



East Dunbartonshire Council

Annual Progress Report 2023

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Annual Progress Report (APR)



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2023 Air Quality Annual Progress Report (APR) for East Dunbartonshire Council

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

Local Air Quality Management

October 2023

East Dunbartonshire Council

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Executive Summary: Air Quality in Our Area

Air Quality in East Dunbartonshire Council

This report is the 2023 Annual Progress Report undertaken in accordance with East Dunbartonshire Council's statutory obligation under the National Air Quality Strategy.

The report considers measured pollutant concentrations across East Dunbartonshire for the calendar year of 2022 and considers the potential for exceedances of the air quality objectives.

In East Dunbartonshire, the main pollutants of concern are NO₂, PM₁₀ and PM_{2.5} and the source of pollutant is mainly due to the volume of traffic and congestion. Across East Dunbartonshire, traffic flows have returned to pre pandemic levels however, pollutant levels remain satisfactory.

East Dunbartonshire Council has four continuous automatic analysers; one in Bishopbriggs, one in Bearsden, one in Kirkintilloch and one in Milngavie. This equipment downloads automatically and pollutant levels can be viewed via the Council web page or Scottish Air Quality website.

Monitoring over 2022 indicates a continuing overall downward trend in line with what has been experienced across Scotland over the last few years and this trend continued on the whole for all pollutants. The annual mean NO₂ level at three out of four automatic monitoring sites rose slightly post pandemic to levels between 16 and 24 µg/m³, and have since dropped slightly in 2022, well below the objective of 40µg/m³. Unfortunately, data capture at the Bishopbriggs site was poor resulting in annualisation being required with a final annual mean NO₂ of 16.2 µg/m³ being recorded for 2022, a slight decrease from 16.8 µg/m³ in 2021. Milngavie also required annualization and recorded the lowest annual mean level of 14.3 µg/m³; similar concentrations were recorded at the same site the previous year following various periods of lockdown. No exceedances of the hourly mean were recorded.

All four sites recorded levels which were significantly below the air quality objective for annual mean NO₂.

PM₁₀ levels at three out of four automatic monitoring sites recorded slight increases varying between 9.0 µg/m³ at Milngavie and 11.4 µg/m³ at Bishopbriggs, all well below the annual mean objective level of 18µg/m³.

Annual mean PM_{2.5} levels at all four sites increased slightly between 2021 and 2022, though concentrations are well within the Scottish objective level of 10 µg/m³. The maximum concentration was 6.4 µg/m³ recorded at Bishopbriggs.

There are no new major sources of emissions although the installation of domestic wood burning stoves, and complaints concerning their use, continue to be received.

There is one AQMA in East Dunbartonshire, the Kirkintilloch Road AQMA (hereafter referred to as the Bishopbriggs AQMA), since the East Dunbartonshire Council AQMA (hereafter referred to as the Bearsden AQMA) was revoked in 2022. NO₂ tubes which were added to the network to further investigate background levels have mostly been removed.

Air quality is a material consideration in terms of planning which means that all local development is considered in terms of air quality to ensure implications are examined and considered in advance and appropriate consultation takes place with such partners as the Scottish Environment Protection Agency (SEPA), Transport Scotland and Scottish Natural Heritage (SNH).

Actions to Improve Air Quality

East Dunbartonshire has a successful iBike programme operated in partnership with Sustrans Scotland. The iBike officers work intensely across local schools delivering practical lessons on active travel embedded within the school curriculum. This includes learning to cycle sessions, bike skills sessions, led rides, led walks, bike maintenance sessions, bike clubs etc. This encourages younger people to travel more actively and evidence shows that iBike schools tend to have higher levels of active travel on average than non-iBike schools.

The Bearsden AQMA was revoked in 2022, leaving only the Bishopbriggs AQMA in place. The Bishopbriggs AQMA will remain in place despite no breaches having occurred for several years, primarily due to planned infrastructure and development changes over the

coming years. The Air Quality Action Plan (AQAP) for the Bishopbriggs AQMA will be updated shortly, with the majority of measures having been achieved.

Local Priorities and Challenges

Our priority in the coming year is to ensure the smooth running of our monitoring network to gain as accurate a picture as possible of air quality levels across East Dunbartonshire. Complaints concerning smoke and smell associated with wood burning stoves remain a challenge and have possibly been exacerbated due to people being at home and being more aware of what is going on in their neighbourhood. There has also been an increase in the number of complaints concerning bonfires, chimneys, fire pits and BBQs.

How to Get Involved

Further information on air quality in East Dunbartonshire can be found on the Council website [Pollution page](#). You can visit the Scottish Air Quality website <https://www.scottishairquality.scot/> and view live air quality data in East Dunbartonshire at The Scottish Air Quality web pages. You can register for text and email alerts when air quality is forecast to be poor for the day ahead and can visit the Education pages and involve your children and family – all on the same link which also offers a free app for iPhone and Android for keeping you updated about air pollution in Scotland.

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1 Local Air Quality Management

This report provides an overview of air quality in East Dunbartonshire Council during 2022. It fulfils the requirements of Local Air Quality Management (LAQM) as set out in Part IV of the Environment Act (1995), as amended by the Environment Act (2021), and the relevant Policy and Technical Guidance documents.

The LAQM process places an obligation on all local authorities to regularly review and assess air quality in their areas, and to determine whether or not the air quality objectives are likely to be achieved. Where an exceedance is considered likely the local authority must declare an Air Quality Management Area (AQMA) and prepare an Air Quality Action Plan (AQAP) setting out the measures it intends to put in place in pursuit of the objectives. This Annual Progress Report (APR) summarises the work being undertaken by East Dunbartonshire 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 East Dunbartonshire 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 [AQMA webpage](#).

Table 2.1 – Declared Air Quality Management Areas

AQMA Name	Pollutants and Air Quality Objectives	City / Town	Description	Action Plan
Kirkintilloch Road (Bishopbriggs AQMA)	NO ₂ Annual Mean PM ₁₀ Annual Mean	Bishopbriggs	An area encompassing a 60 metre wide corridor along the A803 Kirkintilloch Road, Bishopbriggs between the Council's border with Glasgow City and a point 30 metres to the north of Cadder Roundabout.	The Bishopbriggs Air Quality Action Plan is outdated and the majority of measures have been achieved. Those outstanding are updated in Table 2.3

2.2 Cleaner Air for Scotland 2

[Cleaner Air for Scotland 2 – Towards a Better Place for Everyone \(CAFS2\)](#) is Scotland's second air quality strategy. CAFS2 sets out how the Scottish Government and its partner organisations propose to further reduce air pollution to protect human health and fulfil Scotland's legal responsibilities over the period 2021 – 2026. CAFS2 was published in July 2021 and replaces [Cleaner Air for Scotland – The Road to a Healthier Future \(CAFS\)](#), which was published in 2015. CAFS2 aims to achieve the ambitious vision for Scotland "to have the best air quality in Europe". A series of actions across a range of policy areas are outlined, a summary of which is available on the Scottish Government's website.

Progress by East Dunbartonshire Council against relevant actions for which local authorities are the lead delivery bodies within this strategy is demonstrated below.

2.2.1 Placemaking – Plans and Policies

Local authorities with support from the Scottish Government will assess how effectively air quality is embedded in plans, policies, City Deals and other initiatives, and more generally in cross departmental working, identifying and addressing evidence, skills, awareness and operational gaps.

Air Quality is embedded in the East Dunbartonshire Council Local Development Plan with specific policy on addressing air quality through planning applications and accompanying Air Quality Planning Guidance. The Strategic Environmental Assessment (SEA) process also includes the East Dunbartonshire Council LAQM Annual Progress Report 2022 assessment of impact on air quality. SEA Officers assess every Council plan and policy and air quality impact assessment is part of the process.

2.2.2 Transport – Low Emission Zones

Local authorities working with Transport Scotland and SEPA will look at opportunities to promote zero-carbon city centres within the existing LEZs structure.

East Dunbartonshire Council has no Low Emission Zones established within the Local Authority area. East Dunbartonshire Council decided to take no further action at this stage on introducing Low Emission Zones as there are currently no exceedances of any of the

air quality objectives across the East Dunbartonshire area. The Council intends to introduce a Climate Action Plan with a net zero target for the East Dunbartonshire area and, as transport is one of the main sources of emissions, this will be a key area of focus for carbon reduction. The Action Plan is due to go to public consultation in late 2023.

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

The Bishopbriggs Air Quality Action Plan (2009) is outdated and is due to be updated by mid-2024. While the air quality in the Bishopbriggs AQMA has been compliant with all legal objectives since 2013, significant proposed changes to infrastructure along the A803 corridor may alter or disrupt the validity of air quality monitoring in the area over the coming years. As a result, the AQMA will be retained at least until works are completed, which is expected by 2027.

There are a number of other Council policies that impact significantly upon improving air quality throughout East Dunbartonshire, including the newly adopted [Local Development Plan](#), [Active Travel Strategy](#), [Local Transport Strategy](#) and forthcoming [Climate Action Plan](#). In addition, it is the intention of East Dunbartonshire Council to produce an Air Quality Strategy covering the entire Council area and work on this is due to commence late 2023.

Table 2.2 – Progress on Measures to Improve Air Quality

Measure No.	Measure	Category	Expected/Actual Completion year	Measure Status	Funding Status	Key Milestones	Progress	Barriers to implementation
1	Maintain contact with Scottish Govt re adoption of national air quality measures	Policy guidance and development control	Ongoing	In progress	Fully funded Annual funding by Scottish Government LAQM Grant	National objectives met for air quality throughout East Dunbartonshire	Funding supported installation of new monitoring equipment at Bishopbriggs and Bearsden sites. NO ₂ , PM ₁₀ and PM _{2.5} . now being monitored at all four sites	
2	Promote air quality with planning and transport strategies and other Council Plans	Policy guidance and development control	Ongoing	In progress	Partially funded via developer contributions	Local development plan LDP2 adopted November 2022	Newly adopted LDP2 The Active Travel Strategy 2023-2030 aims to accelerate the modal shift towards zero-carbon travel and an update report on the Electric Vehicle Action Plan is awaiting committee approval The Local Transport Strategy 2020-2025 has been approved.	
3	Intelligent traffic management systems	Traffic Management	2027	In progress	Fully funded via City Deal	Work on Mova 8 complete in 2018	Canniesburn Toll Improvement Project will include signals on the junction and potentially link in with an adjacent junction. Work to commence July 2023. Additional traffic management systems under consideration in A803 corridor adjacent to Bishopbriggs AQMA.	
4	Parking Controls	Traffic Management	Ongoing	In progress	Not externally funded		Charges introduced in council car parks throughout Kirkintilloch, Bishopbriggs, Bearsden and Milngavie.	
5	Mitigation of emissions from developments within and around the AQMA	Policy guidance and development control	Ongoing	In progress	Partially funded via developer contributions.	Air quality objectives met within AQMA	Regular review and updating of LDP and LTS takes account of policies consistent with air quality objectives. Mitigation includes active, sustainable travel measures. Included as planning condition as part of consultation process	Significant future development in close proximity to Bishopbriggs AQMA as part of City Deal funding requires further monitoring to ensure continued compliance with air quality objectives
6	Air quality planning guidance	Policy guidance and development control	Ongoing	In progress	Partially funded via developer contributions		Planning guidance adopted 2018 and LAQM guidance updated 2023	
7	Fleet waste collection	Vehicle fleet efficiency	Completed 2016	Completed	Not funded		Fortnightly fleet waste collection as standard reduces overall vehicle emissions.	
8	Council fleet replacement programme	Vehicle fleet efficiency	Ongoing	In progress	Not funded		Electric pool vehicles increased to 37. New electric van provided for libraries use.	Lack of electric vehicle charging points limits uptake. Emphasis on providing improved charging infrastructure.
9	Environmental fleet recognition scheme	Vehicle fleet efficiency	Ongoing	In progress	Partially funded by annual Scottish Government LAQM Grant	Funding is in place for 2023/2024	Approx 118 vehicles within EDC Fleet assessed and graded at 4* with 65 vehicles at 5*. Approx. 217 members overall of the EDC scheme with 7284 vehicles. Funding used to progress scheme within EDC.	Further uptake by private companies required to expand the network. Work is ongoing to promote the scheme throughout the Council area.

10	Vehicle idling enforcement	Promoting low emission transport	Ongoing	In progress	Partially funded by Annual Scottish Government Vehicle Emissions Grant		Regular monitoring patrols are undertaken when appropriate, particularly around schools. Funding used to carry out regular patrols around schools, particularly in winter months and to conduct awareness raising campaigns in local media. Promoting drivers to avoid idling their engines while parked. Individual complaints of idling vehicles responded to where possible.	Scottish Government guidance remains that drivers be asked to switch off engines, with enforcement only being taken for repeat offences or where the driver refuses to do so. No fixed penalties issued to date as policy of education is adhered to
11	Management of biomass installations	Promoting low emission plants	Ongoing	In progress	Not funded		Reactive work undertaken in responding to complaints All planning applications involving a wood burning stove have an appropriate informative added to ensure most efficient stove is installed.	Many installations do not require planning permission
12	Quality bus/bike partnerships	Alternatives to private vehicle use	2027	In progress	Fully funded via City Deal	Core paths in Bearsden upgraded 2017/18	. New links created to provide traffic free link to bus stop on Drymen Road and Bearsden Academy Cycle and walking routes will be developed where possible. Active Travel Strategy 2023 -2030 will introduce new projects across the authority area with increased opportunities for active travel	
13	Council smart working	Alternatives to private vehicle use	Ongoing	In progress	No funding	Reduced emissions from private vehicles used to attend place of work.	Reduced emissions from private vehicles used to attend place of work and reduced requirement for travel outwith Council area	
14	Green travel planning	Alternatives to private vehicle use	Ongoing	In progress	Not currently funded		Pool bikes are available for staff use however there has been a reduction in staff movement due to working from home.	There is uncertainty post-pandemic regarding staff movement, largely due to working from home. it is likely this will not be progressed until it becomes clearer how and where people will be working in future across the Council estate.
15	School travel plans	Alternatives to private vehicle use	Ongoing	In progress	Fully funded annually by Paths for All		All new build schools within EDC include travel plans as standard	Existing schools require to implement travel plans at local level. Support is given where possible to implement these.
16	Air quality awareness raising and education	Public Information	Ongoing	In Progress	Partially funded Annual funding by Scottish Government LAQM and Emissions Grants		Various public awareness projects already undertaken and more planned in schools as part of science and maths curriculum	
17	Travel plans for large employers	Alternatives to private vehicle use	Ongoing	In Progress	Not funded		Strategic development and regeneration team ensure all relevant commercial planning applications have travel plan conditions applied in accordance with current best practice	
18	Eco driver training	Vehicle fleet efficiency	Ongoing	In progress	Not currently funded		Employees trained in Fuel Good Driving Techniques to reduce fuel use and emissions.	Further eco-driving training delayed by Covid. Rollout may be resumed in future as funding permits

19	Council pool cars – priority spaces and car sharing	Vehicle fleet efficiency	Ongoing	In progress	Not funded		Priority spaces designated for pool cars at all Council buildings 117 employees signed up to SPT Journey share/Liftshare	Low uptake of car sharing initiatives post pandemic. Unlikely to gain further support in near future.
20	Vehicle emission testing	Promoting low emission transport	Complete 2019	Completed	Not currently funded		Very low rate of failure due to improved vehicle efficiency and scrappage schemes removing many older vehicles from use	
21	Vehicle tracking and telematics	Vehicle fleet efficiency	Complete 2022	Completed	Not funded	100% of EDC fleet now fitted with tracking.	Master naught vehicle tracking installed in all fleet and pool vehicles	
22	Improvements to SPT prioritised bus stops	Promoting travel alternatives	Ongoing	In progress	Fully funded annually by SPT		The process of improving SPT bus stops will continue as required and as funding allows	
23	Soft measures – Healthy Habits	Promoting travel alternatives	Ongoing	In progress	Fully funded annually by Paths for all & Transport Scotland		The Healthy Habits project is ongoing with new initiatives continually developed to encourage local people to walk and cycle more often	
24	Domestic emissions and fuel consumption awareness raising	Domestic solid fuel burning	Ongoing	In progress	Partial funding via Local Education Improvement Programme		Support for awareness raising of energy efficient measures by Scottish and UK government	
25	Tree and wild flower planting	Public Information	Ongoing	In progress	Partial funding via Buglife – the Invertebrate Conservation Trust	New planting of wildflower meadow completed at Inverary Drive, Bishopbriggs in 2021/2022	Trees, shrubs and wildflower meadows planted where possible	
26	Joint health improvement plan	Public Information	Ongoing	In progress	Not funded		The Local Outcomes Improvement Plan aims for the council and the Health & Social Care Partnership to work with local communities and residents in a joint effort to improve health and address health inequalities and increase awareness of active travel to help mitigate the impact of poor physical and mental health and air quality related health effects on the NHS. (https://www.eastdunbarton.gov.uk/sites/default/files/documents/local_outcomes_improvement_plan_2017-27.pdf)	
27	Green Infrastructure	Public Information	Ongoing	In progress	Partially funded via developer contributions		LDP Supplementary Guidance on Green Infrastructure and Green Network is available online. All Council new-build now with CHP and air source heat pumps.	
28	Taxi Licensing	Promoting low emission transport	Ongoing	In progress	Not funded		Frequency of testing increased to twice a year for older vehicles.	

3 Air Quality Monitoring Data and Comparison with Air Quality Objectives

3.1 Summary of Monitoring Undertaken

3.1.1 Automatic Monitoring Sites

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

East Dunbartonshire Council undertook automatic (continuous) monitoring at four sites during 2022. Table A.1 in Appendix A shows the details of the sites. National monitoring results are available at [Scottish Air Quality website](#).

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

East Dunbartonshire Council undertook non-automatic (passive) monitoring of NO₂ at 48 sites during 2022. Table A.2 in Appendix A shows the details of the sites.

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

East Dunbartonshire Council commissioned a detailed assessment of air quality in Bishopbriggs in 2018/19, however the results were delayed due to the COVID-19 pandemic and were finalised in 2022. This assessment was undertaken to determine pollutant concentrations within the AQMA and the wider area of Westerceddens, in part due to the increase in proposed residential development in the area.

Measurement and dispersion modelling techniques indicate that all pollutant levels are below Scottish air quality objectives and confirmed that annual mean concentrations for all pollutants are well below objective annual mean levels in the Westercleddens area.

3.2 Individual Pollutants

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

3.2.1 Nitrogen Dioxide (NO₂)

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

For diffusion tubes, the full 2022 dataset of monthly mean values is provided in Appendix B.

There are no exceedances of the annual mean air quality objective of 40 µg/m³ at any NO₂ monitoring location within the local authority area of East Dunbartonshire during 2022. All monitored concentrations of NO₂, automatic or passive monitoring are well below the annual mean objective. Concentrations of NO₂ decreased at monitoring locations compared with 2021 at the majority of sites with 12 diffusion tubes sites showing increases in concentration in 2022. This may be due to lockdown and travel restrictions during 2020 and 2021. 2022 was the first year to experience no restrictions due to Covid-19.

East Dunbartonshire Council ceased monitoring at seven diffusion tube sites during 2022. The justification for the removal of these sites is detailed below.

- 13 - Bearsden 4 - 8 Lowther Avenue - background tube and already have other background tube in place)
- 17 - Bearsden 10 - Junction of Maryhill Road/Rannoch Drive (outside shops – no residential receptors)
- 18 - Bearsden 13 - Outside Trilogy Beauty (outside shop – no residential receptor)
- 38 - Bishopbriggs 24 - 2 Cadder Road (overgrown with trees)
- 40 - Kirkintilloch 20 – 44 Industry Street (large tree overgrowing and covering tube)

- 41 - Kirkintilloch 21 - Tenements at Lenzie Railway Station (levels low and no need to retain)
- 45 - Bearsden 20 - outside 261 Milngavie Road (sign mounted on same lamp post blocking air flow)

Table A.4 in Appendix A compares the ratified continuous monitored NO₂ hourly mean concentrations for the past five years with the air quality objective of 200 µg/m³, not to be exceeded more than 18 times per year. There were no NO₂ hourly means recorded greater than 200 µg/m³ in 2022.

3.2.2 Particulate Matter (PM₁₀)

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

Table A.6 in Appendix A compares the ratified continuous monitored PM₁₀ daily mean concentrations for the past five years with the air quality objective of 50 µg/m³, not to be exceeded more than seven times per year.

No exceedances of the annual mean PM₁₀ objective of 18 µg/m³ were recorded in the East Dunbartonshire Council area in 2022 and all concentrations were well below the objective. However, concentrations of PM₁₀ did show increases at three out of four automatic monitoring sites in 2022. This may be due to Covid-19 restrictions on travel and lockdowns in 2020 and 2021. Concentrations of PM₁₀ show an overall decreasing trend since 2018.

3.2.3 Particulate Matter (PM_{2.5})

Table A.7 in Appendix A compares the ratified and adjusted monitored PM_{2.5} annual mean concentrations for the past five years with the air quality objective of 10 µg/m³. The maximum concentration was 6.4 µg/m³ recorded at Bishopbriggs.

No exceedances of the annual mean PM_{2.5} objective of 10 µg/m³ were recorded in the East Dunbartonshire Council area in 2022. Similarly to PM₁₀, monitored concentrations of PM₁₀ show increases from 2021, which may be due to lockdown and travel restrictions in 2020 and 2021 being lifted. All concentrations, however, were below the objective and show an overall decreasing trend across five years of data.

3.2.4 Sulphur Dioxide (SO₂)

East Dunbartonshire Council does not monitor sulphur dioxide within the local authority area.

3.2.5 Carbon Monoxide, Lead and 1,3-Butadiene

East Dunbartonshire Council does not monitor sulphur dioxide within the local authority area.

4 New Local Developments

East Dunbartonshire Council requests a full air quality impact assessment in line with the East Dunbartonshire Air Quality Planning Guidance and where it is considered the application may affect air quality.

All East Dunbartonshire Council projects requiring planning permission come with a full air quality impact assessment as standard.

4.1 Road Traffic Sources

The following new junctions were identified by East Dunbartonshire Council in 2022:

- Birdston Road, Milton of Campsie at Cortmalaw Drive, and;
- Auchinloch Road, Lenzie at Cyprian Drive

The proposed redesign of Canniesburn Toll is due to commence 31st July 2023. This will put signals on the Toll to better regulate traffic flow. It will also improve pedestrian access, particularly walking and cycling, around the Toll.

4.2 Other Transport Sources

No new sources of emissions relating to transport were identified by East Dunbartonshire Council in 2022.

4.3 Industrial Sources

No new industrial sources were identified by East Dunbartonshire Council in 2022.

4.4 Commercial and Domestic Sources

No new commercial or domestic sources were identified by East Dunbartonshire Council in 2022.

4.5 New Developments with Fugitive or Uncontrolled Sources

No new sites were identified by East Dunbartonshire Council in 2022.

5 Planning Applications

East Dunbartonshire Council requests a full air quality impact assessment in line with the East Dunbartonshire Air Quality Planning Guidance and where it is considered the application may affect air quality.

No major development that would have significant bearing upon air quality were brought forward in 2022, however several developments of interest are ongoing and progressing towards completion including:

- Ongoing development of housing (TP/ED/19/0816) and retail foodstore (TP/ED/19/0186) in Bishopbriggs. These developments are funded in part by the City Deal, which is also progressing the Westerhill Development Road; and,
- Residential housing sites at Fauldhead (TP/ED/21/0365) and Chryston Road (TP/ED/21/0366)

There were 24 planning applications concerning domestic properties which included the installation of wood burning stoves.

6 Conclusions and Proposed Actions

6.1 Conclusions from New Monitoring Data

Automatic and passive monitoring of NO₂ was undertaken in 2022 across the East Dunbartonshire Council area, no exceedances of the annual or short term NO₂ air quality objectives were reported. Overall concentrations of NO₂ continued to decrease, although some increases were seen at twelve diffusion tubes which maybe be due to lockdown and travel restrictions in 2020 and 2021 rather than increases in concentrations in 2022. Overall five year trends for NO₂ show decreases in concentrations.

PM₁₀ and PM_{2.5} concentrations within East Dunbartonshire increases in 2022 which may also be due to traffic flows returning to pre pandemic levels. Concentrations have remained below the annual mean air qualitative objectives and 24-hour PM₁₀ air quality objective.

East Dunbartonshire Council has one declared AQMA in Bishopbriggs. All monitoring results within the AQMAs are below the air quality objective levels for which they were declared and have been for some time. It is not the intention to revoke the Bishopbriggs AQMA just yet due to the number of planned infrastructure and development changes planned as part of the City Deal funding award. East Dunbartonshire Council withdrew the Bearsden AQMA in 2021 following a consistent compliance with the air quality objectives and a decreasing trend in NO₂ concentrations.

6.2 Conclusions relating to New Local Developments

East Dunbartonshire Council has no exceedances of any of the relevant air quality objectives and no new local developments likely to introduce new exceedances have been identified.

6.3 Proposed Actions

A review of the NO₂ tube network has seen the removal of a number of NO₂ tubes which confirm there is no longer any need for concern in the particular area in terms of air quality objective levels. Seven diffusion tube monitoring sites were closed in 2022. The monitoring network will continue to be monitored in future years.

It is not the intention to revoke the Bishopbriggs AQMA at this stage due to the extensive proposed redevelopment of Bishopbriggs in line with City Deal funding including an aspiration to complete phase 5 of the Bishopbriggs Relief Road (now referred to as Westerhill Development Road). It is anticipated that during construction over several years, local air quality data may be unreliable.

Implementation of the Action Plan measures where funding allows. The next Annual Progress Report will be submitted in 2024.

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)
EDB1	Bishopbriggs	Roadside	260995	670130	NO ₂ ; PM ₁₀ ; PM _{2.5}	Yes AQMA 1	Chemiluminescent; FIDAS	5m	2m	2
EDB2	Bearsden	Kerbside	254269	672067	NO ₂ ; PM ₁₀ ; PM _{2.5}	No – Former Bearsden	Chemiluminescent; FIDAS	<2m	1m	2
EDB3	Kirkintilloch	Kerbside	265675	673516	NO ₂ ; PM ₁₀ ; PM _{2.5}	No	Chemiluminescent; FIDAS	<2m	1m	3
EDB4	Milngavie	Roadside	255328	674115	NO ₂ ; PM ₁₀ ; PM _{2.5}	No	Chemiluminescent; TEOM FDMS; FIDAS	<40m	1m	3

Notes:

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

(2) N/A if not applicable.

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

Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) ⁽¹⁾	Distance to kerb of nearest road (m) ⁽²⁾	Tube co-located with a Continuous Analyser?	Tube Height (m)
1	Bishopbriggs 6	Roadside	261016	670198	NO ₂	Yes - Bishopbriggs	<2m	2m	No	2.5
2	Bishopbriggs 13	Roadside	260549	669312	NO ₂	Yes - Bishopbriggs	5m	2m	No	2.4
3, 4, 5	Bishopbriggs 14C	Roadside	260995	670130	NO ₂	Yes - Bishopbriggs	42m	2m	Yes	1.8
6	Kirkintilloch 15	Roadside	265641	673497	NO ₂	No	2m	2m	No	2.8
7	Kirkintilloch 16	Roadside	265697	673524	NO ₂	No	3m	2m	No	2.4
8, 9, 10	Kirkintilloch 17C	Kerbside	265675	673516	NO ₂	No	3m	1m	Yes	1.9
11	Bearsden 1 (118 Drymen Rd)	Roadside	254218	672193	NO ₂	No – Former Bearsden	3m	2m	No	2.4
12	Bearsden 3 (5 Ravelston Rd)	Urban Background	254655	670158	NO ₂	No	8m	5m	No	2.4
13	Bearsden 4 (8 Lowther Ave)	Urban Background	253075	673382	NO ₂	No	6m	5m	No	1.8
14	Bearsden 7	Roadside	254269	672069	NO ₂	No – Former Bearsden	<2m	2m	No	1.8
15	Bearsden 8	Roadside	254275	672047	NO ₂	No – Former Bearsden	18m	2m	No	1.8
16	Bearsden 9	Roadside	254751	670621	NO ₂	No	30m	2m	No	1.8
17	Bearsden 10	Roadside	255394	670683	NO ₂	No – Former Bearsden	24m	2m	No	2.4
18	Bearsden 13	Roadside	254809	671057	NO ₂	No – Former Bearsden	26m	2m	No	2.4
19	Bearsden 14	Roadside	254877	671000	NO ₂	No – Former Bearsden	8m	2m	No	2.4

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)
20	Bearsden 15	Roadside	254898	671023	NO ₂	No – Former Bearsden	2m	2m	No	2.5
21, 22, 23	Bearsden 16C	Kerbside	254269	672067	NO ₂	No – Former Bearsden	2m	1m	Yes	1.8
24	Milngavie 4	Roadside	255728	674486	NO ₂	No	5m	2m	No	2.6
25	Milngavie 7	Roadside	255279	674124	NO ₂	No	<2m	9m	No	2.1
26	Milngavie 9	Urban Background	255331	674214	NO ₂	No	7m	2m	No	2.4
27, 28, 29	Milngavie 10C	Roadside	255329	674114	NO ₂	No	40m	1m	Yes	2.0
30	Bishopbriggs 16	Roadside	260580	669533	NO ₂	Yes - Bishopbriggs	<2m	2m	No	2.4
31	Bishopbriggs 17	Roadside	260552	669320	NO ₂	Yes - Bishopbriggs	<2m	2m	No	2.0
32	Bearsden 17	Roadside	254258	672077	NO ₂	No – Former Bearsden	<2m	2m	No	2.6
33	Bearsden 18	Roadside	254275	672069	NO ₂	No – Former Bearsden	<2m	2m	No	2.4
34	Kirkintilloch 18	Kerbside	265674	673521	NO ₂	No	<2m	2m	No	2.4
35	Bishopbriggs 21	Roadside	261033	669650	NO ₂	No	6m	2m	No	2.2
36	Bishopbriggs 22	Roadside	260571	669339	NO ₂	Yes - Bishopbriggs	5m	2m	No	2.3
37	Bishopbriggs 23	Roadside	260759	669999	NO ₂	Yes - Bishopbriggs	5m	2m	No	2.2
38	Bishopbriggs 24	Roadside	261903	671955	NO ₂	Yes - Bishopbriggs	10m	2m	No	2.2
39	Bishopbriggs 25	Urban Background	260617	670338	NO ₂	No	6m	2m	No	2.4
40	Kirkintilloch 19	Roadside	265602	673583	NO ₂	No	<2m	<2m	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)
41	Kirkintilloch 20	Roadside	265849	673424	NO ₂	No	6m	<2m	No	2.3
42	Kirkintilloch 21	Roadside	265506	671961	NO ₂	No	5m	<2m	No	2.4
44	Bearsden 19	Roadside	255403	673236	NO ₂	No	5m	<2m	No	2.2
45	Bearsden 20	Roadside	255400	673134	NO ₂	No	28m	<2m	No	2.5
46	Bearsden 21	Roadside	254984	671910	NO ₂	No	32m	<2m	No	2.2
48	Bishopbriggs 26	Roadside	262112	670517	NO ₂	No	3m	1m	No	2.4
49	Bishopbriggs 30	Roadside	262398	669436	NO ₂	No	3m	1m	No	2.4
50	Milngavie 13	Roadside	255183	674409	NO ₂	No	3m	1m	No	2.4

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 NO₂ Monitoring Results (µg/m³)

Site ID	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2022 (%) ⁽²⁾	2018	2019	2020	2021	2022
EDB1	Kerbside	Automatic	94.4	94.4	33	32	20	24.3	21.9
EDB2	Roadside	Automatic	72.9	72.9	27	26	20	16.8*	16.2*
EDB3	Kerbside	Automatic	99.0	99.0	29	27	18	19.6	18.2
EDB4	Roadside	Automatic	74.2	74.2	20	19	15	16.2	14.3*
1	Roadside	Diffusion Tube	100	100.0	24.9	24.1	17.8	17.1	16.6
2	Roadside	Diffusion Tube	100	100.0	34.7	31.5	23.3	27.6	24.0
3, 4, 5	Roadside	Diffusion Tube	100	100.0	23.4	21.8	16.5	15.0	15.9
6	Roadside	Diffusion Tube	100	100.0	25.3	24.4	17.3	17.9	17.5
7	Roadside	Diffusion Tube	100	100.0	28.4	27.6	20.3	20.6	20.5
8, 9, 10	Kerbside	Diffusion Tube	100	100.0	25.7	27.8	18.3	21.3	20.2
11	Roadside	Diffusion Tube	100	100.0	26.8	25.0	16.9	19.3	18.4
12	Urban Background	Diffusion Tube	100	100.0	17.0	17.4	11.4	12.4	11.0
13	Urban Background	Diffusion Tube	15.4	15.4	13.3	15.3	7.5	7.3	-
14	Roadside	Diffusion Tube	100	100.0	24.9	30.1	21.5	21.6	20.4
15	Roadside	Diffusion Tube	100	100.0	27.0	27.4	20.9	22.2	20.7
16	Roadside	Diffusion Tube	92.3	92.3	21.3	23.4	17.0	17.9	15.4
17	Roadside	Diffusion Tube	15.4	15.4	24.2	24.1	23.1	20.1	-
18	Roadside	Diffusion Tube	15.4	15.4	28.0	29.2	21.7	21.3	-
19	Roadside	Diffusion Tube	82.7	82.7	28.1	27.6	21.4	22.0	24.5
20	Roadside	Diffusion Tube	100	100.0	30.1	28.8	22.9	19.3	19.8
21, 22, 23	Kerbside	Diffusion Tube	100	100.0	30.8	30.6	22.5	22.8	22.6
24	Roadside	Diffusion Tube	100	100.0	20.3	21.7	17.7	20.9	16.7
25	Roadside	Diffusion Tube	73.1	73.1	26.5	24.5	21.7	21.4	17.1
26	Urban Background	Diffusion Tube	82.7	82.7	25.2	22.0	14.9	21.2	16.3
27, 28, 29	Roadside	Diffusion Tube	100	100.0	20.6	20.1	14.3	16.3	14.2
30	Roadside	Diffusion Tube	92.3	92.3	24.8	22.1	18.1	16.9	17.6
31	Roadside	Diffusion Tube	100	100.0	27.6	24.9	19.6	19.8	18.5
32	Roadside	Diffusion Tube	100	100.0	31.1	31.2	20.6	22.7	23.2
33	Roadside	Diffusion Tube	100	100.0	26.8	27.6	19.7	19.1	19.4
34	Kerbside	Diffusion Tube	100	100.0	22.5	23.4	16.6	16.8	17.3
35	Roadside	Diffusion Tube	82.7	82.7	19.7	14.9	12.0	12.0	12.1

Site ID	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2022 (%) ⁽²⁾	2018	2019	2020	2021	2022
36	Roadside	Diffusion Tube	100	100.0	32.7	29.0	23.6	24.4	22.0
37	Roadside	Diffusion Tube	75.0	75.0	23.0	27.0	21.0	19.2	21.0
38	Roadside	Diffusion Tube	15.4	15.4	22.8	24.9	18.5	17.3	-
39	Urban Background	Diffusion Tube	100	100.0	15.6	15.4	12.7	11.4	12.0
40	Roadside	Diffusion Tube	100	100.0	17.4	18.2	14.0	15.4	12.8
41	Roadside	Diffusion Tube	15.4	15.4	27.5	24.8	22.5	23.7	-
42	Roadside	Diffusion Tube	15.4	15.4	18.8	18.2	15.2	13.6	-
44	Roadside	Diffusion Tube	100	100.0	16.4	18.5	14.2	18.0	12.5
45	Roadside	Diffusion Tube	7.7	7.7	14.5	17.3	13.4	14.3	-
46	Roadside	Diffusion Tube	100	100.0	16.4	18.0	19.9	15.9	12.6
48	Roadside	Diffusion Tube	100	100.0	-	17.2	12.5	16.1	13.2
49	Roadside	Diffusion Tube	100	100.0	-	22.5	16.7	19.2	16.3
50	Roadside	Diffusion Tube	100	100.0	-	18.4	14.1	15.3	13.1

Notes:

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

NO₂ annual means exceeding 60 µg/m³, indicating a potential exceedance of the NO₂ 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. Annualised means highlighted with (*)

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

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

Figure A.1 Trends in Annual Mean NO₂ Concentration in Bishopbriggs AQMA

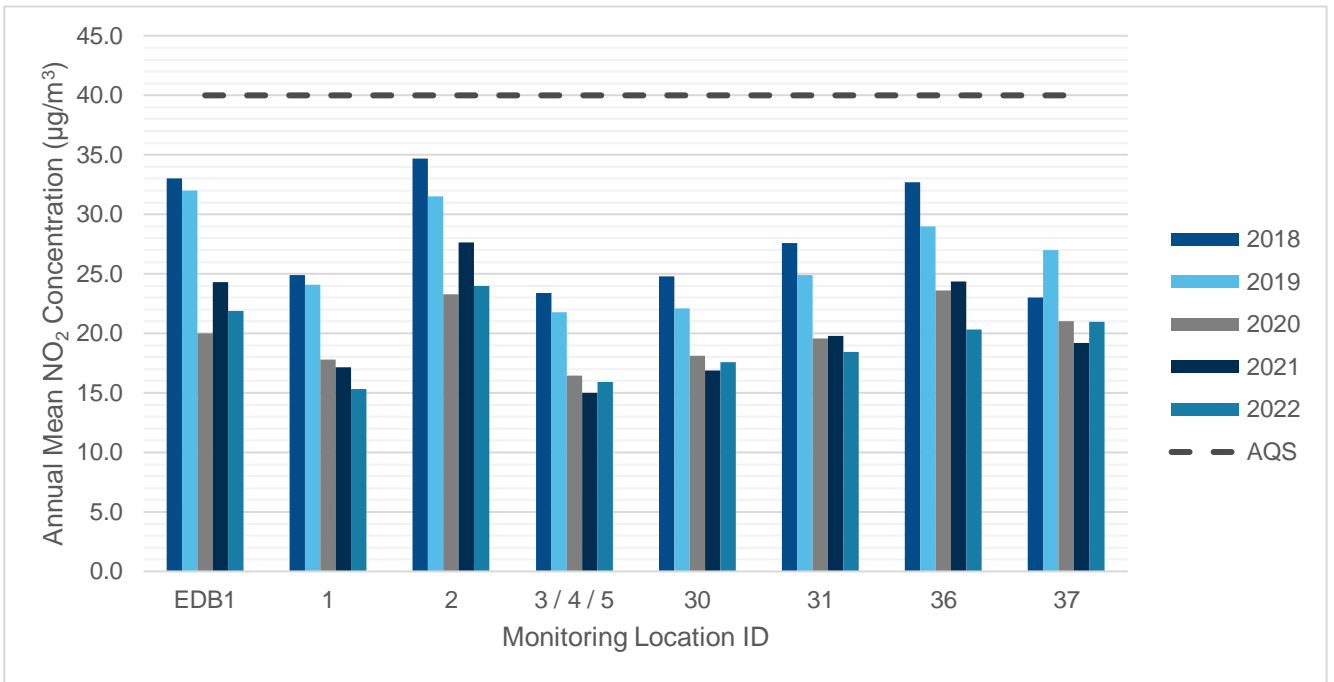


Figure A.2 Trends in Annual Mean NO₂ Concentration in Bearsden

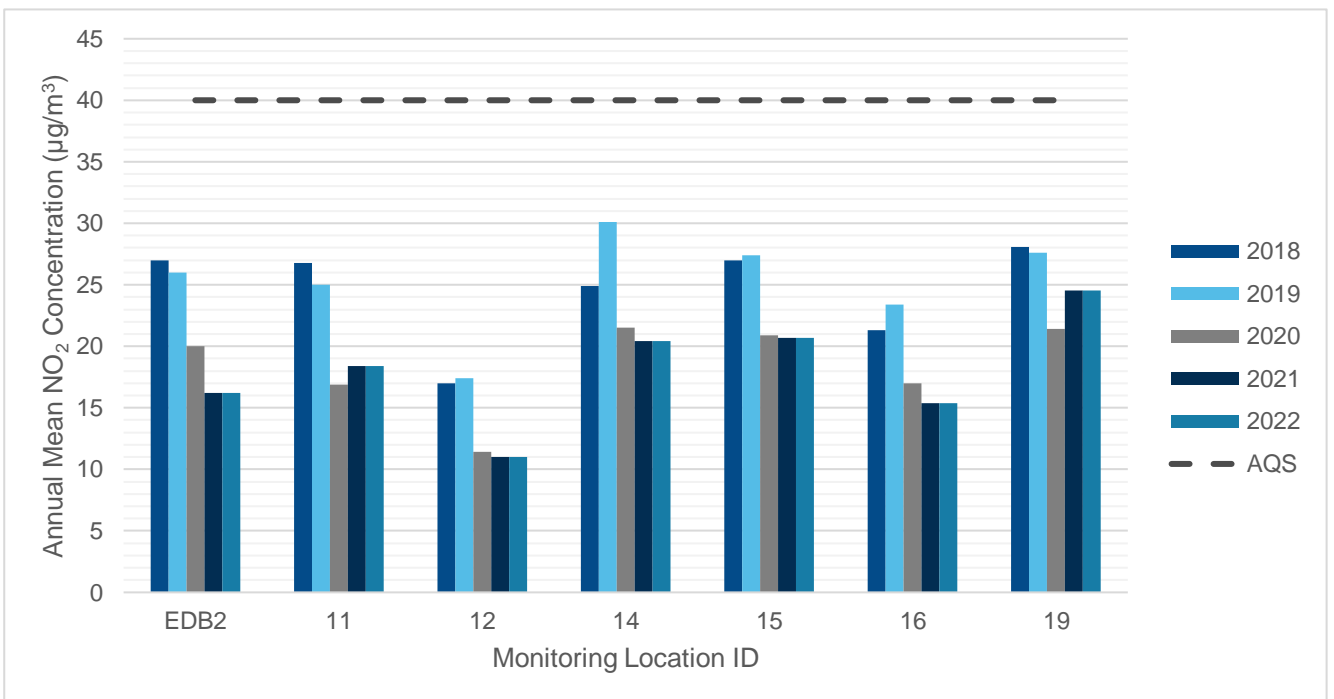


Figure A.3 Trends in Annual Mean NO₂ Concentration in Bearsden (continued)

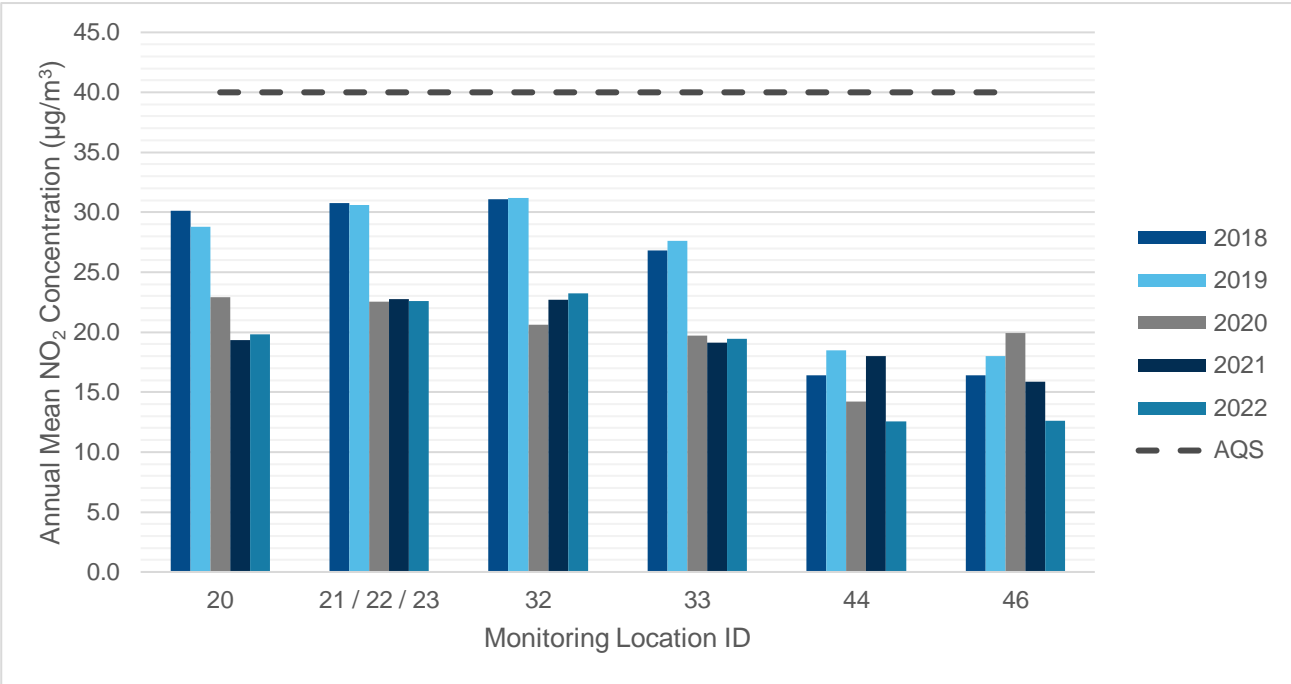


Figure A.4 Trends in Annual Mean NO₂ Concentration in Kirkintilloch

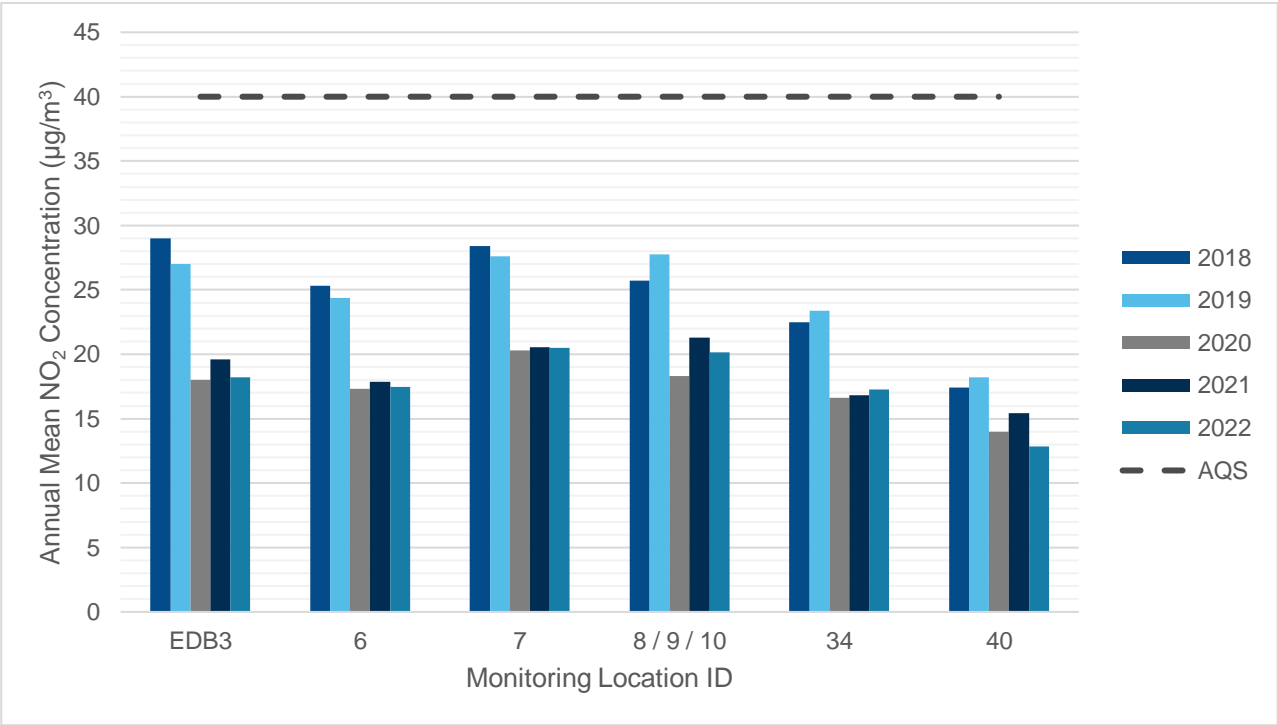


Figure A.5 Trends in Annual Mean NO₂ Concentration in Milngavie

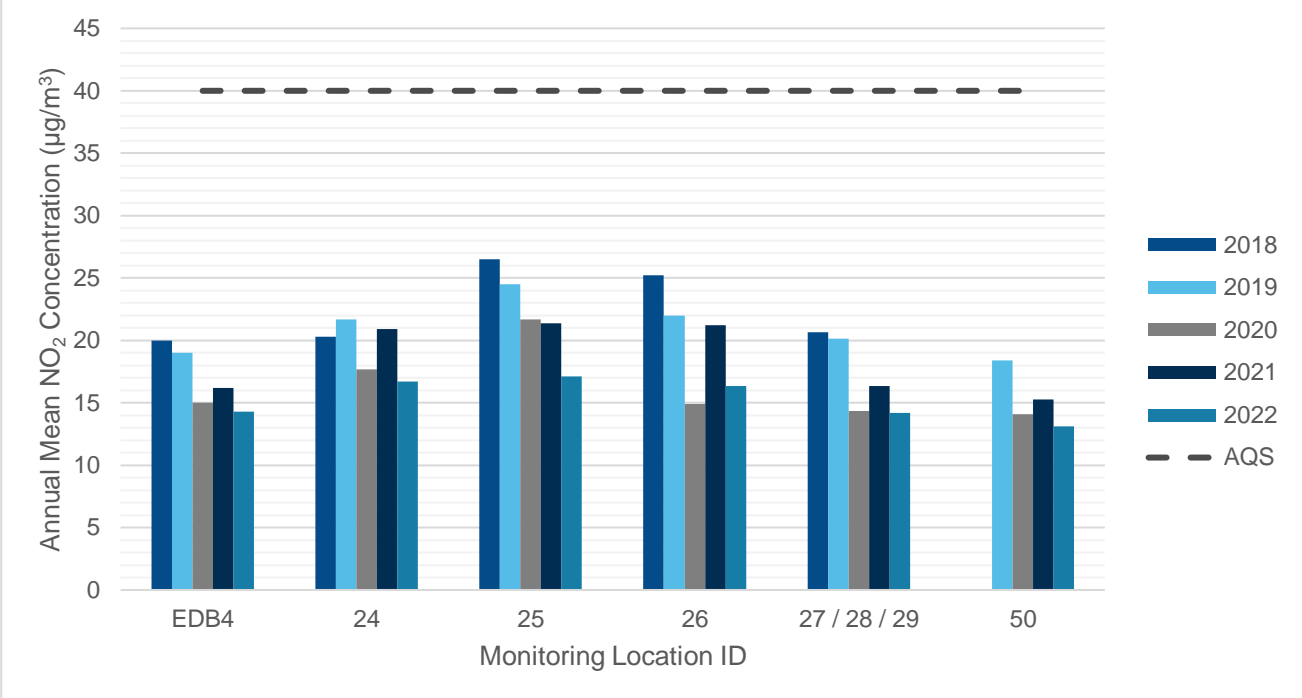


Table A.4 – 1-Hour Mean NO₂ Monitoring Results, Number of 1-Hour Means > 200 µg/m³

Site ID	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2022 (%) ⁽²⁾	2018	2019	2020	2021	2022
Bearsden	Kerbside	Automatic	94.4	94.4	0	0	0	0	0
Bishopbriggs	Roadside	Automatic	72.9	72.9	0(99)	0	0	0	0 (80)
Kirkintilloch	Kerbside	Automatic	99.0	99.0	0	0	0	0	0
Milngavie	Roadside	Automatic	74.2	74.2	0(105)	0	0	0	0 (80)

Notes:

Exceedances of the NO₂ 1-hour mean objective (200 µg/m³ not to be exceeded more than 18 times/year) are shown in bold.

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

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

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

Table A.5 – Annual Mean PM₁₀ Monitoring Results (µg/m³)

Site ID	Site Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2022 (%) ⁽²⁾	2018	2019	2020	2021	2022
Bearsden	Kerbside	99.7	99.7	14	11	8	9.5	10.0
Bishopbriggs	Roadside	94.6	94.6	17	12	10	10.2	11.4
Kirkintilloch	Kerbside	99.1	99.1	11	13	9	10.7	10.6
Milngavie	Roadside	89.7	89.7	13	14	10	8.7	9.0

Notes:

Exceedances of the PM₁₀ annual mean objective of 18 µg/m³ are shown in bold.

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

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

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

Figure A.6 Trends in Annual Mean PM₁₀ Concentration in East Dunbartonshire

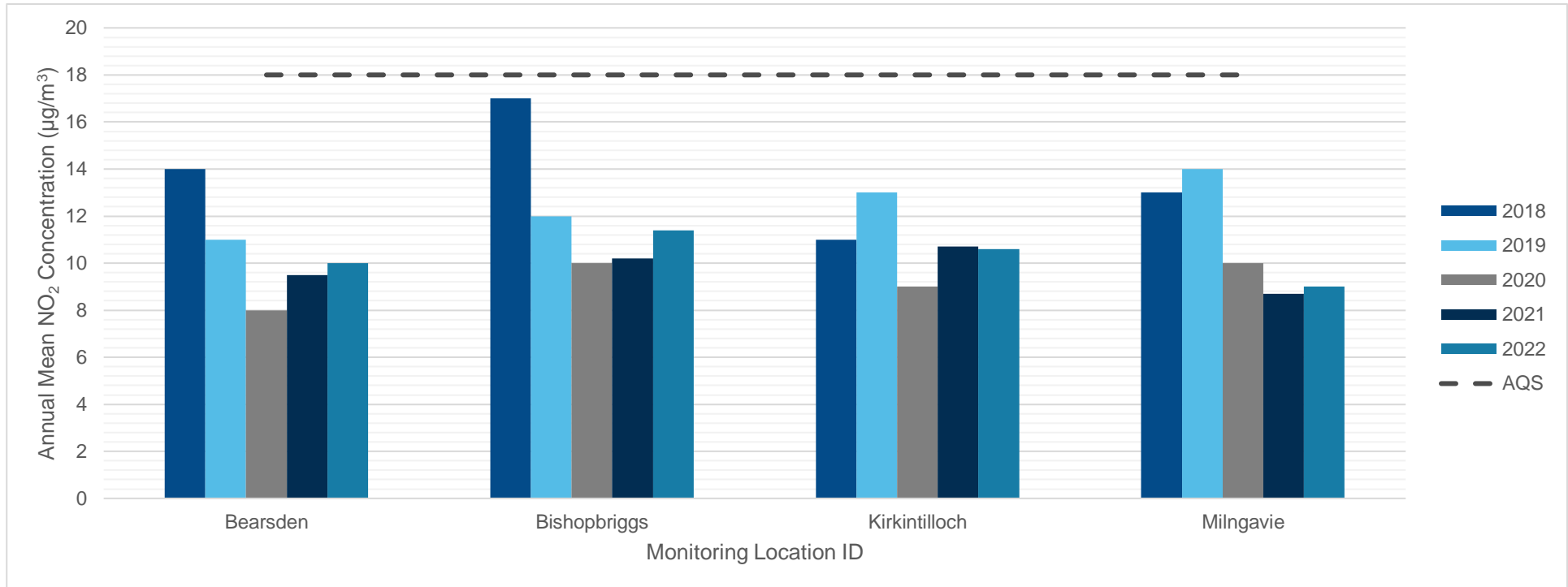


Table A.6 – 24-Hour Mean PM₁₀ Monitoring Results, Number of PM₁₀ 24-Hour Means > 50µg/m³

Site ID	Site Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2022 (%) ⁽²⁾	2018	2019	2020	2021	2022
Bearsden	Kerbside	99.7	99.7	0	2	0	0	2
Bishopbriggs	Roadside	94.6	94.6	7	2	0	0	3
Kirkintilloch	Kerbside	99.1	99.1	0	3	0	0	4
Milngavie	Roadside	89.7	89.7	0	2	0	0	0

Notes:

Exceedances of the PM₁₀ 24-hour mean objective (50 µg/m³ not to be exceeded more than seven times/year) are shown in bold.

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

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

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

Table A.7 – Annual Mean PM_{2.5} Monitoring Results (µg/m³)

Site ID	Site Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2022 (%) ⁽²⁾	2018	2019	2020	2021	2022
Bearsden	Kerbside	99.7	99.7	N/A	6	5	5.2	5.5
Bishopbriggs	Roadside	94.6	94.6	N/A	7	6	5.9	6.4
Kirkintilloch	Kerbside	99.1	99.1	6	8	5	5.4	5.7
Milngavie	Roadside	89.7	89.7	N/A	N/A	4	4.8	4.9

Notes:

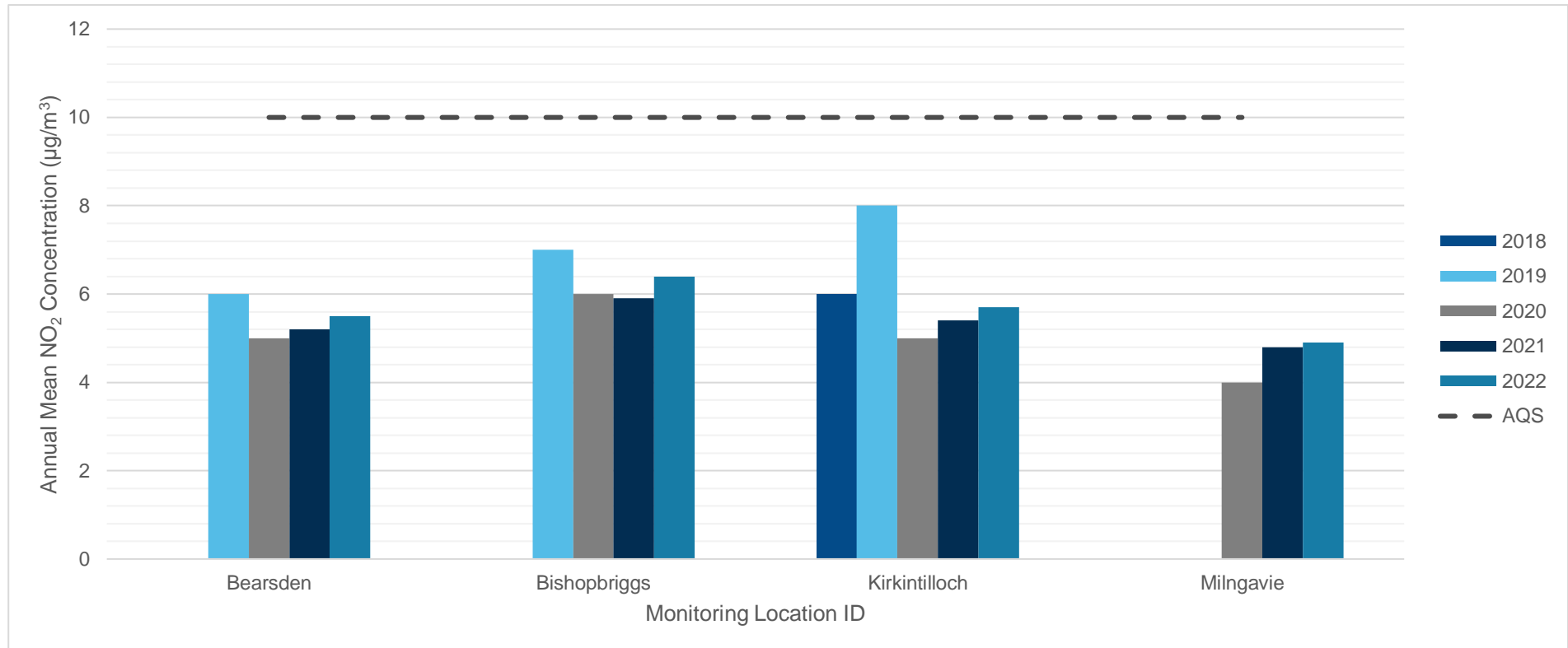
Exceedances of the PM_{2.5} annual mean objective of 10 µg/m³ are shown in bold.

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

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

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

Figure A.7 Trends in Annual Mean PM₁₀ Concentration in East Dunbartonshire



Appendix B: Full Monthly Diffusion Tube Results for 2022

Table B.1 – NO₂ 2022 Monthly Diffusion Tube Results (µg/m³)

Site ID	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Bias Adjusted ⁽¹⁾
1	25.9	21.2	29.8	18.7	13.7	11.8	4.9	15.4	19.7	18.7	24.4		18.6	16.6
2	31.4	25.3	36.9	25.8	25.9	16.7	12.2	19.8	25.9	25.4	34.0	43.3	26.9	24.0
3	57.6	15.3	23.9	15.5	12.2	9.9	4.7	11.1	15.1	16.4	22.9	29.4	-	.. ⁽²⁾
4	25.7	16.3	25.1	16.7	12.2	10.5	6.5	11.5	11.7	16.7	20.0	31.6	-	.. ⁽²⁾
5	18.0	17.7	24.9	15.3	10.9	9.5	6.5	14.0	13.5	15.1	24.9	32.9	17.8	15.9 ⁽²⁾
6	23.8	19.0	27.8	19.0	13.2	11.9	10.0	14.1	15.0	20.3	27.0	33.5	19.6	17.5
7	31.2	24.4	31.6	23.1	18.1	16.3	7.5	19.5	16.0	20.7	29.7	37.5	23.0	20.5
8	30.8	18.7	27.6	22.6	16.0	14.5	10.6	19.8	13.8	23.3	28.9	39.1	-	.. ⁽³⁾
9	28.4	22.2	29.8	24.0	15.0	15.8	9.1	18.4	21.6	21.3	28.6	38.4	-	.. ⁽³⁾
10	27.8	23.7	28.0	23.7	16.8	12.3	12.7	21.1	19.2	22.8	29.1	37.1	22.6	20.2 ⁽³⁾
11	29.0	21.2	24.4	20.1	15.9	15.8	5.6	16.8	17.6	21.0	28.4	31.6	20.6	18.4
12	16.0	10.7	19.3	11.2	7.2	5.5	3.3	10.4	6.1	13.1	19.4	25.4	12.3	11.0
13	10.6	7.2											-	-
14	30.9	22.3	30.6	26.2	14.0	16.2	15.2	22.5	15.6	22.9	21.1	37.3	22.9	20.4
15	28.1	26.3	29.3	21.1	19.4	20.9	15.2	22.0	12.7	24.5	25.1	33.6	23.2	20.7
16	23.7	17.5	25.0	12.3	13.3	13.8	5.0	13.7	9.8	20.3		35.0	17.2	15.4
17	27.9	21.3											-	-
18	29.8	25.3											-	-
19	29.5	23.0	30.7		18.9		9.2	55.4	25.4	18.9	20.9	42.7	27.5	24.5
20	27.1	21.5	31.3	22.8	16.7	14.8	8.1	19.8	15.7	21.7	28.2	38.7	22.2	19.8
21	26.8	24.6	36.4	26.9	23.9	21.7	12.0	28.2	27.7	16.9	21.8	42.0	-	.. ⁽⁴⁾
22	27.6	20.8	33.5	25.5	21.5	18.9	13.8	26.2	26.7	26.5	25.3	37.9	-	.. ⁽⁴⁾
23	29.4	23.3	31.1	26.0	22.8	20.5	12.2	26.7	16.1	20.8	26.5	41.8	25.3	22.6 ⁽⁴⁾
24	29.6	16.2	19.3	15.9	16.6	15.5	9.7	15.7	12.8	27.4	17.8	27.9	18.7	16.7
25	31.3	21.2	23.2	19.3	17.2	15.0	8.3	17.1	19.7				19.1	17.1
26	24.3	18.5	22.6	17.4	14.3	13.8	8.3		15.9		16.9	31.0	18.3	16.3
27	22.6	14.6	22.2	15.7	11.4	8.2	7.1	13.6	16.3	15.6	10.4	28.5	-	.. ⁽⁵⁾
28	20.5	14.1	20.6	15.1	10.8	7.9	7.2	12.3	16.9	18.0	19.1	28.4	-	.. ⁽⁵⁾

Site ID	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Bias Adjusted ⁽¹⁾
29	19.7	16.0	23.3	16.8	12.3	9.6	6.4	14.0	15.6	16.0	16.0	28.6	15.9	14.2 ⁽⁵⁾
30	20.7	11.1	28.3	18.5	10.7		6.4	33.0	15.8	17.1	21.0	34.1	19.7	17.6
31	27.1	16.2	32.0	19.7	17.1	13.2	6.8	19.0	12.6	20.9	26.4	37.2	20.7	18.5
32	26.1	18.1	34.1	29.4	24.8	20.1	14.1	24.3	27.1	24.0	29.3	41.0	26.0	23.2
33	23.8	20.1	28.7	24.0	20.7	19.2	10.8	19.8	21.4	20.3	15.5	37.1	21.8	19.4
34	26.4	20.7	24.6	17.7	12.9	11.9	11.8	17.1	15.8	18.9	18.7	35.6	19.3	17.3
35	18.9	9.1	20.4	10.6			3.8	10.5	11.3	10.8	13.6	26.0	13.5	12.1
36	33.5	24.6	30.4	23.3	16.8	17.6	10.1	22.3		25.7	26.0	40.9	24.7	22.0
37	30.6	16.6	28.9	16.7				19.3	19.2	18.0	23.3	39.0	23.5	21.0
38	17.5	11.2											-	-
39	36.1	10.3	8.9	11.0	7.8	5.7	3.5	9.2	11.1	10.1	21.2	27.0	13.5	12.0
40	21.0	15.7	10.6	10.6	9.5	8.6	6.5	12.1	14.6	13.2	22.9	27.4	14.4	12.8
41	25.0	20.1											-	-
42	19.5	15.0											-	-
44	18.6	15.3	13.2	11.5	10.3	8.3	3.8	13.3	14.3	13.2	18.6	28.2	14.1	12.5
45	20.5												-	-
46	16.3	10.7	16.9	15.3	9.8	11.6	4.1	10.0	13.7	15.0	16.6	29.7	14.1	12.6
48	18.9	13.6	14.3	16.0	9.9	5.9	5.0	13.9	15.0	17.5	21.7	25.5	14.8	13.2
49	27.2	18.3	17.6	20.6	11.5	10.1	8.9	16.9	16.2	17.1	21.7	33.4	18.3	16.3
50	19.0	14.2	9.5	16.8	11.7	9.4	4.4	16.3	13.3	14.8	23.8	23.3	14.7	13.1

Notes:

- (1) See Appendix C for details on bias adjustment
- (2) Triplicate Site with 3, 4 and 5 - Annual data provided for 5 only
- (3) Triplicate Site with 8, 9 and 10 - Annual data provided for 10 only
- (4) Triplicate Site with 21, 22 and 23 - Annual data provided for 23 only
- (5) Triplicate Site with 27, 28 and 29 - Annual data provided for 29 only

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

New or Changed Sources Identified Within East Dunbartonshire Council During 2022

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

Additional Air Quality Works Undertaken by East Dunbartonshire Council During 2022

East Dunbartonshire Council has not completed any additional works within the reporting year of 2022.

QA/QC of Diffusion Tube Monitoring

The diffusion tubes are supplied and analysed by Glasgow Scientific Services (GSS) and are prepared using the 20% TEA in water method and in accordance with the procedures set out in the practical guidance. Glasgow Scientific Services (GSS) Laboratory is UKAS accredited for the analysis of Diffusion tubes. Diffusion tube monitoring was undertaken in accordance with the diffusion tube calendar provided by Defra. All results have been bias adjusted and annualised where required.

Glasgow Scientific Services (GSS) Laboratory also participates in the independent AIR-PT scheme for NO₂ tubes analysis. GSS has performed to proficiency levels of 100% for the first two periods of 2022, January to June during the AIR-PT testing scheme. The above results were determined to be satisfactory based upon a z-score of $\leq \pm 2$. At the time of writing the results for the periods between June and December 2022 were not available for review.

Diffusion Tube Annualisation

All diffusion tube monitoring locations within East Dunbartonshire Council recorded data capture of above 75% therefore it was not required to annualise any monitoring data. In

addition, any sites with a data capture below 25% do not require annualisation, in 2022 seven diffusion tube monitoring locations recorded data capture below 25% due to the cessation of monitoring at these locations.

Diffusion Tube Bias Adjustment Factors

East Dunbartonshire Council have applied a local bias adjustment factor of 0.89 to the 2022 monitoring data. A summary of bias adjustment factors used by East Dunbartonshire Council over the past five years is presented in Table C.1.

Four co-location studies were undertaken by East Dunbartonshire Council in 2022, these co-location studies were all utilised given good data capture to provide a combined local bias adjustment factor for 2022 in line with guidance provided within LAQM.TG22 Chapter 7: NO_x and NO₂ Monitoring, NO₂ by Diffusion Tubes. This local bias adjustment factor was applied to all diffusion tube monitoring data undertaken in 2022.

Table C.1 – Bias Adjustment Factor

Year	Local or National	If National, Version of National Spreadsheet	Adjustment Factor
2022	Local	-	0.89
2021	Local	-	0.97
2020	Local	-	0.95
2019	Local	-	0.85
2018	Local	-	0.92

NO₂ Fall-off with Distance from the Road

No diffusion tube NO₂ monitoring locations within East Dunbartonshire Council required distance correction during 2022.

QA/QC of Automatic Monitoring

All automatic sites are part of the Scottish Air Quality Programme and are audited twice per year by Ricardo. Servicing and repair is carried out by Acoem UK and Horiba UK, the service contracts include a six monthly service of instruments, call outs to site for

repairs and the routine replacement of consumables. All data is available in real-time, and regularly scaled and ratified by Ricardo on behalf of the Scottish Government.

PM₁₀ and PM_{2.5} Monitoring Adjustment

The type of PM₁₀ and PM_{2.5} monitors utilised within East Dunbartonshire Council do not require the application of a correction factor.

Automatic Monitoring Annualisation

If annualisation was required for any automatic monitoring sites a summary of the sites should be provided here and the annualisation data should be presented in Table C.2. Annualisation is required for any site with data capture less than 75% but greater than 25%. Two automatic sites within the East Dunbartonshire Council area recorded data capture below 75% for NO₂ in 2022 and therefore annualisation was undertaken.

NO₂ Fall-off with Distance from the Road

No automatic NO₂ monitoring locations within East Dunbartonshire Council required distance correction during 2022.

Table C.2 – Annualisation Summary (concentrations presented in $\mu\text{g}/\text{m}^3$)

Annualisation was undertaken for two automatic monitoring sites for which data capture was below 75% in 2022. Annualisation was undertaken utilising methodology provided in [Technical Guidance LAQM.TG22](#). Four urban and rural background sites were selected with greater than 85% data capture in 2022. No diffusion tubes monitoring sites required annualisation in 2022.

Site ID	Annualisation Factor Glasgow Townhead	Annualisation Factor Edinburgh St Leonards	Annualisation Factor Peebles	Annualisation Factor Bush Estate	Average Annualisation Factor	Raw Data Annual Mean	Annualised Annual Mean	Comments
Bishopbriggs	0.8963	0.8295	0.9598	0.9614	0.9118	16.2	14.7	
Milngavie	0.8963	0.8295	0.9598	0.9614	0.9118	14.3	13.1	

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	10	10	11	9	-
Bias Factor A	0.87 (0.77 - 1)	1.02 (0.91 - 1.16)	0.82 (0.76 - 0.9)	0.88 (0.8 - 0.98)	-
Bias Factor B	15% (0% - 30%)	-2% (-14% - 10%)	22% (12% - 32%)	13% (2% - 24%)	-
Diffusion Tube Mean ($\mu\text{g}/\text{m}^3$)	25.9	16.4	23.0	15.3	-
Mean CV (Precision)	6.3%	8.4%	6.8%	6.2%	-
Automatic Mean ($\mu\text{g}/\text{m}^3$)	22.5	16.7	18.9	13.5	-
Data Capture	99%	99%	99%	99%	-
Adjusted Tube Mean ($\mu\text{g}/\text{m}^3$)	22 (20 - 26)	17 (15 - 19)	19 (17 - 21)	13 (12 - 15)	-

Notes:

A combined local bias adjustment factor of 0.89 has been used to bias adjust the 2022 diffusion tube results.

Appendix D: Maps Showing the Location of Monitoring Sites

Figure D.1 – Monitoring within the Bishopbriggs area

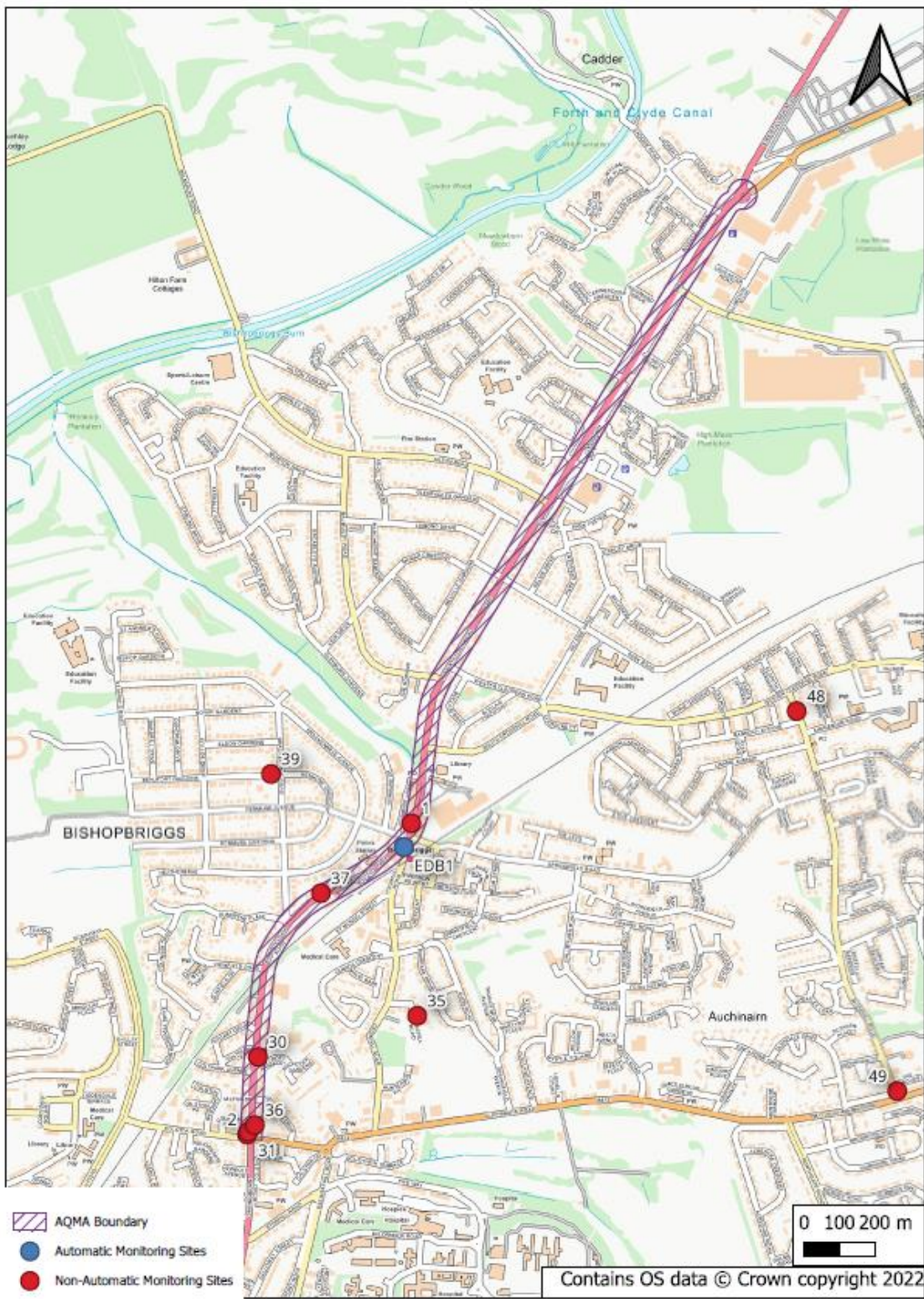


Figure D.2 – Monitoring within the Kirkintilloch area

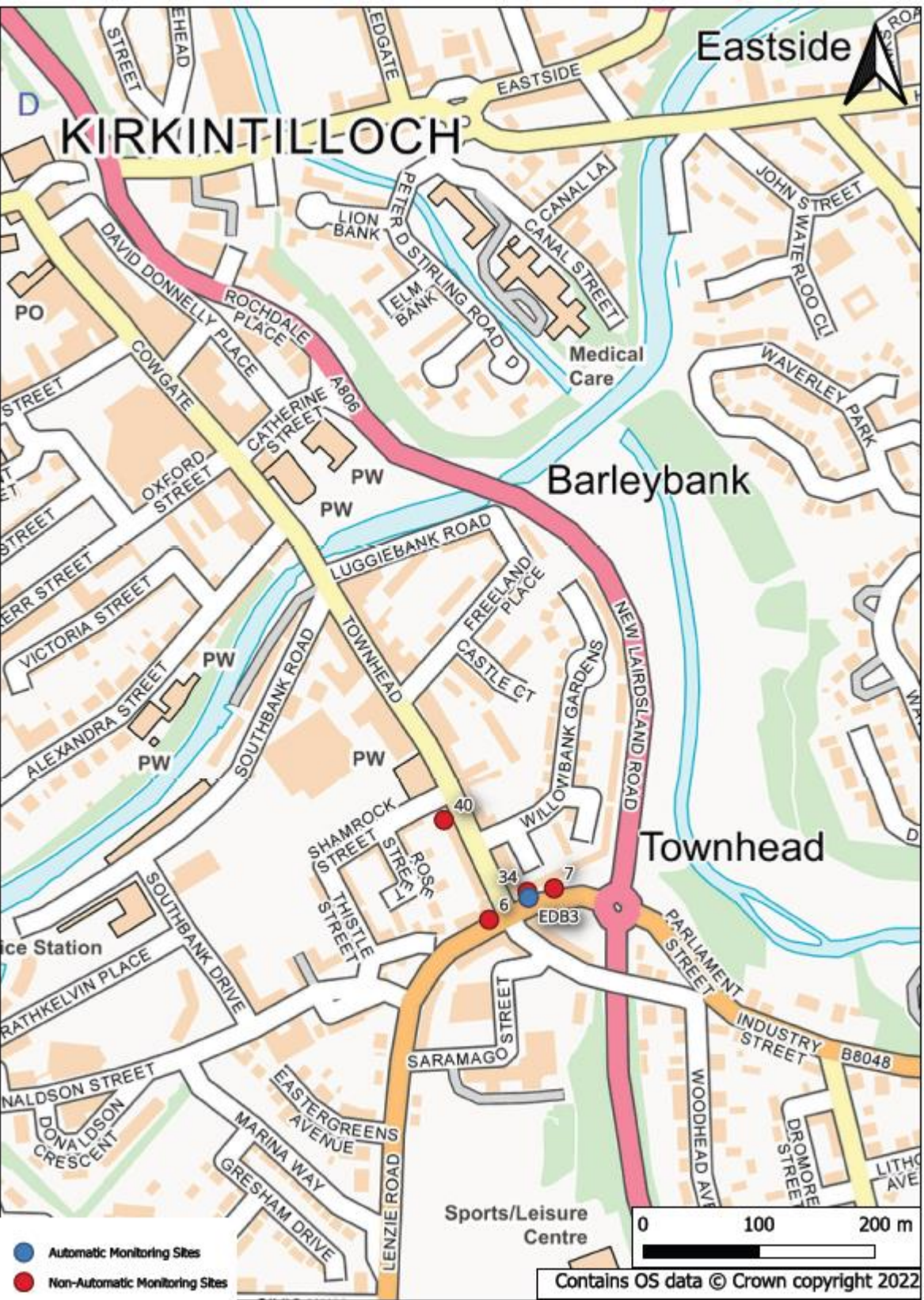


Figure D.3 – Monitoring within the Milngavie area

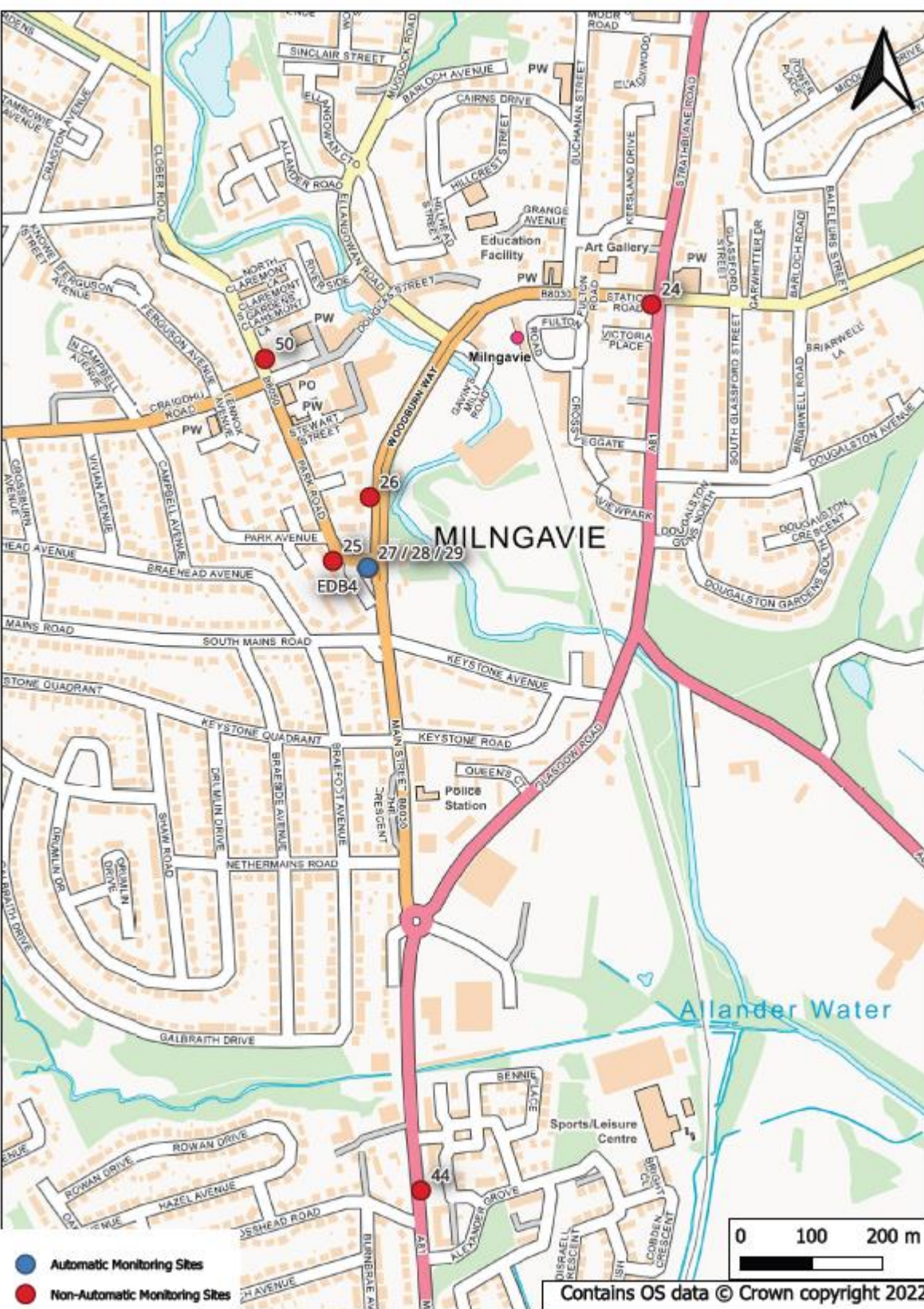
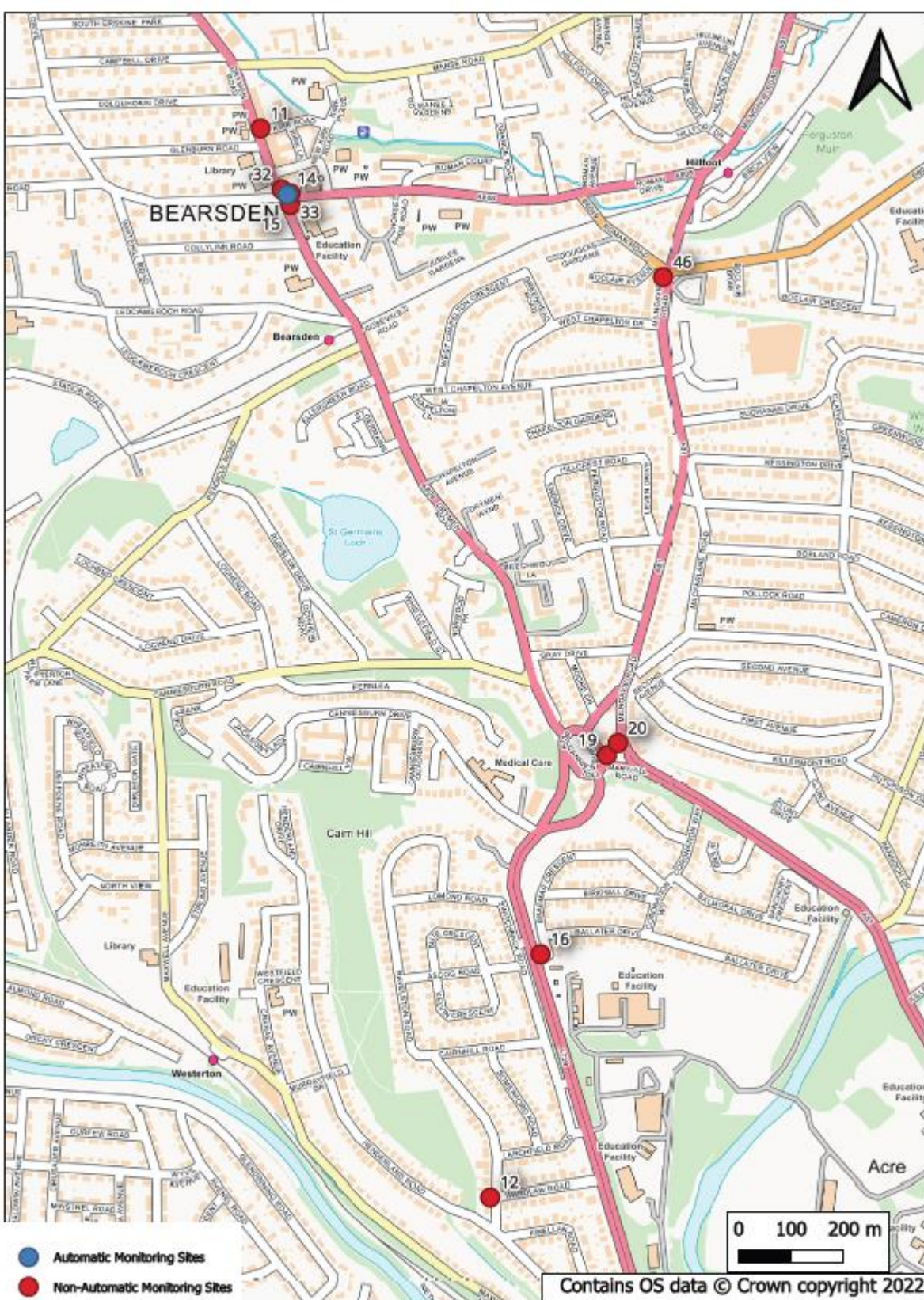


Figure D.4 – Monitoring within the Bearsden area



Glossary of Terms

Abbreviation	Description
AQAP	Air Quality Action Plan - A detailed description of measures, outcomes, achievement dates and implementation methods, showing how the LA intends to achieve air quality limit values'
AQMA	Air Quality Management Area – An area where air pollutant concentrations exceed / are likely to exceed the relevant air quality objectives. AQMAs are declared for specific pollutants and objectives
APR	Air quality Annual Progress Report
AURN	Automatic Urban and Rural Network (UK air quality monitoring network)
Defra	Department for Environment, Food and Rural Affairs
DMRB	Design Manual for Roads and Bridges – Air quality screening tool produced by Highways England
FDMS	Filter Dynamics Measurement System
GSS	Glasgow Scientific Services
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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