Annual Progress Report (APR)

2023 Air Quality Annual Progress Report (APR) for South Lanarkshire Council

In fulfilment of Part IV of the Environment Act 1995, as amended by the Environment Act 2021

Local Air Quality Management

June 2023

Customer:
South Lanarkshire Council

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Executive Summary: Air Quality in Our Area

Air Quality in South Lanarkshire Council

Air Quality is generally good in most parts of South Lanarkshire. Monitoring network data collected during 2022 shows an overall downward trend in the measured concentrations of the main pollutants of concern. Concentrations measured in 2022 are similar to those measured in 2021, and all remain lower than 2019.

Three Air Quality Management Areas (AQMA) have been declared in South Lanarkshire at Whirlies East Kilbride (PM_{10}), Lanark (NO_2) and Rutherglen (PM_{10}). The process to revoke the Lanark AQMA has been initiated following consultation. South Lanarkshire Council now plan to review the Whirlies and Rutherglen AQMAs following the publication of the Scottish Government FIDAS equivalence study[1].

South Lanarkshire Council is committed to working towards achieving compliance with health-based air quality objectives. The main source of localised air pollution in South Lanarkshire is road traffic emissions; and to a lesser extent, emissions from industrial processes and commercial/domestic fuel combustion. The main pollutants of concern are nitrogen dioxide (NO_2) and fine particulate matter (PM_{10} and $PM_{2.5}$).

This Annual Progress Report provides a summary of the air quality measurements conducted across South Lanarkshire in 2022; it also considers any new potential sources of air pollution and if any further action is required to protect or improve air quality within South Lanarkshire.

All annual mean Nitrogen Dioxide (NO_2) concentrations measured at automatic monitoring sites within South Lanarkshire were below the annual mean objective of 40 µg/m^3 during 2022. The last five years' measurements indicate an overall downward trend in measured NO_2 concentrations at all automatic and passive monitoring sites; with a sharp decline

[1] Ricardo Energy & Environment (2023) Equivalence Study to Investigate Particulate Matter Monitoring in Scotland using the FIDAS 200; Report for the Scottish Government; Ref ED11195 Issue 1 10th May 2023; available to download here: https://www.scottishairquality.scot/news/local-authority-guidance-note-laqm-reporting-scottish-pm-data

between 2019 and 2020 attributable to reduced road traffic emissions during the nationwide pandemic restrictions in 2020.

No sites measured 1-hour mean NO_2 concentrations in excess of 200 µg/m^3 objective during 2022; all measurement sites were therefore compliant with the 1-hour short-term mean objective[2].

The 18 µg/m^3 Scottish PM_{10} annual mean objective was not exceeded at any of South Lanarkshire Council's eight automatic monitoring sites in 2022. Measured PM_{10} concentrations in 2022 were similar to those measured in 2021.

No PM_{10} daily means greater than 50 µg/m^3 were measured at any monitoring site during 2022. All measurement sites were therefore compliant with the 24-hour short-term mean objective[3].

South Lanarkshire Council measured $PM_{2.5}$ concentrations at eight of their automatic sites in 2022. No exceedances of the Scottish $PM_{2.5}$ annual mean objective[4] were measured. Measured $PM_{2.5}$ concentrations in 2022 were similar to those measured in 2021.

Based on available information regarding planned developments, South Lanarkshire Council have not identified any locations where there may be a risk of the air quality objectives being exceeded.

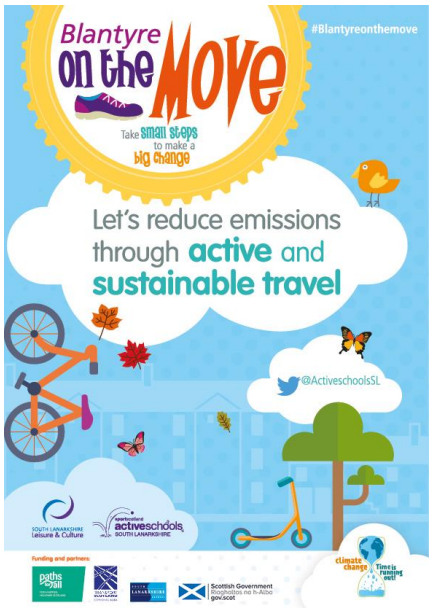
Actions to Improve Air Quality

Active Travel

The **WALKCYCLE4AIR App** and competition was launched in partnership with North Lanarkshire Council. The App aims to encourage people out of their cars whilst enjoying fresh air and cutting their emissions at the same time. The App was downloaded over 1,100 times last summer. More information is available here: Treasure trail helps address air pollution - South Lanarkshire View *(Air Quality Action Plan South Lanarkshire Council: S15 – Investigate behaviour change initiatives)*

[2] 1-hr mean 200 µg/m^3 standard is not to be exceeded more than 18 times per year
[3] 24-hr mean 50 µg/m^3 not to be exceeded more than 7 times a year
[4] Exceedances of the $PM_{2.5}$ annual mean objective of 10µg/m^3

The **On the Move** project has been expanded to include Lanark and Blantyre with work ongoing to introduce it to the Calderglen area in East Kilbride. Primary schools and communities around Lanark and Blantyre have worked together to inspire locals to travel responsibly for the environment. More information is available here: On the Move to cleaner air in Lanark - South Lanarkshire View *(Air Quality Action Plan South Lanarkshire Council: S15 – Investigate behaviour change initiatives)*



Love to Ride South Lanarkshire – cycling behaviour change project. This tailored online behaviour change programme and platform ran for eighteen months and has been proven to monitor and get more people on bikes. Love to Ride South Lanarkshire engaged with 35 workplaces and encouraged 18% of new riders to become occasional or regular riders and 9% of active occasional riders become regular riders. More information is available here: Cycle for fun and prizes this September - South Lanarkshire View. *(Air Quality Action Plan South Lanarkshire Council: S15 – Investigate behaviour change initiatives)*

Beat the Street East Kilbride engaged 15.7% of the local population (11,803) and participants travelled over 151,500 miles sustainably across their local town as part of the active and sustainable travel promotion initiative. The project saw an 11% reduction in motorised vehicle use. More information is available here: Beat the Street reports a success in East Kilbride - South Lanarkshire View (*Air Quality Action Plan South Lanarkshire Council: S15 – Investigate behaviour change initiatives*)

South Lanarkshire Council continues its partnership with South Lanarkshire College to support the expansion of cycling uptake with students and staff. South Lanarkshire Council

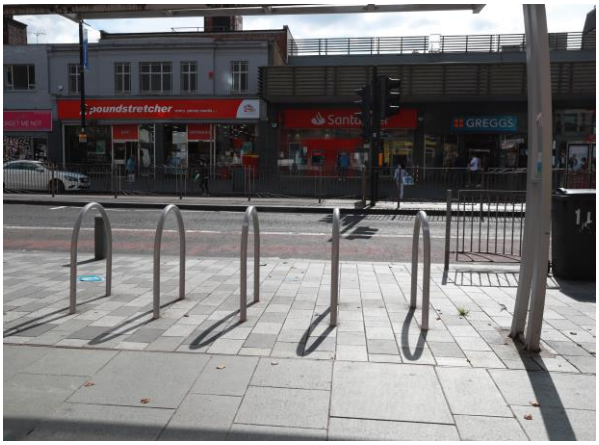
supported the college in their purchase of a new e-cargo bike which will enable sustainable deliveries across campus as well as transporting materials for the horticultural department. (*Air Quality Action Plan South Lanarkshire Council: S9. – Encourage the uptake of low emission vehicles*)

South Lanarkshire re-launched its **Cycle2Work** scheme and in 2022 agreed that this scheme would now be an all-year-round project with no closing date for applications. More information is available here: Cycle2Work (*Air Quality Action Plan South Lanarkshire Council: S9. – Encourage the uptake of low emission vehicles)*

South Lanarkshire also runs **Walk to School** initiatives and works on expanding the number of schools participating in this initiative. In this academic year 60 schools were provided with 'walk to school week' classroom packs. 18 schools took part in the year-round 'WOW: Walk to School challenge with other walk to school and sustainable travel activities promoted throughout the academic year. *(Air Quality Action Plan South Lanarkshire Council: S15 – Investigate behaviour change initiatives)*

Cycle training has also been provided within in our schools. In academic year 2022-23 there were 67 schools delivering to Bikeability Level 1 and 52 schools training to Level 2 on-road with a further 2 schools delivering Level 2 style training in the playground. (*Air Quality Action Plan South Lanarkshire Council: S9. – Encourage the uptake of low emission vehicles)*

Ongoing improvements and expansion of the cycling and walking network continued throughout 2022 and a link to the current network is available via the **Air That We Breathe** GIS Story map resource: The air that we breathe story map . An example of the improvements is available here: Improvements underway for Active Travel routes - South Lanarkshire View *(Air Quality Action Plan South Lanarkshire Council: S14 – Improve cycle routes)*



The East Kilbride branch of Universal Connections participated in a **Beat the Street** legacy project aimed at upskilling members of the local community in cycle training. Nine members of staff and volunteers completed their Train the Trainers Bikeability Leaders course. This will enable the centre to run Essential Cycling courses for young people and the wider community to build their confidence, using cycle lanes safely and basic bike maintenance to keep their bikes roadworthy. (*Air Quality Action Plan South Lanarkshire Council: S9. – Encourage the uptake of low emission vehicles)*

Young sports leaders and S6 students from St Andrews and St Brides had an opportunity to be trained as **Bikeability Instructors**. These students are now able to deliver on road cycle training to primary school children under the Cycling Scotland's Training Scheme. Children who are taught this course learn safe cycling skills and road safety/Highway Code awareness, and basic cycle maintenance checks along with Eco and Active Travel sustains to improve air quality in conjunction with the aims of South Lanarkshire Council. On completing this course, the students have also been able to gain SCQF University Points towards their future learning and employment opportunities for the future. Some of these students have said they may be able to help specifically within their local primary schools with upcoming training sessions. (*Air Quality Action Plan South Lanarkshire Council: S9. – Encourage the uptake of low emission vehicles)*

Tackling Engine Idling

South Lanarkshire's engine idling promotion campaign continues following on from the re-launch on Clean Air Day 2022. Graphics have been developed and distributed at suitable locations such as streetlamp post banners at schools, school railing banners and lamp post posters throughout the council area. The campaign emphasises those being affected by poor air quality from engine idling. The refreshed campaign branding '30 good reasons to switch off your engine' and '11 good reasons to turn off your engine' are in use around schools and sports centres. The new branding has been very well received. *(Air Quality Action Plan South Lanarkshire Council: S15 – Investigate behaviour change initiatives)*

Improvements to Vehicle Emissions

South Lanarkshire Council has facilitated the expansion of the electric vehicle charging network with 133 charging points now available. Read more here: Tariff to be introduced for electric vehicle charging - South Lanarkshire View (*Air Quality Action Plan South Lanarkshire Council: S9. – Encourage the uptake of low emission vehicles)*

The ECO Stars scheme was extended in 2021 to include taxis. The scheme aims to raise awareness among companies of the important role they can play in helping improve local air quality by enhancing the performance of their fleet. The fleet scheme currently has 277 members with 10,273 registered vehicles. The taxi scheme now has 4 members with 162 vehicles. More information is available here: Commercial vehicle operators save costs and save the planet - South Lanarkshire View. *(Air Quality Action Plan South Lanarkshire Council: S9 – Encourage the uptake of low emission vehicles; L10 – Engage local businesses in eco fleet initiatives and travel planning)*

Greening of Public Spaces

Working in partnership with a local community gardening group ‘Grow 73’ a number of large wooden planters with pollution fighting plants were installed adjacent to a busy junction. The project has been running for several years now and Grow 73 continue to maintain the planters and they have also engaged with the Royal Horticultural Society who have supported the project by providing advice, compost and additional plants. (*Air Quality Action Plan South Lanarkshire Council: L7. Investigate the use of green infrastructure)*

Local Priorities and Challenges

South Lanarkshire Council plan to undertake a light touch review of the Air Quality Action Plan following consultation with the Scottish Government and the Scottish Environmental Protection Agency (SEPA), taking into consideration the ongoing revocation of the Lanark AQMA and likely revocation of Whirlies and Rutherglen AQMAs following the publication of the Scottish Government FIDAS equivalence study[5]. Thereafter, the longer-term ambition is to develop and fully adopt an air quality strategy for all of South Lanarkshire, being especially protective of air quality in previous (revoked) AQMAs.

A Detailed Assessment considering revocation of the Lanark AQMA was conducted in 2022[6]. No exceedances of the NO_2 annual mean objective have been measured there since 2013, and all measured annual means were well below the 40 µg/m^3 objective in 2019. The detailed assessment aimed to future proof the revocation of the AQMA by including sensitivity testing of inter-annual variability in meteorological conditions that could lead to increased pollutant concentrations and future traffic conditions with planned nearby developments in 2025. No exceedances of the NO_2 annual or short-term objectives were predicted at locations of relevant human exposure. The assessment concluded that South Lanarkshire Council may now wish to consider revocation of the Lanark AQMA.

How to Get Involved

The public can obtain further information relating to air quality in South Lanarkshire on the Council Website (Air quality - South Lanarkshire Council).

Regular updates on air quality projects are promoted via the council's news portal. This can be accessed via this link: South Lanarkshire View. In addition, air quality initiatives are regularly promoted via social media pages. An example includes South Lanarkshire

[5] Ricardo Energy & Environment (2023) Equivalence Study to Investigate Particulate Matter Monitoring in Scotland using the FIDAS 200; Report for the Scottish Government; Ref ED11195 Issue 1 10th May 2023; available to download here: https://www.scottishairquality.scot/news/local-authority-guidance-note-laqm-reporting-scottish-pm-data

[6] Ricardo Energy & Environment (2022) Detailed assessment to the revocation of Lanark AQMA, South Lanarkshire; Report for South Lanarkshire Council; Ref ED12832128- Issue Number 1 28th January 2022

Council on Twitter: "A campaign to help people across South Lanarkshire to engage in a more active lifestyle has been launched."

More information about air quality in Scotland and actions that members of the public can take to help reduce air pollution is available at Air Quality in Scotland.

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1 Local Air Quality Management

This report provides an overview of air quality in South Lanarkshire Council during 2022. It fulfils the requirements of Local Air Quality Management (LAQM) as set out in Part IV of the Environment Act (1995), as amended by the Environment Act (2021), 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 South 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	31.12.2021
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 publish and implement an Air Quality Action Plan (AQAP) within the shortest possible time and no later than 12 months of the date of AQMA Designation Order. The AQAP must set out measures the local authority intends to put in place in pursuit of the objectives within the shortest possible time. Measures should be provided with milestones and a final date for completion. The action plan itself should have a timescale for completion and for revocation of the AQMA. Where measures to reduce air pollution may require a longer timescale an action plan shall be reviewed and republished within five years of initial publication and then five-yearly thereafter.

A summary of AQMAs declared by South 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 South Lanarkshire Council AQMAs - Defra and in Appendix D.

The process to revoke the Lanark AQMA has been initiated following consultation, and South Lanarkshire Council plan to review the Whirlies and Rutherglen AQMAs following the publication of the Scottish Government Equivalence Study To Investigate Particulate Matter Monitoring In Scotland Using The Fidas 200.

Table 2.1 – Declared Air Quality Management Areas

AQMA Name	Pollutants and Air Quality Objectives	City / Town	Description	Action Plan
Whirlies Roundabout	PM_{10} annual mean	East Kilbride	An area encompassing the Whirlies Roundabout, East Kilbride between the A725, A749 and B783 and extending along all the roads leading into the roundabout.	Whirlies AQMA, details available at: South Lanarkshire AQMAs - Air Quality in Scotland

AQMA Name	Pollutants and Air Quality Objectives	City / Town	Description	Action Plan
Rutherglen	PM_{10} annual mean	Rutherglen	An area encompassing all areas of Rutherglen is designated.	Rutherglen AQMA, details available at: South Lanarkshire AQMAs - Air Quality in Scotland
Lanark Town Centre	NO_2 annual mean	Lanark	An area encompassing all areas of Lanark is designated. SLC are working towards the revocation of the Lanark AQMA, supported by a Detailed Assessment submitted in 2022.	Lanark AQMA, details available at: South Lanarkshire AQMAs - Air Quality in Scotland

2.2 Cleaner Air for Scotland 2

Cleaner Air for Scotland 2 – Towards a Better Place for Everyone (CAFS2) is Scotland's second air quality strategy. CAFS2 sets out how the Scottish Government and its partner organisations propose to further reduce air pollution to protect human health and fulfil Scotland's legal responsibilities over the period 2021 – 2026. CAFS2 was published in July 2021 and replaces Cleaner Air for Scotland – The Road to a Healthier Future (CAFS), which was published in 2015. CAFS2 aims to achieve the ambitious vision for Scotland "to have the best air quality in Europe". 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 South Lanarkshire Council against relevant actions for which local authorities are the lead delivery bodies within this strategy is demonstrated below.

2.2.1 Placemaking – Plans and Policies

Local authorities with support from the Scottish Government will assess how effectively air quality is embedded in plans, policies, City Deals and other initiatives, and more generally

in cross departmental working, identifying and addressing evidence, skills, awareness and operational gaps.

South Lanarkshire Council Environmental Services has a representative at the Council's Strategic Environmental Assessment Working Group. This group reviews all new and revised policies, plans and strategies introduced by the Council. This has proved invaluable in promoting awareness of air quality issues and embedding measures to support the improvement and protection of air quality going forward. Through previous air quality action planning projects Environmental Services have developed a strong working partnership with South Lanarkshire Leisure and Culture Services (SLLC), particularly the Active Schools teams. Projects such as Beat the Street and the E-Bike Physical Activity Prescription Trial have resulted in an environmental working group being set up within SLLC. Lanark on the Move project was developed by SLLC as a result of successful partnership working.

2.2.2 Transport – Low Emission Zones

Local authorities working with Transport Scotland and SEPA will look at opportunities to promote zero-carbon city centres within the existing LEZs structure. Following the Scottish National Low Emission Framework (NLEF) Screening Determination compiled in 2020, and on the basis of a continuing decline in pollutant concentrations, South Lanarkshire Council's current opinion is that a Low Emission Zone is neither required or a suitable option for improving ambient air quality in the Council area.

2.2.3 Local Transport Strategy

South Lanarkshire Council is due to renew the Local Transport Strategy in 2023 and it is anticipated that zero carbon ambitions will be embedded within the revised Strategy to reflect the Councils strong commitment to a zero-carbon future. A Climate Change and Sustainability Committee has made available a Climate Emergency Fund, and this has been used to support some of SLC's sustainable travel projects in alignment with air quality action planning.

2.3 Implementation of Air Quality Action Plan(s) and/or measures to address air quality

In order to ensure that local authorities implement the measures within an action plan by the timescales stated within that plan, the Scottish Government expects authorities to

submit updates on progress through the APR process. South Lanarkshire Council has taken forward a number of measures within the action plan during the current reporting year of 2022 in pursuit of improving local air quality and meeting the air quality objectives within the shortest possible time. 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 a combined air quality Action Plan for South Lanarkshire Council's AQMAs which can be found at: South Lanarkshire's air quality action plan .

South Lanarkshire Council plan to undertake a light touch review of the Air Quality Action Plan following consultation with the Scottish Government and the Scottish Environmental Protection Agency (SEPA), taking into consideration the ongoing revocation of the Lanark AQMA and likely revocation of Whirlies and Rutherglen AQMAs following the findings from the Scottish Government Equivalence Study To Investigate Particulate Matter Monitoring In Scotland Using The Fidas 200. Thereafter, the longer-term ambition is to develop and fully adopt an air quality strategy for air quality across all of South Lanarkshire, being especially protective of air quality in previous (revoked) AQMAs.

Table 2.2 – Progress on Measures to Improve Air Quality

Measure No.	Measure	Category	Expected/Actual Completion year	Measure Status	Funding Status	Key Milestones	Progress	Barriers to implementation
Strategic 1	Strengthen links with Local Transport Strategy	Transport planning and infrastructure	This is an ongoing measure and will be reviewed at the 2023 refresh of the Strategy.	In progress	Not funded	Reference to AQMAs and measures included in South Lanarkshire Council AQAP. Integration of plan with Local and Regional Transport Strategies.	Air quality is integral to South Lanarkshire's Local Transport Strategy 2013 -2023 with a commitment to improve air quality through the provision of enhanced public transport infrastructure and supporting the introduction of electric and hybrid vehicles. In addition, the Strategy outlines a commitment to encourage and facilitate uptake of active travel.	
Strategic 2	Strengthen links with Local Planning and Economic Development	Policy guidance and development control	This is an ongoing measure and will continue as local policy guidance on development plans and measures evolve.	In progress	Not funded	Integration of South Lanarkshire Council AQAP within future versions of Local Development Plan.	South Lanarkshire Local Development Plan 2 will replace the current LDP which was adopted in 2015. LDP2 contains a clear commitment that any new development proposals will not result in, or can mitigate against, any significant adverse impact on air quality. The use of the green network and greenspace to help improve air quality is recognised within LDP2 as well as ensuring development has sustainable travel options by encouraging less reliance on private vehicles and	

Measure No.	Measure	Category	Expected/Actual Completion year	Measure Status	Funding Status	Key Milestones	Progress	Barriers to implementation
							facilitating cycling, walking and the use of public transport.	
Strategic 3	Integrate Air Quality with other Council Strategies	Policy guidance and development control	Ongoing measure that will continue to be considered as existing and new Strategies are developed and updated.	In progress	Not funded	Inclusion of air quality outcomes in the Sustainable Development and Climate Change Strategy 2017 – 2022. Inclusion of air quality outcomes in the Biodiversity Implementation Plan 2018 – 2022. Inclusion of air quality outcomes in the Cycling Strategy 2015 – 2020. Inclusion of air quality outcomes in the Park and Ride Strategy 2018 – 2027.	The Sustainable Development and Climate Change Strategy 2022 – 2027 includes a vision to restore, protect, enhance and respect South Lanarkshire's natural environment enabling basic needs such as clean air. The strategy includes progress to date in a range of air quality improvement projects and an education programme involving communities, businesses and schools throughout the previous 5-year strategy. The South Lanarkshire Biodiversity Duty Implementation Plan 2018-2022 includes an action to investigate the use of green infrastructure to improve air quality. South Lanarkshire recognises the benefits of encouraging cycling and have developed a South Lanarkshire Council Cycling Strategy 2015-2020.	

Measure No.	Measure	Category	Expected/Actual Completion year	Measure Status	Funding Status	Key Milestones	Progress	Barriers to implementation
							This strategy aims to improve air quality by getting more people cycling and travelling actively. The Council has a Park and Ride Strategy 2018 - 2027 which focuses on making the rail network attractive and accessible by providing park and ride facilities. Improving air quality is one of the key benefits and outcomes of this strategy.	
Strategic 4	Revise and adopt an Air Quality Strategy for South Lanarkshire	Policy guidance and development control	2023	In progress	Funded	Develop and adopt an Air Quality Strategy for South Lanarkshire	A revision to the draft Air Quality Strategy will be undertaken and will detail high level guidance to help inform other strategies and policies across the Council. The policy will be aimed at Council staff as well as local businesses, organisations and the general public.	
Strategic 5	Develop air quality guidance note	Policy guidance and development control	Completed with period review of content undertaken.	Complete	Not funded	Maintain and make available an air quality guidance note	South Lanarkshire has developed a GIS based story map 'The air that we breathe' which contains guidance and links to resources and advice to help improve air quality and encourage a 'be part of the solution, not the pollution' approach.	

Measure No.	Measure	Category	Expected/Actual Completion year	Measure Status	Funding Status	Key Milestones	Progress	Barriers to implementation
Strategic 6	Lobby government for additional national policy	Policy guidance and development control	Ongoing	In progress	Not funded	Maintain contact with the Scottish Government regarding the adoption of national air quality measures.	South Lanarkshire has contributed to consultation on Low Emission Zone and will continue to contribute to relevant air quality consultations.	
Strategic 7	Review traffic studies	Transport planning and infrastructure	Ongoing	In progress	Not funded	Undertake a review of traffic to assess the potential impact traffic management optimisation on air quality	Air quality action planning funds have supported review of traffic within the Lanark area as part of a Scottish Transport Appraisal Guidance (STAG) based study particularly in relation to traffic flow and layout review in this area. The aim is to develop a scheme which reduces congestion and so improve air quality particularly within the hot spot location of Bannatyne Street. The STAG is currently in final stages of completion.	
Strategic 9	Encourage the uptake of low emission vehicles	Promoting travel alternatives	Ongoing	In progress	Part funded	Number of low emission vehicles	To support the transition to low emission vehicles across the wider community South Lanarkshire continues to expand the network of electric charging points. Information on the location of the charging	

Measure No.	Measure	Category	Expected/Actual Completion year	Measure Status	Funding Status	Key Milestones	Progress	Barriers to implementation
							points is available via the air quality storymap. South Lanarkshire Scheme Council have recently introduced the Eco Stars Taxi and Private Hire to augment the existing Eco Stars Fleet Scheme. This will further raise awareness within the taxi and private hire sector of the important role they play in helping to improve local air quality. Eco Stars provides tailored guidance to fleet and taxi operators on low emission vehicle options.	
Strategic 10	Expand cycle / pedestrian counters	Promoting travel alternatives	Ongoing	In progress	Part funded	Number of cycle and pedestrian counters	A growing network of cycle and pedestrian counters are distributed across South Lanarkshire with action plan funding being used to support the growing network. To date approximately 79 counters are in use.	
Strategic 11	Awareness training on air quality issues	Public information	Ongoing	In progress	Not funded	Continue to make training available to relevant Council staff	Air quality and development training has been attended by representatives from Environmental Services and Traffic and	

Measure No.	Measure	Category	Expected/Actual Completion year	Measure Status	Funding Status	Key Milestones	Progress	Barriers to implementation
							Transportation Services. Further refresher training for these officers will be undertaken as well as the provision of air quality training as part of the internal programme of continuing professional development for planning colleagues.	
Strategic 12	Train station and bus station improvements	Promoting travel alternatives	Ongoing	In progress	Not funded	Upgrade and expansion at bus and train stations to include active travel hub options. Improved integration between cycling, walking and public transport.	South Lanarkshire Council continues to work in Partnership with Scotrail to increase awareness and facilities to support active travel connectivity with rail stations. In addition, Environmental Services work closely with Traffic and Transportation colleagues to identify priority areas that can support and improve facilities at bus and train stations. Enhancement of park and ride facilities for rail stations to reflect the significant increase in rail travel is a particular area of focus with a Park and Ride Strategy being implemented.	

Measure No.	Measure	Category	Expected/Actual Completion year	Measure Status	Funding Status	Key Milestones	Progress	Barriers to implementation
							The Council opened a new park and ride facility at Cambuslang Train Station in 2021. The facility offers 265 parking spaces including new electric vehicle charging infrastructure which will provide further sustainable transport options to local residents and the surrounding community Plans are also moving forward to re-locate Hairmyres Train Station and provide an expanded transport hub. The work is due to commence in 2024 and will develop a major transport interchange with park and ride facilities. It will also have significant electric vehicle charging provisions, active travel improvements and new bus interchange.	
Strategic 13	Investigate integration of air quality awareness within Education	Public information	Ongoing	In progress	Funded	Continue to make training available to relevant Council staff	Air quality and sustainable active travel workshops have previously been undertaken within a number of primary schools within South Lanarkshire. An online active travel resource for primary schools was	

Measure No.	Measure	Category	Expected/Actual Completion year	Measure Status	Funding Status	Key Milestones	Progress	Barriers to implementation
							piloted during school academic year 2021/22. Lanark on the Move pilot project has been expanded to include Blantyre and Calderglen areas.	
Strategic 14	Improve cycle routes	Transport planning and infrastructure	Ongoing	In progress	Part funded	Improvement of cycle routes	South Lanarkshire Council continues to invest in the maintenance, upgrading and expansion of cycling infrastructure across the area. Active travel studies have been completed for East Kilbride, Cambuslang, Rutherglen Hamilton, Lanark, Carluke, Larkhall, Strathaven, Bothwell, Blantyre and Uddingston. Further studies are due to commence within the Clydesdale area. These studies underpin applications for funding to support infrastructure investment and help identify areas were further works would be of most benefit. Following on from the active travel study, East Kilbride has the completed the first stage of segregated cycle infrastructure.	

Measure No.	Measure	Category	Expected/Actual Completion year	Measure Status	Funding Status	Key Milestones	Progress	Barriers to implementation
							Further work has been undertaken on the joint project with North Lanarkshire Council which supports the promotion of walking and cycling access routes to Strathclyde Park. A treasure Trail App is now available to encourage more walking, cycling and wheeling, with the hopes that this will transcend into everyday journeys. A new cycling infrastructure project which will regenerate a derelict brownfield site in Cambuslang into a major new cycling venue has commenced. One of the main aims of this project is encourage more people in the local community to switch from car use to cycling.	
Strategic 15	Investigate further behaviour change initiatives	Public information	Ongoing	In progress	Funded	Continue to focus on air quality initiatives	Beat the Street East Kilbride engaged 15.7% of the local population (11,803) and participants travelled over 151,500 miles sustainably across their local towns as part of the active and sustainable travel promotion initiative. The	

Measure No.	Measure	Category	Expected/Actual Completion year	Measure Status	Funding Status	Key Milestones	Progress	Barriers to implementation
							project saw an 11% reduction in motorised vehicle use. On the Move project has been expanded to include Lanark and Blantyre with work ongoing to introduce it to Calderglen area in East Kilbride. Primary schools and communities around Lanark and Blantyre have worked together to inspire locals to travel responsibly for the environment. Love to Ride South Lanarkshire – cycling behaviour change project. This tailored online behaviour change programme and platform ran for eighteen months and has been proven to monitor and get more people on bikes. Love to Ride South Lanarkshire engaged with 35 workplaces and encouraged 18% of new riders to become occasional or regular riders and 9% of active occasional riders become regular riders.	

Measure No.	Measure	Category	Expected/Actual Completion year	Measure Status	Funding Status	Key Milestones	Progress	Barriers to implementation
							An engine idling promotion campaign took place within the last year. This involved graphics being developed and distributed at suitable locations such as street lamp post banners at schools, school railing banners and lamp post posters throughout the council area. The campaign put the emphasis on those being affected by poor air quality from engine idling – whether that be school children, children playing sports or staff and customers at hot food takeaway outlets.	
Strategic 16	Continue to expand air quality monitoring activities	Public information	Ongoing	In progress	Part Funded	Continued provision of appropriate air quality monitoring	AQ Mesh pods, which are more portable forms of real time air quality monitoring kit, have been purchased and used in various locations across South Lanarkshire. A car free zone pilot study was undertaken and demonstrated a 57% reduction and 29% reduction in NO_2 at the two car free zone pilot schools.	Funding has not been secured to continue the car free zone study.

Measure No.	Measure	Category	Expected/Actual Completion year	Measure Status	Funding Status	Key Milestones	Progress	Barriers to implementation
Strategic 17	Section 75 Town and Country Planning (Scotland) Act 1997 agreements	Policy guidance and development control	Ongoing	In progress	Not funded	Consideration of air quality issues in the development management process.	No Section 75 agreements have been processed this year in terms of air quality.	
Whirlies 1	Real time bus passenger information	Promoting travel alternatives	Complete	Complete	N/A	Provision of real time passenger information	The number of real time passenger information systems have been increased over this past year and are in place at key bus stop locations in the East Kilbride area. Bus companies operating in South Lanarkshire have developed an App to provide their customers access to real time information for buses on routes within South Lanarkshire.	
Whirlies 2	Investigate bike hire schemes for key locations	Promoting travel alternatives	Ongoing	In progress	Not funded	Provision of bike hire schemes. Progress of this action is dependent on the conclusions of the pilot study.	An initial feasibility study has been undertaken which considered the East Kilbride and Rutherglen areas for potential bike hire schemes. The study supported the Rutherglen area for the operation of a cycle hire scheme with potential to link with the Glasgow bike hire scheme. The study was more cautious in terms of the feasibility of a cycle hire scheme within the East Kilbride area. A re-	

Measure No.	Measure	Category	Expected/Actual Completion year	Measure Status	Funding Status	Key Milestones	Progress	Barriers to implementation
							fresh of the previous Rutherglen study is being considered by Traffic and Transportation Services.	
Lanark 1	Investigate eco-route signage to encourage alternative routes away from town centre	Transport planning and infrastructure	Ongoing	In progress	Not funded	Implementation of eco-route signage. Progress of this action is dependent on the conclusions of the traffic review.	A transport appraisal undertaken in terms of Transport Scotland's Scottish Transport Appraisal Guidance (STAG) is nearing completion. This review will influence cycle and walking route signage and also electric charging points for vehicles. The most up to date information on the Clydesdale STAG is available Clydesdale Scottish Transport Appraisal Guidance (STAG) - South Lanarkshire Council	
Lanark 2	Traffic re-routing investigation	Traffic management	Ongoing	In progress	Not funded	Optimisation of the traffic management system. Progress of this action is dependent on the conclusions of the feasibility study.	The Local Transport Strategy 2013 - 2023 recognises that the growth within the market town of Lanark has resulted in traffic problems which in turn is impacting air quality. To alleviate the congestion issues the feasibility of constructing a gyratory system at the east end of the High Street is currently being considered as part of the Clydesdale STAG The traffic review	

Measure No.	Measure	Category	Expected/Actual Completion year	Measure Status	Funding Status	Key Milestones	Progress	Barriers to implementation
							will inform re-routing options going forward.	
Lanark 3	Review delivery times	Traffic management	Ongoing	In progress	Not funded	Identify which traffic restriction measures considered appropriate to reduce congestion due to delivery vehicles	Discussions are underway with Traffic and Transportation Services as to the traffic regulation restrictions within the Lanark area. Again the Clydesdale STAG will inform this action going forward.	
Lanark 4	Real time bus passenger information	Transport planning and infrastructure	Ongoing	In progress	Not funded	Provision of real time passenger information	Again the Clydesdale STAG is reviewing public transport infrastructure. There have been discussions with Traffic and Transportation Services in terms of the planned upgrade to the Lanark bus and train stations. Integral to these discussions is the feasibility of ensuring future infrastructure supports real time bus passenger information.	
Lanark 5	Review traffic and air quality patterns	Traffic management	Ongoing	In progress	Funded	Results of air quality monitoring used to identify times when peak emissions are experienced	The action plan steering group raised a query as to whether higher volumes of traffic are experienced on market days within the town. In addition, it was queried whether higher volumes of LGVs and HGVs are experienced on these days and	

Measure No.	Measure	Category	Expected/Actual Completion year	Measure Status	Funding Status	Key Milestones	Progress	Barriers to implementation
							whether these are having an effect on air quality. To assist with this query an AQ Mesh pod has been fitted within Bannatyne Street. This portable air quality monitoring unit records real time emissions and will allow a review of days and times when peak emissions are being experienced.	
Lanark 6	Review and promote awareness of parking restrictions	Traffic management	Ongoing	In progress	Not funded	Implementation of measures to improve awareness of parking restrictions	Initial discussions are underway with Traffic and Transportation Services as to the traffic regulation restrictions within the Lanark area. The Clydesdale STAG will also influence this project going forward.	
Lanark 7	Investigate the use of green infrastructure	Transport planning and infrastructure	Ongoing	In progress	Funded	Introduction of green infrastructure. Progress of this action is dependent on the conclusions of the pilot study in Rutherglen.	Limited progress has been made with this measure. A pilot planting project has been undertaken within the Rutherglen area. The lessons learned from the pilot will be used to shape any progress of this measure within the Lanark area	
Lanark 8	Investigate quality bus partnerships (ECO stars)	Vehicle fleet efficiency	Ongoing	In progress	Funded	Number of ECO Stars members	Lanark bus companies have been encouraged to join the ECO Stars fleet recognition scheme which aims to help fleet operators improve efficiency, reduce fuel consumption	

Measure No.	Measure	Category	Expected/Actual Completion year	Measure Status	Funding Status	Key Milestones	Progress	Barriers to implementation
							and emissions and make cost savings. Specialist workshops were arranged specifically tailored to bus operators and a number of attendees opted for additional support from Ecostars to assist with funding applications to encourage transition to cleaner vehicles.	
Lanark 9	Investigate the use of traffic regulation conditions	Traffic management	On hold	On hold	Not funded	Identify which traffic restriction measures considered appropriate to reduce traffic within the AQMA.	At this stage this measure has not been progressed. This will be reviewed going forward.	Awaiting outcome of STAG review and impact on town parking
Lanark 10	Engage local businesses in eco-fleet initiatives and travel planning	Vehicle fleet efficiency	Ongoing	In progress	Funded	Number of fleet operators accessing assessment and guidance from South Lanarkshire Council	South Lanarkshire provide fleet operators free access to assessment and tailored guidance to assist fleet operators in becoming more economic in terms of fuel, emissions and costs.	
Lanark 11	Investigate cycle hire feasibility study within the Lanark area	Promoting travel alternatives	On hold	On hold	Not funded	Provision of bike hire schemes	At this stage this measure has not been progressed. This will be reviewed going forward.	Awaiting outcome of STAG as well as bus and train station improvements and active travel hub options

Measure No.	Measure	Category	Expected/Actual Completion year	Measure Status	Funding Status	Key Milestones	Progress	Barriers to implementation
Lanark 12	Investigate active travel hub for bus and train stations	Promoting travel alternatives	Ongoing	In progress	Part funded	Upgrade and expansion at Lanark bus and train station to include active travel hub options. Improved integration between cycling, walking and public transport.	As part of upgrading and expanding the facilities available at the Lanark bus and train stations investigations additional land adjacent to the stations has now been purchased. Plans are at an early stage in terms of development of park and ride facilities to support both of these stations.	
Lanark 13	Review pedestrian locations	Promoting travel alternatives	On hold	On hold	Not funded	Improved provision of pedestrian locations	At this stage this measure has not been progressed. This will be reviewed going forward.	Awaiting outcome of Lanark Stag and town centre review
Rutherglen 1	Investigate eco-route signage to encourage alternative routes away from town centre	Transport planning and infrastructure	On hold	On hold	Not funded	Implementation of eco-route signage.	At this stage this measure has not been progressed. This will be reviewed going forward.	
Rutherglen 2	Review parking restriction enforcement and promotion	Traffic management	On hold	On hold	Not funded	Implementation of measures to improve awareness and enforcement of parking restrictions.	At this stage this measure has not been progressed. This will be reviewed going forward.	
Rutherglen 3	Real time passenger	Transport planning and infrastructure	Complete	Complete	N/A	Provision of real time passenger information	One of the main bus companies who are operating in South Lanarkshire have developed an App	

Measure No.	Measure	Category	Expected/Actual Completion year	Measure Status	Funding Status	Key Milestones	Progress	Barriers to implementation
	information installed						to provide their customers access to real time information for buses on routes within South Lanarkshire. The App has recently been updated to allow users to determine if there are spaces for wheelchairs as well as if there are seats available. Due to the evolving increased use of Apps to support real time data it is unlikely that further real time passenger information signage will be installed.	
Rutherglen 4	Air quality modelling to assist understanding of the current picture	Traffic Management	Complete	Complete	Funded	Carry out Air Quality dispersion modelling to quantify the current air quality status. Results shown in South Lanarkshire's air quality story map.	South Lanarkshire's air quality story map includes the use of air quality modelling data pre and post opening of the M74 extension works. The M74 works reduced traffic travelling through Rutherglen Main Street by in the region of 5,000 vehicles per day. The impact can be seen using the interactive GIS map available via the 'effect of traffic on air quality' page within the story map.	

Measure No.	Measure	Category	Expected/Actual Completion year	Measure Status	Funding Status	Key Milestones	Progress	Barriers to implementation
Rutherglen 5	Investigate the utilisation of green infrastructure to target emission reductions in hot spot locations	Transport planning and infrastructure	Complete	Complete	Funded	Introduction of green infrastructure.	Working in partnership with a local community gardening group 'Grow 73' a number of large wooden planters with pollution fighting plants have been installed adjacent to a busy junction close to areas where exceedance of air quality objectives were modelled. Grow 73 continue to maintain the planters and they have also engaged with the Royal Horticultural Society who have supported the project by providing advice, compost and additional plants.	
Rutherglen 6	Investigate quality bus partnerships	Vehicle fleet efficiency	On hold	On hold	Not funded	Number of members of quality bus partnership	At this stage this measure has not been progressed. This will be reviewed going forward.	
Rutherglen 7	Investigate the use of traffic regulation orders	Traffic management	On hold	On hold	Not funded	Identify which traffic restriction measures considered appropriate to reduce traffic within the AQMA.	At this stage this measure has not been progressed. This will be reviewed going forward.	
Rutherglen 8	Investigate bike hire schemes for key locations	Promoting travel alternatives	Ongoing	In progress	Funded	Provision of bike hire schemes	In partnership with South Lanarkshire Leisure and Cultural Services (SLLC), an electric bike pilot project commenced pre-	

Measure No.	Measure	Category	Expected/Actual Completion year	Measure Status	Funding Status	Key Milestones	Progress	Barriers to implementation
							pandemic. The project targeted employees who travel between sites and are replacing conventional car commutes with ebike journeys. In addition a further project included an option for ebike use for patients referred by their GP's to SLLC to increase their activity levels. This project was put on hold during the pandemic and discussions are underway to re-start the project.	
Rutherglen 9	Review pedestrian locations	Promoting travel alternatives	On hold	On hold	Not funded	Improved provision of pedestrian locations	At this stage this measure has not been progressed. This will be reviewed going forward.	

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.

South Lanarkshire Council undertook automatic (continuous) monitoring eight sites during 2022. Table A.1 in Appendix A shows the details of the sites. National monitoring results are available at Air Quality in Scotland: Measurement and annual statistics.

Maps showing the location of the monitoring sites are provided in Appendix D or can be found at Air Quality in Scotland: Latest pollution map. 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

South Lanarkshire Council undertook non- automatic (passive) monitoring of NO_2 at 40 sites during 2022. Table A.2 in Appendix A shows the details of the sites.

Maps showing the location of the monitoring sites are provided in Appendix D or Air Quality in Scotland: Latest pollution map. Further details on Quality Assurance/Quality Control (QA/QC) and bias adjustment for the diffusion tubes are included in Appendix C.

3.1.3 Other Monitoring Activities

Blantyre

Throughout 2022, a 12-month measurement study was conducted in Blantyre town centre[7]. This was required based on recommendations from the Defra LAQM helpdesk appraisers regarding the conclusion of the 2019 Detailed Assessment of air quality in Blantyre[8]. The Detailed Assessment indicated that there may be exceedances of the NO_2 annual mean objective at locations where residential properties are present at first floor height in Blantyre town centre. The maximum modelled NO_2 annual mean concentration was considered a marginal exceedance of the 40 µg/m^3 objective, the modelling also indicated that the area of exceedance was very localised. The Defra appraisers subsequently recommended gathering better evidence by conducting a detailed measurement study with samplers deployed at first floor height and at a selection of new sites along Glasgow Road in the town centre.

The 2022 measurement results can be summarised as:

- NO_2 annual means measured using diffusion tubes were less than the 40 µg.m^{-3} objective at all locations
- Particulate Matter (PM) concentrations measured using an AQMesh sensor were less than each respective Scottish PM_{10} and $PM_{2.5}$ annual mean objective

On this basis it appears that there is not a requirement for an AQMA in Blantyre currently. South Lanarkshire Council will submit the measurement study report to Defra for review and await feedback while continuing to carefully measure and review air quality in Blantyre.

[7] Ricardo Energy & Environment (2023), Blantyre NO_2 monitoring study; A report for South Lanarkshire Council, Ref ED15694, 14th March 2023

[8] Ricardo Energy & Environment (2018), Detailed Assessment of Air Quality at Glasgow Road, Blantyre; Report for South Lanarkshire Council, Ref ED11046108 Issue Number 2, 23rd July 2018

AQMesh monitoring

In addition to the monitoring in Blantyre, AQMesh sensors collected measurements from January – December 2022 at sites in Lanark, Hamilton, and Rutherglen, as well as at three primary schools as part of a study on car free zones.

The sensors were co-located with reference monitors in December 2021-January 2022 and again in October – December 2022. AQMesh measurements were adjusted following the co-location periods.

The AQMesh sensors measured NO_2, PM_{10}, and $PM_{2.5}$. However, the PM measurements were found to be unreliable in cold, wet weather. The NO_2 measurements are presented in Table B.2.

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)

No annual mean NO_2 concentrations in excess of the 40 µg/m^3 air quality objective were measured at any automatic or non-automatic monitoring sites in South Lanarkshire during 2022.

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.

For diffusion tubes, the full 2022 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 200µg/m^3, not to be exceeded more than 18 times per year. Hourly mean NO_2 concentrations measured at automatic monitoring sites during 2022 were compliant with the NO_2 1-hour objective as there were no measured exceedances of the 200 µg/m^3 objective during the year.

The annual mean concentrations measured at roadside, kerbside and urban background monitoring sites over the last five years are presented in Figure A.2, Figure A.3 and Figure A.4 in Appendix A.

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.

There were no exceedances of the 18 µg/m^3 annual mean objective at any monitoring locations within South Lanarkshire during 2022. A comparison of PM_{10} annual mean concentrations measured in South Lanarkshire over the past five years are presented in Figure A.5 in Appendix A.

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.

No daily means greater than 50 µg/m^3 were measured at any automatic site in 2022. Therefore all sites remain compliant with the objective.

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.

During 2022, $PM_{2.5}$ concentrations measured at all locations in South Lanarkshire were less than the annual mean objective of 10 µg/m^3.

3.2.4 Sulphur Dioxide (SO_2)

South Lanarkshire Council do not currently measure SO_2 concentrations.

3.2.5 Carbon Monoxide, Lead and 1,3-Butadiene

South Lanarkshire Council do not currently measure any of these pollutants.

4 New Local Developments

4.1 Road Traffic Sources

No new or significant changes to road traffic sources have been identified during 2022.

4.2 Other Transport Sources

No other transport sources have been identified that require screening or consideration at this time.

4.3 Industrial Sources

No new or significantly changed industrial sources have been identified during 2022.

4.4 Commercial and Domestic Sources

No new or significantly changed commercial or domestic sources have been identified during 2022.

4.5 New Developments with Fugitive or Uncontrolled Sources

SEPA issued one new waste management license in South Lanarkshire Council in 2022. The details are provided below.

Table 4.1 - New waste site details

Authorisation No	Site Address	Authorisation Holder	Application Type
WML/L/5002993	7-10 Linwood Avenue, East Kilbride, G74 5NR	Highlander International Recycling Limited	New Licence

5 Planning Applications

Table 5.1 includes the details of a proposed development project in which an air quality impact assessment was required in 2022. The planning application was approved in October, 2022 and included a planning condition specifying that an air quality impact assessment should be submitted. The assessment is currently pending.

Table 5.1 - Proposed developments

Reference	Type	Project	Description
P/21/1812	Residential	Land To The West Of Strathaven Road, Hamilton	Residential development (628 units) with associated roads, landscaping and SUDS

6 Conclusions and Proposed Actions

6.1 Conclusions from New Monitoring Data

All Nitrogen Dioxide (NO_2) annual mean concentrations measured during 2022 at automatic monitoring sites in South Lanarkshire were less than the 40 µg/m^3 objective. The last five years of measurements indicate an overall downward trend in measured NO_2 concentrations at all automatic sites. No exceedances of the NO_2 hourly objective (200 µg/m^3) were measured during 2022.

No exceedances of the NO_2 annual mean objective were measured at diffusion tube locations.

No exceedances of the PM_{10} annual mean objective were measured during 2022, with and without FIDAS correction factors applied. Measured concentrations at the eight PM_{10} measurement sites in South Lanarkshire ranged from 10 to 13 µg/m^3 (with FIDAS correction factors applied). Measured PM_{10} concentrations in 2022 were similar to those measured in 2021.

There were no exceedances of the PM_{10} daily short-term air quality objectives at any monitoring site during 2022.

No exceedances of the $PM_{2.5}$ annual mean objective were measured during 2022. Measured concentrations at the eight $PM_{2.5}$ measurement sites in South Lanarkshire ranged from 5 to 7 µg/m^3. Measured $PM_{2.5}$ concentrations were similar to those measured in 2021.

Blantyre

As described in Section 3.1.3; throughout 2022 a detailed 12-month measurement study was conducted in Blantyre town centre.

The 2022 measurement results can be summarised as:

- NO_2 annual mean measured using diffusion tube were less than the 40 µg.m^{-3} objective at all locations
- Particulate Matter (PM) concentrations measured using an AQMesh sensor were less than each respective Scottish PM_{10} and $PM_{2.5}$ annual mean objective

On this basis it appears that there is not a requirement for an AQMA in Blantyre currently. South Lanarkshire Council will submit the measurement study report to Defra for review and await feedback while continuing to carefully measure and review air quality in Blantyre.

6.2 Conclusions relating to New Local Developments

South Lanarkshire Council has not identified any new local developments that required further consideration, or any locations where there may be a risk of the air quality objectives being exceeded. There was one planning application approved in 2022 for a residential development in Hamilton for which an air quality impact assessment is required and still pending.

6.3 Proposed Actions

Following the review of all available data it is recommended that South Lanarkshire Council carry out the following actions:

1. Submit the next Air Quality Progress Report in June 2024.
2. Review the air quality action plan and continue to implement the measures outlined.
3. Review the current NO_2 diffusion tube monitoring programme and seek to relocate any tubes where appropriate (i.e., where low concentrations have been measured consistently).
4. Proceed with the revocation of the Lanark AQMA.
5. Review the AQMAs at Rutherglen and Whirlies using the recommendations of the Scottish Government's Particulate Matter Measurement Study on FIDAS measurements.

South Lanarkshire Council confirms it will undertake these recommended actions.

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)
SL04	Rutherglen	Roadside	261114	661691	NO_2; PM_{10}; $PM_{2.5}$	Yes (Rutherglen)	Chemiluminescent; FIDAS	60	1	2
EK0	East Kilbride Whirlies	Roadside	264383	655664	NO_2; PM_{10}; $PM_{2.5}$	Yes (Whirlies)	Chemiluminescent; FIDAS	10	0.5	2
SL03	Lanark	Kerbside	288427	643701	NO_2; PM_{10}; $PM_{2.5}$	Yes Lanark	Chemiluminescent; FIDAS	2	0.5	1
SL05	Hamilton	Roadside	272310	655276	NO_2; PM_{10}; $PM_{2.5}$	No	Chemiluminescent; FIDAS	2	8	1.8
SL06	Uddingston	Roadside	269663	660304	NO_2; PM_{10}; $PM_{2.5}$	No	Chemiluminescent; FIDAS	2	2	1.5
SL07	Cambuslang	Kerbside	264321	660516	NO_2; PM_{10}; $PM_{2.5}$	No	Chemiluminescent; FIDAS	10	0.5	2
SLC08	Raith Interchange 2	Roadside	271063	658087	NO_2; PM_{10}; $PM_{2.5}$	No	Chemiluminescent; FIDAS	25	38	2
SLC09	Blantyre	Roadside	268916	657605	NO_2; PM_{10}; $PM_{2.5}$	No	Chemiluminescent; FIDAS	2.6	1.7	1.9

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.

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)
1	3 London Street, Larkhall	Kerbside	276087	651563	NO_2	No	2.3	1	No	2-3
2	Greenhills Road, East Kilbride	Roadside	260052	653785	NO_2	No	20	1.3	No	2-3
3	4 Kirkton Street, Carluke	Kerbside	284538	650572	NO_2	No	2	0.8	No	2-3
4	4 St Leonard Street, Lanark	Kerbside	288438	643694	NO_2	Yes (Lanark)	0.7	4.4	No	2-3
5	32 Friars Lane, Lanark	Urban Background	287860	643685	NO_2	Yes (Lanark)	4.8	3.6	No	2-3
6	4 Bloomgate, Lanark	Roadside	288122	643685	NO_2	Yes (Lanark)	2	0.2	No	2-3
7	218 Eaglesham Road, East Kilbride	Kerbside	260711	654205	NO_2	No	4.7	1.2	No	2-3
8, 9, 10	Whirlies (1, 2, 3), East Kilbride	Kerbside	264374	655673	NO_2	Yes (Whirlies)	6.8	1.9	Yes	2-3
11	56 Maxwell Drive, East Kilbride	Roadside	264210	654909	NO_2	No	16	30	No	2-3
12	20 Farmeloan	Kerbside	261662	661789	NO_2	Yes (Rutherglen)	0.6	2.1	No	2-3

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)
	Road, Rutherglen									
13	252 Main Street, Rutherglen	Kerbside	261662	661663	NO_2	Yes (Rutherglen)	3.8	0.1	No	2-3
14	12 Mill Street, Rutherglen	Roadside	261302	660734	NO_2	Yes (Rutherglen)	5.1	2.6	No	2-3
15	Cambuslang Road (Smith Terrace)	Roadside	261858	662142	NO_2	Yes (Rutherglen)	3	1.5	No	2-3
16	Hamilton Road/ Clydeford Road Jct	Kerbside	264492	660497	NO_2	No	15	1.5	No	2-3
17	262 Cambuslang Road, Cambuslang	Roadside	263086	661296	NO_2	Yes (Rutherglen)	0.3	2.3	No	2-3
18	Greenlees Road, Cambuslang	Roadside	264300	660476	NO_2	No	5	1	No	2-3
19	Blackswell Lane, Hamilton	Roadside	272704	655431	NO_2	No	6.9	2.7	No	2-3
20	190 Hamilton Road, Halfway	Kerbside	265561	659788	NO_2	No	3	1.5	No	2-3
21	109 Caird Street, Hamilton	Roadside	271670	656346	NO_2	No	5.7	3.1	No	2-3
22	79 Union Street, Hamilton	Kerbside	271852	655320	NO_2	No	1.2	3.3	No	2-3

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)
23	134 Almada Street, Hamilton	Roadside	271424	655786	NO_2	No	3.7	1.4	No	2-3
24	Almada Street-Muir Street, Hamilton	Roadside	271861	655952	NO_2	No	3.6	0.1	No	2-3
25	289 Glasgow Road (Empire Bar)	Roadside	270013	656436	NO_2	No	2	2.7	No	2-3
26	24 Low Patrick Street, Hamilton	Roadside	272608	655213	NO_2	No	3.3	5.6	No	2-3
27	10 Gateside Street, Hamilton	Roadside	272265	655078	NO_2	No	2.2	0.8	No	2-3
28	28 Low Quarry gardens, Hamilton	Urban Background	271949	654957	NO_2	No	11.9	0.6	No	2-3
29	5 Wordsworth Way, Bothwell	Urban Background	270924	659109	NO_2	No	15.9	1.6	No	2-3
30	93 Main Street, Bothwell	Kerbside	270526	658722	NO_2	No	8.9	2.3	No	2-3
31	25 Main Street, Bothwell	Roadside	270526	658510	NO_2	No	3.1	3.3	No	2-3
32	233 Glasgow	Roadside	268902	657591	NO_2	No	0.4	3.6	No	2-3

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)
	Road, Blantyre									
33	283 Glasgow Road, Blantyre	Roadside	268754	657689	NO_2	No	5.2	3	No	2-3
34	1 Hunthill Road, Blantyre	Roadside	268000	656643	NO_2	No	4.4	2.3	No	2-3
35	Wellhall Road / Hillhouse Roundabout	Urban Background	270065	654918	NO_2	No	12.2	1.3	No	2-3
36	Bardykes Road (West End Bar)	Kerbside	268175	658191	NO_2	No	1.5	0.2	No	2-3
37	Burnpark Avenue, Uddingston	Roadside	268944	661474	NO_2	No	22	29.2	No	2-3
38	81 Main Street, Uddingston	Roadside	269617	660438	NO_2	No	0.2	2.7	No	2-3
39	North British Road, Uddingston	Kerbside	270180	660753	NO_2	No	29	1.1	No	2-3
40	Bannatyne Street, Lanark	Kerbside	288450	643698	NO_2	Yes (Lanark)	1.5	0.2	No	2-3

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 2022 (%) (2)	2018	2019	2020	2021	2022
SL04	Roadside	Automatic	98	98	38	36	-	25.5	22.5
EK0	Roadside	Automatic	82	82	32	-	22	24.8	22.0
SL03	Kerbside	Automatic	100	100	19	19	13	16.7	14.5
SL05	Roadside	Automatic	73	73	31	29	19	24.2	25.3
SL06	Roadside	Automatic	94	94	24	26	15	18.8	17.7
SL07	Kerbside	Automatic	40	40	35	33	21	27.2	22.3
SL08	Roadside	Automatic	98	98	24	20	-	14.3	14.0
SL09	Roadside	Automatic	100	100	-	28.6	18	21.8	18.7
1	Kerbside	Diffusion tube	92	92	25.9	21.8	16.4	18.2	15.4
2	Roadside	Diffusion tube	83	83	16.1	22.7	9.9	12.0	11.9
3	Kerbside	Diffusion tube	92	92	33.9	36.4	25.5	29.0	20.2
4	Kerbside	Diffusion tube	92	92	30.3	27.8	21.1	23.8	19.8
5	Urban Background	Diffusion tube	67	67	6.6	6.1	4.5	4.9	4.3
6	Roadside	Diffusion tube	83	83	37.3	31.2	28.4	28.1	21.8
7	Kerbside	Diffusion tube	92	92	22.4	21.2	15.0	17.0	14.4
8, 9, 10	Kerbside	Diffusion tube	92	92	33.8	30.0	22.8	25.1	20.6
11	Roadside	Diffusion tube	83	83	14.8	15.3	10.2	15.1	11.4
12	Kerbside	Diffusion tube	92	92	**42.2 (40.5)**	34.9	27.7	27.9	25.1
13	Kerbside	Diffusion tube	83	83	26.0	23.9	17.3	20.1	17.0
14	Roadside	Diffusion tube	67	67	32.7	29.4	19.3	22.6	18.9
15	Roadside	Diffusion tube	92	92	33.7	29.0	21.9	24.2	20.7
16	Kerbside	Diffusion tube	83	83	28.4	29.4	18.4	18.5	16.8
17	Roadside	Diffusion tube	83	83	26.0	25.0	17.3	20.3	17.2
18	Roadside	Diffusion tube	92	92	37.9	33.6	21.9	23.6	18.4
19	Roadside	Diffusion tube	100	100	36.7	33.7	25.9	25.9	24.0
20	Kerbside	Diffusion tube	67	67	23.4	23.5	15.4	17.7	16.6
21	Roadside	Diffusion tube	100	100	32.4	25.2	16.8	18.4	17.8
22	Kerbside	Diffusion tube	92	92	29.0	27.1	19.1	19.9	20.3
23	Roadside	Diffusion tube	75	75	29.0	24.7	17.1	20.8	19.7
24	Roadside	Diffusion tube	75	75	32.1	28.5	19.3	22.5	19.6
25	Roadside	Diffusion tube	100	100	36.9	34.1	22.4	24.3	21.7
26	Roadside	Diffusion tube	92	92	**66.9 (59.2)**	**46.0**	37.1	29.8	19.2

Site ID	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2022 (%) (2)	2018	2019	2020	2021	2022
27	Roadside	Diffusion tube	67	67	34.6	31.5	21.1	24.3	19.8
28	Urban Background	Diffusion tube	92	92	12.7	11.3	8.8	9.4	6.2
29	Urban Background	Diffusion tube	92	92	20.1	16.5	11.7	13.3	12.5
30	Kerbside	Diffusion tube	92	92	35.0	29.1	20.8	25.1	18.9
31	Roadside	Diffusion tube	92	92	25.3	27.1	15.7	16.0	14.1
32	Roadside	Diffusion tube	92	92	**54.2 (52.9)**	**46.3**	**46.1**	32.1	23.7
33	Roadside	Diffusion tube	100	100	25.5	22.6	15.9	19.4	16.6
34	Roadside	Diffusion tube	100	100	22.8	21.3	14.9	16.1	16.1
35	Urban Background	Diffusion tube	100	100	23.7	20.1	14.4	16.2	13.2
36	Kerbside	Diffusion tube	92	92	25.4	26.6	16.2	18.0	15.4
37	Roadside	Diffusion tube	100	100	31.3	22.7	18.1	20.6	17.1
38	Roadside	Diffusion tube	100	100	29.4	24.8	19.7	22.9	19.1
39	Kerbside	Diffusion tube	92	92	27.0	29.8	18.4	19.9	18.0
40	Kerbside	Diffusion tube	100	100	24.4	20.3	10.6	18.7	16.1

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(22) 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 2022 (%) (2)	2018	2019	2020	2021	2022
SL04	Roadside	Automatic	98	98	**1**	0 (99)	-	0 (89.5)	0
EK0	Roadside	Automatic	82	82	0 (138)	-	**2**	**4**	0 (116.6)
SL03	Kerbside	Automatic	100	100	0	0	0 (68)	0 (70)	0
SL05	Roadside	Automatic	73	73	0	0	0	0 (100.3)	0 (95.1)
SL06	Roadside	Automatic	94	94	0	0	0 (50)	0 (70.1)	0
SL07	Kerbside	Automatic	40	40	0	**1**	0	0	0 (124.3)
SL08	Roadside	Automatic	98	98	0	0 (71)	-	0 (65.8)	0
SL09	Roadside	Automatic	100	100	**-**	0 (98)	0	0	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 2022 (%) (2)	2018	2018 Corrected*	2019	2019 Corrected*	2020	2020 Corrected*	2021	2021 Corrected*	2022	2022 Corrected*
SL04	Roadside	99	99	13	14	14	15	10	11	11.9	13.1	11.8	13.0
EK0	Roadside	99	99	10	11	10	11	9	10	9.8	10.8	10.1	11.1
SL03	Kerbside	100	100	11	12	10	11	8	9	8.8	9.7	10.1	11.1
SL05	Roadside	85	85	11	12	11	12	9	10	10.0	11.0	10.4	11.4
SL06	Roadside	61	61	12	13	12	13	10	11	9.8	10.8	8.8	9.7
SL07	Kerbside	100	100	12	13	13	14	10	11	10.7	11.8	11.4	12.5
SL08	Roadside	98	98	11	12	10	11	8	9	9.1	10.0	9.5	10.5
SL09	Roadside	100	100	-	-	11	12	9	10	12.1	13.3	10.7	11.8

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(22), valid data capture for the full calendar year is less than 75%. See Appendix C for details.

* All means have been corrected using factors (PM_{10} divided by 0.909) identified by the "Scottish Government Equivalence Study To Investigate Particulate Matter Monitoring In Scotland Using The Fidas 200".

(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 2022 (%) (2)	2018	2019	2020	2021	2022
SL04	Roadside	99	99	0	**4**	0	0 (35.3, 38.8*)	0
EK0	Roadside	99	99	0	**1**	0	0	0
SL03	Kerbside	100	100	**1**	**1**	0	0	0
SL05	Roadside	85	85	0	**1 (35, 39*)**	0	0	0
SL06	Roadside	61	61	0	**2 (45, 50*)**	0	0	0 (26.7, 29.4*)
SL07	Kerbside	100	100	**2**	**7**	0 (25, 28*)	0	0
SL08	Roadside	98	98	0	**1**	0	0	0
SL09	Roadside	100	100	-	**2**	0	0	0

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, with the uncorrected 24-hour mean followed by the corrected 24-hour mean.

* 24-hour means provided second in brackets have been corrected using factors (PM_{10} divided by 0.909) identified by the "Scottish Government Equivalence Study To Investigate Particulate Matter Monitoring In Scotland Using The Fidas 200".

(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/m³)

Site ID	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2022 (%) (2)	2018	2018 Corrected*	2019	2019 Corrected*	2020	2020 Corrected*	2021	2021 Corrected*	2022	2022 Corrected*
SL04	Roadside	99	99	7	7	8	8	6	6	5.9	6.3	6.2	6.6
EK0	Roadside	99	99	5	5	6	6	5	5	4.7	5.0	5.1	5.4
SL03	Kerbside	100	100	6	6	6	6	5	5	4.7	5.0	5.2	5.5
SL05	Roadside	85	85	6	6	6	6	5	5	4.9	5.2	5.2	5.5
SL06	Roadside	60	60	7	7	7	7	5	5	5.0	5.3	4.5	4.7
SL07	Kerbside	100	100	7	7	7	7	5	5	5.3	5.6	5.9	6.3
SL08	Roadside	98	98	5	5	6	6	5	5	5.0	5.3	5.1	5.4
SL09	Roadside	100	100	-	-	6	6	5	5	5.4	5.7	5.4	5.7

Notes:

Exceedances of the $PM_{2.5}$ annual mean objective of 10 µg/m³ are shown in bold.

All means have been "annualised" as per LAQM.TG(22), valid data capture for the full calendar year is less than 75%. See Appendix C for details.

All means have been corrected using factors ($PM_{2.5}$ multiplied by 1.06) identified by the "Scottish Government Equivalence Study To Investigate Particulate Matter Monitoring In Scotland Using The Fidas 200".

(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%).

Figure A.1 Trends in Annual Mean NO_2 Concentrations at Automatic Monitoring Sites (2018 to 2022)

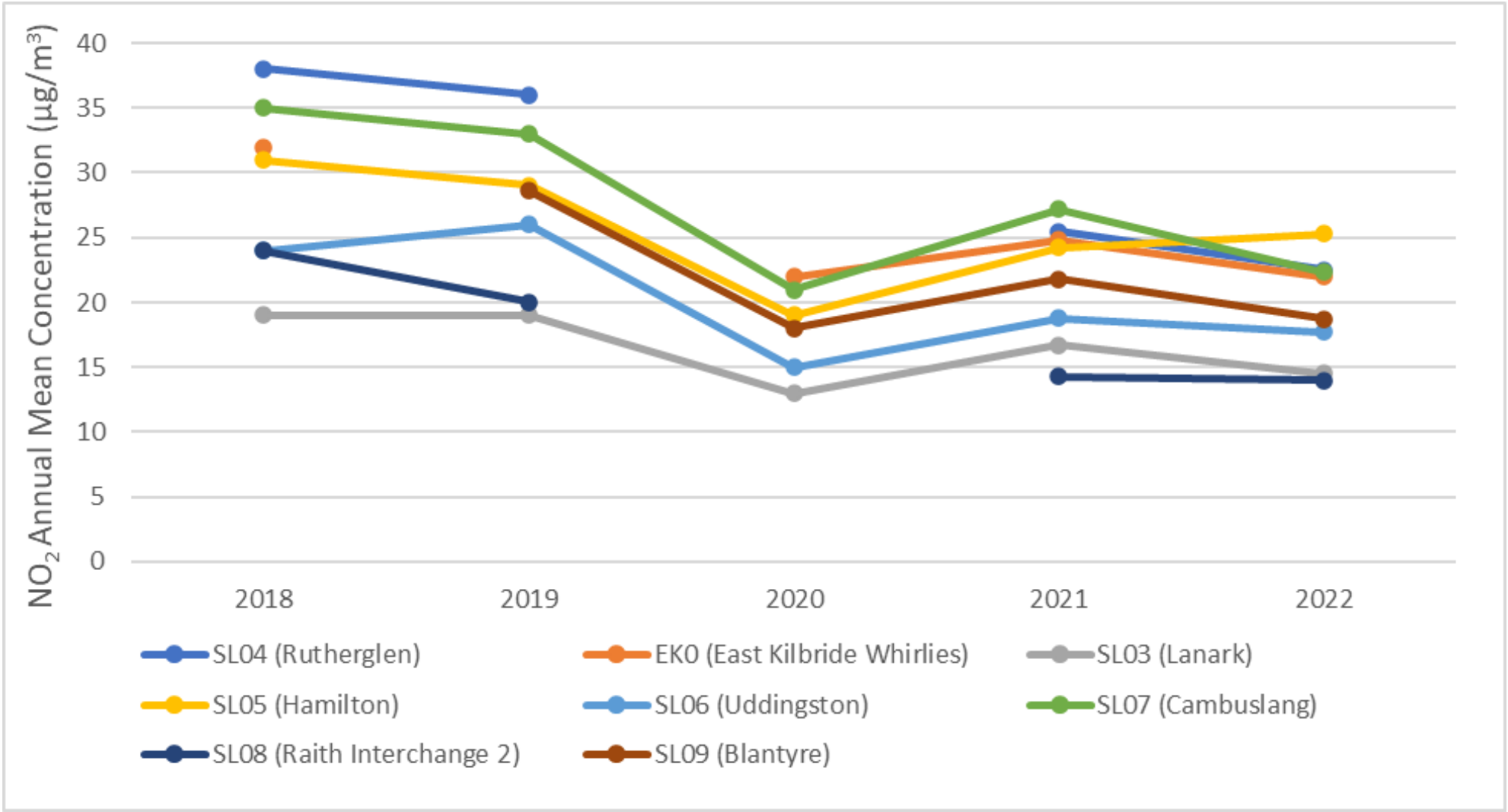


Figure A.2 Trends in Annual Mean NO_2 Concentrations at Roadside Sites (2018 to 2022)

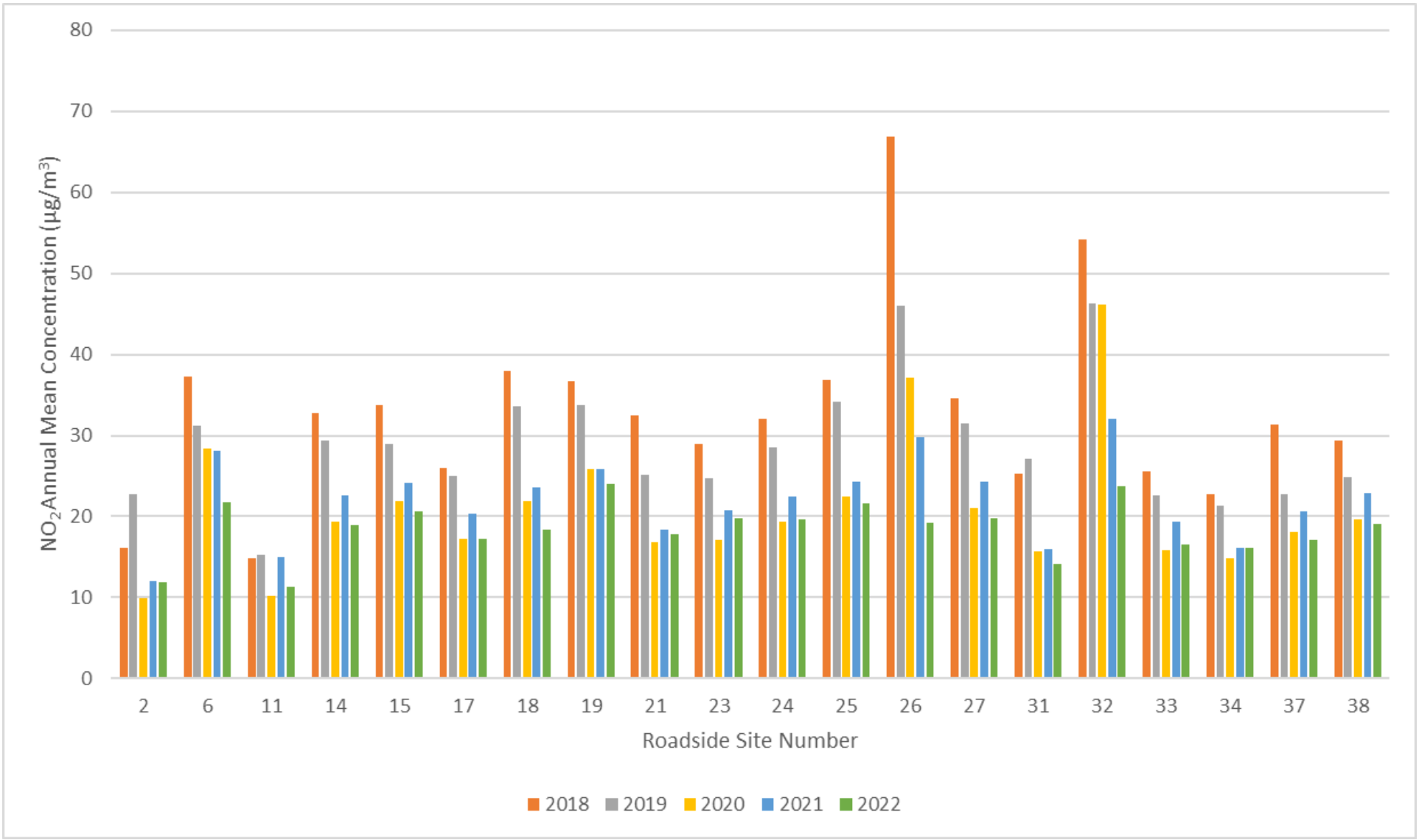


Figure A.3 Trends in Annual Mean NO_2 Concentrations at Kerbside Sites (2018 to 2022)

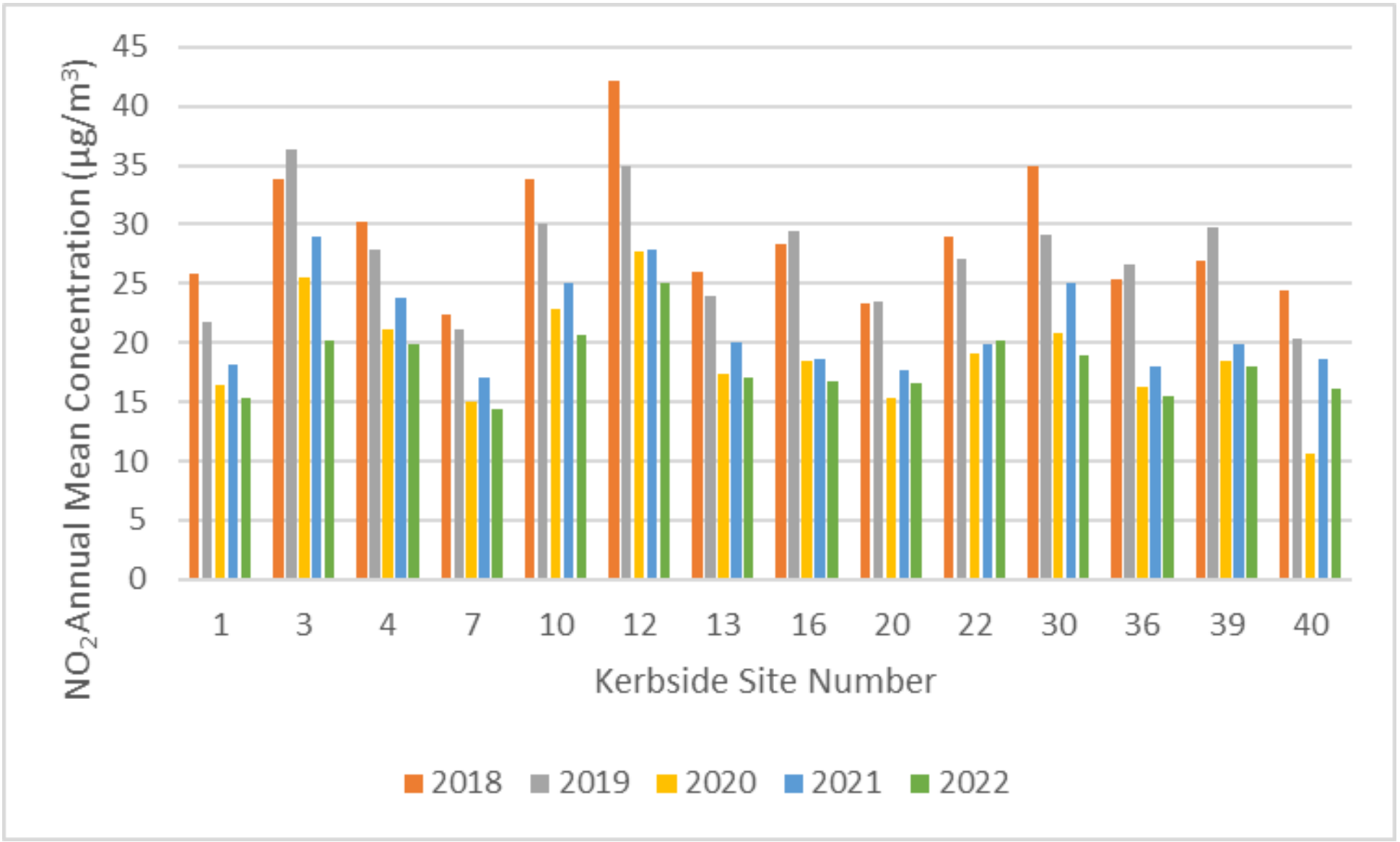


Figure A.4 Trends in Annual Mean NO_2 Concentrations at Urban Background Sites (2018 to 2022)

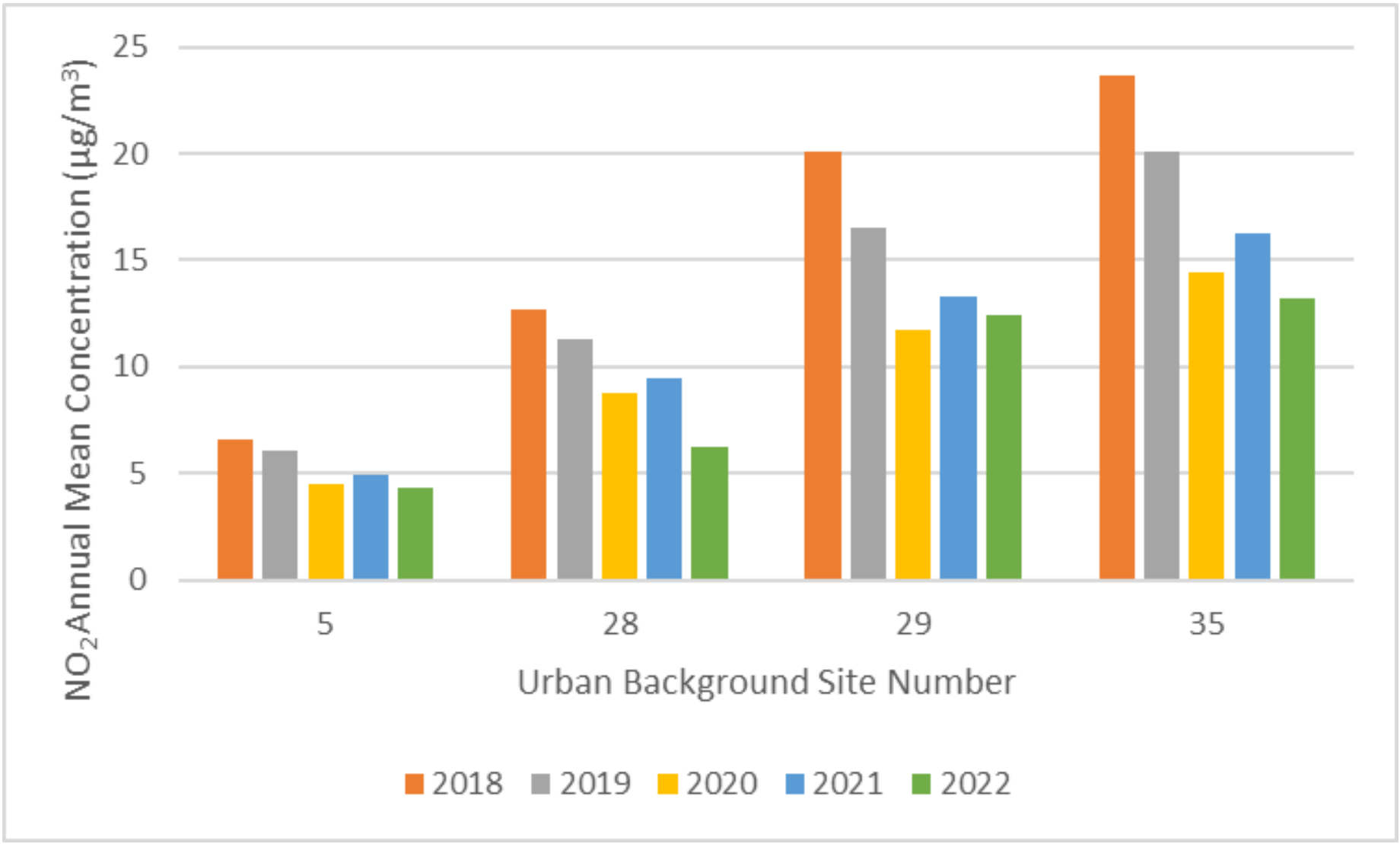


Figure A.5 Trends in Annual Mean PM_{10} Concentrations (using FIDAS correction values) at Automatic Sites (2018 to 2022)

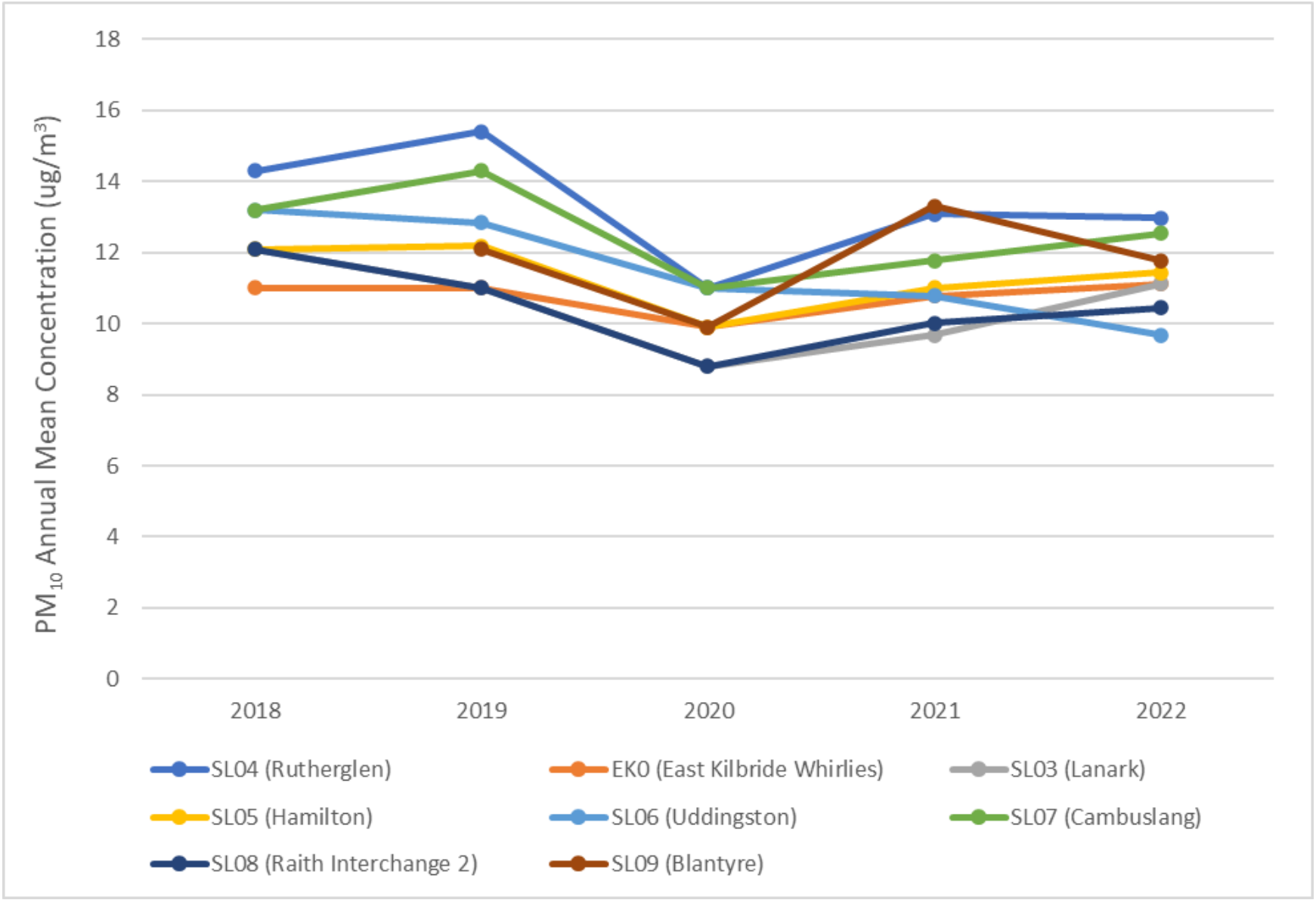
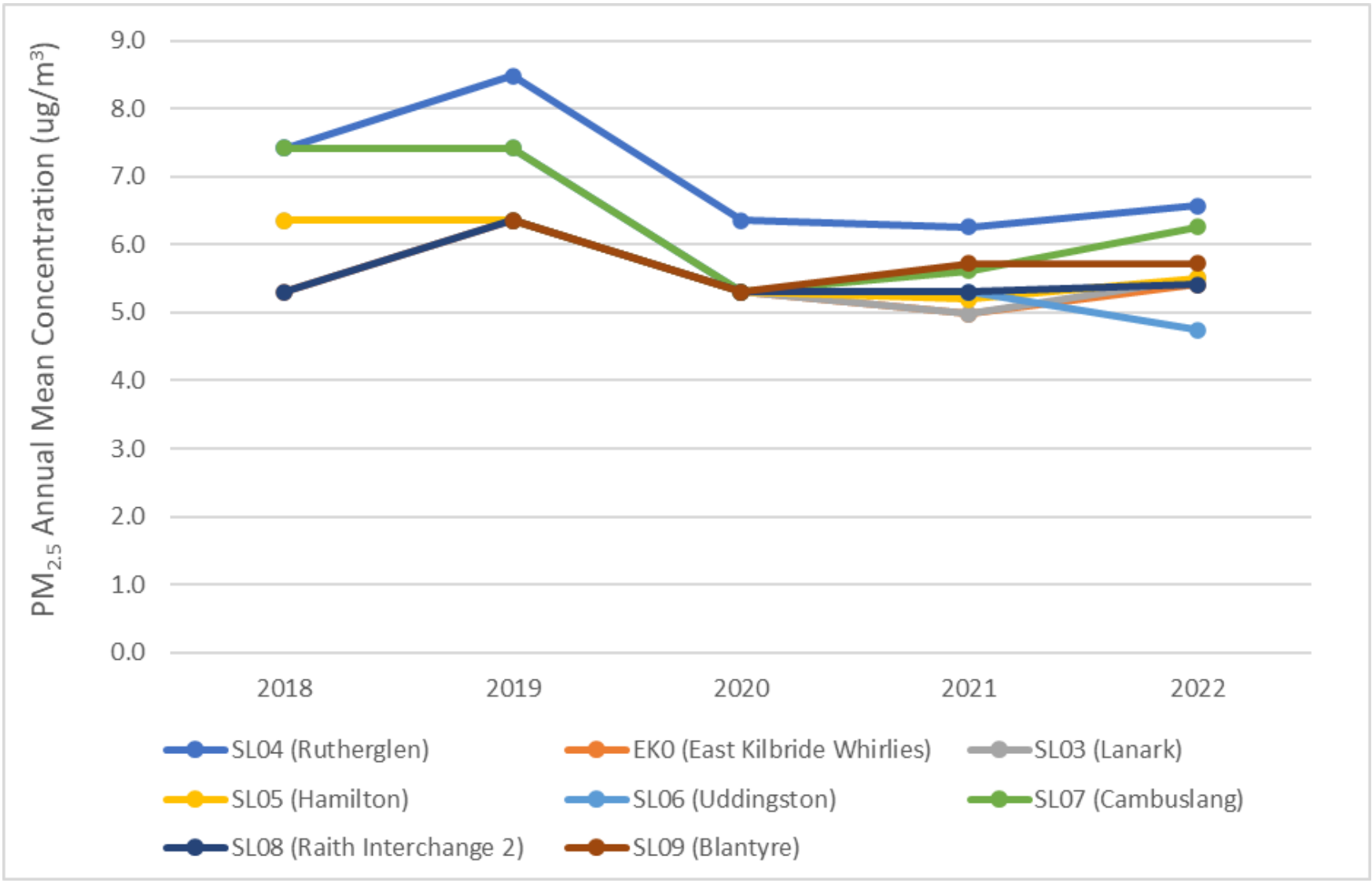


Figure A.6 Trends in Annual Mean $PM_{2.5}$ Concentrations (using FIDAS correction values) at Automatic Sites (2018 to 2022)



Appendix B: Full Monthly Diffusion Tube Results for 2022

Table B.1 – NO_2 2022 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)
1	22.5	24.9	24.5	19.6	17.5	13.3	16.2	17.8	16.4	15.2	20.9		19.0	15.4
2	8.5	13.7	18.8		24.6	7.7	10.6		12.5	13.9	10.2	26.9	14.7	11.9
3		30.1	31.7	23.0	14.8	24.8	25.0	26.4	24.1	24.2	21.5	29.0	25.0	20.2
4	29.0	24.2	33.8	26.4	24.0	20.4	19.4	25.4	22.5	20.8	23.1		24.5	19.8
5	4.9	4.3	6.6	5.7	3.5		5.3				6.8	11.8	6.1	4.3
6	27.1	29.8	31.8	31.3	26.1	14.1	22.8	29.6	33.3	23.1			26.9	21.8
7	15.6	20.2	21.4	22.8	15.1	10.2	14.0		17.8	14.3	15.2	28.7	17.8	14.4
8	20.8	32.0	36.4	31.8	30.6		21.3		26.6	24.2	24.0	18.4	-*	-*
9	22.2	29.7	37.1	31.7	22.0		21.0		24.6	19.6	23.8	26.0	-*	-*
10	23.7	24.5	35.5	35.8	23.6	13.3			23.6	24.3	28.5	35.7	25.5	20.6
11	10.0	11.6	16.3		22.5	19.5	10.6		9.9	9.8	12.2	17.9	14.0	11.4
12	26.9	36.6	37.7	37.5	29.4	20.6	18.2		34.4	26.2	27.9	45.8	31.0	25.1
13	17.4	22.0	27.9	25.5	15.1	14.2	17.2			19.8	21.8	29.5	21.0	17.0
14	17.4	25.5	30.5	28.9	24.2	14.3				22.7		36.0	24.9	18.9
15	8.3	32.6	40.3	21.9	21.7	22.2	22.0		27.4	23.9	24.7	35.6	25.5	20.7
16	23.3	26.4	22.6	18.7		15.9	18.0		21.2	18.2	17.8	25.3	20.7	16.8
17	19.9	27.1	24.1	22.1	17.7	16.1			21.9	19.6	16.9	27.2	21.3	17.2
18	18.7	26.8	29.2	24.9	24.7	5.9	21.5		24.2	22.7	20.4	30.3	22.7	18.4
19	26.4	29.3	34.1	34.4	32.4	21.7	23.6	25.1	27.6	31.8	33.6	35.2	29.6	24.0
20	14.4	19.8	33.3	21.6	14.6	9.2			21.4	14.0			18.5	16.6
21	19.3	26.7	26.4	17.6	18.1	13.7	18.1	19.8	23.6	19.0	26.4	34.5	21.9	17.8
22	15.8	25.3	26.4		27.4	15.0	16.8	19.5	22.8	23.0	35.3	47.8	25.0	20.3
23	22.6	22.0	28.6	19.4	23.1	20.9	20.9				30.6	30.9	24.3	19.7
24	27.2	24.7	34.1	24.5	20.2		23.9		22.9		11.0	29.2	24.2	19.6
25	19.7	32.9	37.5	21.2	21.5	18.5	25.4	24.7	23.5	23.2	32.6	40.4	26.8	21.7
26	21.4	28.2	17.6	23.4	24.0	12.3	22.8	20.9	26.4	22.6		40.5	23.6	19.2

Site ID	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Bias Adjusted (1)
27	21.8	34.2	35.7	23.7		9.9	26.1	26.4				36.9	26.8	19.8
28	6.5	11.4	13.5	8.0	7.3	3.4	6.5	6.9	5.6	6.5	8.6		7.7	6.2
29	11.2	12.7	20.7	14.1	9.4		15.8	11.7	16.6	14.3	19.6	23.0	15.4	12.5
30	23.8	25.6	26.8	23.5		18.4	19.8	21.6	23.3	20.5	23.8	29.5	23.3	18.9
31	13.7	17.1	22.4	14.8		16.5	13.3	14.3	13.8	17.7	21.8	25.8	17.4	14.1
32	29.0	34.0	35.5	27.5	27.5		25.7	27.7	30.8	26.5	29.8	28.2	29.3	23.7
33	15.3	20.6	27.2	25.9	16.6	11.5	17.7	17.6	21.9	16.9	27.1	27.7	20.5	16.6
34	15.1	20.9	22.7	18.1	14.2	42.3	12.8	14.6	17.1	15.2	17.0	28.8	19.9	16.1
35	10.1	14.0	25.0	16.4	13.4	8.3	13.8	15.8	18.6	13.8	19.2	26.7	16.3	13.2
36	7.4	19.0	27.6	26.8	16.6	14.5	15.4	17.3	23.0	20.5	21.4		19.0	15.4
37	15.4	25.3	22.7	27.3	16.5	10.4	14.0	18.0	23.6	19.5	26.4	34.7	21.2	17.1
38	28.1	40.3	28.1	21.0	16.9	17.8	18.2	19.0	18.1	20.1	27.2	28.5	23.6	19.1
39	12.7	18.1	26.2	26.4		8.5	13.3	17.3	54.6	15.9	23.5	27.7	22.2	18.0
40	18.5	24.0	25.5	21.8	21.0	7.9	22.3	18.8	17.5	15.1	17.5	28.3	19.9	16.1

Notes:

(1) See Appendix C for details on bias adjustment

* Triplicate Site with Diffusion Tubes 8, 9 and 10 - Annual data provided for 10 only

Table B.2 – Other NO_2 monitoring - 2022 Quarterly AQMesh Results (µg/m^3)

Site	Dec 21 – Feb 22	March 22 - May 22	June 22 - Aug 22	Sept 22 - Nov 22	Dec 22 - Feb 23
Kirkfieldbank Brae, Lanark	21.7		6.7	7.1	10.9
Glasgow Road (258) Blantyre	20.2	12.9	9.2	12.5	7.8
Low Patrick Street, Hamilton	17.6	17.4	15.3	9.0	10.9
Burnside Primary School	36.7	26.1	20.3	5.7	10.8
St Anthony & Loch Primary	21.6	9.6	10.3	6.3	7.0
St Joseph's Primary, Blantyre	20.3	13.8	12.5	9.8	9.4
Bannatyne Street, Lanark	20.4	22.6	9.3	9.1	13.8
Cathkin By-Pass, Rutherglen	14.8	13.1	10.5	3.6	8.5

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

New or Changed Sources Identified Within South Lanarkshire Council During 2022

South Lanarkshire Council has not identified any new sources relating to air quality within the reporting year of 2022.

Additional Air Quality Works Undertaken by South Lanarkshire Council During 2022

South Lanarkshire Council has not completed any additional works within the reporting year of 2022.

QA/QC of Diffusion Tube Monitoring

South Lanarkshire Council maintained the diffusion tube monitoring networks as normal (exposure and analysis in line with diffusion tube calendar). The annual mean NO_2 concentration was calculated using the Diffusion Tube Processing Tool (v3.0), as per LAQM.TG(22). All results have been bias adjusted, annualised (where required) and expressed as an Annual Mean NO_2 concentration as presented in Table B.1.

All passive diffusion tubes (PDT) for NO_2 measurements were prepared and analysed by Edinburgh Scientific Services. The PDTs were prepared using the 50% triethanolamine (TEA) in acetone method. Edinburgh Scientific Services is a UKAS accredited laboratory with documented Quality Assurance/Quality Control (QA/QC) procedures for diffusion tube analysis.

Diffusion Tube Annualisation

Four diffusion tubes within South Lanarkshire Council required annualisation as data capture was below 75%. The data capture was above 25% at all monitoring sites. The four diffusion tubes that required annualisation were processed with Defra's Diffusion Tube Processing Tool (v3.0), as per LAQM.TG(22). Details are provided in Table C.2.

Diffusion Tube Bias Adjustment Factors

South Lanarkshire Council have applied a national bias adjustment factor of 0.81 to the 2022 monitoring data. A co-location study completed at East Kilbride Whirlies had poor overall continuous monitor data capture for a local bias adjustment to be used (details in Table C.3).

National Diffusion Tube Bias Adjustment Factor Spreadsheet — Spreadsheet Version Number: 03/23

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 June 2023
LAQM Helpdesk Website

The LAQM Helpdesk is operated on behalf of Defra and the Devolved Administrations by Bureau Veritas, in conjunction with contract partners AECOM and the National Physical Laboratory.

Spreadsheet maintained by the National Physical Laboratory. Original compiled by Air Quality Consultants Ltd.

Step 1:	Step 2:	Step 3:	Step 4:
Select the Laboratory that Analyses Your Tubes from the Drop-Down List	Select a Preparation Method from the Drop-Down List	Select a Year from the Drop-Down List	Where there is only one study for a chosen combination, you should use the adjustment factor shown with caution. Where there is more than one study, use the overall factor[3] shown in blue at the foot of the final column.
If a laboratory is not shown, we have no data for this laboratory.	If a preparation method is not shown, we have no data for this method at this laboratory.	If a year is not shown, we have no data[2]	If you have your own co-location study then see footnote[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)
Edinburgh Scientific Services	50% TEA in acetone	2022	KS	Marylebone Road Intercomparison	12	52	42	22.9%	G	**0.81**
Edinburgh Scientific Services	50% TEA in acetone	2022		**Overall Factor[3] (1 study)**				**Use**		**0.81**

A summary of bias adjustment factors used by South Lanarkshire Council over the past five years is presented in Table C.1.

Table C.1 – Bias Adjustment Factor

Year	Local or National	If National, Version of National Spreadsheet	Adjustment Factor
2022	National	03/23	0.81
2021	Local/National	03/22	0.87
2020	National	03/21	0.88
2019	National	03/20	0.87
2018	National	03/19	0.96

NO_2 Fall-off with Distance from the Road

No diffusion tube NO_2 monitoring locations within South Lanarkshire Council required distance correction during 2022.

QA/QC of Automatic Monitoring

All South Lanarkshire Council's automatic monitoring sites are calibrated and audited by Ricardo Energy & Environment whereby monitoring data are managed to the same

procedures and standards as Automatic Urban and Rural Network (AURN) sites. All data presented within this APR is ratified. Live/historic data is available at Air Quality in Scotland.

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

PM_{10} and $PM_{2.5}$ measurements were made using FIDAS analysers. All PM measurement data were fully ratified by Ricardo Energy & Environment to AURN standards.

All PM_{10} and $PM_{2.5}$ measurements have been reported as measured and after applying correction factors based on guidance from the Scottish Government on the use of FIDAS analysers in Scottish Government Equivalence Study To Investigate Particulate Matter Monitoring In Scotland Using The Fidas 200.

Automatic Monitoring Annualisation

Annualisation was required for NO_2 measurements at two automatic sites (Hamilton and Cambuslang) within South Lanarkshire Council where data capture was less than 75%. Annualisation was required for PM_{10} and $PM_{2.5}$ at one automatic site (Uddingston) as data capture was less than 75%. Data capture was greater than 25% at all automatic sites. Details of annualisation are provided in Table C.2 and followed the guidance provided in LAQM.TG(22).

NO_2 Fall-off with Distance from the Road

No automatic NO_2 monitoring locations within South Lanarkshire Council required distance correction during 2022.

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

Site ID	Annualisation Factor Glasgow Townhead	Annualisation Factor Peebles	Annualisation Factor Edinburgh St Leonards	Annualisation Factor Auchencorth Moss	Average Annualisation Factor	Raw Data Annual Mean	Annualised Annual Mean	Comments
5	0.8856	0.8554	0.8703		0.8705	6.1	5.3	Diffusion Tube
14	0.9434	0.9262	0.9378		0.9358	24.9	23.3	Diffusion Tube
20	1.0962	1.2012	1.0215		1.1063	18.5	20.5	Diffusion Tube
27	0.9311	0.8933	0.9069		0.9104	26.8	24.4	Diffusion Tube
SL05 (NO_2)	1.0673	1.1519	1.0519		1.0904	23.2	25.3	Automatic
SL07 (NO_2)	0.8825	0.8455	0.8876		0.8719	25.6	22.3	Automatic
SL06 (PM_{10})	0.9292		0.9355	0.9115	0.9254	9.5	8.8	Automatic
SL06 ($PM_{2.5}$)	0.9292		0.9254	0.8868	0.9138	4.9	4.5	Automatic

Table C.3 – Local Bias Adjustment Calculations

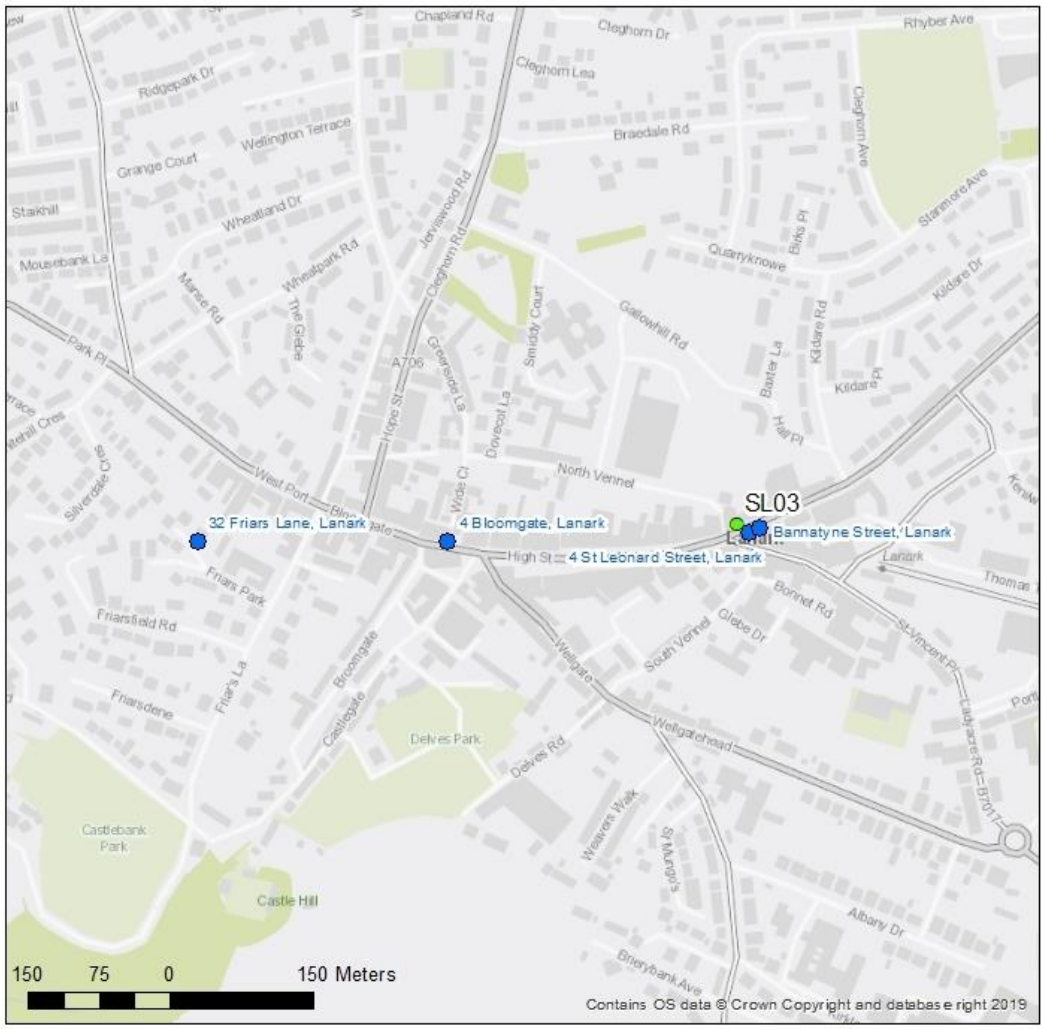
	Local Bias Adjustment Input 1	Local Bias Adjustment Input 2	Local Bias Adjustment Input 3	Local Bias Adjustment Input 4	Local Bias Adjustment Input 5
Periods used to calculate bias	7				
Bias Factor A	0.78 (0.64 - 1)				
Bias Factor B	29% (0% - 57%)				
Diffusion Tube Mean (µg/m^3)	27.5				
Mean CV (Precision)	8.4%				
Automatic Mean (µg/m^3)	21.3				
Data Capture	95%				
Adjusted Tube Mean (µg/m^3)	21 (18 - 27)				

Notes:

The local bias adjustment factor was calculated but not used to adjust the diffusion tube annual means as the overall continuous monitor data capture was poor (83%). The national bias adjustment factor (0.81) was used to adjust the diffusion tube annual means.

Appendix D: Map of the Diffusion Tube Monitoring Network and AQMAs

Figure D. 1 Lanark Monitoring Sites



N

Legend:

- Diffusion Tube
- Automatic Station

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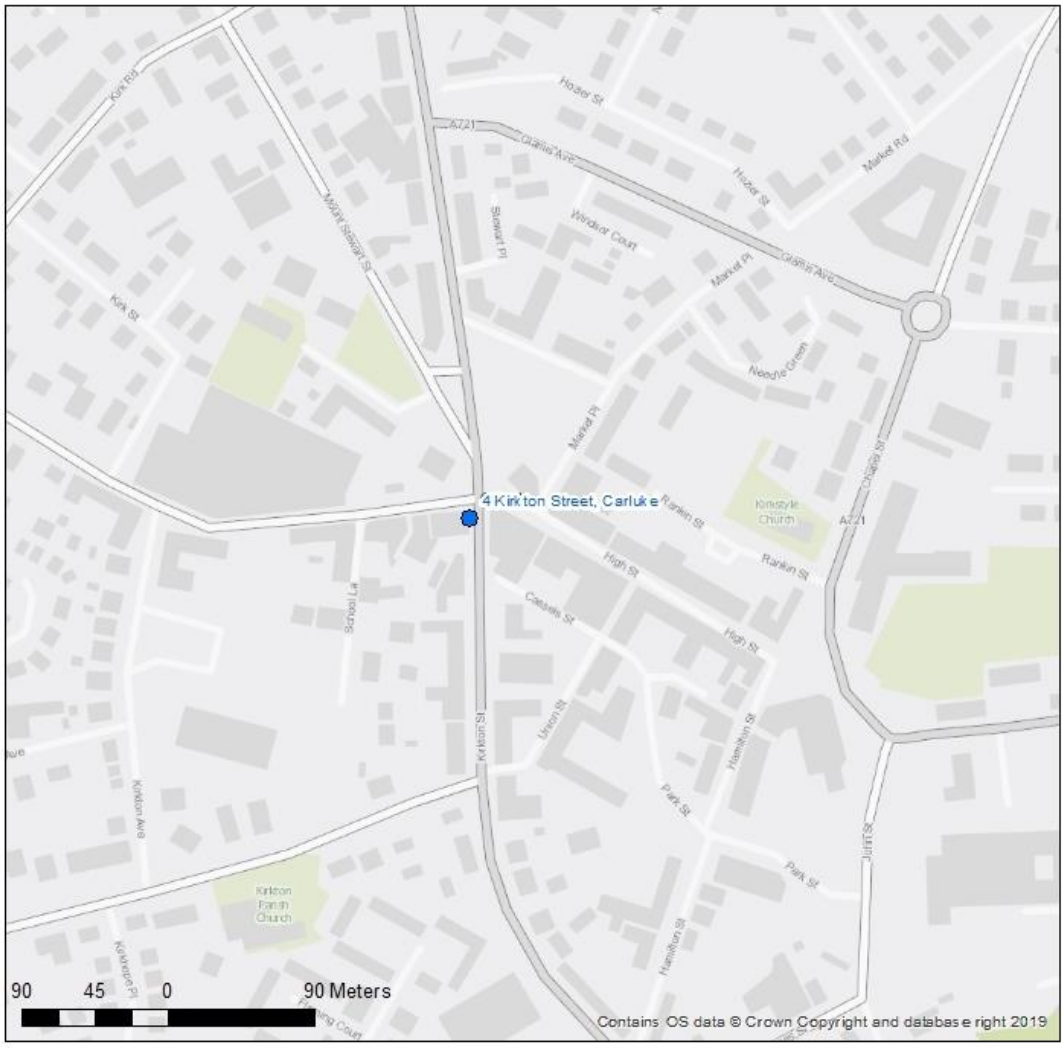
Figure D. 2 Carluke Diffusion Tube Site



N

Legend:

- Diffusion Tube
- Automatic Station

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Figure D. 3 Larkhall Diffusion Tube Site

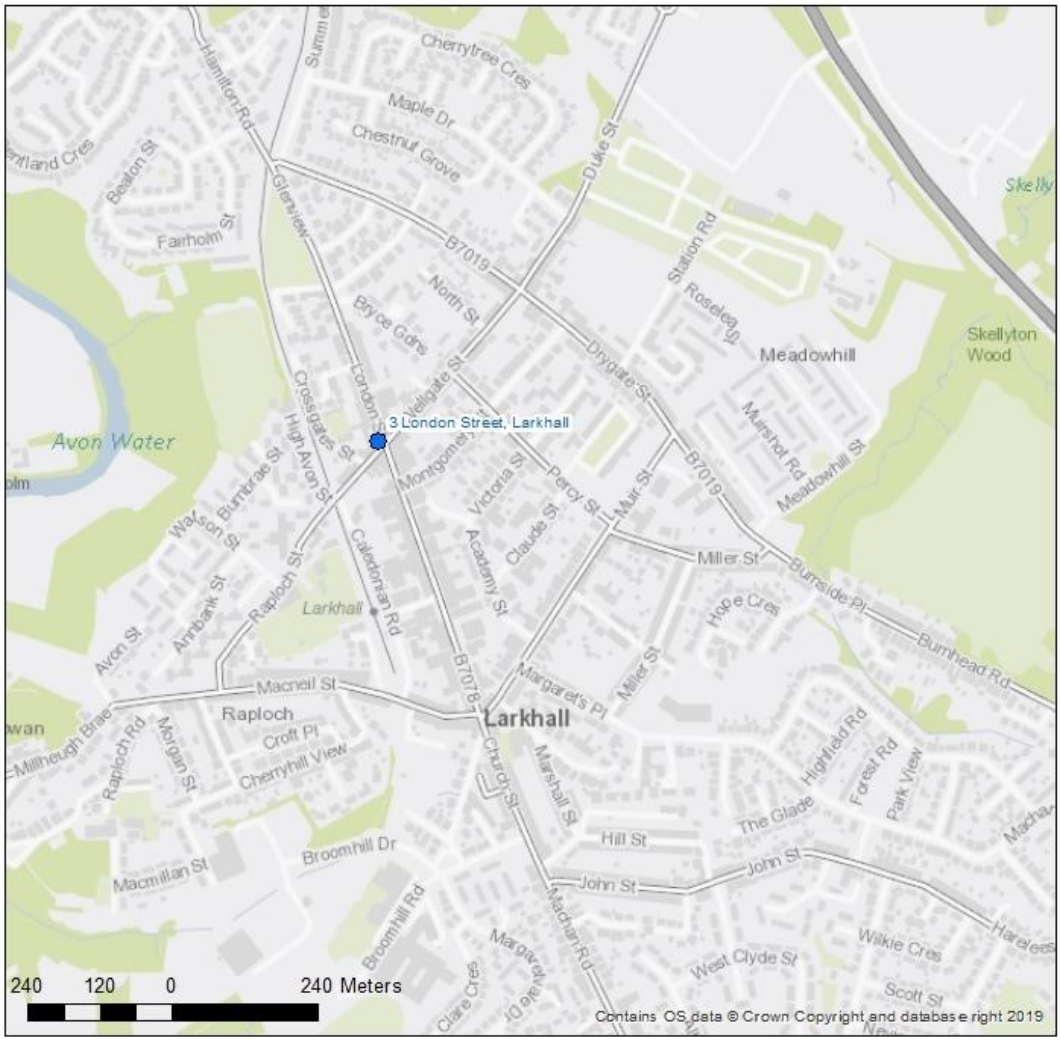
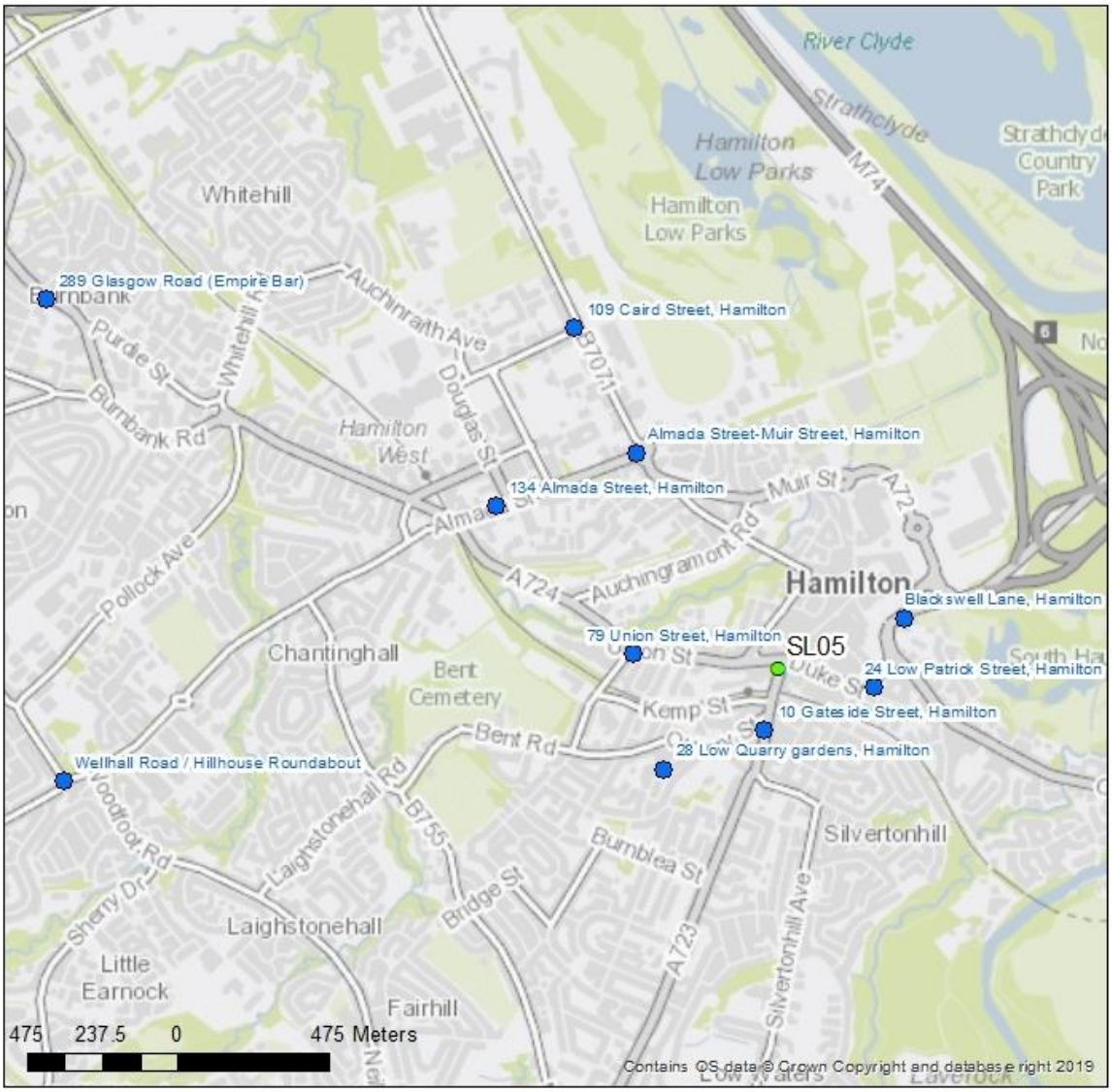


Figure D. 4 Hamilton Monitoring Sites



N

Legend:

- Diffusion Tube
- Automatic Station

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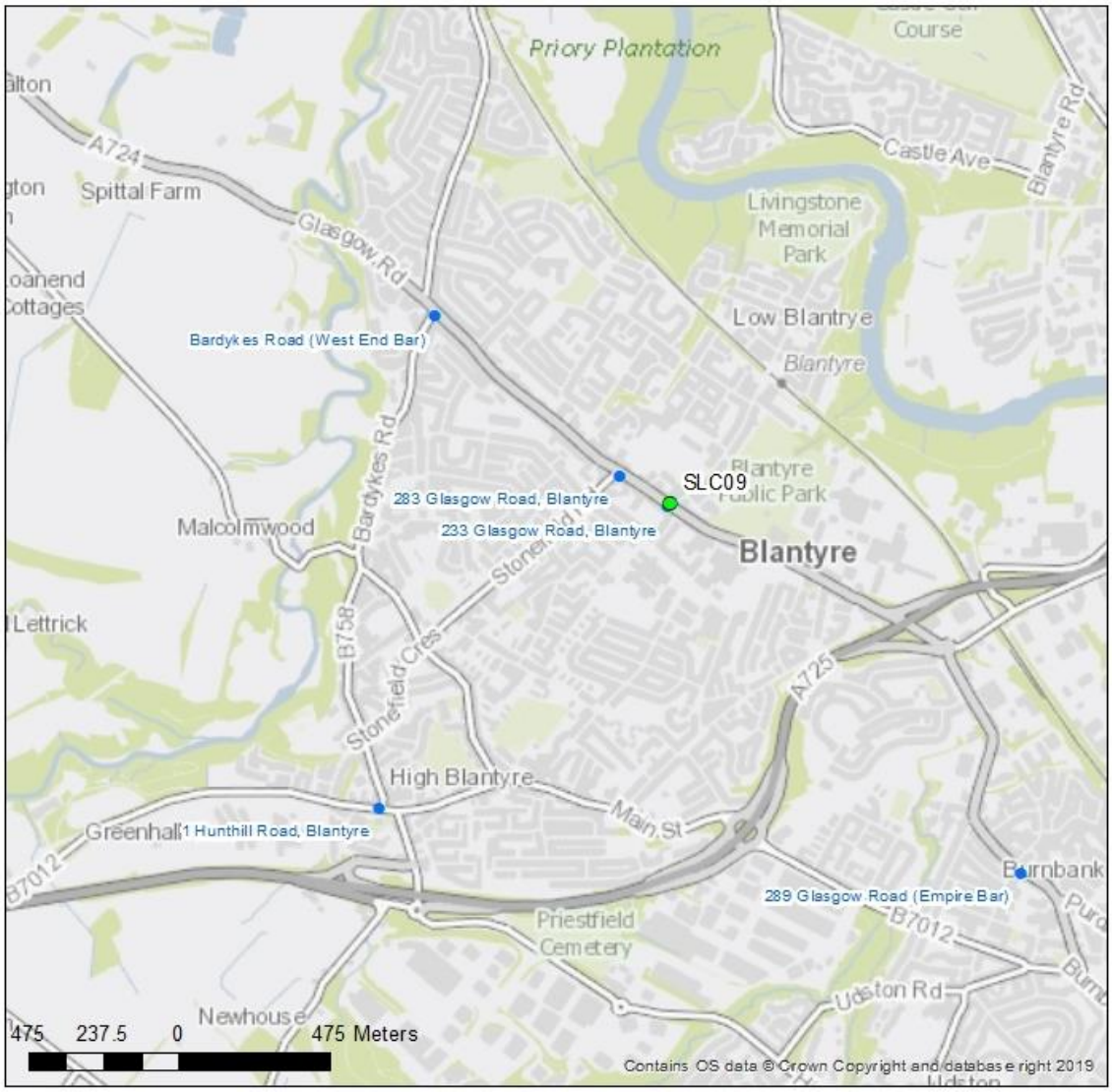
Figure D. 5 Blantyre Monitoring Sites



Legend:

- Diffusion Tube
- Automatic Station

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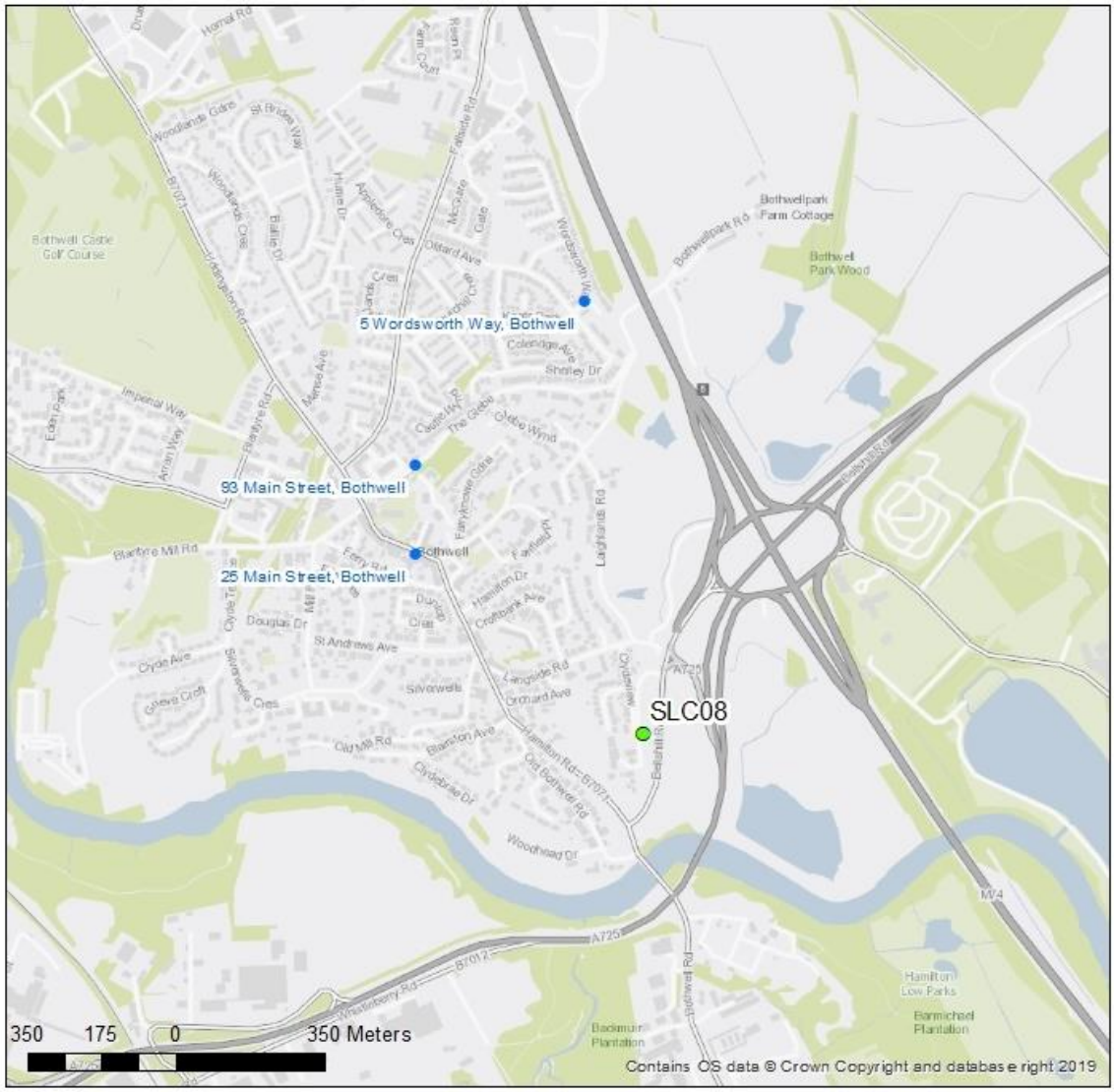
Figure D. 6 Raith Interchange and Bothwell Monitoring Sites



N

Legend:

- Diffusion Tube
- Automatic Station

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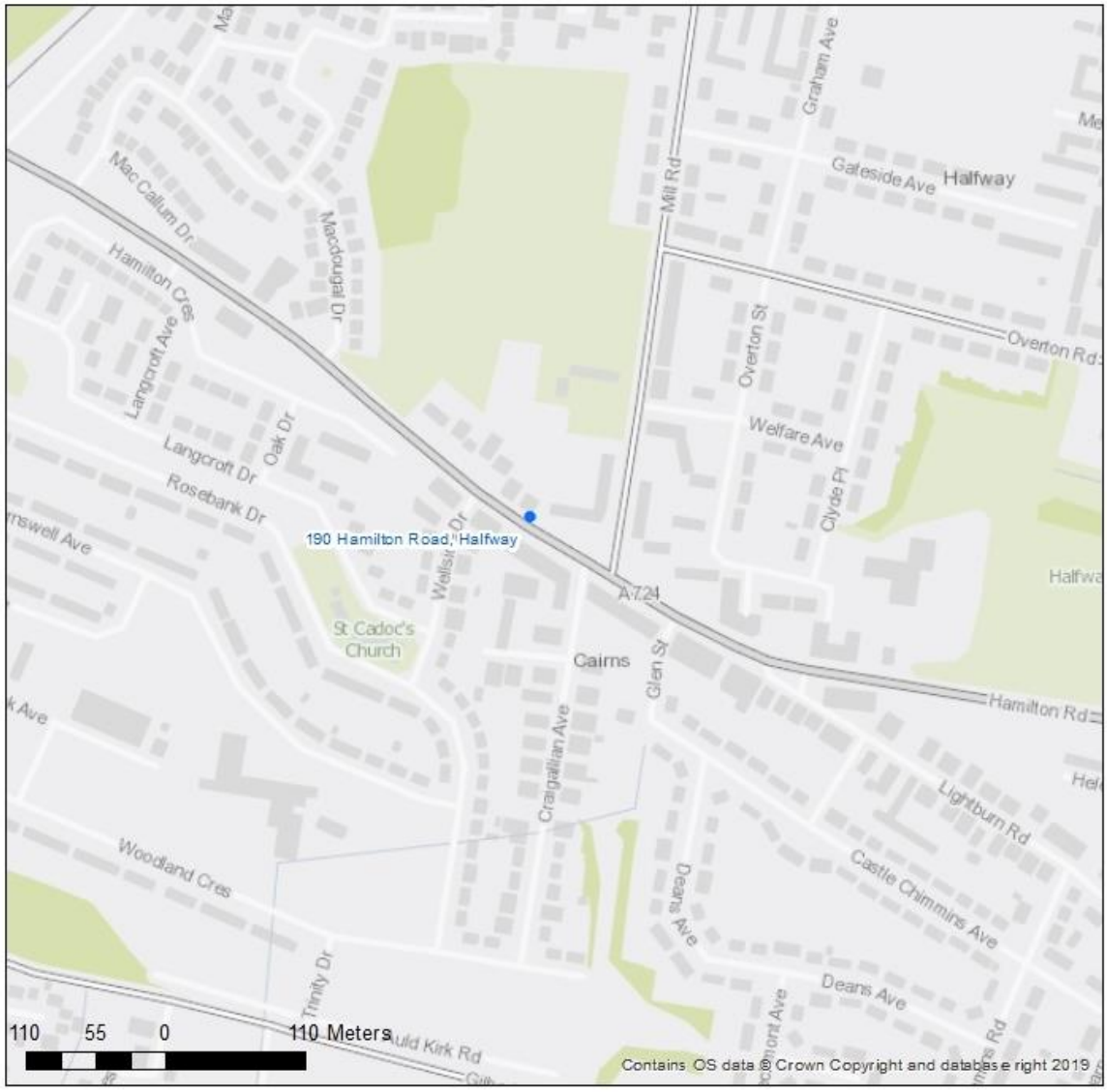
Figure D. 7 Uddingston Monitoring Sites

N

Legend:

- Diffusion Tube
- Automatic Station

Figure D. 8 Halfway Diffusion Tube Site



N

Legend:

- Diffusion Tube
- Automatic Station

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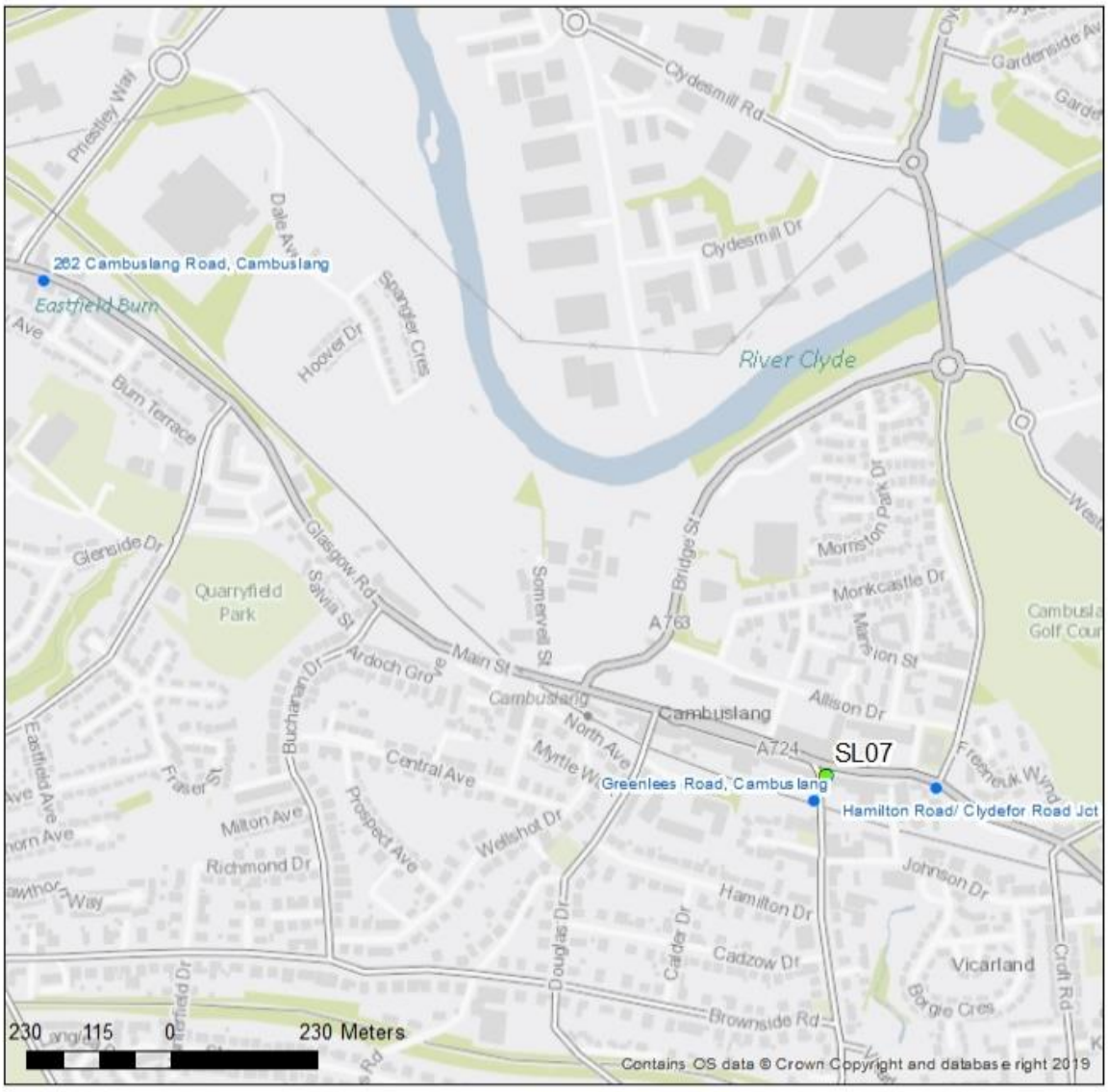
Figure D. 9 Cambuslang Monitoring Sites



N

Legend:

- Diffusion Tube
- Automatic Station

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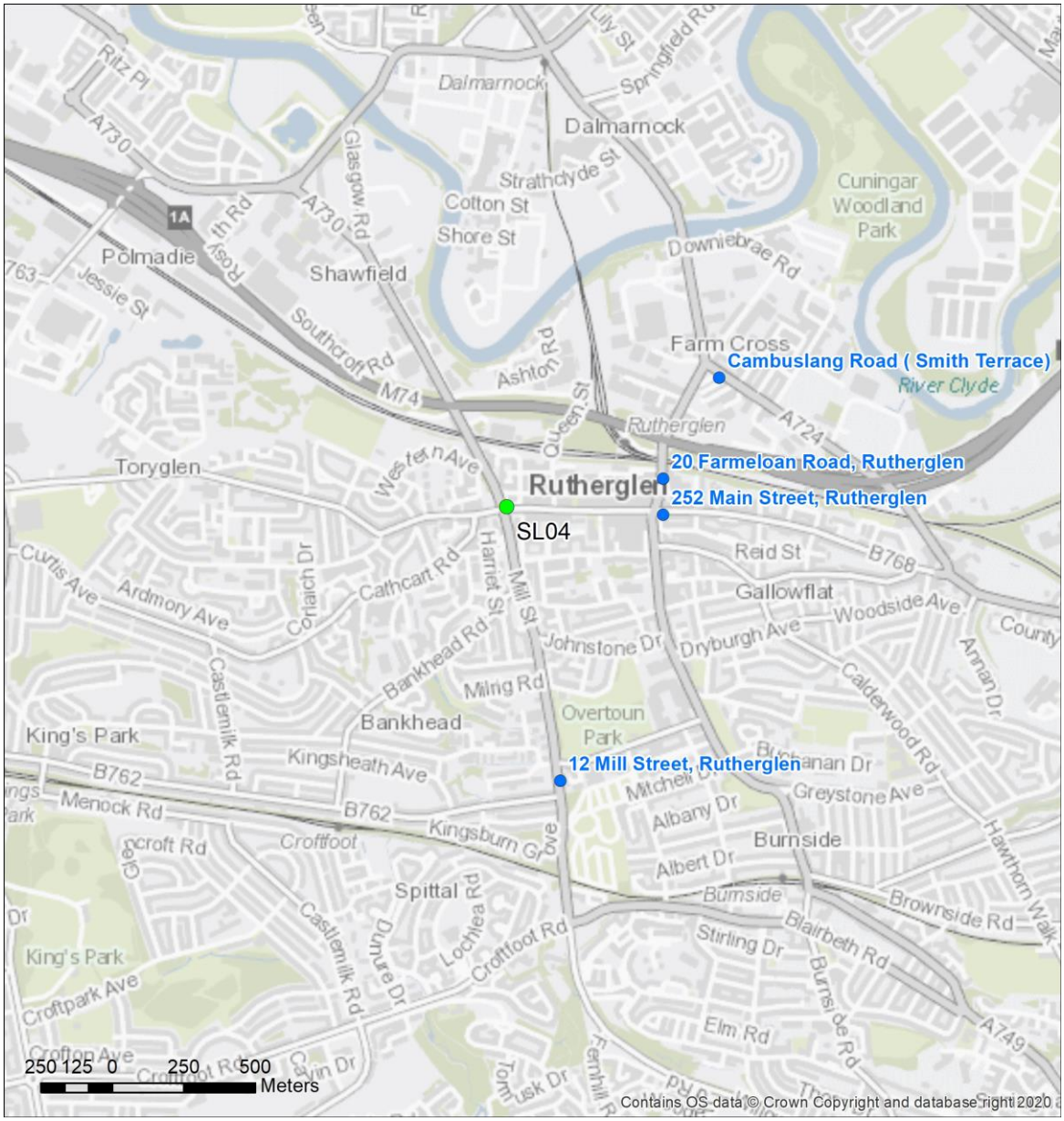
Figure D. 10 Rutherglen Monitoring Sites



N

Legend:

- Diffusion Tube
- Automatic Station

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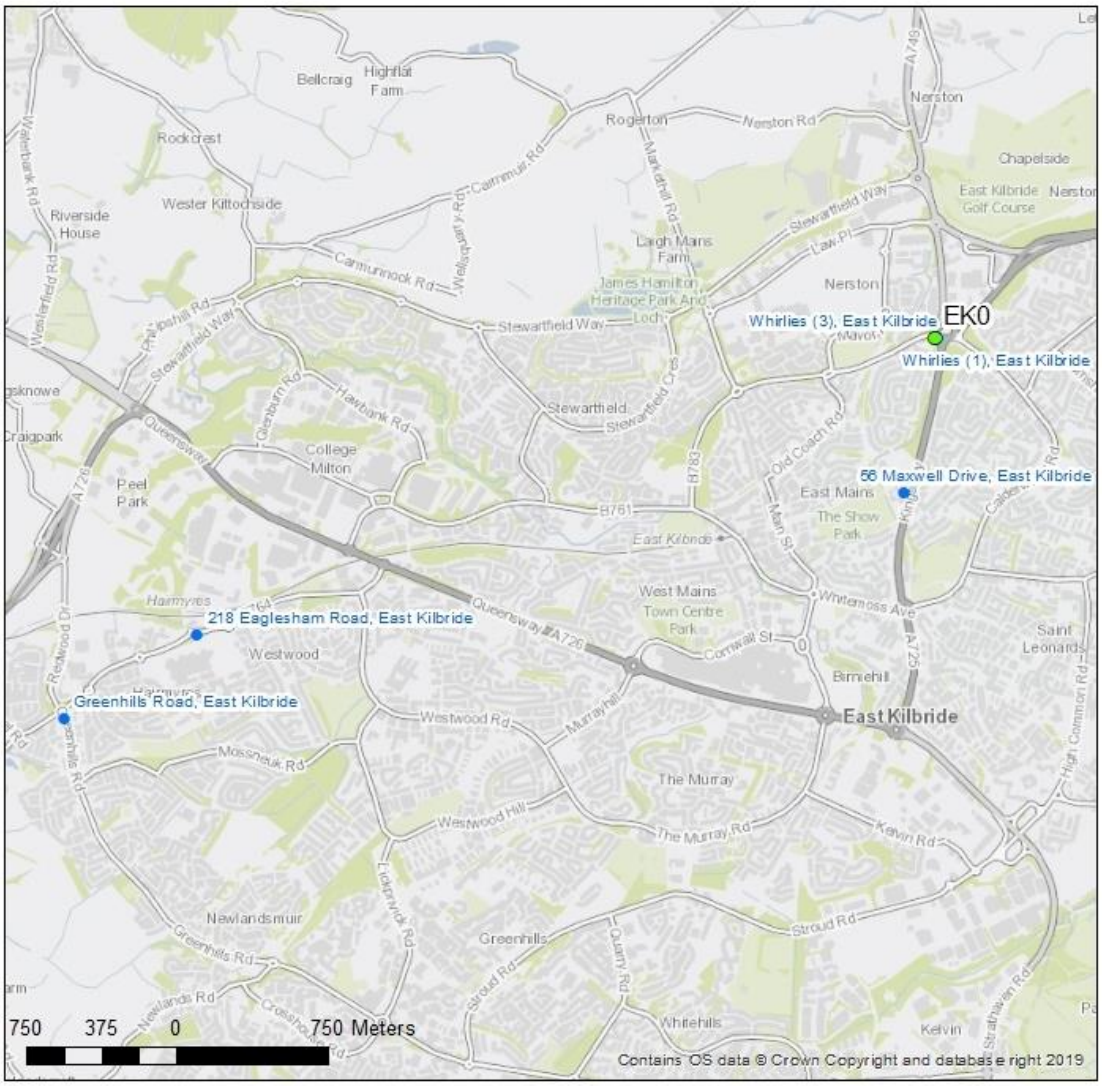
Figure D. 11 East Kilbride Monitoring Sites



N

Legend:

- Diffusion Tube
- Automatic Station

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Figure D. 12 Lanark AQMA with monitoring locations

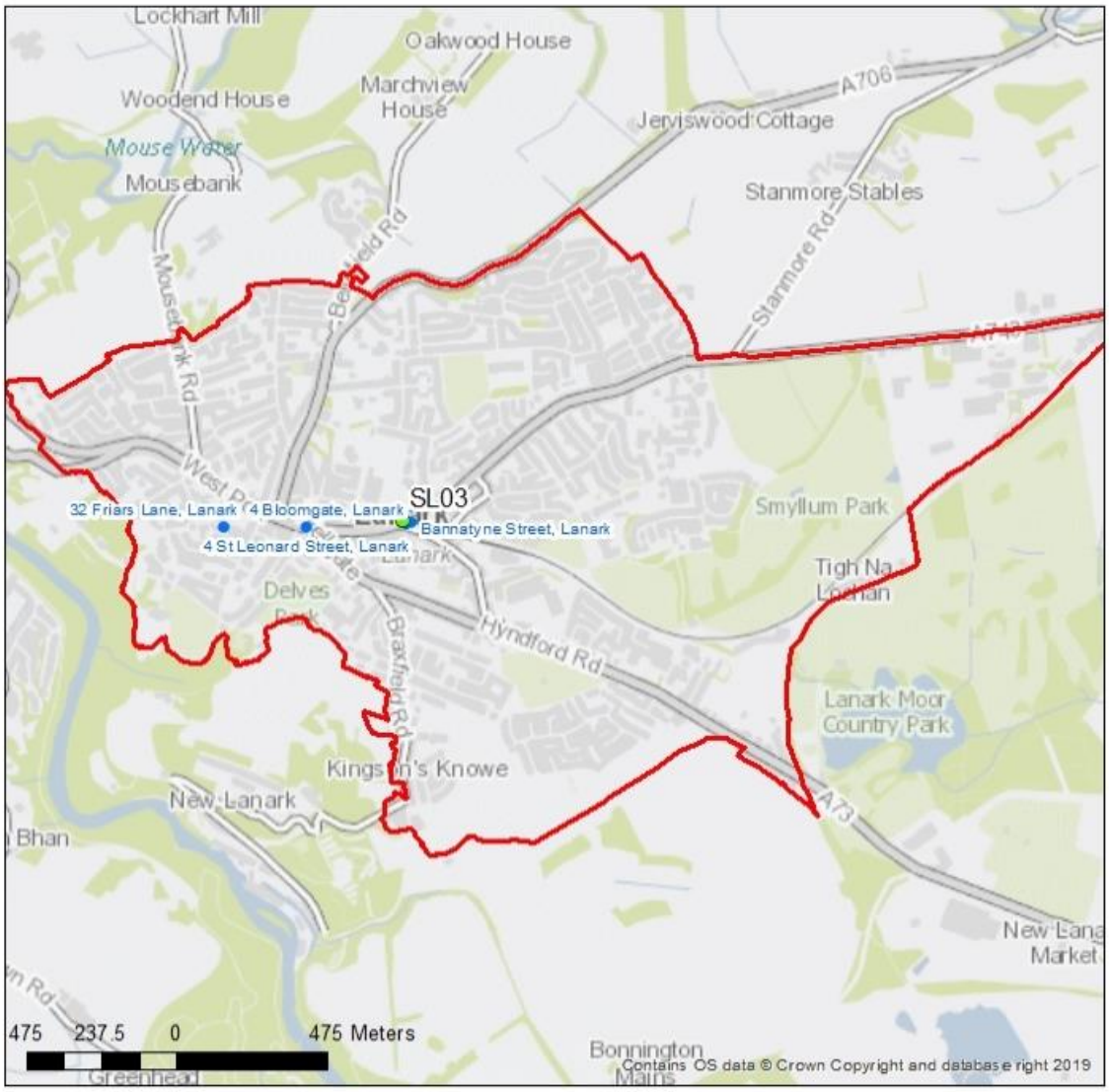

Figure D. 13 East Kilbride Whirlies AQMA with monitoring locations

N

Legend:

- Diffusion Tube
- Automatic Station
- AQMA Boundary

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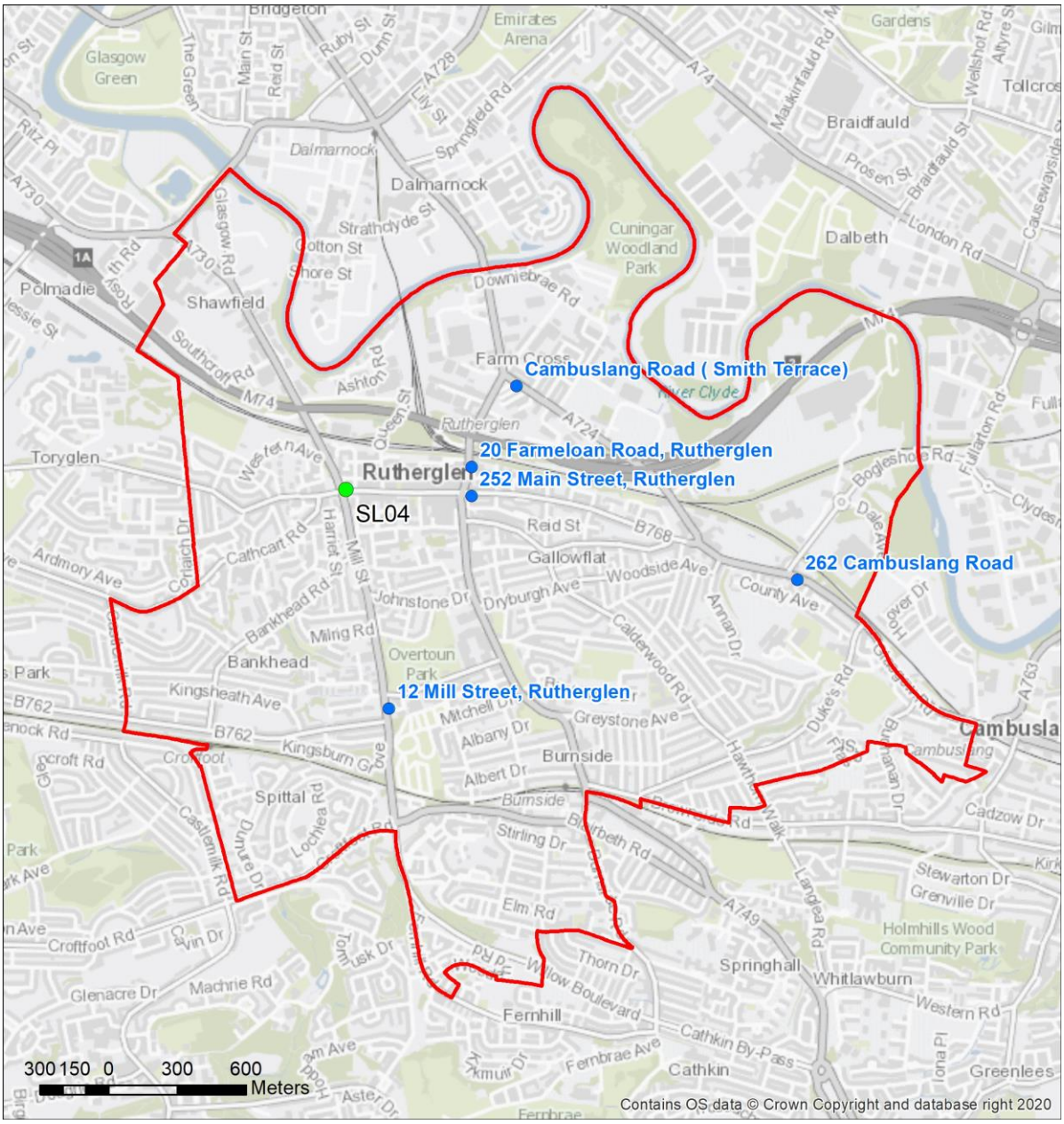
Figure D. 14 Rutherglen AQMA with monitoring locations



N

Legend:

- Diffusion Tube
- Automatic Station
- AQMA Boundary

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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
SEPA	Scottish Environment Protection Agency
SO_2	Sulphur Dioxide

References

Defra, TG(22), Local Air Quality Management Technical Guidance, August 2022

Defra UK AIR AQMA interactive map; Download the 2022 AQMA Dataset; available at AQMA maps

Ricardo Energy & Environment (2018), Detailed Assessment of Air Quality at Glasgow Road, Blantyre; Report for South Lanarkshire Council, Ref ED11046108 Issue Number 2, 23rd July 2018

Ricardo Energy & Environment (2022), Detailed assessment to the revocation of Lanark AQMA, South Lanarkshire; Report for South Lanarkshire Council, Ref ED12832128- Issue Number 1, 28th January 2022

Ricardo Energy & Environment (2023), Blantyre NO2 monitoring study; A report for South Lanarkshire Council, Ref ED15694, 14th March 2023

Ricardo Energy & Environment (2023), Equivalence Study to Investigate Particulate Matter Monitoring in Scotland using the FIDAS 200; Report for the Scottish Government, Ref ED11195- Issue 1, 10th May 2023, available to download here: https://www.scottishairquality.scot/news/local-authority-guidance-note-laqm-reporting-scottish-pm-data

South Lanarkshire Council, South Lanarkshire Council Local Development Plan 2

South Lanarkshire Council, The Sustainable Development and Climate Change Strategy 2017 – 2022

South Lanarkshire Council, South Lanarkshire Biodiversity Duty Implementation Plan 2018-2022

South Lanarkshire Council, South Lanarkshire Council Cycling Strategy 2015-2020

South Lanarkshire Council, Park and Ride Strategy 2018 - 2027

South Lanarkshire Council, The air that we breathe" – GIS story book

South Lanarkshire Council, The Local Transport Strategy 2013 - 2023

South Lanarkshire Council, Sustainable Development and Climate Change Strategy 2017 – 2022

Scottish Air Quality Database, available at Air Quality in Scotland