.

The AIR-PT AR034 result of 50% was investigated by the laboratory to the satisfaction of their accreditation body UKAS and no reprocessing was required.

Excluding this result, the results of all round results from January 2019 were 100% demonstrating satisfactory performance of the laboratory.

There were no results recorded for AIR-PT AR037 and AR039. This was also the same for all other laboratories which analyse diffusion tubes. This is expected to be due to the Covid-19 lockdown and restrictions in place at that time.

Diffusion Tube Bias Adjustment Factors

North Lanarkshire Council have applied a national bias adjustment factor of 0.89 to the 2020 monitoring data. A summary of bias adjustment factors used by North Lanarkshire Council over the past five years is presented in Table C.1

The National bias adjustment factor spreadsheet 06/21 was used to derive the national bias adjustment factor for diffusion tubes analysed by Glasgow Scientific Services during 2020. The National Bias Adjustment Factor Spreadsheet used is shown in Figure C.1 below, displaying the data for Glasgow Scientific Services.

An overall adjustment factor of 0.95 is calculated in the spreadsheet from 9 diffusion tubes which have been included in the study. Only two of these tubes however have Good precision.

A bias adjustment factor of 0.89 was calculated using only the tubes with Good precision. A value of 0.89 was therefore used as the adjustment factor for the monitored 2020 diffusion tube data.

National Diffusion Tube Bias Adjustment Factor Spreadsheet — Spreadsheet Version Number: 06/21

Follow the steps below in the correct order to show the results of relevant co-location studies
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 spreadhseet will be updated every few months: the factors may therefore be subject to change. This should not discourage their immediate use.

This spreadsheet will be updated at the end of Sept 2021

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: Select the Laboratory that Analyses Your Tubes from the Drop-Down List. If a laboratory is not shown, we have no data for this laboratory.

Step 2: Select a Preparation Method from the Drop-Down List. If a preparation method is not shown, we have no data for this method at this laboratory.

Step 3: Select a Year from the Drop-Down List. If a year is not shown, we have no data[2]

Step 4: 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 you have your own co-location study then see footnote[4]. If uncertain what to do then contact the Local Air Quality Management Helpdesk at LAQMHelpdesk@bureauveritas.com or 0800 0327953

Analysed By[1]	Method (To undo your selection, choose (All) from the pop-up list)	Year[2] (To undo your selection, choose (All))	Site Type	Local Authority	Length of Study (months)	Diffusion Tube Mean Conc. (Dm) (µg/m³)	Automatic Monitor Mean Conc. (Cm) (µg/m³)	Bias (B)	Tube Precision[4]	Bias Adjustment Factor (A) (Cm/Dm)
Glasgow Scientific Services	20% TEA in water	2020	R	East Dunbartonshire Council	11	23	19	15.8%	P	0.86
Glasgow Scientific Services	20% TEA in water	2020	R	East Dunbartonshire Council	11	19	18	3.9%	G	0.96
Glasgow Scientific Services	20% TEA in water	2020	R	East Dunbartonshire Council	10	15	15	-2.9%	P	1.03
Glasgow Scientific Services	20% TEA in water	2020	KS	Marylebone Road Intercomparison	11	53	44	21.7%	G	0.82
Glasgow Scientific Services	20% TEA in water	2020	R	Glasgow City Council	12	26	23	13.1%	P	0.88
Glasgow Scientific Services	20% TEA in water	2020	R	Glasgow City Council	12	21	20	4.7%	P	0.96
Glasgow Scientific Services	20% TEA in water	2020	R	Glasgow City Council	11	22	23	-3.6%	P	1.04
Glasgow Scientific Services	20% TEA in water	2020	KS	Glasgow City Council	12	33	36	-8.4%	P	1.09
Glasgow Scientific Services	20% TEA in water	2020	UB	Glasgow City Council	12	19	17	6.9%	P	0.94
Glasgow Scientific Services	20% TEA in water	2020		Overall Factor[3] (9 studies)				Use		0.95

Figure C.1 Glasgow Scientific Services – National Average Bias Adjustment Factor Spreadsheet 06/21

Diffusion Tube Annualisation

Monitored NO_2 concentrations from all diffusion tube sites where data captures of less than 75% and greater or equal to 25% were recorded have been annualised as per the guidance provided in LAQM. TG16 Chapter 7 and summarised in Table C.2.

Annualisation was carried out using data from the following nearby continuous automatic background monitoring sites for 2020:

- CM1 Coatbridge Whifflet – Urban background;
- Glasgow Waulkmill Glen Reservoir – Rural background; and
- Glasgow Townhead – Urban background.

Table C.1 – Bias Adjustment Factor

Year	Local or National	If National, Version of National Spreadsheet	Adjustment Factor
2020	National	06/21	0.89(1)
2019	National	06/20	0.87(1)
2018	National	03/19	0.92(1)
2017	National	06/18	0.90
2016	National	06/17	0.97

(1) Adjustment Factor was derived from using only the diffusion tubes with Good precision

NO_2 Fall-off with Distance from the Road

No diffusion tube NO_2 monitoring locations within North Lanarkshire required distance correction during 2020.

QA/QC of Automatic Monitoring

Automatic monitoring of NO_x, PM_{10} and $PM_{2.5}$ is completed within North Lanarkshire Council using Chemiluminescence and FIDAS (PM_{10} and $PM_{2.5}$) analysers. All data is available in real-time and following data dissemination is ratified by Ricardo Energy and Environment to AURN standards.

The data from the automatic monitoring stations is checked daily by the Local Site Operator (in-house member of staff).

Live and historic data are available from http://www.scottishairquality.scot/

Details of the calibration, servicing etc. arrangements for the automatic air monitoring stations in North Lanarkshire are as follows.

- Automatic analysers are set up to calibrate themselves every 72 hours.
- All automatic analysers are audited by Ricardo every six months.
- Analysers are serviced by the maintenance contractor for the equipment every six months. Maintenance contracts are in place for the analysers to ensure this. This also covers attending faults as necessary.
- Our in-house LSO maintains the air station network in terms of filter changes, gas ordering, initial fault-finding and reporting faults, as necessary. They also carry out visual checks on the monitors and ancillary equipment, enclosures etc.

PM_{10} and $PM_{2.5}$ Monitoring Adjustment

All PM_{10} and $PM_{2.5}$ monitoring within North Lanarkshire is carried out using either the conventional TEOM gravimetric equivalent monitoring technique or the FIDAS monitoring technique. All correction factors applied to monitoring data of PM_{10} and $PM_{2.5}$ within North Lanarkshire are detailed in the Annual Statistics Reports for the monitoring sites published by Ricardo Energy & Environment.

Automatic Monitoring Annualisation

Annualisation was undertaken for the following continuous automatic monitoring sites within North Lanarkshire due to recording a data capture of greater than equal to 25% and less than 75% for 2020:

- CM10 – Airdrie, Kenilworth Drive, PM_{10}, Data Capture – 52.12%
- CM11-Adele St, Motherwell, PM_{10}, $PM_{2.5}$, Data Capture-39.99%

Monitoring site CM7 – New Edinburgh Rd, Uddingston reported a very low data capture of 9.32% for PM_{10} during 2020. No annualization has been undertaken for this site as the data capture is below the minimum threshold of 25% in accordance with the guidance in LAQM. TG16 Chapter 7, and summarised in Table C.2.

Annualisation was carried out using data from the following nearby continuous automatic background monitoring site for 2020:

- CM3 Whifflet Coatbridge – Urban background;
- Glasgow Waulkmill Glen Reservoir – Rural background; and
- Glasgow Townhead – Urban background.

Automatic site CM10 reported PM_{10} data for 9 months during 2020 (75% of the year). The data capture, however, for a number of the individual months during 2020 for CM10 were low, resulting in the overall yearly data capture for this site being below 75%. Annualisation of CM10 was therefore undertaken.

NO_2 Fall-off with Distance from the Road

No automatic NO_2 monitoring locations within North Lanarkshire required distance correction during 2020.

Table C.2 – Annualisation Summary (concentrations presented in µg/m^3)

Site ID	Annualisation Factor CM3 Coatbridge Whifflet	Annualisation Factor Glasgow Waulkmill Glen Reservoir	Annualisation Factor Glasgow Townhead	Annualisation Factor	Average Annualisation Factor	Raw Data Annual Mean	Annualised Annual Mean	Comments
DT62	0.83	0.94	0.82	-	0.86	23.3	20.1	Annualised Annual Mean bias corrected by 0.89 to provide result in Table B1
DT144	0.77	0.88	0.75	-	0.8	13.3	10.7	Annualised Annual Mean bias corrected by 0.89 to provide result in Table B1
DT145	0.76	0.85	0.75	-	0.78	14.2	11.1	Annualised Annual Mean bias corrected by 0.89 to provide result in Table B1
DT146	0.83	0.88	0.81	-	0.84	15.5	13.0	Annualised Annual Mean bias corrected by 0.89 to provide result in Table B1
DT152	0.90	0.91	0.87	-	0.89	26	23.3	Annualised Annual Mean bias corrected by 0.89 to provide result in Table B1
CM10	0.8	0.75	0.93	-	0.83	9.4	7.8	Annualised Annual Mean result for PM_{10} presented in Table A5
CM11	1.05	1.07	1.04	-	1.06	7.6	8.0	Annualised Annual Mean result for PM_{10} presented in Table A5
CM11	0.99	1.04	1.06	-	1.03	4.4	4.5	Annualised Annual Mean result for $PM_{2.5}$ presented in Table A7

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

LAQM Technical Guidance TG(16), Defra

Cleaner Air for Scotland : An Air Quality Strategy for Scotland, Scottish Government

North Lanarkshire Council Air Quality Action Plan 2018-2021

North Lanarkshire Council Annual Progress Report 2020