Annual Progress Report (APR)

2025 Air Quality Annual Progress Report (APR) for Glasgow City Council

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

Local Air Quality Management

August 2025

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Report Reference Number	GCC/NRS/APR25
Date	August 2025

Executive Summary: Air Quality in Our Area

Air Quality in Glasgow

The Annual Progress Report has been undertaken to fulfil Glasgow City Council's duty to annually review and assess air quality. The report provides the latest monitoring results and discusses the implications for air quality management in Glasgow.

The main pollutants of concern in Glasgow are nitrogen dioxide (NO_2) and particulate matter (PM_{10} and $PM_{2.5)}$, related to road traffic emissions.

Results from automatic monitoring stations in 2024 show full compliance with the relevant objectives for all pollutants for the third consecutive year, continuing the significant reductions observed from the introduction of the Glasgow Low Emission Zone.

For the first year since the Local Air Quality Management process was established under Part IV of the Environment Act 1995, all diffusion tube monitoring of NO_2 was within the annual mean objective level. The improvements in levels of NO_2 are such that compliance with the objectives has been achieved by a significant margin, providing a degree of confidence that compliance will continue. This conclusion is further evidenced by the Glasgow LEZ Update report by SEPA.

Levels of NO_2 recorded at 17 locations were below the highly ambitious World Health Organisation guideline values, viewed as a long-term ambition for Glasgow City Council.

No hourly mean levels of NO_2 above 200ug/m^3 were recorded at any of the monitoring stations in 2024, continuing the long-term trend of compliance with this objective.

Levels of PM_{10} recorded across the city in 2024 were satisfactory with both the daily mean and annual mean objectives being met at all monitoring locations. This continued the trend of compliance in respect of this pollutant which has been observed for several years. It should be noted that the Scottish objective for this pollutant is set at just under half that of the UK and EU limits. Levels of PM_{10} recorded at most stations in 2024 were also below the guideline values set by the World Health Organisation.

The $PM_{2.5}$ annual mean objective of 10µg/m^3 was not exceeded at any monitoring location in Glasgow during 2024.

Actions to Improve Air Quality

In response to the implementation of the AQMA's in the city, Glasgow City Council produced Air Quality Action Plans (AQAP) in 2004 and 2009 introducing a range of measures aimed at reducing pollution in the city. The AQAP is an evolving project with several measures such as vehicle idling enforcement, vehicle emission testing and initiatives towards cleaner vehicles ongoing. Other measures, such as the city car club and electric vehicle charging infrastructure, have been implemented and continue to be actioned.

A new AQAP was introduced in April 2024. This was produced in consideration of the recommendations from Environmental Standards Scotland's report on their investigation into air quality, and the updated guidance and templates arising from this.

Low Emission Zone

The Scottish Programme for Government announced in 2017 that there would be Low Emission Zones (LEZ's) in 4 cities in Scotland. Glasgow City Council introduced Scotland's first LEZ in an area broadly equivalent to the city centre AQMA at the end of 2018.

The LEZ has been introduced in two phases, with the first phase targeting improvements in emissions arising from scheduled bus journeys through the city centre. From December 2018 the LEZ required that 20% of bus journeys through the city centre meet the Euro VI emission standard. This target was increased by 20% each year, until 100% of buses were compliant by end of December 2022.

Public and stakeholder consultation on possible LEZ phase 2 options took place in February and March of 2020. The results of this were used, along with extensive option modelling, to identify the preferred LEZ scheme for non-bus traffic.

The second phase of the LEZ received Ministerial approval and came into effect on 31 May 2022. This began a statutory one-year grace period before general enforcement began on 1 June 2023. A further year grace period for vehicles registered to residential properties within the zone means enforcement for these vehicles began on 1 June 2024.

The Glasgow LEZ applies to all vehicle types with the exception of motorcycles and mopeds.

The objectives of the Glasgow Low Emission Zone are as follows:

- Improve public health of residents of and visitors to, the City of Glasgow by contributing towards meeting the air quality objectives prescribed under section 87(1) of the Environment Act 1999.
- Contribute towards the emissions reduction targets set out in Part 1 of the Climate Change (Scotland) Act 2009 through the promotion of low and zero emissions vehicles and the promotion of public and sustainable transport options.
- Improve the amenity of Glasgow through the promotion of the Glasgow City Council Strategic Themes of A Vibrant City, A Healthier City and a Sustainable and Low Carbon City.

Link to Glasgow's LEZ.

https://www.glasgow.gov.uk/LEZ

Enforcement of phase 2 of the Glasgow LEZ began on 1 June 2023 and this APR therefore includes reporting on monitored pollution levels during 2024, the first full calendar year in which the LEZ was actively enforced. This is considered in more detail later in this report.

Glasgow's Climate Plan

In 2019, Glasgow City Council set up a Climate Emergency Working Group, subsequently declaring a Climate Emergency in the city. In response to this, a Climate Plan has been prepared detailing a list of actions which the Council, its partners and stakeholders will take to ensure a just transition to a low carbon and resilient city. Many of the actions to move to a low carbon city have co-benefits for air quality pollutants with development of the LEZ directly addressing actions 22 and 53 of the Glasgow Climate Plan. Expected improvements in LAQM pollutant emissions are a co-benefit of actions 26, 33, 54, 55 and 56. The AQAP and LEZ complements those actions seeking to reduce carbon emissions

from traffic such as reducing private car use, improve public transport provision and transition of the fleet to cleaner forms of transport.

The Glasgow Climate Plan is currently under review with an updated plan being prepared for the period to the 2030 target for achieving net zero carbon.

Link to Glasgow's Climate Plan

https://www.glasgow.gov.uk/CHttpHandler.ashx?id=50623&p=0

Glasgow Transport Strategy

The Glasgow Transport Strategy is a new local transport strategy which is city-wide and provides a framework for investment and decision-making on transport issues up to 2030. Part 1 of the Glasgow Transport Strategy, a Policy Framework, has been produced and approved by the Council. Part 2, a Spatial Delivery Framework, was approved and adopted by the Council on 8 February 2024.

Link to Glasgow's transport Strategy

https://www.glasgow.gov.uk/transportstrategy

One of the Glasgow Transport Strategy goals is to “contribute to a successful and just transition to a net-zero carbon, clean and sustainable city.” The Delivery Focus Areas and Monitoring Update report provides information on the transport and mobility workstreams across the city, all of which aim to deliver the outcomes and vision set out in the Glasgow Transport Strategy (GTS).

Link to monitoring update report

Delivery Focus Areas and Monitoring Update report

There are other separate but related transport strategies, all of which complement the LEZ – the Active Travel Strategy, Liveable Neighbourhoods Plan and City Centre Transformation Plan.

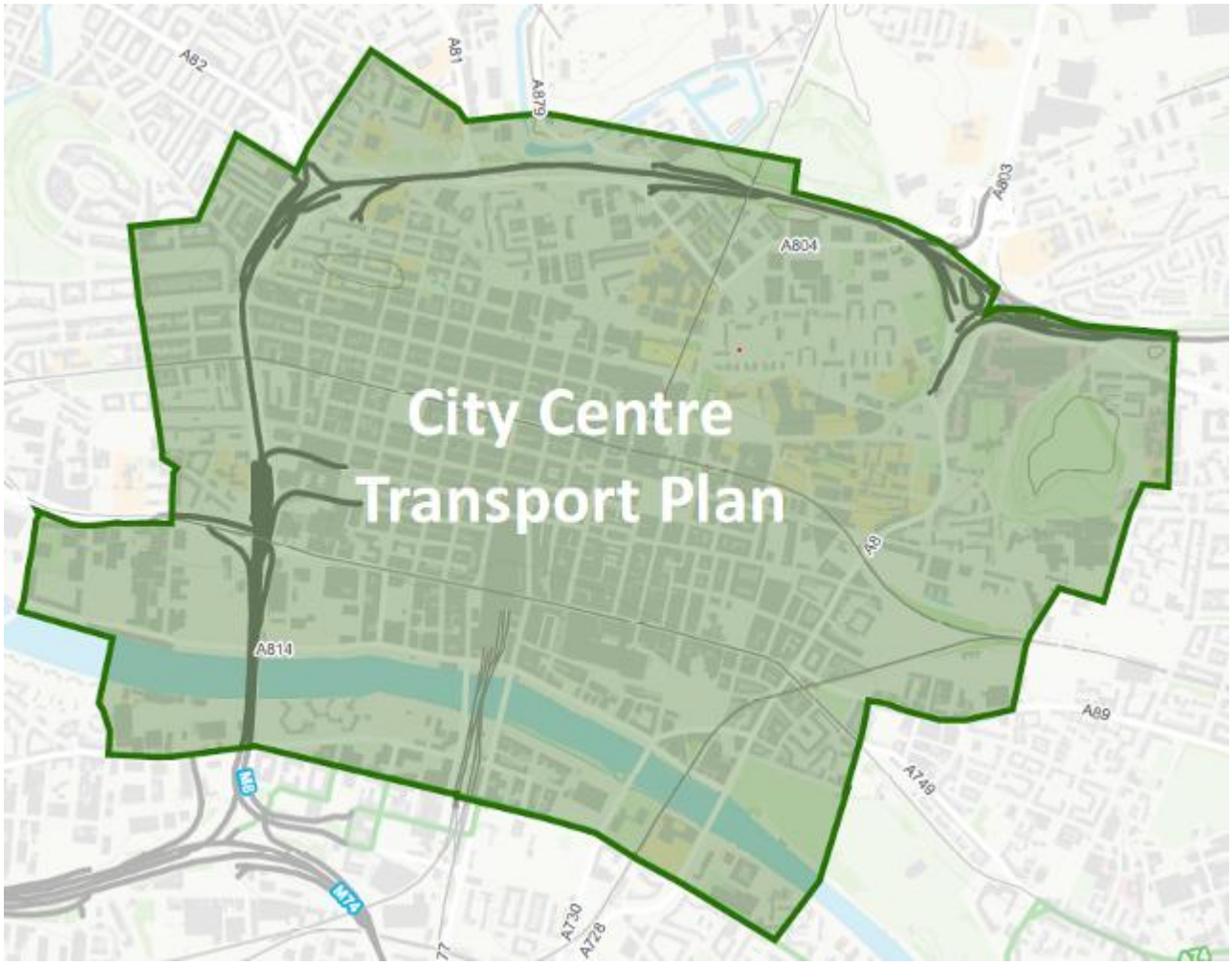
City Centre Transformation Plan

The City Centre Transformation Plan (CCTP) is particularly aligned with the development of the LEZ, given the overlap with the aims of the CCTP and the geographical area covered by the plan. Key aims of the CCTP which have the potential to improve air quality include:

- Re-allocate road space in Glasgow City Centre for active travel and green infrastructure;
- Deliver improved public transport and support/encourage a shift to more sustainable modes, particularly walking, cycling and public transport;
- Improve access for the mobility impaired;
- Achieve a 30-40% reduction in peak-hour private car traffic in Glasgow City Centre by 2030;
- Deliver improvements for servicing (e.g. goods, deliveries and waste collection) to improve the vitality of Glasgow City Centre;
- Support a doubling of Glasgow City Centre's population by 2035; and
- Support Glasgow's aim to be carbon neutral by 2030

- The CCTP will help to deliver a transformation of the centre and ensure the city makes a full contribution to our climate change commitments and transition to net zero carbon.

The CCTP area includes the entirety of the City Centre AQMA and the Glasgow Low Emission Zone.



As part of the CCTP, several Area Based Catalysts for Change have been identified to deliver the transformational changes set out in the plan objectives. One of these is the 'People First Zone'. The 'People First Zone' is proposed to be a central area where vehicular access would be limited to essential users only such as people with disabilities, buses, taxis, emergency services etc. This intervention would greatly reduce vehicle numbers in the core of the city centre and create opportunities to reallocate road space for active travel, public realm and greenery. On street parking would also be significantly reduced. The People First Zone coincides with a central area within the LEZ where air pollution levels are at their highest. It also complements the ongoing 'Avenues project'.

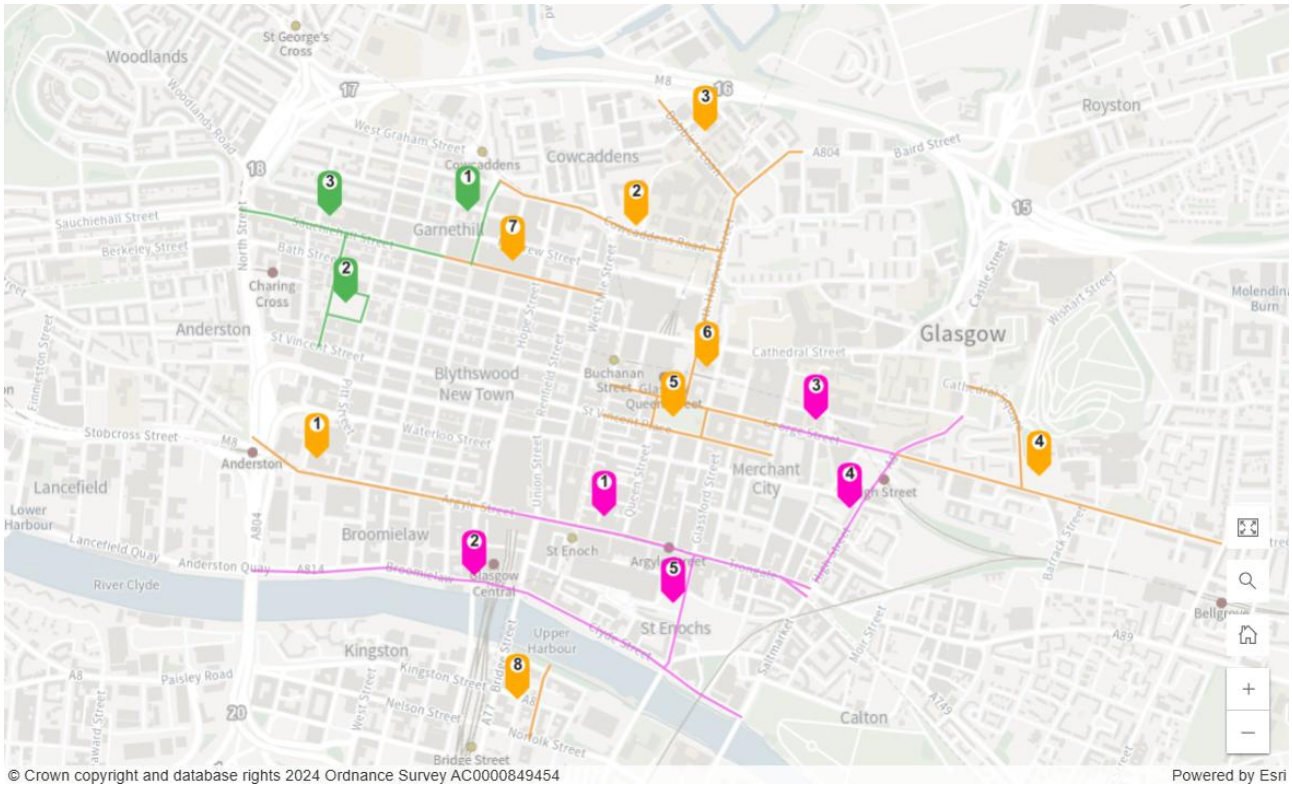
The CCTP Final Report was approved at Committee on 1 December 2022.

Link to the City Centre Transport Plan.

https://www.glasgow.gov.uk/city-centre-transport-plan

EIIPR Avenues Programme

Included in the Glasgow City Region City Deal funding, Glasgow City Council is investing approximately £115 million within the city centre to deliver on the Enabling Infrastructure - Integrated Public Realm (EIIPR) programme. More commonly known as the Avenues programme, this will see streetscape improvements made to the public realm, supporting a key strategic objective of the City Centre Strategy and Action Plan 2014-19: the establishment of principal Avenues throughout the city centre to form an integrated network of continuous pedestrian and cycle priority routes. It will be delivered through City Deal investment over the period to 2027/28



Link to the avenues project

https://www.glasgow.gov.uk/article/11803/The-Avenues

Active Travel Strategy

The Council adopted Glasgow's Active Travel Strategy 2022-2031 at the City Administration Committee on 24th February 2022.

As part of a step change to how we move around Glasgow, the Active Travel Strategy (ATS) aims to achieve significant modal shift across the city to walking, wheeling and cycling and to deliver on its vision that:

"walking, wheeling and cycling will be the first and natural choice for everyday journeys, for people
of all ages and ability, to travel locally to schools, to shops, to work, or to the city centre."

The ATS further defines how active travel contributes to the transport needs of the city, while helping deliver on carbon neutrality and social equity.

A key output from the strategy will be the City Network, which will provide an accessible, safe, coherent and direct active travel network across Glasgow. To be delivered by 2030

in a phased approach, the City Network will connect key amenities and drivers of travel such as education, business, retail and culture. There will also be development of the Neighbourhood Network with a focus on walking and wheeling. This Neighbourhood Network will enable easy everyday active journeys within and between neighbourhoods.

Glasgow City Council Fleet Strategy

As a Local Authority, GCC operates a large vehicle fleet to support all aspects of Council services with over 1,300 vehicles in the fleet across the council “family”. The GCC Fleet Strategy for 2020 to 2030 sets out to minimise the Council’s carbon footprint and lead on our carbon neutrality and net zero commitments. Successful delivery of the fleet strategy will see alternative fuel solutions powering our fleet to support our operational objectives, significantly reducing our carbon footprint and advancing the Council’s drive towards net zero emissions.

Link to Glasgow Fleet Strategy

Glasgow Fleet Strategy

Other initiatives such as the provision, and promotion of, electric vehicle charge points, car clubs and cycle hire schemes, all serve to promote sustainable and low emission transport options. The LEZ can support the travel aspirations of Glasgow by encouraging modal shift, especially if delivered in tandem with active travel and bus priority improvements.

Clean Air Day

Glasgow City Council continues to support Clean Air Day, organised by Environmental Protection Scotland on behalf of the Scottish Government. Taking place on 20 June 2024, Clean Air Day focussed on education and promotion of learning activities related to air pollution and transport choices to school children.

Local Priorities and Challenges

Glasgow's Low Emission Zone (LEZ) is an intervention directed at protecting and improving public health. While the concept was first introduced in the 2009 Action Plan it is also now part of a broader approach to enhancing the amenity and attractiveness of the city centre through providing cleaner air.

The LEZ scheme design was approved by the City Administration Committee of Glasgow City Council and by Scottish Ministers and came into effect on 31st May 2022. This began the mandatory grace period before general enforcement began on 1st June 2023. An additional grace period applies to vehicles registered to a residential address within the LEZ and enforcement for these vehicles began on 1st June 2024.

The priorities for 2025 / 2026 includes the continuing and enhanced enforcement of the LEZ with ongoing communications and engagement to increase compliance rates.

Other priorities include:

- Progress actions within the 2024 Air Quality Action Plan
- Continue with the implementation of actions within Glasgow's Climate Plan with a focus on those actions with local air quality co-benefits. This will be undertaken in conjunction with the review and update of the plan.
- Continue to develop the Glasgow Transport Strategy and its related parts, the City Centre Transformation Plan, the Liveable Neighbourhoods Plan and the Active Travel Strategy.
- Continue the comprehensive review of air quality monitoring in Glasgow with a focus around schools, hospitals and care homes.

How to Get Involved

Information relating to the LEZ, Local Air Quality Management (LAQM) and AQMA's in Glasgow is available via the Glasgow City Council website. This information includes Air Quality Action Plans, Progress Reports and Detailed Assessments.

Link to LAQM website

https://www.glasgow.gov.uk/index.aspx?articleid=18863

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1 Local Air Quality Management

This report provides an overview of air quality in Glasgow during 2024. 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 Glasgow City 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 Glasgow City Council can be found in Table 2.1 . Further information related to declared or revoked AQMAs, including maps of AQMA boundaries are available online at https://www.glasgow.gov.uk/localairqualitymanagement

The Byres Road / Dumbarton Road AQMA was formally revoked on 4th July 2024 leaving the City Centre as the last remaining active AQMA.

Table 2.1 – Declared Air Quality Management Areas

AQMA Name	Pollutants and Air Quality Objectives	City / Town	Description	Action Plan
City Centre AQMA	NO_2 annual mean PM_{10} annual mean NO_2 hourly mean	Glasgow	The city centre AQMA is loosely bound by the M8 motorway to the west and north (with slight protrusions at North Street and Royston Road), by High Street and Saltmarket to the east and by the river Clyde to the south. This area was	Glasgow City Council Air Quality Action Plan 2024

AQMA Name	Pollutants and Air Quality Objectives	City / Town	Description	Action Plan
			declared an AQMA in 2004 in respect of the annual mean NO_2 Objective. In 2007 the area covered by this AQMA was extended and declared in respect of the annual mean PM_{10} Objective. In 2012 a further extension of the AQMA was declared and the order amended in respect of the hourly mean NO_2 Objective.	

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. Glasgow City Council has taken forward a number of measures within the action plan during the current reporting year of 2024 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 the air quality Action Plan relating to each AQMA.

Key completed measures for this reporting year are:

- LEZ enforcement continued with expiry of the resident's grace period and most taxi exemptions.
- Development of the new Staff Travel Plan for GCC employees
- Introduction of emission-based parking permits

- Revocation of the Byres Rd / Dumbarton Rd AQMA following several years of compliance with objectives
- Use of LEZ funding for city greening activities, particularly within the city centre
- Establishment of the LEZ Community Support Fund, allocation of funds to projects which support the aims of the LEZ

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

- Undertake a comprehensive review of air quality monitoring in Glasgow with a focus around schools, hospitals and care homes. Whilst a number of additional monitoring locations were identified and implemented in time for the beginning of the calendar year, more work remains to be done and will be completed for the beginning of 2026, allowing a full year of monitoring, as required for statutory reporting against objectives.

Glasgow City Council expects the following measures to be completed over the course of the next reporting year:

- Continue to implement and enforce the Glasgow LEZ.
- Complete the review of monitoring locations
- Progress the pilot project to install a combined solar PV, battery storage and EV charging facility open to public use.

Table 2.2 – Progress on Measures to Improve Air Quality

Measure No.	Measure	Category	Expected/Actual Completion year	Organisations Involved	Measure Status	Funding Status	Key Milestones	Progress	Barriers to implementation
<1>	Continue to implement the Low Emission Zone and Mitigation Measures	Promoting Low Emission Transport	2024	GCC Transport Scotland SEPA	In progress	Fully funded for development and implementation phases Operational phase funded from revenue	June 2023 – implement LEZ for all vehicle types. June 2024 – resident grace period and sector specific exemptions end. Statutory annual reporting	Full implementation of the LEZ following expiry of resident exemption. First full year of LEZ enforcement	Technical and legal barriers.
<2>	Support the development and implementation of the Glasgow Transport Strategy (GTS) and associated City Centre Transport Plan (CCTP) and People First Zone (PFZ)	Transport Planning and Infrastructure	2030	GCC	In progress	Annual or ongoing funding required	To be determined within delivery plan and delivery framework.	Delivery Focus Areas and Monitoring Update report	N/A
<3>	Undertake a comprehensive review of air quality monitoring in Glasgow with a focus around schools, hospitals and care homes	Public information	2024	GCC	In progress	N/A	Complete review finalised	Partial addition of new monitoring locations undertaken for start of 2025 monitoring year	Staff resources
<4>	Implement the Council's Fleet Strategy	Promoting Low Emission Transport	2030	GCC	In progress	Part funded	As detailed in Fleet Strategy	Fleet renewal progress	Funding

Measure No.	Measure	Category	Expected/Actual Completion year	Organisations Involved	Measure Status	Funding Status	Key Milestones	Progress	Barriers to implementation
								Alternative fuels pilot scheme launched.	
<5>	Conduct a pilot project to install a combined solar PV, battery storage and EV charging facility open to public use.	Promoting Low Emission Transport	2025	GCC	In progress	Part funded	Procurement of equipment and installation Identification of alternative location	PV panels and battery storage procured. Installation location agreed	Contractual / procurement issues
6	Transition the fleet of private hire vehicles to zero emission vehicles	Promoting Low Emission Transport	2030	GCC	In progress	N/A	Annual proportion of zero emission private hire vehicles	Increased numbers of zero emission vehicles registered	Uptake and mechanism for promotion
7	Develop new Staff Travel Plan for GCC employees	Promoting Travel Alternatives	2024	GCC	Complete	N/A	Staff travel survey completed Actions arising	Completed Actions arising may be incorporated into AQAP	N/A
8	Support hybrid and remote working	Promoting Travel Alternatives	Ongoing	GCC	In progress	N/A	N/A	Established hybrid working schedule for suitable staff Enhanced hybrid meeting facilities	N/A
9	Establish a pilot example school for the promotion of good air quality	Promoting Travel Alternatives	2025	GCC	In progress	LEZ Community Support Fund	Funded pilot to be completed 2025	LEZ funded a pilot study at three schools	N/A

Measure No.	Measure	Category	Expected/Actual Completion year	Organisations Involved	Measure Status	Funding Status	Key Milestones	Progress	Barriers to implementation
	and travel practices.								
10	Vehicle Idling Awareness and Enforcement	Traffic Management	Ongoing	GCC	In progress	Scottish Government funded	N/A	Annual awareness campaign, signage installation and enforcement / education patrols	Reduction in SG funding
11	Emission based parking permits	Traffic Management	2025	GCC	Completed	N/A	Implementation	Implemented	N/A
12	Implement city wide 20mph speed limit	Traffic Management	Phased introduction	GCC	In progress	N/A	Completion of area based phases	Implemented elements of first phases	N/A
13	Support the expansion of Glasgow's active travel network and supporting infrastructure through the Active Travel Strategy including promoting behavioural change to encourage modal shift to sustainable transport options	Transport Planning and Infrastructure	2031	GCC / Scottish Government / Sustrans	In progress	Annual or ongoing funding required	Annual targets for number of key locations connected to city network (schools, healthcare centres etc.) to inform City Network delivery.	Various additions including within Avenues roll-out	Funding

Measure No.	Measure	Category	Expected/Actual Completion year	Organisations Involved	Measure Status	Funding Status	Key Milestones	Progress	Barriers to implementation
14	Public Cycle Hire Scheme	Transport Planning and Infrastructure	Ongoing	GCC / Nextbike	In progress	GCC / SG funded	Explore potential for expansion of the cycle hire scheme, including provision of e-bikes and charging infrastructure.	Continued successful operation of scheme	N/A
15	Support for Glasgow Car Club	Alternatives to Private Vehicle Use	Ongoing	GCC / Co Wheels	In progress	Not funded	Dependent on future requirements	Continued successful operation of scheme	N/A
16	Continue to support and expand the Eco Stars Fleet Recognition Scheme	Vehicle Fleet Efficiency	Ongoing	GCC / TRL	In progress	GCC / SG funded	Annual increase in membership and fleet numbers	Despite reduced funding membership and vehicles increased	N/A
17	Revoke Byres Rd / Dumbarton Rd AQMA	Public information	2024	GCC	Completed	N/A	Revocation completed	Revocation completed in November 2024	N/A
18	Develop an appropriate model to successfully deliver the Local Heat and Energy Efficiency Strategy (LHEES)	N/A	2024	GCC	In progress	Funded	N/A	Feasibility studies into (i) the heat supplies available (ii) the profile of heat demand and (iii) the commercial viability of heat networks in those areas	Funding and commercial uptake

Measure No.	Measure	Category	Expected/Actual Completion year	Organisations Involved	Measure Status	Funding Status	Key Milestones	Progress	Barriers to implementation
19	Aligning Planning and Air Quality Guidance and Placemaking Targets outlined in CAFS 2 Ensuring air quality is a material consideration in developments compatible with National Planning Framework (NPF) 4 and that air quality is included in any revisions to the City Development Plan	Policy Guidance and Control	Ongoing	GCC	Ongoing	N/A	N/A	Ongoing input into planning and review of applications	N/A
20	Explore pathways towards the achievement of World Health Organisation (WHO) guideline values, including interim guidelines, and liaise with the Scottish Government in relation to potential changes to the statutory Scottish objectives.	Policy Guidance and Control	Ongoing	GCC / Scottish Government	Ongoing	N/A	Pathway to be identified by SG	GCC input into discussions with SG on lower objective levels	Legislative
21	Support the Council Tree Plan and pursue planting at locations where	N/A	Ongoing	GCC	Ongoing	Part funded	Annual reporting on new tree planting,	LEZ funding used for city centre tree planting and development	

Measure No.	Measure	Category	Expected/Actual Completion year	Organisations Involved	Measure Status	Funding Status	Key Milestones	Progress	Barriers to implementation
	additional trees have the potential to maximise air quality co-benefits.						particularly within AQMA	of "Trees for Streets" scheme	

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.

Glasgow City Council undertook automatic (continuous) monitoring at 11 sites during 2024. Table A.1 in Appendix A shows the details of the sites. National monitoring results are available at http://www.scottishairquality.scot/

Maps showing the location of the monitoring sites are provided in Appendix E. 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

Glasgow City Council undertook non- automatic (passive) monitoring of NO_2 at 121 sites during 2024. Table A.2 in Appendix A shows the details of the sites.

Maps showing the location of the monitoring sites are provided in Appendix E. 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

There were no other monitoring activities undertaken during 2024.

3.2 Individual Pollutants

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

3.2.1 Nitrogen Dioxide (NO_2)

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

Table A.4 in Appendix A compares the adjusted monitored NO_2 annual mean concentrations for the past five years with the air quality objective of 40 µg/m^3 at non automatic monitoring sites.

For diffusion tubes, the full 2024 dataset of monthly mean values is provided in Appendix B.

Table A.5 in Appendix A compares the ratified continuous monitored NO_2 hourly mean concentrations for the past five years with the air quality objective of 200 µg/m^3, not to be exceeded more than 18 times per year.

During 2024, Glasgow City Council measured concentrations of NO_2 below the annual mean objective at all automatic monitoring stations in the city, including those within the City Centre Air Quality Management Area (AQMA). This was the third consecutive year in which levels of NO_2 at the automatic monitoring stations were within the objective. The previous marginal compliance at the Glasgow Kerbside station has improved to record an annual mean of almost 10% below the objective, reducing from 39 ug/m^3 to 36.3 ug/m^3.

Levels of NO_2 in 2024 at all automatic monitoring stations were below the objective levels, continuing the trend of compliance observed since 2022. Glasgow Kerbside (GLA4) remains the station recording the highest level of NO_2. However, NO_2 levels continue to decrease and the 2024 annual mean of 36.3ug/m^3 at this location is now almost 10% below the objective level of 40ug/m^3.

Figure E.4 in Appendix E shows the trend in annual average NO_2 concentrations at selected automatic monitoring stations since 2020.

Diffusion tube monitoring in 2024 was the first to record all monitoring locations within the annual mean objective with a significant reduction in NO_2 levels for the first full year of operation of the Glasgow LEZ. The average reduction within the city centre was 17.7% from 2023 levels. NO_2 levels also reduced across the city with the average reduction outside of the city centre being 6.7%.

Two diffusion tubes recorded marginal exceedances of the annual mean objective in 2023 with one further location being within 10% of the objective. However, in 2024, the highest level recorded by diffusion tube was 29.8 ug/m^3, more than 25% below the objective.

The hourly mean objective for this pollutant is set at 200ug/m^3 with 18 hours above this level permitted before an exceedance is considered to have been made. No hourly mean levels above 200ug/m^3 were recorded at any of the automatic monitoring stations in 2024. Further, no diffusion tubes recorded annual mean levels above 60ug/m^3, indicating that exceedances of the hourly mean objective at these locations was unlikely.

3.2.2 Particulate Matter (PM_{10})

Table A.6 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.

Table A.7 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.

Levels of PM_{10} recorded across the city in 2024 were satisfactory with both the daily mean and annual mean objectives being met at all monitoring locations. This continued the trend of compliance in respect of this pollutant which has been observed for several years.

3.2.3 Particulate Matter ($PM_{2.5}$)

Table A.8 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. This objective was not exceeded at any monitoring location in Glasgow during 2024.

3.2.4 Sulphur Dioxide (SO_2)

Sulphur dioxide monitoring has been discontinued in Glasgow following a long period of compliance with the relevant Objectives.

3.2.5 Carbon Monoxide, Lead and 1,3-Butadiene

Monitoring of these pollutants has been discontinued in Glasgow following a long period of compliance with the relevant Objectives.

4 New Local Developments

4.1 Road Traffic Sources

Road traffic levels on surrounding roads is likely to be affected by the continuing works on the Woodside Viaduct part of the M8 motorway, with increases expected due to periods where diversions are in place. Whilst not expected to lead to new exceedances of the air quality objectives, monitoring will continue on applicable routes to verify this. Diversions in this area have also had an impact on the operation of the Glasgow LEZ, with periods of LEZ enforcement being suspended due to non-compliant vehicles being diverted into the LEZ.

4.2 Other Transport Sources

No significant new transport sources have been identified which require consideration in this report.

4.3 Commercial and Domestic Sources

No significant new commercial and domestic sources have been identified which require consideration in this report.

4.4 New Developments with Fugitive or Uncontrolled Sources

No significant new developments with fugitive or uncontrolled sources have been identified which require consideration in this report.

5 Planning Applications

There have been several planning applications for residential and commercial developments within the last year which required air quality assessments due to the introduction of new receptors or increased emissions due to additional vehicle movements. No assessments resulted in predictions of significant adverse impacts on air quality.

6 Glasgow Low Emission Zone

Enforcement of the Glasgow LEZ began on 1st June 2023 following the mandatory one-year grace period after formal introduction of the zone on 31st May 2022. Therefore, the 2025 APR, reporting on monitoring conducted in 2024, is the first to report on post-LEZ air quality levels across a full calendar year.

The LEZ was enforced for the full 2024 reporting period; however it should be noted that residents of the zone were subject to a further year grace period and were therefore exempt from the LEZ until 1st June 2024. The Glasgow taxi fleet were also eligible for a time-limited exemption, with 776 exemptions until 31st May 2024 issued to operators.

Following the initial positive results from 2023, further significant reductions in the monitored levels of NO_2 have been recorded across the city and particularly within the area of the LEZ in 2024.

Table D.1 in Appendix D shows results from the city centre monitoring using NO_2 diffusion tubes and the percentage reduction observed. Comparing 2024 with 2022, the last full year before the introduction of the Glasgow LEZ, shows locations within the zone have observed an average reduction in annual mean NO_2 of 34% whilst locations outside of the zone observed an annual reduction of 21%.

Table D.2 and Figure E.3 in Appendix D show those monitoring locations which were exceeding or within 10% of the annual mean objective in the last full pre-pandemic year of 2019 and the results for these locations in the subsequent years. Diffusion tube results show a clear upward trend since the pandemic affected year of 2020 with all locations

showing increases between 2021 and 2022. This is then followed by significant decreases in 2023 and 2024 as the enforcement of the Glasgow LEZ begins.

In 2024, air pollution monitoring conducted within the city met all applicable statutory objectives. This is the first time full compliance has been recorded since the Local Air Quality Management process was established under Part IV of the Environment Act 1995.

The level of compliance with the annual mean NO_2 objective in 2024 is of note. The Hope St automatic station, at a kerbside location and consistently the station which records the highest NO_2 levels within Scotland, is now recording levels almost 10% below the objective. City centre diffusion tubes, which in 2023 recorded levels above the objective at two locations, are now in full compliance and the highest recorded level is more than 25% below the objective.

The Scottish Environment Protection Agency (SEPA) has undertaken an update to the air pollution dispersion modelling conducted in advance of the introduction of the LEZ. This report concludes that the emissions reduction is greater than predicted prior to the introduction of the LEZ, mainly due to the increased proportion (~40%) of bus journeys within the zone which are zero emission at tailpipe. The report also highlights that refreshed dispersion modelling shows full compliance with the annual mean NO_2 objective.

7 Conclusions and Proposed Actions

7.1 Conclusions from New Monitoring Data

Results from automatic monitoring stations in 2024 show full compliance with the relevant objectives for all pollutants for the third consecutive year, continuing the significant reductions observed from the introduction of the Glasgow Low Emission Zone.

For the first year since the Local Air Quality Management process was established under Part IV of the Environment Act 1995, all diffusion tube monitoring of NO_2 was within the annual mean objective level. The improvements in levels of NO_2 are such that compliance with the objectives has been achieved by a significant margin, providing a degree of confidence that compliance will continue. This conclusion is further evidenced by the Glasgow LEZ Update report by SEPA.

Levels of NO_2 recorded at 17 locations were below the highly ambitious World Health Organisation guideline values, viewed as a long-term ambition for Glasgow City Council.

No hourly mean levels of NO_2 above 200ug/m^3 were recorded at any of the monitoring stations in 2024, continuing the long-term trend of compliance with this objective.

Levels of PM_{10} recorded across the city in 2024 were satisfactory with both the daily mean and annual mean objectives being met at all monitoring locations. This continued the trend of compliance in respect of this pollutant which has been observed for several years. It should be noted that the Scottish objective for this pollutant is set at just under half that of the UK and EU limits. Levels of PM_{10} recorded at most stations in 2024 were also below the guideline values set by the World Health Organisation.

The $PM_{2.5}$ annual mean objective of 10µg/m^3 was not exceeded at any monitoring location in Glasgow during 2024.

7.2 Conclusions relating to New Local Developments

Ongoing remedial work on the Woodside Viaduct part of the M8 motorway, expected to continue through until 2026, has the potential to increase road traffic emissions through the use of periodic diversions. Whilst not expected to lead to new exceedances of the air

quality objectives, monitoring will continue on applicable routes to verify this. There were no other new developments considered likely to affect air quality.

7.3 Proposed Actions

Following the formal introduction of phase 2 of the LEZ on 31 May 2022 and general enforcement beginning on 1st June 2023, Glasgow City Council will continue to work with partners in the Scottish Government, Transport Scotland and the Scottish Environment Protection Agency to implement and evaluate the operation and effectiveness of the LEZ. The monitoring results from 2024 in relation to the first full year of operation of the LEZ have been considered in this report and the further modelling assessments, undertaken by SEPA, will be published on the Glasgow LEZ website.

The 2024 Air Quality Action Plan has been officially adopted and the measures included considered within this report. The AQAP measures will be progressed with the aim of completing within the five year lifespan of the plan and revoking the City Centre AQMA, the last active AQMA in the city.

Glasgow City Council will continue to monitor levels of air pollution to ensure the compliance recorded in 2024 continues. Once confidence in this has been achieved, GCC will move to revoke the last remaining AQMA in the city.

The next Air Quality Progress Report will be produced and submitted in 2025.

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)
GLA4	Glasgow Kerbside	Kerbside	258708	665200	NO_2 PM_{10} $PM_{2.5}$	YES	City Centre AQMA	Chemiluminescent FIDAS	0	1	3
GLKP	Glasgow Townhead	Urban Background	259675	665900	NO2 PM10 PM2.5 O3	YES	City Centre AQMA	Chemiluminescent FIDAS UV Photometric	0	120	3
GGWR	Glasgow Great Western Road	Roadside	258007	666649	NO2	No	N/A	Chemiluminescent	0	5	2
GHSR	Glasgow High Street	Roadside	260013	665346	NO2 PM10 PM2.5	YES	City Centre AQMA	Chemiluminescent FIDAS	0	3	3
GLA5	Glasgow Anderston	Urban Background	257925	665487	NO2 PM10 PM2.5	No	N/A	Chemiluminescent FIDAS	0	40	3
GLA6	Glasgow Byres Road	Roadside	256526	666933	NO2 PM10 PM2.5	No	N/A	Chemiluminescent FIDAS	0	3	3

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)
GL9	Glasgow Dumbarton Road	Roadside	255030	666608	NO2 PM10 PM2.5	No	N/A	Chemiluminescent FIDAS	0	3	2
GL2	Glasgow Nithsdale Road	Roadside	257883	662673	NO2 PM10 PM2.5	No	N/A	Chemiluminescent FIDAS	0	3	2
GLA7	Glasgow Waulkmillglen Reservoir	Rural	252461	658154	NO2 PM10 PM2.5 O3	No	N/A	Chemiluminescent FIDAS UV Photometric	N/A	N/A	3
GL3	Glasgow Broomhill	Roadside	255030	667195	PM10 PM2.5	No	N/A	FIDAS	0	3	2
GL6	Glasgow Burgher Street	Roadside	262550	664164	NO2 PM10 PM2.5	No	N/A	Chemiluminescent FIDAS	0	3	2

Notes:

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

(2) N/A if not applicable.

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)
CC01	George Square	Urban Background	259296	665389	NO2	City Centre	N/A	30.0	No	3.0
CC02	Union Street	Roadside	258828	665204	NO2	City Centre	0.0	3.0	No	3.0
CC03	Bath Street	Roadside	258374	665826	NO2	City Centre	3.0	3.0	No	2.5
CC04	Glassford Street	Roadside	259361	665252	NO2	City Centre	0.0	3.0	No	2.5
CC05	Buchanan Street	Roadside	259055	665468	NO2	City Centre	0.0	3.0	No	2.5
CC06	Castle Street	Roadside	260068	665589	NO2	City Centre	0.0	3.0	No	2.5
CC07	Hope Street 3	Kerbside	258856	665940	NO2	City Centre	N/A	1.0	No	2.5
CC08	Montrose Street	Roadside	259536	665313	NO2	City Centre	0.0	3.0	No	2.5

Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube co-located with a Continuous Analyser?	Tube Height (m)
CC09	Cochrane Street	Roadside	259430	665316	NO2	City Centre	0.0	3.0	No	2.5
CC10	Renfield Street	Roadside	258896	665637	NO2	City Centre	0.0	3.0	No	2.5
CC11	George Street	Kerbside	259551	665380	NO2	City Centre	N/A	1.0	No	2.5
CC12	North Street	Roadside	257906	665675	NO2	City Centre	N/A	3.0	No	2.5
CC13	Hope Street 1	Roadside	258730	665322	NO2	City Centre	0.0	3.0	No	3.0
CC14	Gordon Street	Roadside	258756	665346	NO2	City Centre	N/A	3.0	No	3.0
CC15	Heilanmans Umbrella North	Roadside	258770	665120	NO2	City Centre	0.0	3.0	No	3.0
CC16	Saltmarket	Roadside	259545	664739	NO2	City Centre	0.0	3.0	No	2.5

Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube co-located with a Continuous Analyser?	Tube Height (m)
CC17	High Street	Roadside	259732	664991	NO2	City Centre	0.0	3.0	No	2.5
CC18	Dobbies Loan	Urban Background	259415	666194	NO2	City Centre	0.0	3.0	No	2.5
CC20	Dundasvale Street	Urban Background	258820	666306	NO2	City Centre	0.0	15.0	No	2.5
CC21	Royston Road	Roadside	260429	666264	NO2	No	5.0	3.0	No	2.5
CC22	St Mungo Avenue	Urban Background	259392	665866	NO2	City Centre	0.0	5.0	No	2.5
CC23	Brown Street	Roadside	258336	665122	NO2	City Centre	0.0	3.0	No	2.5
CC24	Broomielaw	Roadside	258562	664933	NO2	City Centre	N/A	3.0	No	2.5
CC25	McLeod Street	Urban Background	260077	665481	NO2	City Centre	0.0	8.0	No	2.5

Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube co-located with a Continuous Analyser?	Tube Height (m)
CC26	Sauchiehall Street	Urban Background	258639	665852	NO2	City Centre	N/A	N/A	No	3.0
CC28	St Mungo's PS	Roadside	259983	665834	NO2	City Centre	10.0	1.0	No	2.5
CC29	Garnetbank PS	Roadside	258240	666033	NO2	City Centre	5.0	1.0	No	2.5
GE01	Westmuir Street	Roadside	262589	664139	NO2	No	0.0	3.0	No	2.5
GE02	Hillcrest Road	Roadside	265075	662001	NO2	No	5.0	3.0	No	2.5
GE03	Main Street (Bridgeton)	Roadside	260650	663319	NO2	No	0.0	5.0	No	2.5
GE04	Westercraigs	Urban Background	260942	665226	NO2	No	0.0	15.0	No	2.5
GE06	Sacone SW	Urban Background	263920	664569	NO2	No	0.0	15.0	No	2.5

Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube co-located with a Continuous Analyser?	Tube Height (m)
GE07	Easterhouse	Roadside	267005	666217	NO2	No	0.0	5.0	No	2.5
GE10	Tollcross Park	Roadside	263864	663544	NO2	No	0.0	3.0	No	2.5
GE14	St Michaels Lane	Roadside	262472	664214	NO2	No	0.0	3.0	No	2.5
GE16	Ellismuir Road	Roadside	268413	663872	NO2	No	9.0	1.0	No	2.5
GE17	Carmyle Avenue	Roadside	264792	662418	NO2	No	0.0	7.0	No	2.5
GE18	Barrowfield Street	Roadside	261705	663993	NO2	No	3.0	1.0	No	2.5
GE19	Dalmarnock Station	Roadside	261013	663169	NO2	No	N/A	1.0	No	2.5
GN01	Springburn Road	Roadside	260541	669268	NO2	No	0.0	6.0	No	2.5

Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube co-located with a Continuous Analyser?	Tube Height (m)
GN02	Kippen Street	Urban Background	259731	668488	NO2	No	5.0	3.0	No	2.5
GN03	Ryeside Road	Roadside	261778	668122	NO2	No	10.0	1.0	No	2.5
GS02	Bridge Street	Roadside	258702	664480	NO2	No	3.0	3.0	No	2.5
GS04	Haggs Road	Roadside	256295	661792	NO2	No	0.0	3.0	No	2.5
GS06	Oxford Street	Roadside	258798	664570	NO2	No	0.0	3.0	No	2.5
GS07	Dougrie Road	Roadside	260203	659128	NO2	No	N/A	3.0	No	2.5
GS08	Aikenhead Road	Roadside	259225	662579	NO2	No	0.0	6.0	No	2.5
GS09	Langside Primary School	Roadside	257138	661617	NO2	No	5.0	3.0	No	3.0

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)
GS10	Paisley Road West	Roadside	255599	664313	NO2	No	0.0	3.0	No	2.5
GS11	Sutherland Avenue	Urban Background	256343	663153	NO2	No	10.0	5.0	No	2.5
GS12	Mallaig Place	Urban Background	253989	665298	NO2	No	20.0	6.0	No	2.5
GS13	Govanhill Street	Roadside	258678	662901	NO2	No	3.0	3.0	No	3.0
GS14	Invergarrie Road	Urban Background	253821	658590	NO2	No	5.0	3.0	No	2.5
GS16	Silverburn	Roadside	253047	661349	NO2	No	0.0	5.0	No	2.5
GS18	Paisley Rd West 2	Roadside	257415	664616	NO2	No	0.0	3.0	No	2.5
GS19	Hampden	Urban Background	259038	661285	NO2	No	0.0	3.0	No	2.5

Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube co-located with a Continuous Analyser?	Tube Height (m)
GS20	45 Clifford Street	Roadside	256262	664308	NO2	No	0.0	3.0	No	2.5
GS21	608 Scotland Street West	Roadside	256948	664270	NO2	No	0.0	1.0	No	2.5
GS22	17 Kilbride Street	Roadside	259732	663032	NO2	No	0.0	3.0	No	2.5
GS23	2 Myrtle Drive	Roadside	259246	661979	NO2	No	0.0	3.0	No	2.5
GS24	183 Crossloan Road	Roadside	254724	665407	NO2	No	0.0	3.0	No	2.5
GS25	234 Berryknowes Road	Urban Background	253542	664443	NO2	No	0.0	15.0	No	2.5
GS27	Battlefield Road	Roadside	258084	661642	NO2	No	0.0	3.0	No	2.5
GS28	128 Mennock Road	Roadside	259871	660618	NO2	No	0.0	3.0	No	2.5

Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube co-located with a Continuous Analyser?	Tube Height (m)
GS30	Govan Road	Roadside	254021	665943	NO2	No	0.0	2.0	No	3.0
GS31	Govan Road (Hospital)	Roadside	253865	666006	NO2	No	2.0	2.0	No	2.5
GS34	1220 Govan Road	Roadside	254372	665902	NO2	No	0.0	2.0	No	3.0
GS35	Shieldhall Road	Roadside	253554	665176	NO2	No	0.0	3.0	No	2.5
GS36	Wallace Street	Roadside	258108	664514	NO2	No	0.0	3.0	No	2.5
GS37	Dumbreck Road	Roadside	255477	663644	NO2	No	7.0	1.0	No	2.5
GS45	Ben Glas Place	Urban Background	253609	659958	NO2	No	5.0	1.0	No	2.5
GS46	Kirriemuir Avenue	Roadside	253471	663587	NO2	No	20.0	1.0	No	2.5

Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube co-located with a Continuous Analyser?	Tube Height (m)
GS47	1214 Paisley Road West	Roadside	254818	664109	NO2	No	10.0	1.0	No	2.5
GW01	Dumbarton Road	Roadside	256209	666525	NO2	No	3.0	3.0	No	2.5
GW02	Lawrence Street	Roadside	256295	666816	NO2	No	5.0	2.0	No	3.0
GW04	Finnieston Street	Roadside	257235	665108	NO2	No	N/A	3.0	No	2.5
GW06	Napiershall Street	Roadside	257790	666791	NO2	No	0.0	4.0	No	2.5
GW07	Queen Margaret Drive 2	Roadside	257216	667639	NO2	No	0.0	3.0	No	3.0
GW08	Queen Margaret Drive 3	Roadside	257012	667433	NO2	No	0.0	3.0	No	3.0
GW09	Anniesland Cross	Roadside	254613	668886	NO2	No	0.0	15.0	No	2.5

Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube co-located with a Continuous Analyser?	Tube Height (m)
GW10	Balshagray Avenue	Roadside	254498	667291	NO2	No	0.0	10.0	No	2.5
GW11	Thornwood Drive	Roadside	254903	666855	NO2	No	0.0	3.0	No	2.5
GW12	Belmont Street	Roadside	257533	667418	NO2	No	N/A	3.0	No	2.5
GW13	Glasgow Harbour	Urban Background	255287	666276	NO2	No	0.0	30.0	No	3.0
GW14	Crow Road	Roadside	254640	668203	NO2	no	0.0	3.0	No	2.5
GW15	Hyndland Road	Roadside	255764	667297	NO2	No	0.0	4.0	No	2.5
GW16	Park Road	Roadside	257555	666896	NO2	No	0.0	3.0	No	2.5
GW18	Maryhill Road	Roadside	257243	668285	NO2	No	0.0	3.0	No	3.0

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)
GW19	Scotstoun	Urban Background	253592	667771	NO2	No	0.0	10.0	No	2.5
GW21	Milner Road	Roadside	254456	668108	NO2	No	0.0	3.0	No	2.5
GW22	Gibson Street	Roadside	257166	666787	NO2	No	0.0	2.0	No	2.5
GW26	Great Western Road	Roadside	257255	667112	NO2	No	0.0	3.0	No	2.5
GW30	South Street	Roadside	253193	667219	NO2	No	0.0	2.0	No	2.5
GW33	Great George Street	Roadside	256663	667100	NO2	No	0.0	3.0	No	2.5
GW34	Blairdardie Road	Roadside	253080	670199	NO2	No	8.0	1.0	No	2.5
GW35	Cadder Road	Roadside	257373	669164	NO2	No	10.0	1.0	No	2.5

Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube co-located with a Continuous Analyser?	Tube Height (m)
GW36	New City Road	Urban Background	258309	666457	NO2	No	N/A	1.0	No	2.5
GW37	676 Dumbarton Road	Roadside	254946	666612	NO2	No	0.0	1.0	No	2.5
GW39	Primrose Court	Roadside	252993	667615	NO2	No	0.0	13.0	No	2.5
GW40	Harland Street	Roadside	253139	667333	NO2	No	2.0	3.0	No	2.5
GW41	Partick Bus Station	Roadside	255692	667338	NO2	No	0.0	2.0	No	2.5
GS48	180 Prospecthill Rd	Roadside	258547	661714	NO2	No	0.0	2.0	No	2.5
GS49	92 Calder St	Roadside	258320	662824	NO2	No	0.0	3.0	No	2.5
GS50	186 Rosshall Academy	Roadside	252065	663544	NO2	No	0.0	2.0	No	2.5

Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube co-located with a Continuous Analyser?	Tube Height (m)
GE20	375 Cumbernauld Rd	Roadside	262110	665472	NO2	No	0.0	2.0	No	2.5
GW42	158 Curle St	Roadside	253804	666897	NO2	No	0.0	2.0	No	2.5
GS51	Mount Florida Primary	Urban Background	258709	661317	NO2	No	0.0	10.0	No	2.5
GS52	Glendale Primary	Roadside	257822	663713	NO2	No	10.0	3.0	No	2.5
GE22	989 Cumbernauld Rd	Roadside	263145	666346	NO2	No	0.0	5.0	No	2.5
GE23	6 Maxwelton Rd	Roadside	263439	666750	NO2	No	0.0	12.0	No	2.5
GS53	Devon St	Roadside	258589	663776	NO2	No	0.0	8.0	No	2.5
CL1, CL2, CL3	Hope St AUN 3	Kerbside	258708	665200	NO2	City Centre	1.0	3.5	Yes	3.0

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)
CL4, CL5, CL6	Byres Rd AUN 3	Roadside	256526	666933	NO2	No	25.0	2.0	Yes	3.0
CL7, CL8, CL9	Townhead AUN 3	Urban Background	259675	665900	NO2	City Centre	7.0	40.0	Yes	3.0
CL10, CL11, CL12	High St AUN 3	Roadside	260013	665346	NO2	City Centre	8.0	6.0	Yes	3.0
CL13, CL14,CL15	GWR AUN 3	Roadside	258007	666649	NO2	No	10.0	8.0	Yes	2.0
GW43	Church St	Roadside	256351	666538	NO2	No	0.0	2.5	No	2.5
GS54	Peat Rd	Roadside	252751	660818	NO2	No	0.0	2.5	No	2.5
GS55	Cuthbertson PS	Roadside	258260	663025	NO2	No	0.0	3.0	No	3.0
GE24	375 Cumbernauld Rd	Roadside	262110	665472	NO2	No	0.0	3.0	No	3.0

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)
GS03	St Andrews Dr	Urban Background	256229	662587	NO2	No	0.0	2.0	No	2.0

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: Automatic Monitoring (µg/m^3)

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2024 (%) (2)	2020	2021	2022	2023	2024
GLA4	258708	665200	Kerbside	95.8	95.8	36.0	**45.1**	39.1	39.0	36.3
GLKP	259675	665900	Urban Background	97.9	97.9	17.1	18.0	16.8	15.6	14.5
GGWR	258007	666649	Roadside	98.7	98.7	19.4	21.6	19.8	18.2	17.9
GHSR	260013	665346	Roadside	99.5	99.5	21.1	23.2	20.9	18.4	17.1
GLA5	257925	665487	Urban Background	60.4	60.4	19.5	21.2	21.6	20.5	19.8
GLA6	256526	666933	Roadside	78.5	78.5	22.7	25.7	25.3	21.4	19.3
GL9	255030	666608	Roadside	98.9	98.9	25.2	29.1	24.4	20.2	20.1
GL2	257883	662673	Roadside	46.5	46.5	28.7	24.0	22.1	21.2	20.3
GLA7	252461	658154	Rural	70.0	70.0	5.3	7.5	10.8	7.0	5.9
GL6	262550	664164	Roadside	97.3	97.3	14.7	-	-	16.7	15.0

Notes:

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

NO_2 annual means exceeding 60 µg/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.TG22 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 – Annual Mean NO_2 Monitoring Results: Non-Automatic Monitoring (µg/m^3)

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2024 (%) (2)	2020	2021	2022	2023	2024
CC01	259296	665389	Urban Background	100.0	100.0	19.4	25.0	29.9	22.6	19.2
CC02	258828	665204	Roadside	92.5	92.5	25.8	37.5	38.4	31.4	24.3
CC03	258374	665826	Roadside	75.0	75.0	23.3	31.7	36.2	29.7	21.9
CC04	259361	665252	Roadside	90.6	90.6	24.9	28.6	34.3	30.7	23.0
CC05	259055	665468	Roadside	75.0	75.0	23.9	25.9	32.7	26.5	19.2
CC06	260068	665589	Roadside	100.0	90.6	20.1	24.3	27.5	22.2	16.0
CC07	258856	665940	Kerbside	75.0	75.0	23.4	35.2	**40.4**	35.1	29.3
CC08	259536	665313	Roadside	100.0	100.0	19.1	22.3	27.0	20.3	17.9
CC09	259430	665316	Roadside	90.6	83.0	21.9	28.6	29.9	22.9	20.8
CC10	258896	665637	Roadside	56.6	56.6	28.2	33.1	38.6	30.3	25.0
CC11	259551	665380	Kerbside	100.0	100.0	18.1	24.6	29.7	24.7	18.3

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) [1]	Valid Data Capture 2024 (%) [2]	2020	2021	2022	2023	2024
CC12	257906	665675	Roadside	92.5	92.5	20.6	19.3	22.8	19.8	16.5
CC13	258730	665322	Roadside	83.0	83.0	**40.3**	**43.5**	**44.9**	39.0	29.2
CC14	258756	665346	Roadside	100.0	100.0	36.3	**40.2**	**50.0**	**42.1**	29.8
CC15	258770	665120	Roadside	100.0	100.0	26.9	35.6	**42.3**	**40.9**	25.2
CC16	259545	664739	Roadside	100.0	100.0	23.0	26.2	31.8	21.2	16.5
CC17	259732	664991	Roadside	90.6	90.6	25.9	25.3	34.8	25.7	20.2
CC18	259415	666194	Urban Background	100.0	100.0	18.7	21.8	23.6	17.9	16.4
CC20	258820	666306	Urban Background	100.0	100.0	20.6	24.0	24.5	20.6	17.0
CC21	260429	666264	Roadside	92.5	92.5	21.4	23.8	28.8	21.5	18.9
CC22	259392	665866	Urban Background	100.0	100.0	19.9	21.0	23.7	19.6	14.8
CC23	258336	665122	Roadside	90.6	90.6	16.7	19.3	21.0	15.7	11.4

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) [1]	Valid Data Capture 2024 (%) [2]	2020	2021	2022	2023	2024
CC24	258562	664933	Roadside	100.0	92.5	22.5	31.8	36.2	26.7	25.6
CC25	260077	665481	Urban Background	100.0	100.0	22.2	22.1	29.3	20.7	15.8
CC26	258639	665852	Urban Background	75.0	75.0	21.2	23.8	28.5	23.4	25.9
CC28	259983	665834	Roadside	100.0	100.0	18.6	14.7	19.2	14.6	15.7
CC29	258240	666033	Roadside	100.0	100.0	21.3	21.6	23.1	18.2	18.8
GE01	262589	664139	Roadside	100.0	100.0	22.9	27.6	30.6	24.8	15.6
GE02	265075	662001	Roadside	90.6	90.6	13.1	12.7	13.8	12.2	9.8
GE03	260650	663319	Roadside	100.0	100.0	13.3	16.0	19.7	15.6	13.3
GE04	260942	665226	Urban Background	100.0	100.0	19.7	18.0	16.3	11.6	10.1
GE06	263920	664569	Urban Background	100.0	100.0	14.1	15.1	15.6	11.9	9.0
GE07	267005	666217	Roadside	100.0	100.0	11.7	11.9	13.3	10.8	7.1

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) [1]	Valid Data Capture 2024 (%) [2]	2020	2021	2022	2023	2024
GE10	263864	663544	Roadside	83.0	83.0	14.0	11.2	12.1	11.0	11.6
GE14	262472	664214	Roadside	100.0	100.0	28.9	27.4	21.0	20.2	20.8
GE16	268413	663872	Roadside	90.6	90.6	13.2	13.0	12.4	10.4	10.1
GE17	264792	662418	Roadside	92.5	92.5	19.1	19.3	20.2	18.6	19.9
GE18	261705	663993	Roadside	83.0	83.0	12.5	14.7	15.5	9.8	11.8
GE19	261013	663169	Roadside	100.0	100.0	12.8	14.2	12.2	12.7	12.7
GN01	260541	669268	Roadside	100.0	100.0	15.6	15.3	17.2	15.1	11.6
GN02	259731	668488	Urban Background	100.0	100.0	15.3	12.5	16.5	13.7	11.2
GN03	261778	668122	Roadside	100.0	100.0	14.7	13.7	13.4	9.7	8.8
GS02	258702	664480	Roadside	100.0	100.0	26.7	28.0	31.6	26.9	21.1
GS04	256295	661792	Roadside	100.0	92.5	18.3	19.5	21.0	18.3	15.6

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) [1]	Valid Data Capture 2024 (%) [2]	2020	2021	2022	2023	2024
GS06	258798	664570	Roadside	75.0	75.0	18.8	20.7	23.9	19.5	17.8
GS07	260203	659128	Roadside	92.5	92.5	13.8	15.1	13.7	11.8	10.7
GS08	259225	662579	Roadside	100.0	100.0	16.2	20.9	22.6	17.8	16.9
GS09	257138	661617	Roadside	100.0	100.0	12.5	11.5	14.1	11.6	9.6
GS10	255599	664313	Roadside	100.0	100.0	20.6	21.0	23.3	18.5	15.3
GS11	256343	663153	Urban Background	90.6	90.6	10.2	11.5	11.3	9.0	8.3
GS12	253989	665298	Urban Background	90.6	90.6	13.9	14.2	14.2	12.9	11.1
GS13	258678	662901	Roadside	25.0	25.0	17.6	21.5	22.8	16.5	17.7
GS14	253821	658590	Urban Background	100.0	100.0	11.9	9.8	11.7	9.2	7.3
GS16	253047	661349	Roadside	100.0	100.0	11.8	14.0	12.2	10.3	8.5
GS18	257415	664616	Roadside	92.5	92.5	22.9	22.4	17.9	16.9	17.7

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) [1]	Valid Data Capture 2024 (%) [2]	2020	2021	2022	2023	2024
GS19	259038	661285	Urban Background	92.5	92.5	11.5	9.6	8.3	8.2	8.0
GS20	256262	664308	Roadside	100.0	100.0	19.0	18.9	18.7	20.0	17.8
GS21	256948	664270	Roadside	100.0	100.0	18.7	19.2	19.1	15.8	16.9
GS22	259732	663032	Roadside	100.0	100.0	12.8	15.1	15.5	13.6	14.1
GS23	259246	661979	Roadside	100.0	100.0	12.1	9.7	11.5	12.2	9.8
GS24	254724	665407	Roadside	100.0	100.0	15.9	14.4	13.2	13.0	13.6
GS25	253542	664443	Urban Background	90.6	90.6	15.1	12.6	13.7	13.6	12.0
GS27	258084	661642	Roadside	100.0	100.0	17.2	18.9	17.1	15.7	14.9
GS28	259871	660618	Roadside	90.6	90.6	13.2	12.8	11.8	10.6	9.6
GS30	254021	665943	Roadside	92.5	92.5	21.0	18.7	19.0	14.8	17.9
GS31	253865	666006	Roadside	90.6	90.6	21.6	23.4	21.1	18.8	18.1

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) [1]	Valid Data Capture 2024 (%) [2]	2020	2021	2022	2023	2024
GS34	254372	665902	Roadside	100.0	100.0	16.7	14.9	15.8	13.9	15.9
GS35	253554	665176	Roadside	92.5	92.5	14.1	14.4	12.8	12.7	14.4
GS36	258108	664514	Roadside	90.6	90.6	21.4	24.3	25.9	22.8	24.8
GS37	255477	663644	Roadside	100.0	100.0	16.2	15.5	15.6	14.4	15.4
GS45	253609	659958	Urban Background	100.0	100.0	10.2	11.2	8.8	8.4	8.3
GS46	253471	663587	Roadside	90.6	90.6	9.6	9.5	9.2	8.7	10.0
GS47	254818	664109	Roadside	92.5	92.5	18.4	15.4	15.6	13.9	14.6
GW01	256209	666525	Roadside	100.0	100.0	24.2	22.2	25.1	20.9	14.5
GW02	256295	666816	Roadside	92.5	92.5	16.9	17.8	19.8	15.9	12.4
GW04	257235	665108	Roadside	100.0	100.0	16.9	23.1	22.3	22.2	18.3
GW06	257790	666791	Roadside	100.0	100.0	19.9	19.8	22.9	21.4	18.3

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) [1]	Valid Data Capture 2024 (%) [2]	2020	2021	2022	2023	2024
GW07	257216	667639	Roadside	100.0	100.0	21.7	23.8	26.3	21.0	15.6
GW08	257012	667433	Roadside	100.0	100.0	21.1	24.7	29.8	22.7	19.0
GW09	254613	668886	Roadside	100.0	100.0	16.6	22.4	21.3	16.8	14.0
GW10	254498	667291	Roadside	100.0	100.0	18.5	19.9	23.5	18.8	14.5
GW11	254903	666855	Roadside	100.0	100.0	12.9	13.2	16.6	12.1	10.4
GW12	257533	667418	Roadside	81.1	81.1	15.7	14.1	16.8	12.4	11.1
GW13	255287	666276	Urban Background	100.0	100.0	16.4	16.9	21.4	16.4	12.9
GW14	254640	668203	Roadside	100.0	100.0	21.2	20.9	21.8	19.6	18.1
GW15	255764	667297	Roadside	100.0	100.0	15.6	14.8	15.7	13.3	13.1
GW16	257555	666896	Roadside	100.0	100.0	19.2	19.3	17.7	16.1	16.0
GW18	257243	668285	Roadside	100.0	100.0	19.4	19.9	21.7	16.9	13.9

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) [1]	Valid Data Capture 2024 (%) [2]	2020	2021	2022	2023	2024
GW19	253592	667771	Urban Background	100.0	100.0	14.0	11.2	13.6	12.0	12.4
GW21	254456	668108	Roadside	100.0	100.0	12.4	10.4	10.3	9.3	9.7
GW22	257166	666787	Roadside	100.0	100.0	16.2	17.0	19.9	15.5	14.8
GW26	257255	667112	Roadside	100.0	100.0	18.4	15.9	18.4	18.3	17.8
GW30	253193	667219	Roadside	100.0	100.0	16.0	18.1	17.7	15.3	15.1
GW33	256663	667100	Roadside	100.0	100.0	20.2	17.0	13.8	13.7	15.3
GW34	253080	670199	Roadside	100.0	100.0	11.7	9.7	9.9	8.1	9.5
GW35	257373	669164	Roadside	92.5	92.5	14.1	11.9	14.3	11.3	12.5
GW36	258309	666457	Urban Background	100.0	100.0	23.4	22.8	21.0	15.1	14.7
GW37	254946	666612	Roadside	100.0	100.0	31.2	32.0	28.2	27.6	24.1
GW39	252993	667615	Roadside	100.0	100.0	16.4	21.3	22.7	15.4	16.2

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) [1]	Valid Data Capture 2024 (%) [2]	2020	2021	2022	2023	2024
GW40	253139	667333	Roadside	100.0	100.0	14.9	14.8	17.7	13.8	14.7
GW41	255692	667338	Roadside	100.0	100.0	16.1	16.5	18.6	15.7	14.2
GS48	258547	661714	Roadside	100.0	100.0		27.5	26.8	17.6	19.7
GS49	258320	662824	Roadside	81.1	81.1		31.8	26.9	21.8	19.3
GS50	252065	663544	Roadside	100.0	100.0		22.9	19.1	14.3	15.2
GE20	262110	665472	Roadside	100.0	100.0			21.7	14.9	12.4
GW42	253804	666897	Roadside	100.0	100.0			16.8	13.7	10.9
GS51	258709	661317	Urban Background	100.0	100.0			14.9	10.6	9.8
GS52	257822	663713	Roadside	90.6	90.6			21.0	14.4	10.9
GE22	263145	666346	Roadside	100.0	100.0				12.1	10.5
GE23	263439	666750	Roadside	100.0	100.0				13.8	11.8

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) [1]	Valid Data Capture 2024 (%) [2]	2020	2021	2022	2023	2024
GS53	258589	663776	Roadside	100.0	100.0				18.4	19.9
CL1, CL2, CL3	258708	665200	Kerbside	100.0	100.0				41.2	29.1
CL4, CL5, CL6	256526	666933	Roadside	100.0	100.0				25.9	19.8
CL7, CL8, CL9	259675	665900	Urban Background	100.0	100.0				13.6	13.3
CL10, CL11, CL12	260013	665346	Roadside	100.0	100.0				15.7	16.6
CL13, CL14	258007	666649	Roadside	75.0	75.0				15.4	17.5
CL15	258007	666649	Roadside	83.0	83.0				15.4	18.3
GW43	256351	666538	Roadside	100.0	100.0					16.6
GS54	252751	660818	Roadside	100.0	100.0					9.2
GS55	258260	663025	Roadside	67.9	67.9					11.8
GE24	262110	665472	Roadside	100.0	100.0					12.4

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2024 (%) (2)	2020	2021	2022	2023	2024
GS03	256229	662587	Urban Background	100.0	100.0					11.1

☒ **Annualisation has been conducted where data capture is <75% and >25% in line with LAQM.TG22**

☒ **Diffusion tube data has been bias adjusted**

☒ **Reported concentrations are those at the location of the monitoring site (bias adjusted and annualised, as required), i.e. prior to any fall-off with distance correction**

Notes:

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

NO_2 annual means exceeding 60 µg/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.

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

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

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2024 (%) (2)	2020	2021	2022	2023	2024
GLA4	258708	665200	Kerbside	95.8	95.8	0	0	0	0(105)	0
GLKP	259675	665900	Urban Background	97.9	97.9	0	0	0	0	0
GGWR	258007	666649	Roadside	98.7	98.7	0	0	0	0	0
GHSR	260013	665346	Roadside	99.5	99.5	0	0	0	0	0
GLA5	257925	665487	Urban Background	60.4	60.4	0	0 (82)	0	0	0 (82)
GLA6	256526	666933	Roadside	78.5	78.5	0	0	0	0	0 (76)
GL9	255030	666608	Roadside	98.9	98.9	0	0	0	0	0
GL2	257883	662673	Roadside	46.5	46.5	0	-	0	0	0 (68)
GLA7	252461	658154	Rural	70.0	70.0	0	0	0	0 (56)	0 (42)
GL6	262550	664164	Roadside	97.3	97.3	0	-	-	0 (79)	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.6 – Annual Mean PM_{10} Monitoring Results (µg/m^3)

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2024 (%) (2)	2020	2021	2022	2023	2024
GLA4	258708	665200	Kerbside	67	67	11.4	12.3	12.5	12.0	12.8
GLKP	259675	665900	Urban Background	100	100	8.8	9.2	10.3	9.0	9.3
GHSR	260013	665346	Roadside	100	100	9.3	10.3	10.9	9.6	10.0
GLA5	257925	665487	Urban Background	100	100	9.0	10.5	12.0	10.4	11.3
GLA6	256526	666933	Roadside	34	34	10.8	11.2	11.4	10.8	10.0
GL9	255030	666608	Roadside	21	21	10.2	12.0	12.9	11.5	10.3
GL2	257883	662673	Roadside	100	100	10.2	9.1	10.9	11.0	10.7
GLA7	252461	658154	Rural	99	99	6.9	7.0	8.2	8.8	8.0
GL3	255030	667195	Broomhill	100	100	9.6	9.8	10.6	10.2	10.8
GL6	262550	664164	Roadside	93	83	11.0	-	-	10.0	9.3

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.

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

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2024 (%) (2)	2020	2021	2022	2023	2024
GLA4	258708	665200	Kerbside	67	67	0	0	2	0	0(30)
GLKP	259675	665900	Urban Background	100	100	0	0	2	0	0
GHSR	260013	665346	Roadside	100	100	0	0	1	0	0
GLA5	257925	665487	Urban Background	100	100	0 (24)	0	2	0	0
GLA6	256526	666933	Roadside	34	34	0	0	2(40)	0(23)	0(26)
GL9	255030	666608	Roadside	21	21	0	0(27)	2(45)	0	0(19)
GL2	257883	662673	Roadside	100	100	-	0	0	0	0
GLA7	252461	658154	Rural	99	99	0	0	0	0	0
GL3	255030	667195	Broomhill	100	100	0	0	1	0	0
GL6	262550	664164	Roadside	83	83	-	-	-	0(18)	0(27)

Notes:

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

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

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

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

Table A.8 – Annual Mean $PM_{2.5}$ Monitoring Results (µg/m^3)

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2024 (%) (2)	2020	2021	2022	2023	2024
GLA4	258708	665200	Kerbside	68	68	5.9	6.9	6.7	6.5	7.2
GLKP	259675	665900	Urban Background	100	100	5.0	5.2	5.7	4.5	5.3
GHSR	260013	665346	Roadside	100	100	4.9	5.5	5.9	5.1	5.7
GLA5	257925	665487	Urban Background	100	100	5.1	5.8	6.6	5.8	6.4
GLA6	256526	666933	Roadside	34	34	6.1	6.0	6.4	6.0	5.9
GL9	255030	666608	Roadside	21	21	5.4	5.7	6.5	5.5	5.4
GL2	257883	662673	Roadside	100	100	7.2	5.3	6.3	6.2	6.4
GLA7	252461	658154	Rural	100	100	4.1	4.3	4.8	4.7	5.0
GL3	255030	667195	Broomhill	100	100	5.4	5.5	6.0	5.8	6.4
GL6	262550	664164	Roadside	89	89	-	-	-	5.7	5.5

Notes:

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

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

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

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

Appendix B: Full Monthly Diffusion Tube Results for 2024

Table B.1 – NO_2 2024 Monthly Diffusion Tube Results (µg/m^3)

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	NO_2 Mean Concentrations (µg/m^3)												Simple Annual Mean (µg/m^3)			Comment
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Raw Data	Bias Adjusted (1.05) and Annualised	Distance Corrected to Nearest Exposure	
CC01	259296	665389	23.6	15.2	20.5	10.2	10.7	10.6	15.9	16.3	20.4	25.4	32.1	19.0	18.3	19.2		
CC02	258828	665204		16.1	21.3	15.7	14.4	16.6	28.3	17.9	24.3	35.0	29.1	36.9	23.2	24.3		
CC03	258374	665826	27.6				14.2	13.8	17.9	17.6	14.2	26.6	34.9	21.4	20.9	21.9		
CC04	259361	665252	15.3	19.2	29.6	15.9	11.8	14.6	24.7		16.2	31.3	32.9	30.5	22.0	23.0		
CC05	259055	665468	27.9			13.4	10.7	12.5	15.5	13.4	26.1	23.7	21.8		18.3	19.2		
CC06	260068	665589	17.4	15.3	15.9	8.8		10.3	14.5	11.9	16.9	18.7	14.8	23.3	15.3	16.0		
CC07	258856	665940	35.4		23.3	20.6	15.3	15.4		21.6	31.1	42.2	47.0		28.0	29.3		
CC08	259536	665313	21.3	14.1	15.4	9.4	9.6	8.5	15.1	15.0	20.4	23.6	29.5	23.4	17.1	17.9		
CC09	259430	665316	23.4	18.4	17.2	14.8	18.8		15.9	18.3	15.2		34.0	23.2	19.9	20.8		
CC10	258896	665637	30.2			15.6	14.8		26.7		31.1		40.4	24.8	26.2	25.0		
CC11	259551	665380	23.8	19.8	14.3	18.4	5.7	15.0	18.6	13.3	8.8	21.7	31.1	19.9	17.5	18.3		
CC12	257906	665675	20.6	15.3		9.2	13.5	9.5	14.9	10.1	13.2	24.8	26.7	16.0	15.8	16.5		

CC13	258730	665322	53.8	7.1	34.2	19.7	17.1	17.2		26.5	21.4	40.5	41.6		27.9	29.2		
CC14	258756	665346	27.7	22.6	28.5	16.5	19.8	19.8	33.4	26.7	35.8	42.5	39.3	28.8	28.5	29.8		
CC15	258770	665120	34.4	19.9	22.1	18.2	17.3	20.0	26.2	18.8	22.3	34.3	29.5	26.6	24.1	25.2		
CC16	259545	664739	22.4	14.4	15.2	9.7	10.3	5.0	14.1	11.9	12.3	23.0	31.7	18.8	15.7	16.5		
CC17	259732	664991	25.0	16.8	16.6	15.7		11.8	21.7	13.0	14.4	28.9	24.2	24.0	19.3	20.2		
CC18	259415	666194	29.3	16.1	10.2	8.4	10.0	12.2	16.1	19.2	9.6	23.1	12.2	21.2	15.6	16.4		
CC20	258820	666306	21.7	14.2	15.7	8.3	10.2	10.6	15.2	10.7	19.0	23.1	25.9	20.6	16.3	17.0		
CC21	260429	666264	20.6	16.1	10.1	8.2	12.9		17.2	16.8	14.5	24.6	38.8	19.0	18.1	18.9		
CC22	259392	665866	19.3	12.1	11.9	9.0	11.6	13.8	14.6	19.9	12.7	15.9	14.0	15.1	14.2	14.8		
CC23	258336	665122	11.9	11.6	11.6	6.9	13.2	10.4	10.4	6.4	10.2	16.6	10.9		10.9	11.4		
CC24	258562	664933	33.8	18.9	19.6	21.8	10.3	17.0	24.9	21.5		42.4	35.7	23.4	24.5	25.6		
CC25	260077	665481	24.3	13.9	14.0	10.3	9.0	9.9	13.2	15.4	4.0	18.6	24.1	24.5	15.1	15.8		
CC26	258639	665852	12.4	16.2	23.4	16.3			21.0		46.0	31.6	34.3	21.4	24.7	25.9		
CC28	259983	665834	23.4	18.3	16.6	12.0	11.6	9.4	9.9	12.5	15.0	11.6	18.4	21.0	15.0	15.7		
CC29	258240	666033	23.1	15.0	20.3	8.7	16.3	13.4	15.8	17.8	18.0	22.5	23.8	21.4	18.0	18.8		
GE01	262589	664139	26.2	13.1	14.3	11.6	10.3	10.7	20.1	10.8	15.0	22.5	10.4	13.9	14.9	15.6		
GE02	265075	662001	16.8	9.9	10.4	4.9	5.2	4.5	5.9		8.1	8.2	18.6	10.5	9.4	9.8		
GE03	260650	663319	16.8	12.2	10.8	6.3	8.7	7.9	10.4	10.2	13.2	16.8	25.4	13.5	12.7	13.3		

GE04	260942	665226	13.6	11.0	8.2	3.4	1.7	10.4	7.7	6.7	5.0	13.2	22.9	12.3	9.7	10.1		
GE06	263920	664569	18.6	8.1	7.6	5.0	5.9	6.3	7.3	6.9	4.9	11.9	6.5	14.6	8.6	9.0		
GE07	267005	666217	11.7	7.2	5.8	3.0	4.7	4.8	6.5	6.5	4.4	8.1	10.4	8.7	6.8	7.1		
GE10	263864	663544	17.9	11.0	11.3	6.4	9.7	6.1	7.5	6.8			23.2	11.2	11.1	11.6		
GE14	262472	664214	25.0	19.3	18.4	9.3	18.3	18.2	21.3	21.3	25.5	24.4	22.3	15.7	19.9	20.8		
GE16	268413	663872	19.4	7.1	9.9	6.1	8.0	7.7	7.3		12.4	11.1	2.1	14.6	9.6	10.1		
GE17	264792	662418	26.5	13.8	18.4	9.4	18.5		15.4	16.7	25.8	24.9	25.8	14.3	19.0	19.9		
GE18	261705	663993	18.6	13.3	10.6	5.3	8.0	6.4	7.8	8.2			20.7	14.0	11.3	11.8		
GE19	261013	663169	16.8	9.7	14.4	5.9	12.4	9.7	7.1	9.0	15.3	11.7	18.0	15.2	12.1	12.7		
GN01	260541	669268	15.2	9.5	9.1	6.2	9.3	7.5	9.4	8.5	14.7	15.1	14.1	14.1	11.1	11.6		
GN02	259731	668488	15.2	6.9	11.0	6.5	8.1	4.0	8.0	5.3	13.4	13.5	21.6	14.9	10.7	11.2		
GN03	261778	668122	11.9	8.7	7.1	3.8	6.7	5.7	8.5	7.5	11.3	8.4	8.4	13.4	8.5	8.8		
GS02	258702	664480	26.4	16.5	19.3	13.8	14.0	15.8	25.0	19.8	17.9	25.6	23.1	24.4	20.1	21.1		
GS04	256295	661792	21.3	14.9	17.4	8.9	9.7		4.9	9.5	12.5	19.0	25.3	20.9	14.9	15.6		
GS06	258798	664570			12.9	13.2	20.1	15.3	18.3	17.1		22.0	21.2	13.0	17.0	17.8		
GS07	260203	659128	12.7	5.8	8.9	6.2	11.9		9.5	8.0	6.1	12.2	19.6	11.6	10.2	10.7		
GS08	259225	662579	19.3	15.0	15.9	9.8	18.3	11.1	12.3	10.9	20.0	18.5	27.3	15.6	16.2	16.9		
GS09	257138	661617	14.7	9.4	7.4	4.4	8.8	3.3	4.5	6.5	10.2	11.7	17.4	11.7	9.2	9.6		

GS10	255599	664313	18.7	16.7	14.7	8.8	13.4	15.9	16.6	16.2	10.3	12.6	17.4	14.1	14.6	15.3		
GS11	256343	663153	13.5	7.8	7.5	4.1	1.9	2.3	5.8		5.9	9.9	15.5	13.6	8.0	8.3		
GS12	253989	665298	15.8	8.9	8.8	5.0	5.6	5.0	7.7		11.5	13.7	19.2	15.7	10.6	11.1		
GS13	258678	662901										19.0	30.9	17.8	22.6	17.7		
GS14	253821	658590	11.6	7.1	9.7	4.9	3.8	2.6	4.8	4.4	6.6	10.3	7.4	10.3	7.0	7.3		
GS16	253047	661349	10.9	9.2	10.2	6.5	9.4	4.0	5.7	8.0	8.0	10.2	3.7	11.3	8.1	8.5		
GS18	257415	664616	17.6	11.3	18.8	7.7	18.9	10.1		12.6	21.4	24.3	28.2	14.9	16.9	17.7		
GS19	259038	661285	12.2	7.4	8.6	5.0	6.2	4.4	5.9	4.9	7.1	11.1		11.3	7.6	8.0		
GS20	256262	664308	24.5	19.2	16.2	6.1	15.7	9.1	13.3	17.3	18.2	23.3	18.4	22.6	17.0	17.8		
GS21	256948	664270	20.0	14.8	14.1	10.3	15.3	15.6	15.2	19.6	18.7	21.2	13.6	15.6	16.2	16.9		
GS22	259732	663032	18.9	13.2	10.4	6.1	11.2	8.3	11.4	14.9	11.0	14.9	22.0	19.5	13.5	14.1		
GS23	259246	661979	16.0	6.6	10.4	7.8	9.4	4.4	8.9	7.6	10.3	9.3	10.2	12.0	9.4	9.8		
GS24	254724	665407	16.8	12.2	12.4	7.9	13.1	9.2	11.8	10.3	10.4	18.2	15.3	17.9	13.0	13.6		
GS25	253542	664443	12.3	10.6	14.7	7.3	14.2	6.9	10.8		12.4	9.4	11.3	16.5	11.5	12.0		
GS27	258084	661642	19.2	8.1	19.2	7.7	15.3	10.4	14.0	7.2	16.3	17.6	18.6	17.1	14.2	14.9		
GS28	259871	660618	14.2		2.4	5.7	10.7	5.6	7.6	6.5	9.0	11.1	13.8	14.6	9.2	9.6		
GS30	254021	665943	29.1	15.5	13.8	11.5	15.2		15.6	15.8	20.5	19.4	9.2	22.4	17.1	17.9		
GS31	253865	666006	27.5	18.4	16.9	11.7		18.7	14.6	19.0	19.4	14.1	18.8	11.1	17.3	18.1		

GS34	254372	665902	23.7	9.1	13.3	10.1	18.6	12.3	12.6	10.9	19.2	19.4	15.6	17.8	15.2	15.9		
GS35	253554	665176	19.1	11.1	12.2	7.4	15.6		9.5	10.0	14.5	17.6	16.2	17.8	13.7	14.4		
GS36	258108	664514	23.7	15.8	16.5	18.4	31.1	20.2	23.9	22.7	31.3	28.7	28.3		23.7	24.8		
GS37	255477	663644	17.8	15.1	15.7	9.1	18.1	10.8	11.4	13.4	19.0	16.9	12.4	16.5	14.7	15.4		
GS45	253609	659958	11.9	6.8	8.7	4.9	7.3	4.2	5.6	7.8	11.7	7.1	8.8	10.3	7.9	8.3		
GS46	253471	663587	14.7	8.5	9.3	5.2	8.3	5.3	5.3	8.1	10.7		16.3	13.4	9.6	10.0		
GS47	254818	664109	17.6	12.1	18.8	8.1	14.0	9.6	9.5	10.9		22.1	9.0	22.0	14.0	14.6		
GW01	256209	666525	17.6	12.8	18.2	9.4	8.0	11.0	13.6	11.8	10.9	18.7	24.3	10.5	13.9	14.5		
GW02	256295	666816	16.1	15.1	10.1	4.4	8.4		8.8	9.4	11.0	15.8	20.6	10.8	11.9	12.4		
GW04	257235	665108	22.1	15.9	20.4	8.0	1.6	25.0	15.0	13.9	23.9	25.4	25.9	12.8	17.5	18.3		
GW06	257790	666791	28.6	14.7	18.8	9.9	10.4	7.4	19.8	15.2	13.7	24.5	27.7	19.1	17.5	18.3		
GW07	257216	667639	19.3	16.9	14.2	8.4	10.1	14.4	13.1	14.9	18.0	18.4	18.7	12.0	14.9	15.6		
GW08	257012	667433	29.5	13.2	16.5	9.0	10.0	15.9	17.2	20.5	11.6	26.4	28.1	19.6	18.1	19.0		
GW09	254613	668886	18.7	14.5	7.6	6.2	8.6	4.1	11.0	13.2	12.8	17.5	21.2	25.1	13.4	14.0		
GW10	254498	667291	18.2	13.4	14.8	6.5	7.5	9.5	14.0	12.9	15.1	17.6	20.4	16.3	13.9	14.5		
GW11	254903	666855	16.1	10.0	9.1	3.6	8.0	6.0	10.4	9.2	9.0	10.4	16.0	11.6	10.0	10.4		
GW12	257533	667418	16.0		11.0	4.0	4.9	3.1	7.3		9.0	13.6	18.9	18.1	10.6	11.1		
GW13	255287	666276	10.3	11.2	11.6	6.4	11.7	9.2	9.2	11.6	12.8	18.0	22.7	13.3	12.3	12.9		

GW14	254640	668203	20.2	14.8	17.6	12.2	25.9	9.6	15.0	17.6	15.1	16.5	29.3	14.3	17.3	18.1		
GW15	255764	667297	24.1	12.1	14.7	6.3	13.5	8.4	10.2	10.1	9.1	17.1	13.9	11.3	12.6	13.1		
GW16	257555	666896	20.2	19.9	16.6	8.0	19.1	10.2	14.4	4.2	18.0	22.8	17.4	12.7	15.3	16.0		
GW18	257243	668285	19.2	12.3	13.2	8.6	12.8	10.9	14.4	12.3	8.8	13.1	16.1	17.6	13.3	13.9		
GW19	253592	667771	22.6	11.6	9.5	8.1	6.9	7.4	7.5	9.5	11.1	15.9	21.5	10.4	11.8	12.4		
GW21	254456	668108	12.4	10.3	7.6	4.6	7.5	3.0	7.1	9.2	5.1	12.6	20.7	11.5	9.3	9.7		
GW22	257166	666787	20.0	10.3	15.5	7.2	13.9	12.4	13.8	16.3	9.1	17.3	17.4	17.0	14.2	14.8		
GW26	257255	667112	22.3	20.3	17.5	9.6	21.2	14.5	17.9	10.5	13.4	17.4	22.4	16.7	17.0	17.8		
GW30	253193	667219	23.3	11.1	10.9	8.8	9.1	13.4	14.8	11.9	18.1	19.3	14.3	18.1	14.4	15.1		
GW33	256663	667100	24.3	12.5	10.5	5.8	15.1	10.4	12.0	13.0	17.7	16.8	18.6	18.7	14.6	15.3		
GW34	253080	670199	17.9	9.6	6.8	3.1	7.1	5.4	2.8	10.0	8.1	8.6	17.3	12.7	9.1	9.5		
GW35	257373	669164	16.1	10.9	11.8	6.8	10.1		7.4	11.2	12.2	11.0	18.3	15.5	11.9	12.5		
GW36	258309	666457	25.4	13.8	12.2	9.4	13.1	8.2	10.3	12.3	13.5	16.2	11.3	22.6	14.0	14.7		
GW37	254946	666612	35.8	19.4	17.9	10.8	17.0	23.0	23.3	25.5	27.4	32.2	24.3	20.1	23.1	24.1		
GW39	252993	667615	26.4	13.5	12.9	8.1	13.5	14.3	12.0	14.6	14.8	20.9	18.0	17.2	15.5	16.2		
GW40	253139	667333	20.2	15.1	11.1	8.6	11.0	8.1	15.1	15.5	13.9	14.7	14.7	20.7	14.1	14.7		
GW41	255692	667338	21.1	14.8	13.1	8.5	15.1	9.8	14.1	11.2	16.7	8.1	12.4	17.7	13.6	14.2		
GS48	258547	661714	26.0	19.1	18.6	12.1	19.6	12.4	15.7	16.2	22.3	23.5	18.9	21.6	18.8	19.7		

GS49	258320	662824	26.8	16.0	19.1	9.9	19.8	17.1	19.7	20.0	20.9		14.8		18.4	19.3		
GS50	252065	663544	16.6	4.2	16.4	7.4	8.3	1.7	28.9	12.9	14.3	26.8	15.9	21.2	14.6	15.2		
GE20	262110	665472	15.0	13.4	13.9	7.1	12.0	10.0	12.0	10.6	12.9	9.2	12.2	14.0	11.9	12.4		
GW42	253804	666897	23.2	10.9	11.4	3.7	1.6	5.0	8.4	11.5	13.1	9.2	15.3	11.8	10.4	10.9		
GS51	258709	661317	16.6	7.5	8.6	5.8	7.0	6.0	8.3	7.1	11.0	11.7	12.5	10.0	9.3	9.8		
GS52	257822	663713	13.4	8.7	10.7	6.6	8.6	7.3	8.1	8.2	18.1		11.3	13.8	10.4	10.9		
GE22	263145	666346	12.6	7.6	12.5	4.4	7.1	6.7	8.0	8.8	10.8	17.6	12.2	12.2	10.0	10.5		
GE23	263439	666750	15.4	11.9	12.3	9.5	10.6	11.0	13.4	10.2	6.4	11.3	11.2	12.2	11.3	11.8		
GS53	258589	663776	24.2	19.6	17.0	14.5	19.0	17.9	20.6	10.4	20.0	25.6	13.7	25.6	19.0	19.9		
CL1	258708	665200	35.3	26.4	28.4	14.6	16.5	19.6	29.0	24.2	29.7	34.3	40.9	31.8	-	-		
CL2	258708	665200	37.7	22.7	41.3	18.8	21.5	17.0	27.2	20.3	28.8	38.9	35.2	20.1	-	-		
CL3	258708	665200	37.7	25.1	40.8	19.3	18.5	16.2	30.0	17.2	24.2	42.6	42.4	27.7	27.8	29.1		
CL4	256526	666933	26.6	21.9	23.9	10.9	9.4	12.6	17.6	17.0	22.8	27.7	34.7	12.1	-	-		
CL5	256526	666933	21.2	15.8	17.5	10.5	14.5	15.8	18.5	17.8	20.9	24.9	32.7	15.3	-	-		
CL6	256526	666933	15.1	13.7	20.8	10.6	13.2	16.4	16.3	19.2	19.6	21.2	29.2	23.1	18.9	19.8		
CL7	259675	665900	16.3	11.5	11.9	7.1	11.5	7.1	10.4	11.8	13.8	18.0	19.0	16.0	-	-		
CL8	259675	665900	24.0	13.1	15.7	4.7	10.8	9.8	8.9	14.0	8.7	14.0	13.5	18.4	-	-		
CL9	259675	665900	14.5	12.1	12.5	5.3	10.1	10.7	9.2	13.3	13.7	15.1	17.5	15.2	12.8	13.3		

CL10	260013	665346	19.6	13.6	15.9	11.1	15.3	14.4	13.9	15.0	19.4	15.1	13.2	24.0	-	-		
CL11	260013	665346	22.8	14.7	11.1	11.3	18.0	16.4	14.5	14.6	18.5	12.4	11.9	20.6	-	-		
CL12	260013	665346	30.4	14.0	13.2	12.1	13.8	13.2	9.2	14.0	20.4	19.8	12.8	22.4	15.9	16.6		
CL13	258007	666649	24.5	13.4	12.7	10.2		14.5	14.9	17.6	18.0	19.8	17.9		-	-		
CL14	258007	666649	24.0	13.5	19.4		15.9	15.1	15.4	17.2		23.7	15.6		16.7	17.5		
CL15	258007	666649	25.8	15.0	14.0		14.4	13.0	15.0	17.0	17.4	22.1	21.1		17.5	18.3		
GW43	256351	666538	31.6	13.2	15.7	6.1	11.9	13.4	14.1	9.1	16.6	20.5	23.6	14.7	15.9	16.6		
GS54	252751	660818	11.2	10.1	10.8	4.3	8.9	2.4	7.5	6.6	13.1	12.8	10.3	7.2	8.8	9.2		
GS55	258260	663025	12.9			5.3	8.6			8.4	14.1	15.4	15.7	17.1	12.2	11.8		
GE24	262110	665472	15.0	13.4	13.9	7.1	12.0	10.0	12.0	10.6	12.9	9.2	12.2	14.0	11.9	12.4		
GS03	256229	662587	15.6	10.5	10.0	6.7	3.7	3.2	19.2	4.1	9.3	11.3	18.1	15.7	10.6	11.1		

☒ **All erroneous data has been removed from the NO_2 diffusion tube dataset presented in Table B.1**

☒ **Annualisation has been conducted where data capture is <75% and >25% in line with LAQM.TG22**

☒ **Local bias adjustment factor used**

☒ **Glasgow City Council confirm that all 2024 diffusion tube data has been uploaded to the Diffusion Tube Data Entry System**

Notes:

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

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

See Appendix C for details on bias adjustment and annualisation.

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

New or Changed Sources Identified Within Glasgow During 2024

Glasgow City Council has not identified any new sources relating to air quality within the reporting year of 2024.

Additional Air Quality Works Undertaken by Glasgow City Council During 2024

Glasgow City Council has not completed any additional works within the reporting year of 2024.

QA/QC of Diffusion Tube Monitoring

Diffusion tube monitoring is carried out in accordance with the procedures contained in the guidance 'Diffusion Tubes for Ambient NO_2 Monitoring: Practical Guidance for Laboratories and Users' and LAQM.TG22

Monitoring was conducted in adherence with the 2024 Diffusion Tube Monitoring Calendar.

For 2024 all NO_2 diffusion tubes were supplied and analysed by Glasgow Scientific Services. The preparation method was 20% tri-ethanolamine in water. Glasgow Scientific Services is UKAS accredited for the analysis of diffusion tubes, participating in the AIR-PT Scheme for NO_2 tube analysis and the Annual Field Inter-Comparison Exercise.

In the four AIR-PT results available for 2024, GSS scored 75% in one and 100% in three. The percentage score reflects the results deemed to be satisfactory based upon the z-score of $< \pm 2$.

Diffusion Tube Annualisation

Annualisation was required for three diffusion tube sites, CC10, GS13 and GS55 due to low data collection. Annualisation was conducted in accordance with the annualization section of the diffusion tube processing tool and the results have been expressed in the main results table. The annualization method is shown in Table C.2

Diffusion Tube Bias Adjustment Factors

Glasgow City Council have applied a local bias adjustment factor of 1.05 to the 2024 monitoring data. A summary of bias adjustment factors used by Glasgow City Council over the past five years is presented in Table C.1.

Results from four local co-location studies were used to provide the local co-location factor. These were GLA5, GLA6, GLKP and GHSR. Details of the co-location study can be found in Table C2.

Table C.1 – Bias Adjustment Factor

Year	Local or National	If National, Version of National Spreadsheet	Adjustment Factor
2024	Local	-	1.05
2023	Local	-	1.02
2022	Local	-	1.10
2021	National	03/22	1.12
2020	National	03/21	0.96

NO_2 Fall-off with Distance from the Road

No diffusion tube NO_2 monitoring locations within Glasgow required distance correction during 2024.

QA/QC of Automatic Monitoring

The 11 permanent monitoring stations in Glasgow form part of the Air Quality in Scotland monitoring network. Instruments are calibrated by the Local Site Operators (LSO)

according to the specific site guidelines and audits are carried out every six months by Ricardo. Glasgow City Council Public Health act as LSO for seven of the stations while Ricardo act as LSO for the 4 stations operated as part of the UK network operated by DEFRA. These stations are GLA4, GLKP, GGWR and GHSR.

All automatic air quality data gathered, both current and historical, is independently ratified by Ricardo and made available for viewing by the public at the Scottish Government funded air quality website at:

http://www.scottishairquality.co.uk

All data within this report has been fully ratified.

This webpage also provides access to the QA/QC information relevant to LAQM report requirements. The instrument UKAS calibration certification generated by the six-monthly audit programme for Glasgow's monitoring stations is available at:

http://www.scottishairquality.co.uk/laqm/certificates-calibration

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

The type of PM_{10}/$PM_{2.5}$ monitor(s) utilised within Glasgow do not required the application of a correction factor.

Automatic Monitoring Annualisation

Annualisation was required for three automatic monitoring sites in respect of NO_2, GLA5, GL2 and GLA7 due to low data collection. Additionally, annualization was required at two locations in respect of both PM_{10} and $PM_{2.5}$, GLA4 and GLA6. Annualisation was conducted in accordance with the technical guidance and the results have been expressed in the main results table. The annualization method is shown in Table C.2

NO_2 Fall-off with Distance from the Road

No automatic NO_2 monitoring locations within Glasgow required distance correction during 2024

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

Site ID	Annualisation Factor Dunmbarton Rd	Annualisation Factor Great Western Rd	Annualisation Factor High St	Annualisation Factor Townhead	Average Annualisation Factor	Raw Data Annual Mean	Annualised Annual Mean	Comments
CC10	0.9190	0.9271	0.8994	0.9026	0.9120	26.2	23.9	
GS13	0.7523	0.7518	0.7727	0.7243	0.7502	22.6	16.9	
GS55	0.9317	0.9248	0.9340	0.9193	0.9275	12.2	11.3	
GLA5 (NO_2)	0.9263	0.9332	0.9562	0.9320	0.9369	21.1	19.8	
GL2 (NO_2)	1.0313	0.9820	0.9538	0.9783	0.9863	20.6	20.3	
GLA7 (NO_2)	1.0160	1.0665	1.0691	1.0869	1.0597	5.6	5.9	
GLA4 (PM_{10})			0.9897	0.9971	0.9935	12.9	12.8	
GLA6 (PM_{10})			0.9673	0.9447	0.9560	10.4	10.0	
GLA4 ($PM_{2.5}$)			0.9847	0.9910	0.9879	7.3	7.2	
GLA6 ($PM_{2.5}$)			0.9533	0.9454	0.9493	6.2	5.9	

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	11	6	8	9	10
Bias Factor A	1.32 (1.12 - 1.6)	0.78 (0.71 - 0.87)	1.12 (0.92 - 1.43)	1.11 (0.88 - 1.51)	1.06 (0.87 - 1.34)
Bias Factor B	-24% (-37% - -11%)	28% (15% - 40%)	-11% (-30% - 9%)	-10% (-34% - 14%)	-5% (-25% - 15%)
Diffusion Tube Mean (µg/m^3)	27.9	21.4	13.5	15.4	16.9
Mean CV (Precision)	11.1%	9.3%	10.7%	8.0%	5.6%
Automatic Mean (µg/m^3)	36.8	16.7	15.1	17.0	17.8
Data Capture	96%	79%	98%	99%	99%
Adjusted Tube Mean (µg/m^3)	37 (31 - 45)	17 (15 - 19)	15 (12 - 19)	17 (14 - 23)	18 (15 - 23)

Notes:

A combined local bias adjustment factor of 1.05 has been used to bias adjust the 2024 diffusion tube results

Appendix D: City Centre / LEZ NO_2 Monitoring Results

Table D.1: Monitoring results from city centre locations during the period 2019 – 2024

Site ID	Site Name	2019	2020	2021	2022	2023	2024	% reduction 2022 to 2023	% reduction 2023 to 2024	% reduction 2022 to 2024
CC01	George Square	32.4	19.4	25.0	29.9	22.6	19.2	24.4	15.0	35.8
CC02	Union Street	**47.1**	25.8	37.5	38.4	31.4	24.3	18.2	22.6	36.7
CC03	Bath Street	38.6	23.3	31.7	36.2	29.7	21.9	18.0	26.3	39.5
CC04	Glassford St	**40.1**	24.9	28.6	34.3	30.7	23.0	10.5	25.1	32.9
CC05	Buchanan St	38.0	23.9	25.9	32.7	26.5	19.2	19.0	27.5	41.3
CC06	Castle Street	29.2	20.1	24.3	27.5	22.2	16.0	19.3	27.9	41.8
CC07	Hope Street 3	**40.3**	23.4	35.2	**40.4**	35.1	29.3	13.1	16.5	27.5
CC08	Montrose St	28.2	19.1	22.3	27.0	20.3	17.9	24.8	11.8	33.7
CC09	Cochrane St	35.2	21.9	28.6	29.9	22.9	20.8	23.4	9.2	30.4
CC10	Renfield Street	**41.7**	28.2	33.1	38.6	30.3	25.0	21.5	17.5	35.2
CC11	George Street	32.1	18.1	24.6	29.7	25.8	18.3	13.1	29.1	38.4
CC12	North Street	26.9	20.6	19.3	22.8	19.8	16.5	13.2	16.7	27.6
CC13	Hope Street 1	**55.5**	**40.3**	**43.5**	**44.9**	39.0	29.2	13.1	25.1	35.0
CC14	Gordon Street	**58.8**	36.3	**40.2**	**50.0**	**42.1**	29.8	15.8	29.2	40.4
CC15	Hielanman's Umbrella North	**52.1**	26.9	35.6	**42.3**	**40.9**	25.2	3.3	38.4	40.4
CC16	Saltmarket	30.8	23.0	26.2	31.8	21.2	16.5	33.3	22.2	48.1
CC17	High Street	**42.0**	25.9	25.3	34.8	25.7	20.2	26.1	21.4	42.0
CC18	Dobbies Loan	22.9	18.7	21.8	23.6	17.9	16.4	24.2	8.4	30.5
CC20	Dundasvale St	28.2	20.6	24.0	24.5	20.6	17.0	15.9	17.5	30.6
CC21	Royston Road	28.6	21.4	23.8	28.8	21.5	18.9	25.3	12.1	34.4

Site ID	Site Name	2019	2020	2021	2022	2023	2024	% reduction 2022 to 2023	% reduction 2023 to 2024	% reduction 2022 to 2024
CC22	St Mungo Ave	25.7	19.9	21.0	23.7	19.6	14.8	17.3	24.5	37.6
CC23	Brown Street	24.3	16.7	19.3	21.0	15.7	11.4	25.2	27.4	45.7
CC24	Broomielaw	36.7	22.5	31.8	36.2	26.7	25.6	26.2	4.1	29.3
CC25	McLeod Street	29.6	22.2	22.1	29.3	20.7	15.8	29.4	23.7	46.1
CC26	Sauchiehall St	31.7	21.2	23.8	28.5	23.4	25.9	17.9	-10.7	9.1
CC28	St Mungo's PS	24.0	18.6	14.7	19.2	14.6	15.7	24.0	-7.5	18.2
CC29	Garnetbank PS	29.3	21.3	21.6	23.1	18.2	18.8	21.2	-3.3	18.6

**Exceedances of annual mean shown in bold

Table D.2: Selected monitoring results from city centre locations exceeding or within 10% of the objective during the period 2019 – 2024

Site ID	Site name	Location Description	Annual Mean NO_2 (µg/m^3)					
			2019	2020	2021	2022	2023	2024
CC13	Hope St 1	Road canyon – next to taxi rank	**55.5**	**40.3**	**43.5**	**44.9**	**39.0**	29.2
CC14	Gordon St	Road canyon – next to taxi rank	**58.8**	**36.3**	**40.2**	**50.0**	**42.1**	29.8
CC07	Hope St 3	Road canyon – general traffic	**40.3**	23.4	35.2	**40.4**	35.1	29.3
CC15	Heilanman's Umbrella	Sheltered location – poor dispersion	**52.1**	26.9	35.6	**42.3**	**40.9**	25.2
CC02	Union St	Bus gate – buses and commercial traffic	**47.1**	25.8	**37.5**	**38.4**	31.4	24.3
CC10	Renfield St	Road canyon – general traffic	**41.7**	28.2	33.1	**38.6**	30.3	25.0
CC17	High St	General traffic	**42.0**	25.9	25.3	34.8	25.7	20.2
CC04	Glassford St	General traffic	**40.1**	24.9	28.6	34.3	30.7	23.0
CC03	Bath St	General traffic	**38.6**	23.3	31.7	**36.2**	29.7	21.9
CC05	Buchanan St	Bus gate – buses and taxis	**38.0**	23.9	25.9	32.7	26.5	19.2
CC24	Broomielaw	General traffic	**36.7**	22.5	31.8	**36.2**	26.7	25.6

*Exceedances of annual mean shown in red. Monitoring within 10% of objective shown in bold.

Appendix E: Monitoring locations and pollution trends

Figure E.1: Location of Automatic Monitoring Stations

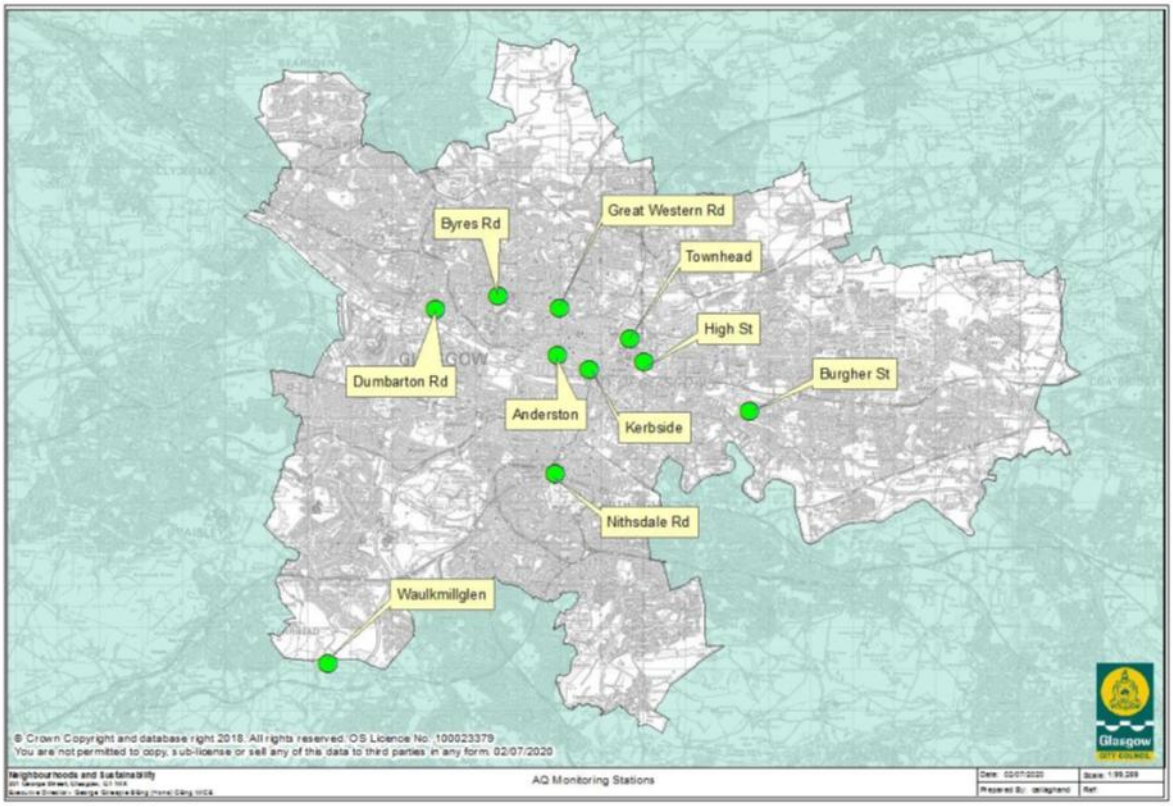


Figure E.2: Location of NO_2 Diffusion Tubes

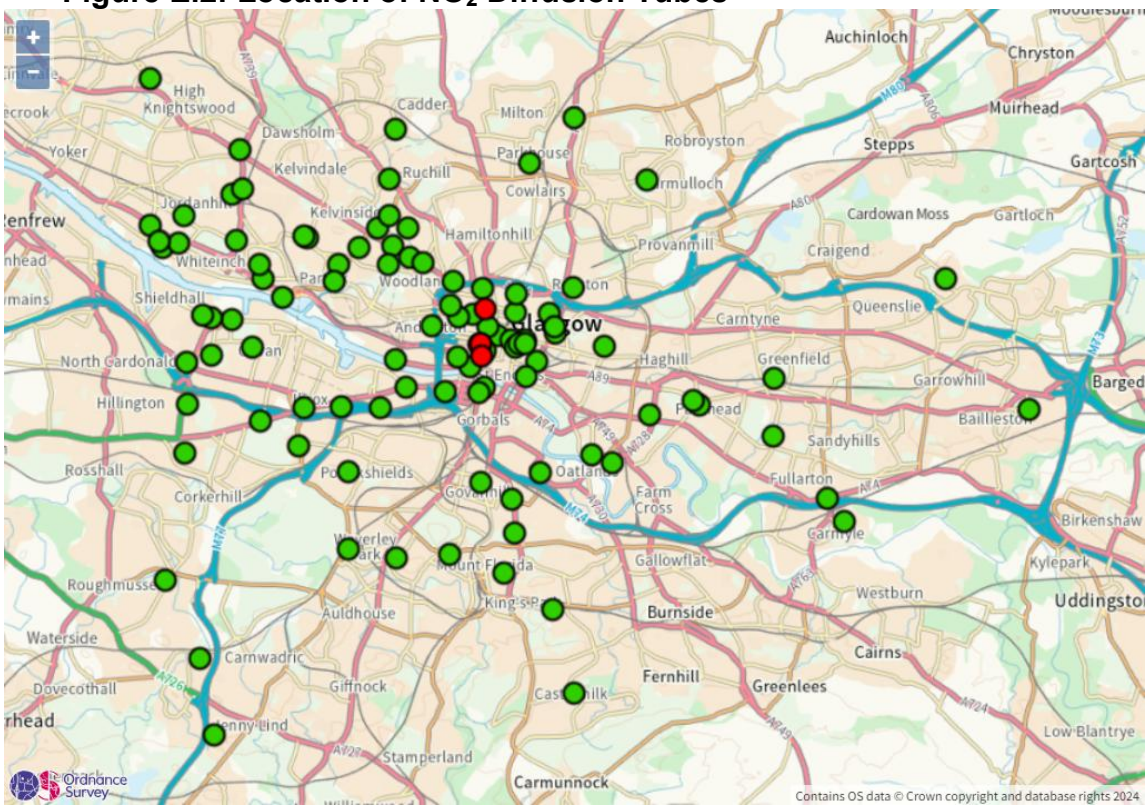


Figure E.3: Selected monitoring results from city centre locations exceeding or within 10% of the objective during the period 2019 – 2024

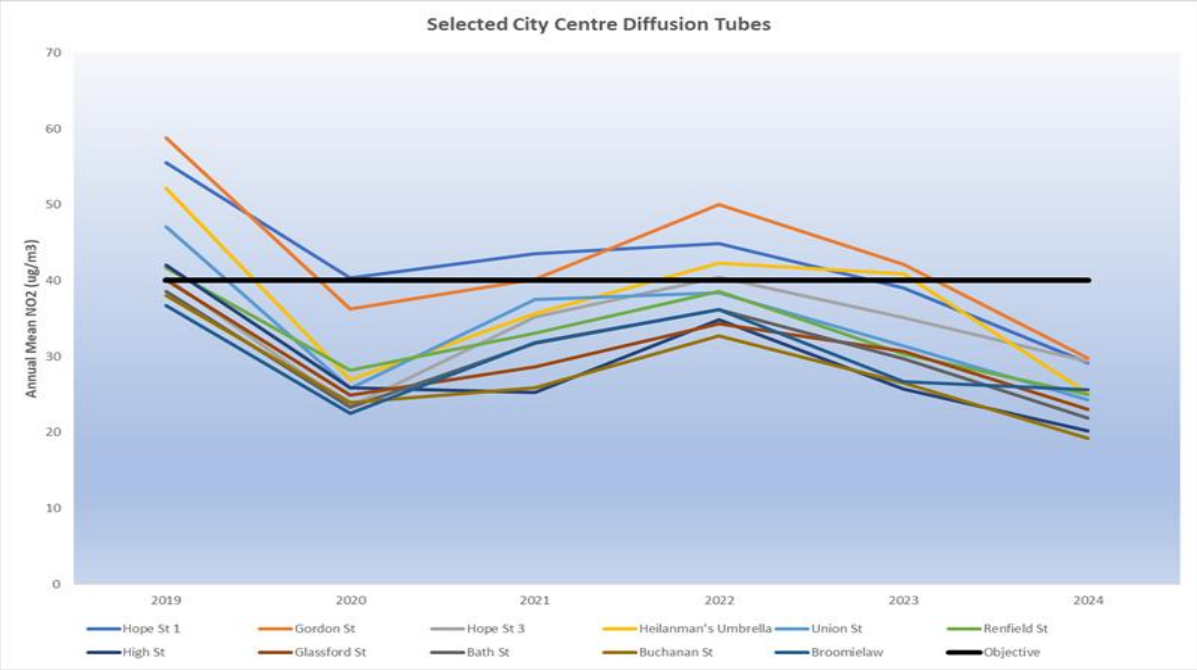
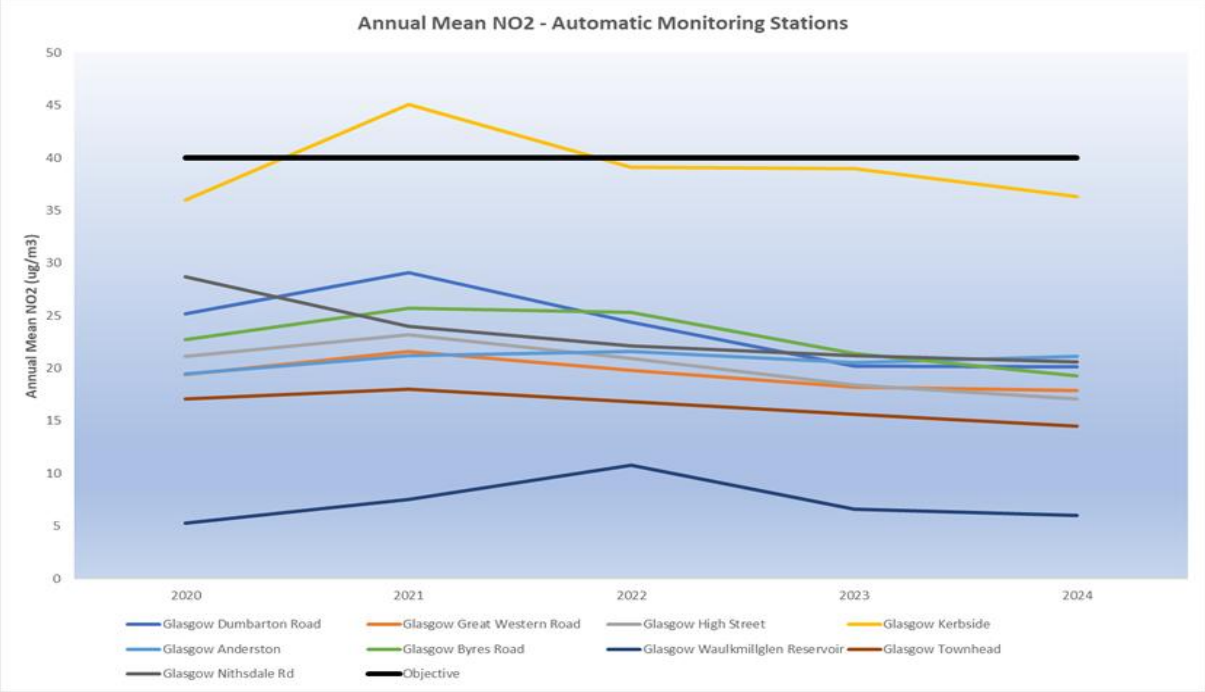


Figure E.4: Trend in annual mean NO_2 at automatic monitoring stations



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	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
DT	Diffusion Tube
FDMS	Filter Dynamics Measurement System
LAQM	Local Air Quality Management
NO_2	Nitrogen Dioxide
NO_X	Nitrogen Oxides
PM_{10}	Airborne particulate matter with an aerodynamic diameter of 10µm (micrometres or microns) or less
$PM_{2.5}$	Airborne particulate matter with an aerodynamic diameter of 2.5µm or less
QA/QC	Quality Assurance and Quality Control
SO_2	Sulphur Dioxide

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- Glasgow Transport Strategy: Policy Framework
- Glasgow City Council Carbon Management Plan 3