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Clackmannanshire Council

2026 Air Quality Annual Progress Report

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Annual Progress Report (APR)



Clackmannanshire Council



2026 Air Quality Annual Progress Report (APR) for Clackmannanshire Council

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

Local Air Quality Management

June 2026

Clackmannanshire Council

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Executive Summary: Air Quality in Our Area

This report provides an overview of air quality within Clackmannanshire during 2025. This is done by reviewing the latest pollutant monitoring data for NO₂, PM₁₀ and PM_{2.5} and comparing the results to the national air quality objectives in accordance with the guidance in LAQM TG.22.

Air Quality in Clackmannanshire

The area of Clackmannanshire is dominated by large amounts of rural land, which gives rise to good levels of air quality. This is supported by the most recently monitoring data for 2025 which indicates NO₂, PM₁₀ and PM_{2.5} concentrations below the relevant air quality objectives. Over the last five years, there have been no exceedances of any relevant air quality objective at any monitoring sites. Therefore, it is evident from the monitoring data that Clackmannanshire continues to experience good air quality (for NO₂, PM₁₀ and PM_{2.5}).

During 2025, Clackmannanshire Council monitored the concentration of NO₂ through a network of six passive diffusion tubes and one automatic continuous analyser. The concentrations of PM₁₀ and PM_{2.5} were also concurrently measures by this automatic analyser during 2025. The diffusion tubes were situated in Alloa / Sauchie, whilst the continuous analyser was located on King Street, Alloa (A907). Across the diffusion tube monitoring network, all six sites recorded an NO₂ annual mean concentration well below the air quality objective of 40 µg/m³, with concentrations in the range of 6.0 – 8.3 µg/m³. Relative to the previous reporting year, the NO₂ annual mean concentration decreased at all six sites in 2025, continuing the trend observed across the last five years (2021 – 2025) of year-on-year decreases in the concentration of NO₂ across the diffusion tube network. At the automatic analyser on King Street, Alloa, the NO₂ annual mean concentration in 2025 was 13.9 µg/m³, which is a slight increase from that recorded in the previous reporting year (11.5 µg/m³). However, when analysed as a wider trend (2021 – 2025), the concentration in 2025 still shows a downward trajectory over the last five reporting years. For PM₁₀ and PM_{2.5}, the annual mean objectives of 18 µg/m³ and 10 µg/m³ respectively, were not exceeded in 2025, with annual mean concentrations of 10.9 µg/m³ (PM₁₀) and 6.5 µg/m³ (PM_{2.5}) recorded by the automatic analyser on King Street, Alloa.

Actions to Improve Air Quality

As Clackmannanshire Council has not declared an Air Quality Management area due to concentrations being continually below the air quality objectives, there is no specific Air Quality Action Plan within Clackmannanshire. However, Clackmannanshire Council continue to take the following measures to ensure air quality is further improved:

- Deploy an 'AQ Mesh Pod' to identify potential hotspot areas. The AQ Mesh Pod is a type of low-cost sensor that measures concentrations of NO₂, PM₁₀ and PM_{2.5} – during 2025, this was situated at Hallpark Road (A908).
- Promote sustainable travel alternatives (i.e. walking / cycling) through the development of cycle routes, travel plans and cycle / walk to work initiatives. Clackmannanshire Council has also introduced a number of quieter / safer street to make sustainable form of travel more desirable (i.e. cycling without congestion of vehicles on the road / new safe road crossings and improved safety measures around schools).
- Decrease emissions from vehicles by reducing the number of polluting vehicles in Clackmannanshire Council's fleet and replacing older inefficient vehicles with low emission alternatives.
- Facilitate the uptake of zero emission vehicles through the installation of EV charging points. Clackmannanshire Council aim to have at least one charge point in every community.
- Participate in initiatives that have a positive impact on air quality, such as School Streets, the 'Wee Walk, Wee Cycle the Wee County' campaign, Clean Air Day, Big Bike Day, and Cycling Awareness Days.

These actions align to the [Cleaner Air for Scotland 2 \(CAFS2\)](#) air quality strategy, with a particular focus on health, public engagement, behavioural change and modal shift to active travel.

Local Priorities and Challenges

A key priority for Clackmannanshire Council is to continue to review the latest monitoring data for primary pollutants of concern (NO₂, PM₁₀ and PM_{2.5}), by maintaining both the passive and automatic monitoring networks. Clackmannanshire Council also have the ability to widen the area of coverage from year-to-year by utilising the 'AQ Mesh Pod',

which is portable so can be relocated to identify hotspot areas; however, during 2025 this remained in the same place as during 2024 on Hallpark Road (A908).

Another key priority for Clackmannanshire Council is to continue with plans to promote low to zero emission transport and sustainable travel alternatives, which are outlined throughout this report. Consideration is also to be given to the [‘Clean Air for Scotland 2’](#) strategy. During the current reporting year of 2026, Clackmannanshire Council’s priority actions include:

- **Cycle / Walking Infrastructure:** Make improvements and upgrades to the cycle / walking path network to continue to interlink with national cycle routes and transport hubs to increase links between Clackmannanshire, Fife and Stirling Council areas.
- **Active Travel Initiatives:** Continue to encourage local businesses and residents to adopt a sustainable approach to travel, such as “Big Bike Day”, Council E-Bike fleet, Cycling Awareness Day, Council Staff Step Count Challenge, and Council “Bring your Bike to Work Day”.
- **Traffic Regulations Order (20mph):** The programme will see speed limits in urban areas around schools, town centres or within residential areas reduced to 20 mph. Active travel to school will continue to be promoted and measures continue to be planned to improve road safety measures around schools. Five primary schools have Active Travel Zone Maps to promote “Park & Stride” options, walking and travel routes and others are being considered.

How to Get Involved

Improving air quality in Clackmannanshire requires a collective effort beyond those of Clackmannanshire Council, including the involvement of local businesses, members of the public, logistics companies and transport operators. For example, choosing to walk or cycle instead of using the car, car sharing where possible and opting to buy a hybrid or lower emissions vehicles all help in improving air quality within Clackmannanshire.

It is also important that individuals make informed decisions about the installation and use of biomass boiler systems and domestic wood or multi-fire stoves as they have the potential to contribute to increased concentrations of gases or particulate matter in the air. Further information on such appliances is available on Clackmannanshire Council’s website for [wood-burning stoves](#).

There are multiple ways through which members of the public can actively engage with the topic of air quality within Clackmannanshire. For example, the public can engage with Clackmannanshire Council's efforts by visited the dedicated website for [Air Quality](#).

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1 Local Air Quality Management

This report provides an overview of air quality in Clackmannanshire during 2025. 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 Clackmannanshire 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.

Clackmannanshire Council currently does not have any AQMAs. Based on the monitoring data, there are also no recommendations in the 2025 APR to declare a new AQMA.

2.2 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. Clackmannanshire Council has taken forward a number of measures within the action plan during the current reporting year of 2025 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 2.1.

In order to encourage local businesses and residents to adopt a sustainable approach to travel, a number of measures were introduced in 2025. Clackmannanshire connects with surrounding councils through sustainable travel / cycle routes like the Forth Coastal Route, which links to Kirkcaldy and Central Scotland, and plans are underway to further improve and expand the cycle network. Key completed measures for this reporting year are:

- **Cycle / Walking Paths:** Approximately 2km of path upgrades were carried out in 2025. These were done at various locations to improve the surface of the path network. New lighting columns were installed along the Alva to Tillicoultry cycle path. Throughout Clackmannanshire, traffic calming measures including features like speed bumps, chicanes, and road narrowing have been implemented to discourage speeding. Appropriate speed limits have been implemented on some road routes providing a safer environment for pedestrians and cyclists. Further information on walking routes is available on the [Walking in Clackmannanshire](#) website of Clackmannanshire Council. There are 30 graded walks within 30 miles of Clackmannanshire (available [here](#)). Information on the existing cycling routes (i.e. the National Cycle Network Route 76, Route 767 and Route 768) is available on the [Cycling in Clackmannanshire](#) website of Clackmannanshire Council.
- **Active Travel (School):** Five active travel zone maps were created for primary schools promoting park and stride options and walking routes. Further information is provided on the [Active Travel Zone Maps for Primary Schools](#) and the [Safer Routes to School](#) website of Clackmannanshire Council. The five primary schools with an active travel zone map include:
 - Alva Primary School (available [here](#)).
 - Craigbank Primary School (available [here](#)).
 - Menstrie Primary School (available [here](#)).
 - St Serfs Primary School (available [here](#)).
 - Sunnyside Primary School (available [here](#)).
- **Active Travel (Work):** Fifty Clackmannanshire Council staff participated in a Step Count Challenge, walking a collective total of 5,426 miles. This initiative is designed to encourage people to walk more in a fun way. Clackmannanshire Council staff participated in the [Cycle to Work Scheme](#) delivered through Cycle Solutions. This scheme offers a tax free bike and accessories package through a loan agreement.
- **Cycling Awareness Day:** In 2025, Clackmannanshire Council (in collaboration with Alloa First and Police Scotland) delivered a Cycling Awareness Day in Alloa town centre. A total of 34 bikes were serviced, 45 bikes given police security tags and 85 people asked about the use of e-bikes. A “Big Bike Day” was also held in September 2025, promoting cycling for all ages, offering bike security and promoting active travel. Alloa High Street and a few surrounding streets were closed to travel. A community travel feedback station was also available, allowing people the chance to share ideas on improving active travel in Clackmannanshire.

- **Bike Shelters:** Seven new bike shelters have been installed in 2025 throughout Clackmannanshire, including one at Clackmannanshire Council's office, to encourage both staff and visitors to cycle.
- **Clackmannanshire Council E-Bike Fleet:** Statistics have been kept on the use of Clackmannanshire Council e-bikes, with a total of 485 miles being cycled in 2025, equating to a saving of 200.2 kg CO₂ carbon footprint. Bike accessories and clothing are available on request for Clackmannanshire Council staff.
- **School Streets:** Clackmannanshire Council originally introduced a '[School Street](#)' to meet Theme 3 (Parking, Road and Transport) in the community plan. However, this initiative also had an inadvertent positive impact on air quality. Clackmannan Primary School is the location of one 'School Street' that is currently in place within Clackmannanshire, with road closures in operation from 8:30 – 9:10 am and from 2:50 – 3:20 pm on Lochies Road, Castle Terrace, Garden Terrace and Bruce Street. Restricting vehicle access along these roads during the morning drop-off and afternoon pick-up reduces exposure to vehicle emissions during what would otherwise be a busy period of vehicle activity.
- **'Wee Walk, Wee Cycle the Wee County':** The 'Wee Walk, Wee Cycle the Wee County' campaign aims to get more people walking and cycling for local journeys and for commuting, with a focus on promoting the local walking and cycling network. Clackmannanshire Council also promote a range of activities including family cycling and walking events and have installed new and improved signs.
- **Planning Developments:** The 'Roads, Traffic and Transportation' department of Clackmannanshire Council review planning developments and, where possible, request active travel plans for specific developments. This includes consideration of safer routes to schools, walking and cycling routes, recreational paths, and access to public transport.

Clackmannanshire Council have implemented a range of measures that aim to increase active travel across the area. These include the development of workplace / school travel plans, increasing infrastructure (i.e. cycling and walking routes) and increasing awareness through specific initiatives / days centred around active travel.

Although active travel is the main focus of the measures that Clackmannanshire Council have implemented to further improve air quality, there is also a focus on reducing emissions from vehicles. This includes increasing the provision of EV charging to facilitate the uptake of low emission vehicles and upgrading the Council's vehicle fleet:

- **Electric Vehicle Charging Points:** A total of 36 EV charging points owned by Clackmannanshire Council have been installed to date. However, in 2026 these are to be transferred over to the private sector as part of a concession contractor. The new operator is expected to significantly invest in new EV chargers, which will increase the number of charge points installed across Clackmannanshire. A map showing the locations of the current EV charging points is available on the [ChargePlace Scotland Website](#). Clackmannanshire residents without access to off-street parking (i.e. a driveway or garage), are able to apply for a reduced tariff of 10% per kWh. Further information on the reduced tariff scheme is available on the [Electric Vehicle Tariff – Residents Discount](#) website of Clackmannanshire Council.
- **Clackmannanshire Council Vehicle Fleet:** There are currently 33 electric and hybrid vehicles in Clackmannanshire Council's fleet, comprising of small vans and cars. The vans are used by different services but mainly by Property Contracts and the Pool Fleet. Clackmannanshire Council is restricted to the Scotland Excel (National Framework) for the hire of vehicles. Due to the expense of hiring electric vehicles, it is not cost-effective to hire electric vehicles. However, vehicles are infrequently hired by Clackmannanshire Council and when they are, it is for a short period of time; there were eight short-term (1-2 days) hires in 2025. A total of seven MG4 electric cars were purchased by Clackmannanshire Council in 2025 to increase the share of EV cars in the vehicle fleet. Clackmannanshire Council are to continue to remove all petrol and diesel cars from the vehicle fleet, replacing them with 100% electric variations when the existing vehicles are due to be replaced.

Clackmannanshire Council is currently continuing to work on implementing the following measures:

- **Active Travel Strategy:** The Clackmannanshire Active Travel Strategy is currently being developed with public consultation due to be completed. The strategy will outline Clackmannanshire Council's future priorities for active travel in terms of where new routes can be established to encourage everyone to use the network of routes for all non-motorised travelling (i.e. walking / cycling). Work is continuing to establish new active travel routes between Stirling and Clackmannanshire, as part of the City Region Deal Project. It means that those using the active travel routes between Clackmannanshire and Stirling will find it easier to transition into the town or up to Stirling town centre. Additionally, new routes between Alloa (connecting to Alva) will connect with Stirling University Campus.

- **Reduced Speed Zones:** Clackmannanshire Council is working on developing the introduction of 20mph zones on residential streets and integrating with cycle lanes where possible.
- **Local Transport Strategy:** Clackmannanshire Council are in the process of updating the Local Transport Strategy to focus on accessibility and carbon reduction goals.

During the current reporting year of 2026, Clackmannanshire Council's priority actions include:

- **Cycle / Walking Infrastructure:** Make improvements and upgrades to the cycle / walking path network to continue to interlink with national cycle routes and transport hubs to increase links between Clackmannanshire, Fife and Stirling Council areas.
- **Active Travel Initiatives:** Continue to encourage local businesses and residents to adopt a sustainable approach to travel, such as "Big Bike Day", Council E-Bike fleet, Cycling Awareness Day, Council Staff Step Count Challenge, and Council "Bring your Bike to Work Day".
- **Traffic Regulations Order (20mph):** The programme will see speed limits in urban areas around schools, town centres or within residential areas reduced to 20 mph. Active travel to school will continue to be promoted and measures continue to be planned to improve road safety measures around schools. Five primary schools have Active Travel Zone Maps to promote "Park & Stride" options, walking and travel routes and others are being considered.

Table 2.1 – 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	Develop Cycling / Walking Infrastructure	Promoting Travel Alternatives	2026	Clackmannanshire Council	In Progress	Not Funded	-	2km paths upgraded. New lighting columns were installed along the Alva to Tillicoultry cycle path	-
2	Promote Active Travel Initiatives	Promoting Travel Alternatives	2026	Clackmannanshire Council	In Progress	Not Funded	-	Cycle Awareness Day held in 2025.	-
3	Develop 20mph Speed Limits on Residential Streets	Traffic Management	2025	Clackmannanshire Council	In Progress	Not Funded	-	Ongoing with some completed and others in progress	-
4	National Cycle Network Route 768	Alternatives to Private Vehicle Use	2025	Clackmannanshire Council	Completed	Not Funded	-	Completed	-
5	Clackmannanshire Active Travel Strategy	Promoting Travel Alternatives	2025	Clackmannanshire Council	In Progress	Not Funded	In development with public consultation	Ongoing	-
6	Alloa Hub – Active Travel Cycling Hub	Promoting Travel Alternatives	2025	Clackmannanshire Council	Completed	Not Funded	-	Completed	-

7	Provision of 7 New Bike Shelters / Rack for Council Visitors	Alternatives to Private Vehicle Use	2025	Clackmannanshire Council	Completed	Not Funded	-	Completed	-
8	Clackmannanshire Employability Programme	Promoting Travel Alternatives	2025	Clackmannanshire Council	Completed	Not Funded	6 bikes provided to clients to attend appointments	Completed	-
9	Bike Day 2025 – Promotion of Cycling / Bike Security / Active Travel	Promoting Travel Alternatives	2025	Clackmannanshire Council	Completed	Not Funded	-	Completed	-
10	Inner Forth Landscape Initiative	Promoting Travel Alternatives	2025	Inner Forth Futures	Completed	Not Funded	-	Completed	-
11	Council E-Bike Fleet	Promoting Low Emission Transport	2025	Clackmannanshire Council	Completed	Not Funded	Used for 485 miles, saving 200.2 kg CO ₂	Completed	-
12	Staff Bike Promotion Day	Promoting Low Emission Transport	2025	Clackmannanshire Council	Completed	Not Funded	Staff use own bike which is serviced whilst at work	Completed	-
13	Patient Health Transport – Door to Door Bus	Alternatives to Private Vehicle Use	2025	Clackmannanshire Council & NHS	Completed	Not Funded	Only used by 8 patients	Slow Progress	Awareness of service availability.

14	School Active Travel – New Safe Road Crossings / Improved Safety	Alternatives to Private Vehicle Use	2025	Clackmannanshire Council	Completed	Not Funded	-	Ongoing improvements being made	-
15	School Active Travel – Zone Maps	Alternatives to Private Vehicle Use	2025	Clackmannanshire Council	Completed	Not Funded	5 school active travel zone maps created	Completed	-
16	Work Active Travel – Step Count Challenge	Alternatives to Private Vehicle Use	2025	Clackmannanshire Council	Completed	Not Funded	50 Council staff walked 5,426 miles	Completed	-
17	Cycling Awareness Day	Alternatives to Private Vehicle Use	2025	Clackmannanshire Council, Alloa First, & Police Scotland	Completed	Not Funded	34 bikes serviced, 45 given police security tags	Completed	-
18	School Streets Initiative – Clackmannan Primary School	Alternatives to Private Vehicle Use	2025	Clackmannanshire Council	Completed	Not Funded	-	Ongoing	-

2.3 Air Quality Complaints Relating to Activities and / or Smoke Emissions

Clackmannanshire Council has investigated a total of 32 air quality complaints related to burning activities and / or emissions of smoke during the reporting year. These complaints related primarily to smoke emissions from the burning of inappropriate materials, domestic or commercial chimneys / wood-burning stoves and odour complaints. Of the complaints received, 100% have been fully resolved following investigation, with no cases remaining open and under further review.

Investigations were undertaken in accordance with the Clean Air Act 1993 and / or the Environmental Protection Act 1990. Where necessary, officers provided advice, carried out site visits, gathered evidence, and engaged directly with householders to support compliance.

Enforcement actions undertaken during the reporting year include:

- Informal warnings or advisory letters issued.

3 Air Quality Monitoring Data and Comparison with Air Quality Objectives

3.1 Summary of Monitoring Undertaken

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

3.1.1 Automatic Monitoring Sites

Clackmannanshire Council undertook automatic (continuous) monitoring at one site during 2025, that measured concentrations of NO₂, PM₁₀ and PM_{2.5}. Table A.1 shows the details of the site, with maps showing the locations of the automatic monitoring site provided in Figure A.1 – Figure A.2. Relative to the previous reporting year, there was no change to the automatic monitoring network in 2025. Further details on how the monitors are calibrated and how the data has been adjusted are included in Appendix C. National monitoring results are available on the [Scottish Government's Air Quality Data Website](#).

3.1.2 Non-Automatic Monitoring Sites

Clackmannanshire Council undertook non-automatic (passive) monitoring of NO₂ at six sites during 2025. Table A.2 shows the details of the sites, with maps showing the locations of the non-automatic monitoring sites shown in Figure A.1 – Figure A.2. Relative to the previous reporting year, there was no change to the non-automatic monitoring network in 2025, with no diffusion tube sites added or removed. 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

During 2025, Clackmannanshire Council continued to deploy an 'AQ Mesh Pod', that monitored concentrations of NO₂, PM₁₀ and PM_{2.5}. This type of low-cost sensors is not to be relied upon for reporting compliance against the air quality objectives. Therefore, the data is not referenced throughout the report but is instead provided in Appendix D and can

be used to identify potential hotspots and trends. Information on low-cost sensors is provided in [LAQM FAQ 140](#).

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 compares the ratified monitored NO₂ annual mean concentrations for the past five years with the air quality objective of 40 µg/m³ at automatic monitoring sites. In 2025, the NO₂ annual mean objective was not exceeded at the automatic monitoring station on King Street, Alloa (CM1), as a NO₂ annual mean concentration of 13.9 µg/m³ was recorded. The NO₂ annual mean concentration is an increase of 2.4 µg/m³ from that of the previous reporting year – this is the first increase observed at the automatic monitoring site over the last five reporting year (2021 – 2025). However, the NO₂ concentration remains significantly below the annual mean air quality objective of 40 µg/m³.

Table A.4 compares the adjusted monitored NO₂ annual mean concentrations for the past five years with the air quality objective of 40 µg/m³ at non-automatic monitoring sites. In 2025, the NO₂ annual mean objective was not exceeded at any diffusion tube site, with a maximum concentration of 8.3 µg/m³ (Site ID: DT3) recorded across the entire diffusion tube network. Relative to the previous reporting year, the maximum concentration in 2025 is a decrease from that recorded in 2024 of 11.3 µg/m³, at the same site. This trend of improving NO₂ concentrations was observed at all six diffusion tube sites and is part of a wider trend of a year-on-year decrease in the NO₂ annual mean concentration observed at all six sites since 2021. Therefore, the NO₂ annual mean concentration has been lower than the previous reporting year over the past five years (2021 – 2025) – this downwards trend in the concentration of NO₂ at all six sites is shown in Figure 3.1 and indicates the continual improvement in the concentration of NO₂ across Clackmannanshire.

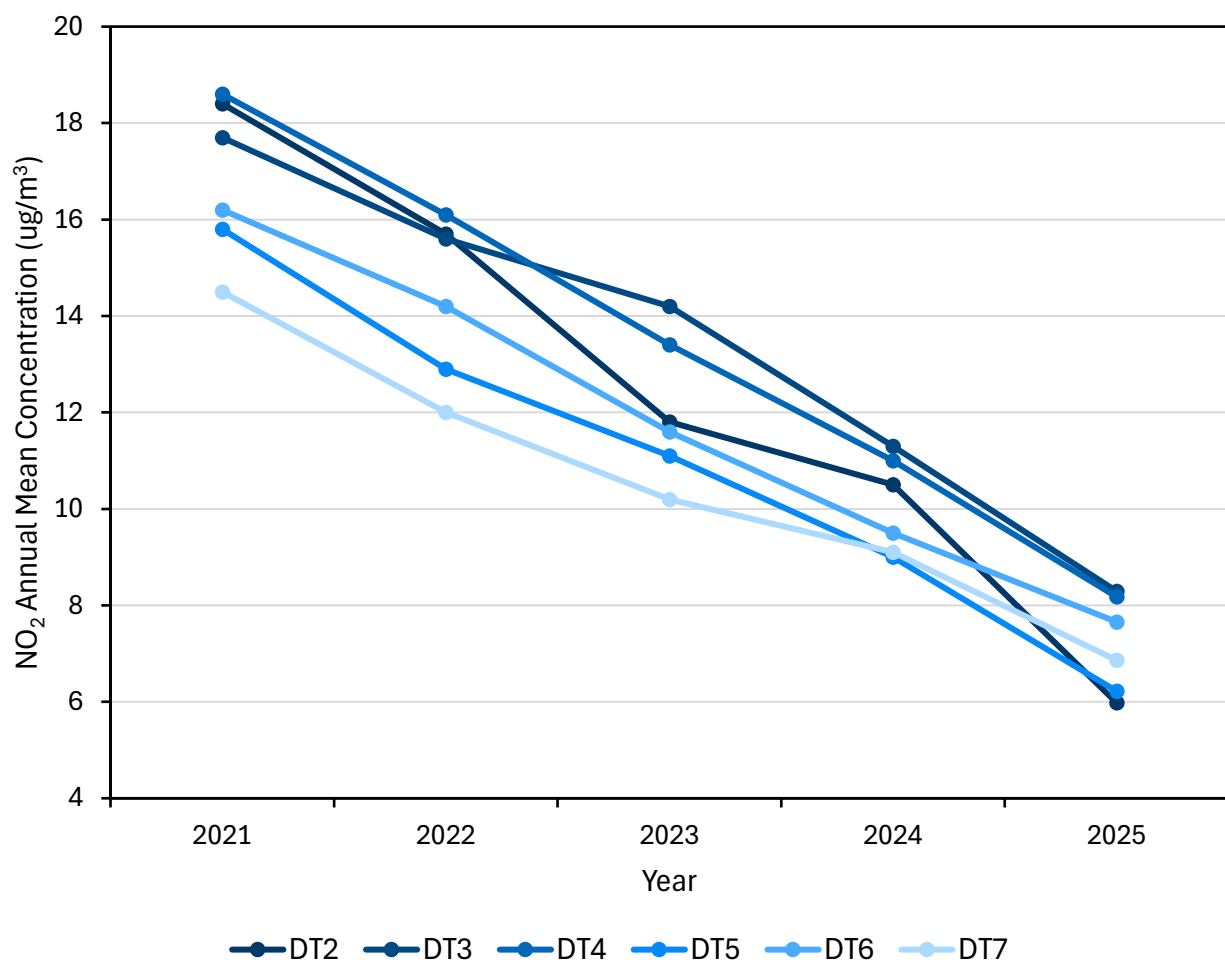
For diffusion tubes, the full 2025 dataset of monthly values is provided in Appendix B.

Table A.5 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. In 2025, there were no exceedances of the NO₂

hourly mean objective of $200 \mu\text{g}/\text{m}^3$, as the maximum hourly mean concentration recorded at the automatic monitoring site on King Street, Alloa (CM1) was $85.9 \mu\text{g}/\text{m}^3$ (3rd January 2025, 4pm). Additionally, as no single diffusion tube recorded an NO_2 annual mean concentration greater than $60 \mu\text{g}/\text{m}^3$, it can be inferred that the NO_2 hourly mean objective was also not exceeded at any site across the diffusion tube monitoring network within Clackmannanshire in 2025. This is outlined in Section 7.97 of LAQM TG.22 which states:

“A study carried out on behalf of Defra and the Devolved Administrations identified that exceedances of the NO_2 1-hour mean are unlikely to occur where the annual mean is below $60 \mu\text{g}/\text{m}^3$. Analysis of the data in more recent years has shown local authorities should continue to use this assumption where NO_2 1-hour mean monitoring data are not available (typically is monitoring using passive diffusion tubes)”.

Figure 3.1 – Trends in NO_2 Annual Mean Concentration (Diffusion Tubes)



As a result of both the automatic monitoring station and the passive diffusion tube network recording NO_2 concentrations below the annual and hourly objectives, no AQMA has needed to be declared for NO_2 within Clackmannanshire. Therefore, combined with the

downward trend in concentrations observed in Figure 3.1, it is evident that the air quality in Clackmannanshire in relation to NO₂ is good, and continues to improve year-on-year.

3.2.2 Particulate Matter (PM₁₀)

Table A.6 compares the ratified and adjusted monitored PM₁₀ annual mean concentrations for the past five years with the air quality objective of 18 µg/m³. In 2025, the PM₁₀ annual mean objective was not exceeded at the automatic monitoring station on King Street, Alloa (CM1), as a PM₁₀ annual mean concentration of 10.9 µg/m³ was recorded. The PM₁₀ annual mean concentration is an increase of 2.3 µg/m³ from the PM₁₀ annual mean concentration recorded in the previous year of 2024 (8.6 µg/m³). This is however the first increase in the PM₁₀ concentration recorded at the site since 2022 and the concentration in 2025 remains well below the PM₁₀ annual mean air quality objective of 18 µg/m³.

Table A.7 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. In 2025, there were no exceedances of the PM₁₀ daily mean objective of 50 µg/m³, as the maximum daily mean concentration was 43.8 µg/m³ (21st March 2025). This is similar to the previous reporting year where no exceedances of the daily mean objective were also recorded.

3.2.3 Particulate Matter (PM_{2.5})

Table A.8 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. In 2025, the PM_{2.5} annual mean objective was not exceeded at the automatic monitoring station on Kind Street, Alloa (CM1), as a PM_{2.5} annual mean concentration of 6.5 µg/m³ was recorded. This PM_{2.5} annual mean concentration is comparable to that recorded in the previous reporting year (6.4 µg/m³), indicating no significant change in the concentration of PM_{2.5} during 2025 and the PM_{2.5} concentration remains below the air quality objective.

4 New Local Developments

This section has been completed following consultation with other relevant services and departments within Clackmannanshire Council, including 'Roads and Transportation' and 'Development Control'. Consultation was also undertaken with the Scottish Environmental Protection Agency (SEPA) for identifying any potential new industrial sources.

4.1 Road Traffic Sources

Consultation with the 'Transport Planning' department of Clackmannanshire Council was undertaken to confirm if there were any new sources or significantly changed traffic sources within the area that could result in an increase in pollutant concentration and eventual exceedance of the air quality objectives. However, during 2025, the department confirmed that there were no new or significantly changed road traffic sources, which may have potential to negatively impact air quality.

4.2 Other Transport Sources

During 2025, there has been no new or significantly changed transport sources at:

- Airports;
- Ports for shipping;
- Locations where diesel or steam trains are regularly stationary for periods of 15 minutes or more, with potential for relevant exposure within 15m; and
- Location with a large number of movement of diesel locomotives and potential for long-term exposure within 30m.

4.3 Industrial Sources

Clackmannanshire Council, in consultation with SEPA, has identified the following planning application as a new source which may impact air quality across the area:

- PPC/A/5010083 – PPC Part A (Glass and Glass Fibre): Air Products (Br) Ltd, Graigward, Alloa, Clackmannanshire, FK10 1PA. Licence granted 16/09/2025.

4.4 Commercial and Domestic Sources

The 'Environmental Health' and 'Planning' departments of Clackmannanshire Council were consulted on any new commercial and domestic emission sources within the area which may have a negative effect on local air quality. However, the departments confirmed that there are no new commercial or domestic sources in 2025 which may potentially have a negative impact on air quality within Clackmannanshire.

4.5 New Developments with Fugitive or Uncontrolled Sources

During 2025, there have been no new or significant changed fugitive or uncontrolled sources at:

- Landfill sites;
- Quarries;
- Unmade haulage roads on industrial sites;
- Waste transfer stations; and
- Other potential sources of fugitive particulate matter emissions.

5 Planning Applications

The 'Development and Planning' department within Clackmannanshire Council was consulted to identify if there were any major planning applications during 2025 which may have the potential to negatively affect local air quality. The applications and outcomes are summarised in Table 5.1, with those requiring an air quality assessment outlined in red.

Table 5.1 – 2025 Planning Applications with an Air Quality Interest

Date	Planning Application	Development Information	Air Quality Interest?	Air Quality Assessment Required?	Decision
9/1/2025	25/00008/FULL	Alterations, demolition of existing flat roof extension and erection of replacement pitched roof extension with flue.	Yes	No. Installation of flue. New ASHP and wood-burning stove. No consultation from planning to Environmental Health.	Approved
29/01/2025	EIA 2025-001 Screening request 25/00067/FULL	Installation of resource recovery factory and associated works at Alloa Wastewater Treatment Works.	Yes	No. Environmental Health would have required this for demolition and construction phases. No consultation from Planning to Environmental Health.	No EIA required. Approved.
17/3/2025	25/00050/FULL	Extension to house including installation of fire pit, bioethanol stove with two existing wood-burning stoves.	Yes	No. No consultation from planning to Environmental Health.	Approved

04/04/2025	25/00070/FULL	Residential development of 75 houses.	Yes	Yes. No AQIA submitted yet. Recommend provide EV charging points.	Awaiting Decision
04/06/2025	25/00096/FULL	Erection of 1 No. house with integrated garage.	Yes	No. Air source heat pump, solar panels, plant room, drawing room has chimney. No consultation from planning to Environmental Health.	Approved
09/06/2025	25/00098/FULL	Installation of air source heat pump to front of house.	Yes	No.	Approved
13/06/2025	25/00105/FULL	Installation of gas cooler and 3 No. air conditioning units in service yard.	Yes	No. No consultation from planning to Environmental Health.	Approved
17/06/2025	25/00107/FULL	Alterations, single storey extension to rear of house, and installation of wood-burning stove and flue.	Yes	No. No consultation from planning to Environmental Health.	Approved
19/08/2025	25/00138/FULL	Demolition of existing ground floor building / structures and erection of two storey wind to comprise 7 No. en-suite bedrooms, a stairwell and plant rooms, plus external alternations.	Yes	No. Installation of air source heat pump.	Awaiting Decision

21/08/2025	25/00143/S36	Installation of a battery energy storage system (BESS) with a generating capacity of up to 250 MW.	Yes	Yes. AQIA recommended for preparation and construction phases by Environmental Health but not included in response to Scottish Government or Council committee.	Consultation response sent to Scottish Government by Planning with "no objection" response.
08/09/2025	25/00153/LIST	Alterations and conversion of existing detached garage to provide habitable accommodation, music room/gym, and erection of outdoor kitchen with pizza oven and flue.	Yes	No. No consultation from planning to Environmental Health.	Approved
08/09/2025	25/00155/FULL	Erection of 2 No. houses with attached garages.	Yes	No. No consultation from planning to Environmental Health. Installation of air source heat pump.	Approved
11/09/2025	25/00156/FULL	Alterations and part demolition of existing extension and two storey extension to side of house.	Yes	No. No consultation from planning to Environmental Health. Installation of wood-burning stove.	Approved

31/10/2025	25/00193/FULL	Partial demolition of vacant building.	Yes – demolition and dust control measures.	No. No consultation from planning to Environmental Health.	Approved – condition to limit dust and litter.
03/11/2025	25/00194/MS	Development of 248 No. new houses (Phases 3 & 4).	Yes – construction and demolition, new roads, gas fired boilers, air source heat pumps.	Yes – provided but Environmental Health recommend review since written in 2022. Mentions gas fire boilers to be reduced with use of alternative renewable energy technology. Transport assessment measures to reduce vehicle usage. All private parking spaces provided with provision for electrical charging. CEMP not included, but documents mention CEMP for dust control measures. Unclear if proposed new school will be part of development – if yes, will likely increase traffic.	Approved – condition for development to be undertaken in accordance with the submitted AQIA and CEMP.

18/11/2025	25/00205/FULL	Removal of existing sun room extension, erection of replacement single storey extension to rear of house which includes wood-burning stove, formation of new window and rooflight openings to side of house.	Yes – although not mentioned on listing includes wood-burning stoves	No. No consultation from planning to Environmental Health.	Approved
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6 Conclusions and Proposed Actions

6.1 Conclusions from New Monitoring Data

In 2025, Clackmannanshire Council monitored the concentration of NO₂ via the following methods:

- Automatically, via a continuous analyser on King Street, Alloa.
- Passively, via a diffusion tube monitoring network of six sites.

The NO₂ annual mean objective 40 µg/m³ was not exceeded at the automatic monitoring station on King Street, Alloa, with a concentration of 13.9 µg/m³ recorded in 2025. Across the six sites of the diffusion tube monitoring network, the maximum NO₂ annual mean concentration was 8.3 µg/m³ (Site ID: DT3), indicating that the annual mean objective was not exceeded at any passive diffusion tube monitoring site in 2025. Across the last five reporting years (2021 – 2025), the NO₂ concentration has been lower than that recorded in the previous year, indicating a continuing improvement in NO₂ across Clackmannanshire.

In 2025, Clackmannanshire Council monitored the concentration of PM₁₀ and PM_{2.5} via the following methods:

- Automatically, via a continuous analyser on King Street, Alloa.

The PM₁₀ annual mean objective of 18 µg/m³ was not exceeded at the automatic monitoring station on King Street, Alloa, with a concentration of 10.9 µg/m³ recorded in 2025. Additionally, the daily mean objective of 50 µg/m³ was not exceeded in 2025, as the maximum daily mean concentration was recorded as 43.8 µg/m³ (21st March 2025). The PM_{2.5} annual mean objective of 10 µg/m³ was also not exceeded, with an annual mean concentration of 6.5 µg/m³ recorded at the automatic monitoring station on King Street, Alloa, in 2025.

The monitoring data from the automatic continuous analysers on King Street, Alloa, and the passive diffusion tube monitoring sites in Alloa / Sauchie, indicate that the air quality objectives for NO₂, PM₁₀ and PM_{2.5} have not been exceeded in Clackmannanshire during 2025. This is a trend that has been observed for more than the last five consecutive years, indicating that Clackmannanshire continues to experience good air quality.

6.2 Conclusions relating to New Local Developments

This assessment has been conducted in accordance with LAQM TG.22. Updated information has been obtained on road, rail, industrial, domestic, and fugitive emission sources and compared to the criteria and conditions described in the guidance. Any new or proposed development which may have a negative effect on local air quality is presented in Table 5.1. Actions as to whether an air quality assessment was required or requested is also outlined.

6.3 Proposed Actions

Despite the latest monitoring data showing continual compliance with the air quality objectives for all pollutants (NO₂, PM₁₀ and PM_{2.5}), Clackmannanshire Council are committed to continuing to take action to further improve air quality. These actions align to the [Cleaner Air for Scotland 2 \(CAFS2\)](#) air quality strategy, with a specific focus on “Public Engagement and Behavioural Change”

The main actions that Clackmannanshire Council intend to implement are centred around encouraging alternate modes of transport. For example, increasing the uptake of EVs, developing safer routes to encourage walking and cycling, and engaging with schools to produce travel plans that facilitate sustainable modes of transport. During the current reporting year of 2026, Clackmannanshire Council's priority actions include:

- **Cycle / Walking Infrastructure:** Make improvements and upgrades to the cycle / walking path network to continue to interlink with national cycle routes and transport hubs to increase links between Clackmannanshire, Fife and Stirling Council areas.
- **Active Travel Initiatives:** Continue to encourage local businesses and residents to adopt a sustainable approach to travel, such as “Big Bike Day”, Council E-Bike fleet, Cycling Awareness Day, Council Staff Step Count Challenge, and Council “Bring your Bike to Work Day”.
- **Traffic Regulations Order (20mph):** The programme will see speed limits in urban areas around schools, town centres or within residential areas reduced to 20 mph. Active travel to school will continue to be promoted and measures continue to be planned to improve road safety measures around schools. Five primary schools have Active Travel Zone Maps to promote “Park & Stride” options, walking and travel routes and others are being considered.

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) ^(1,2)	Distance to kerb of nearest road (m) ⁽²⁾	Inlet Height (m)
CM1	King Street, Alloa	Roadside	288665	693072	NO ₂ , PM ₁₀ , PM _{2.5}	No	-	NO ₂ – Chemiluminescent PM ₁₀ / PM _{2.5} - Fidas	1.2	2.5	2.3

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)
DT2	Clackmannan Road, Alloa	Kerbside	289228	692943	NO ₂	No	2.0	2.0	No	3.3
DT3	Bus Station, Alloa	Kerbside	288818	692878	NO ₂	No	2.0	1.3	No	3.5
DT4	Shillinghill / Bridge Terrace, Alloa	Kerbside	288911	692940	NO ₂	No	2.0	1.4	No	3.1
DT5	King Street, Alloa	Kerbside	288665	693072	NO ₂	No	8.0	2.5	Yes	2.9
DT6	Auld Brig Road, Alloa	Kerbside	288927	692878	NO ₂	No	3.0	1.8	No	3.3
DT7	Pearson View, Sauchie	Kerbside	289371	693727	NO ₂	No	0.0	2.4	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.

Figure A.1 – Air Quality Monitoring Sites (Clackmannanshire Overview)

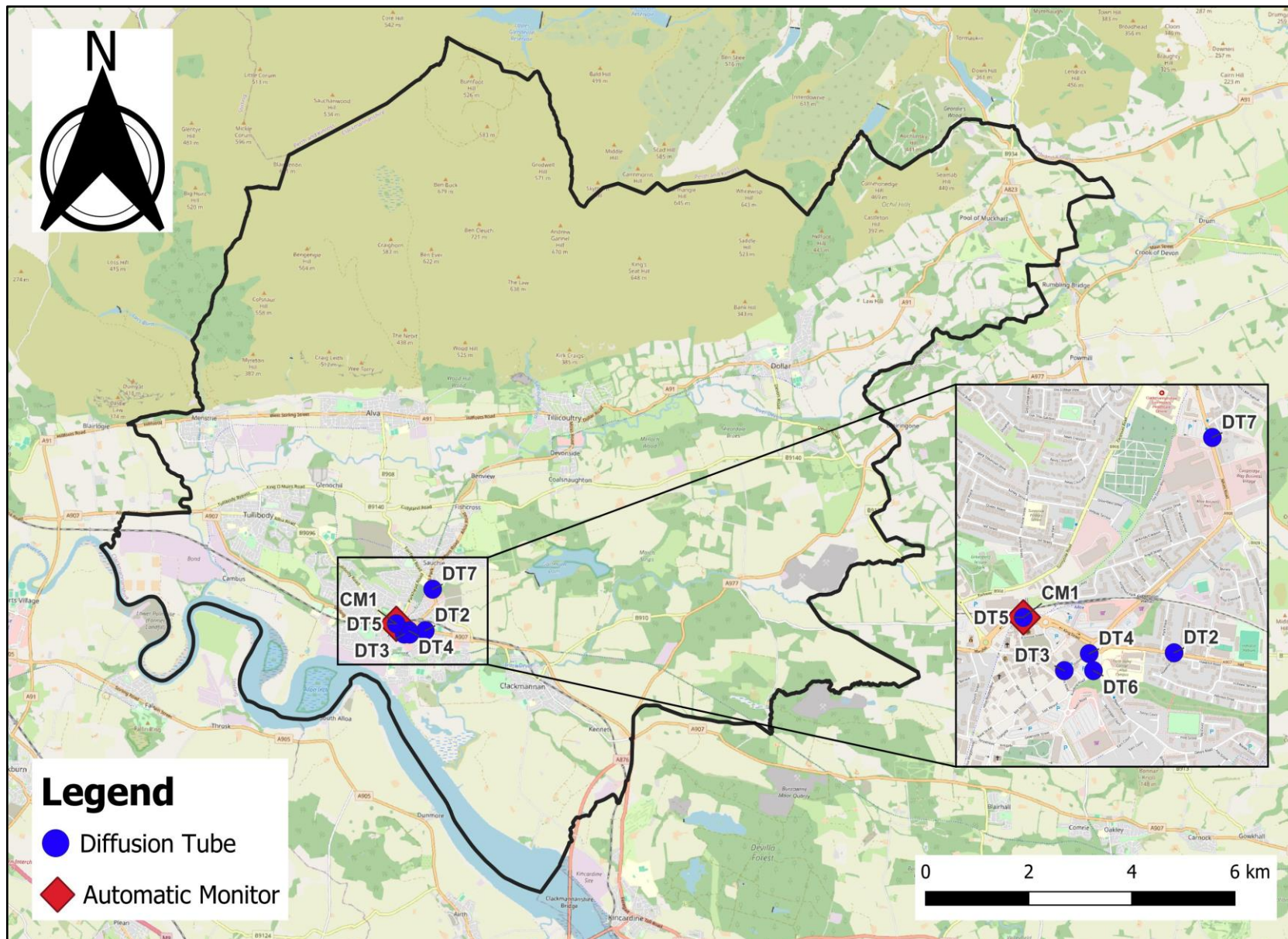


Figure A.2 – Air Quality Monitoring Sites (Alloa / Sauchie)

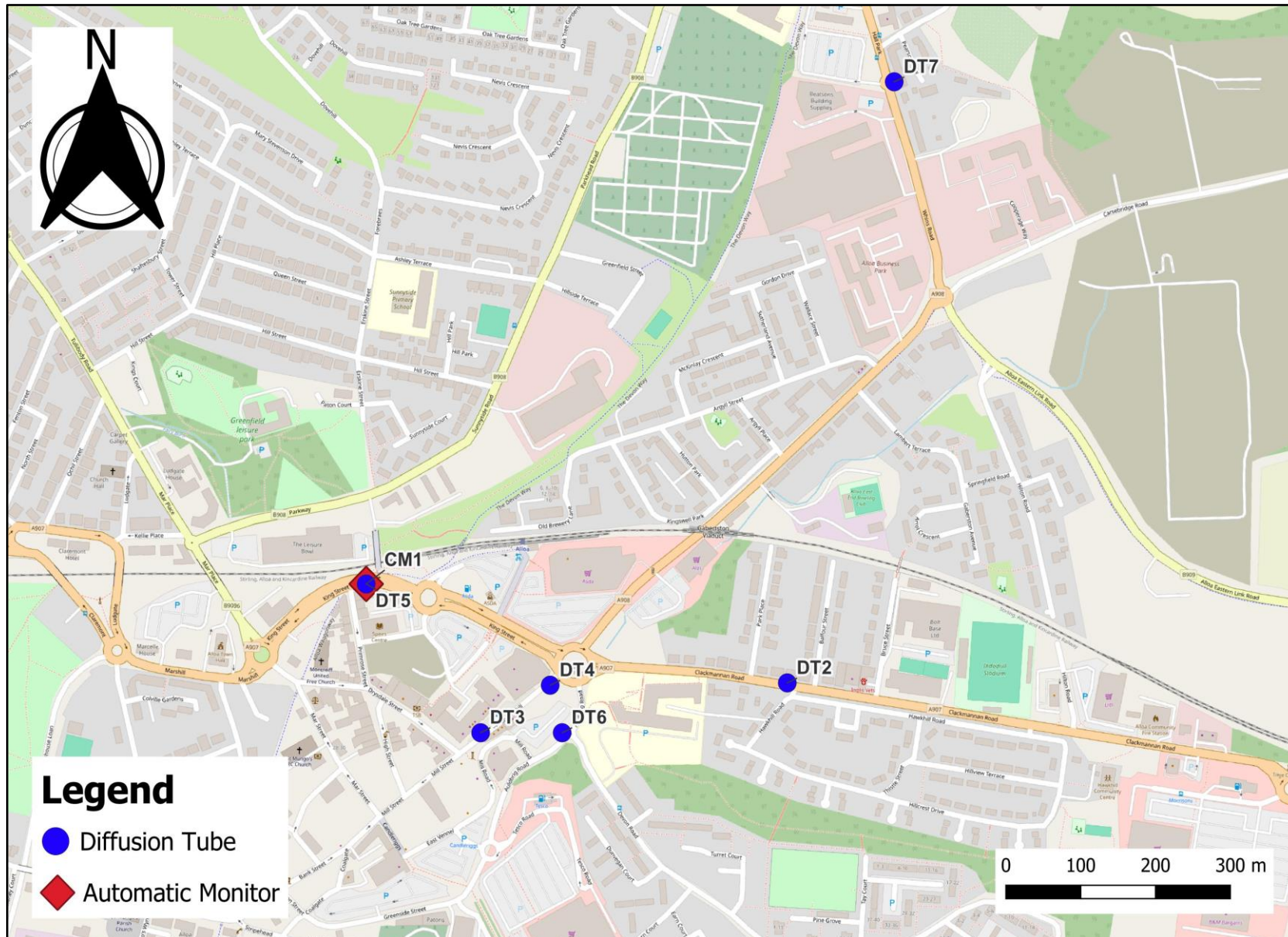


Table A.3 – Annual Mean NO₂ Monitoring Results: Automatic Monitoring (µg/m³)

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2025 (%) ⁽²⁾	2021	2022	2023	2024	2025
CM1	288665	693072	Roadside	99.3	99.3	17.7	14.8	13.5	11.5	13.9

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.

(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 NO₂ Monitoring Results: Non-Automatic Monitoring (µg/m³)

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 2025 (%) ⁽²⁾	2021	2022	2023	2024	2025
DT2	289228	692943	Kerbside	100.0	100.0	18.4	15.7	11.8	10.5	6.0
DT3	288818	692878	Kerbside	100.0	100.0	17.7	15.6	14.2	11.3	8.3
DT4	288911	692940	Kerbside	100.0	100.0	18.6	16.1	13.4	11.0	8.2
DT5	288665	693072	Kerbside	100.0	100.0	15.8	12.9	11.1	9.0	6.2
DT6	288927	692878	Kerbside	100.0	100.0	16.2	14.2	11.6	9.5	7.7
DT7	289371	693727	Kerbside	100.0	100.0	14.5	12.0	10.2	9.1	6.9

☒ Annualisation has been conducted where data capture is <75% and >25% in line with LAQM TG.22.

☒ 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 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.

(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%).

Figure A.3 – Annual Mean NO₂ Monitoring Results (2021 – 2025)

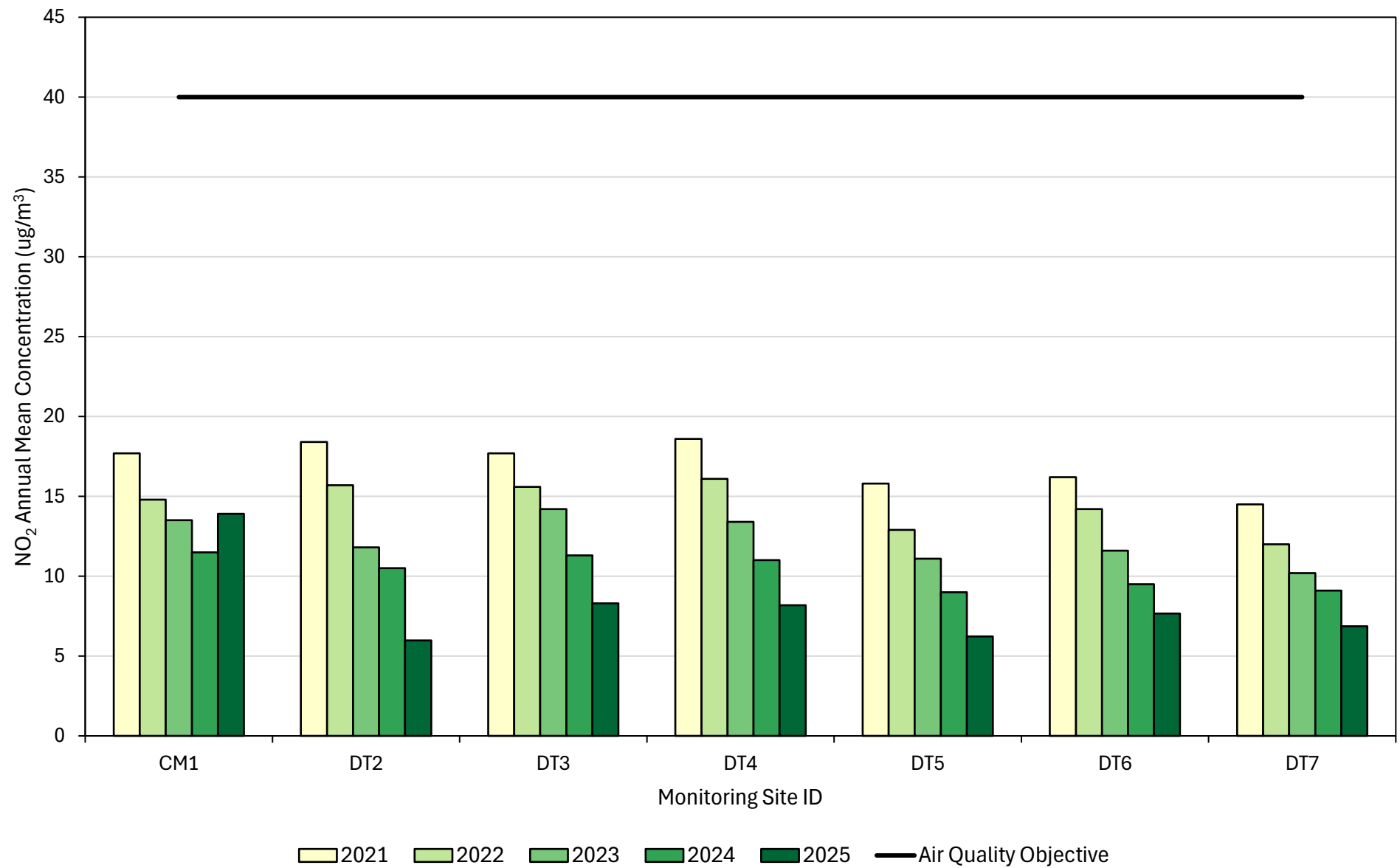


Table A.5 – 1-Hour Mean NO₂ Monitoring Results > 200 µg/m³

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2025 (%) ⁽²⁾	2021	2022	2023	2024	2025
CM1	288665	693072	Roadside	99.3	99.3	0 (61.2)	0	1	0	0

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.6 – Annual Mean PM₁₀ Monitoring Results (µg/m³)

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2025 (%) ⁽²⁾	2021	2022	2023	2024	2025
CM1	288665	693072	Roadside	100.0	100.0	10.7	11.2	9.4	8.6	10.9

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%).

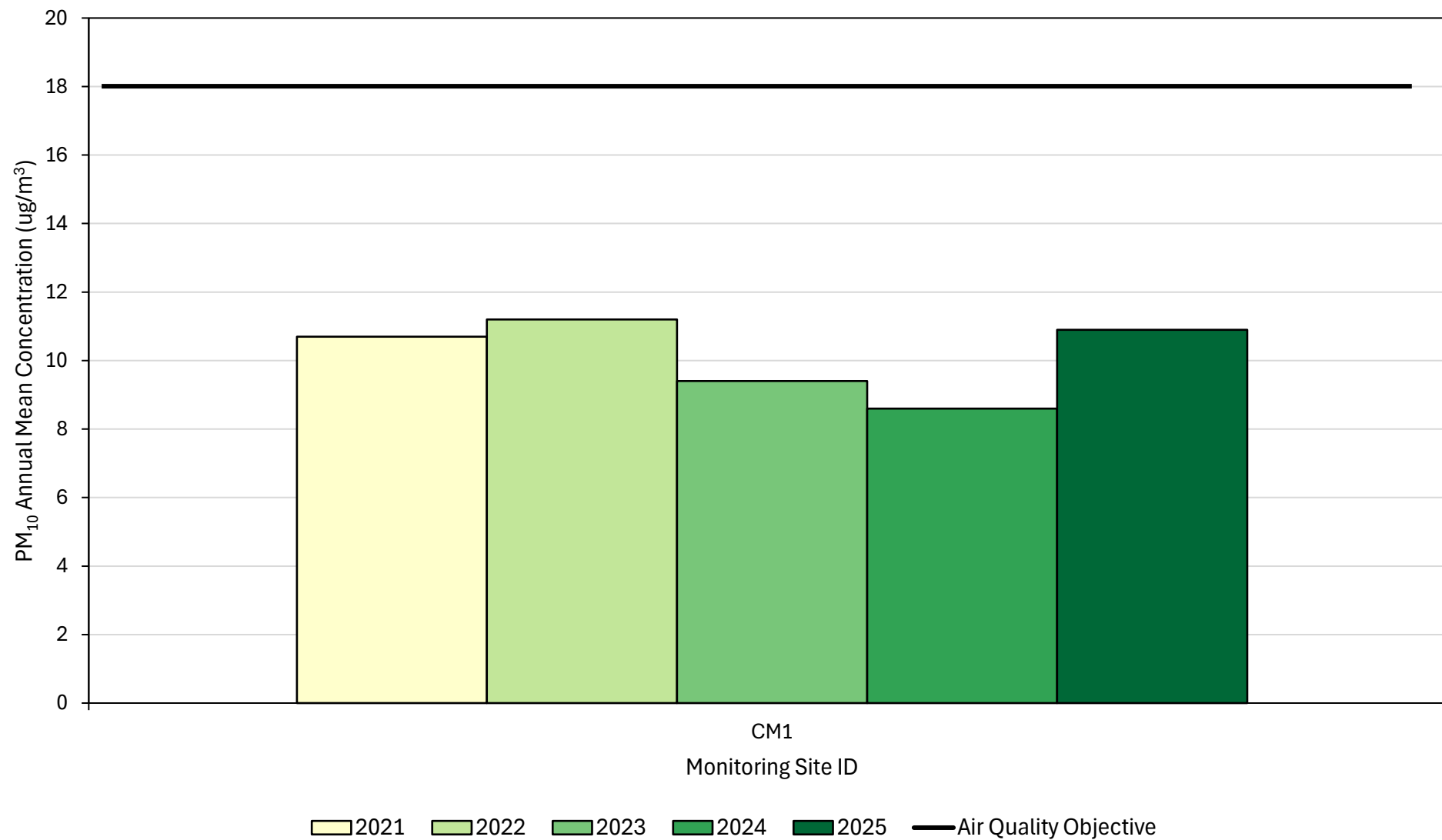
Figure A.4 – Annual Mean PM₁₀ Monitoring Results (2021 – 2025)

Table A.7 – 24-Hour Mean PM₁₀ Monitoring Results > 50 µg/m³

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2025 (%) ⁽²⁾	2021	2022	2023	2024	2025
CM1	288665	693072	Roadside	100.0	100.0	3	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.8 – Annual Mean PM_{2.5} Monitoring Results (µg/m³)

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2025 (%) ⁽²⁾	2021	2022	2023	2024	2025
CM1	288665	693072	Roadside	100.0	100.0	5.6	6.4	5.6	6.4	6.5

Notes:

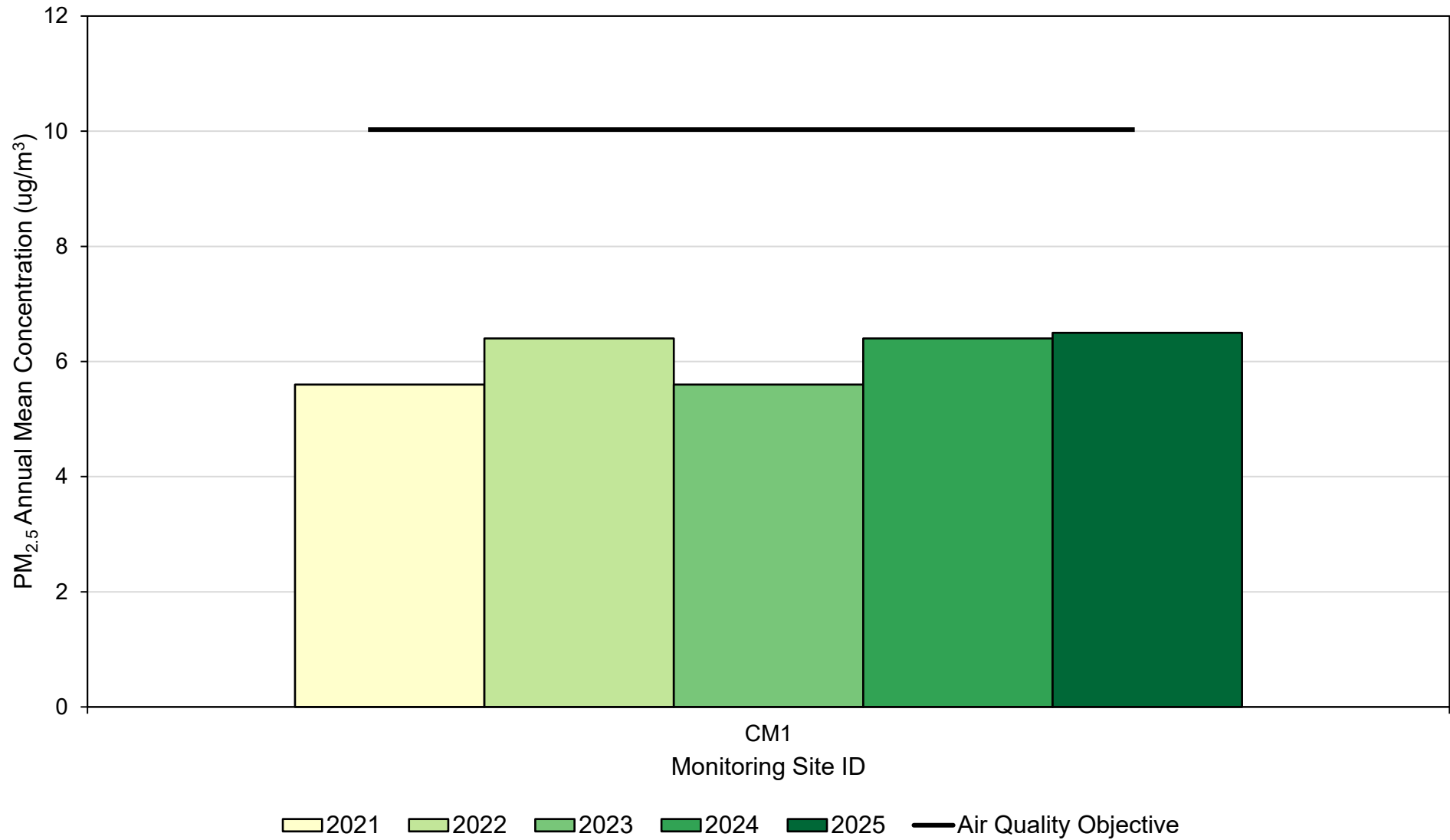
Exceedances of the PM_{2.5} annual mean objective of 10 µg/m³ are shown in bold.

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.5 – Annual Mean PM_{2.5} Monitoring Results (2021 – 2025)



Appendix B: Full Monthly Diffusion Tube Results for 2025

Table B.1 – NO₂ 2025 Monthly Diffusion Tube Results (µg/m³)

DT ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Annualised and Bias Adjusted (0.72)	Annual Mean: Distance Corrected to Nearest Exposure	Comment
DT2	289228	692943	22.8	11.6	6.3	6.3	5.0	2.0	2.5	8.1	5.1	13.3	2.1	14.6	8.3	6.0	-	-
DT3	288818	692878	24.8	13.9	8.1	5.8	6.5	8.7	5.3	7.5	10.5	10.3	17.9	18.9	11.5	8.3	-	-
DT4	288911	692940	21.5	8.7	8.3	7.6	9.5	9.9	5.7	7.6	11.2	13.3	18.4	14.6	11.4	8.2	-	-
DT5	288665	693072	18.3	9.4	7.2	6.5	5.2	4.8	5.2	7.0	7.5	9.0	14.8	8.8	8.6	6.2	-	-
DT6	288927	692878	12.3	17.0	15.4	6.7	3.8	7.4	4.4	4.8	6.4	13.3	21.5	14.6	10.6	7.7	-	-
DT7	289371	693727	18.3	14.5	6.8	6.3	3.3	10.2	4.5	6.2	6.4	9.7	17.7	10.5	9.5	6.9	-	-

- ☒ All erroneous data has been removed from the NO₂ diffusion tube dataset presented in Table B.1.
- ☒ Annualisation has been conducted where data capture is <75% and >25% in line with LAQM TG.22.
- ☐ Local bias adjustment factor used.
- ☒ National bias adjustment factor used.
- ☒ Where applicable, data has been distance corrected for relevant exposure in the final column.
- ☒ Clackmannanshire Council confirm that all 2025 diffusion tube data has been uploaded to the Diffusion Tube Data Entry System.

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**.
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 Clackmannanshire During 2025

Clackmannanshire Council, in consultation with SEPA, has identified the following planning application as a new source which may impact air quality across the area:

- PPC/A/5010083 – PPC Part A (Glass and Glass Fibre): Air Products (Br) Ltd, Graigward, Alloa, Clackmannanshire, FK10 1PA. Licence granted 16/09/2025.

Additional Air Quality Works Undertaken by Clackmannanshire Council During 2025

Clackmannanshire Council has not completed any additional works within the reporting year of 2025.

QA/QC of Diffusion Tube Monitoring

During 2025, the diffusion tubes deployed by Clackmannanshire Council were supplied and analysed by Glasgow Scientific Services (GSS) and were prepared using the 20% Triethanolamine (TEA) in water preparation method. GSS are a UKAS accredited laboratory and participate in the AIR-PT scheme for NO₂ diffusion tube analysis and Annual Field Intercomparison Exercise. These provide strict criteria relating to the performance that participating laboratories must meet, ensuring that the reported NO₂ concentrations are of a high calibre. For all [AIR-PT rounds](#) for diffusion tubes analysed during 2025, GSS received the following scores:

- January – February 2025 (AIR-PT AR068) = 100%
- April – June 2025 (AIR-PT AR069) = 75%.
- July – September 2025 (AIR-PT AR071) = 100%.
- October – December 2025 (AIR-PT AR072) = 100%.

The percentage score reflects the results deemed satisfactory based on the z-score of ± 2 .

Additionally, the precision of the NO₂ diffusion tubes (20% TEA in water) supplied by GSS was classified as 'good' for the single observation (Marylebone Road Intercomparison) in 2025. This reflects the laboratory's performance and consistency in preparing and analysing the diffusion tubes, as well as the subsequently handling of the tubes in the field. Diffusion tubes are considered to have 'good' precision where the coefficient of variation of duplicate or triplicate diffusion tubes for either or more monitoring periods during the year is less than 20%. As a result of these results, there is a high degree of confidence in the data of the diffusion tubes results presented throughout this report. Further information on the precision results is available on the [LAQM Website](#).

Diffusion Tube Deployment Calendar

During 2025, the diffusion tubes deployed by Clackmannanshire Council adhered to the dates of the Defra monitoring calendar.

Diffusion Tube Annualisation

During 2025, all diffusion tube monitoring locations within Clackmannanshire recorded a data capture rate of 100% and, therefore, no annualisation of data was required.

Diffusion Tube Bias Adjustment Factors

Clackmannanshire Council have applied a national bias adjustment factor of 0.72 to the 2025 monitoring data. The National bias adjustment factor spreadsheet (version 03/26) was used to derive the national bias adjustment factor for diffusion tubes analysed by GSS during 2025. However, as shown in Figure C.1, that was based only on one study. As the one study was based at London Marylebone Road, the conditions of the co-location study may not be reflective of the actual conditions in Clackmannanshire. Therefore, the bias adjustment factor should be treated with caution, and Glasgow Scientific Services should increase the number of co-locations to increase confidence of the bias adjustment factor.

A summary of bias adjustment factors used by Clackmannanshire Council over the past five years is presented in Table C.1. Whilst it is evident that the bias adjustment factor is likely to vary year-on-year due to the national factor being derived from one study only (Marylebone Road Intercomparison), Clackmannanshire Council do not undertake any triplicate co-location monitoring so are not able to calculate a local bias adjustment factor.

Figure C.1 – National Bias Adjustment Factor Spreadsheet (03/26)

National Diffusion Tube Bias Adjustment Factor Spreadsheet					Spreadsheet Version Number: 03/26					
Follow the steps below <u>in the correct order</u> to show the results of <u>relevant</u> co-location studies								This spreadsheet will be updated at the end of June 2026		
Data only apply to tubes exposed monthly and are not suitable for correcting individual short-term monitoring periods Whenever presenting adjusted data, you should state the adjustment factor used and the version of the spreadsheet <u>This spreadsheet will be updated every few months: the factors may therefore be subject to change. This should not discourage their immediate use.</u>								LAQM Helpdesk Website		
The LAQM Helpdesk is operated on behalf of Defra and the Devolved Administrations by Bureau Veritas, in conjunction with contract partners AECOM and the National Physical Laboratory.					Spreadsheet maintained by the National Physical Laboratory. Original compiled by Air Quality Consultants Ltd.					
Step 1:		Step 2:	Step 3:	Step 4:						
Select the Laboratory that Analyses Your Tubes from the Drop-Down List		Select a Preparation Method from the Drop-Down List	Select a Year from the Drop-Down List	Where there is only one study for a chosen combination, you should use the adjustment factor shown with caution. Where there is more than one study, use the overall factor ² shown in blue at the foot of the final column.						
If a laboratory is not shown, we have no data for this laboratory.		If a preparation method is not shown, we have no data for this method at this laboratory.	If a year is not shown, we have no data ²	If you have your own co-location study then see footnote ³ . If uncertain what to do then contact the Local Air Quality Management Helpdesk at LAQMHelpdesk@bureauveritas.com or 0800 0327953						
Analysed By ¹	Method	Year	Site Type	Local Authority	Length of Study (months)	Diffusion Tube Mean Conc. (Dm) (µg/m ³)	Automatic Monitor Mean Conc. (Cm) (µg/m ³)	Bias (B)	Tube Precision ³	Bias Adjustment Factor (A) (Cm/Dm)
Glasgow Scientific Services	20% TEA in water	2025	KS	Marylebone Road Intercomparison	12	44	31	39.7%	G	0.72
Glasgow Scientific Services	20% TEA in water	2025		Overall Factor ² (1 study)				Use		0.72

Table C.1 – Bias Adjustment Factor

Year	Local or National	If National, Version of National Spreadsheet	Adjustment Factor
2025	National	03/26	0.72
2024	National	04/25	0.82
2023	National	03/24	0.86 ⁽¹⁾
2022	National	03/23	0.89 ⁽¹⁾
2021	National	03/22	0.89 ⁽¹⁾

(1) Adjustment factor derived using co-location studies of good precision only.

NO₂ Fall-off with Distance from the Road

No diffusion tube NO₂ monitoring locations within Clackmannanshire required distance correction during 2025.

QA/QC of Automatic Monitoring

During 2025, automatic monitoring of NO₂ and PM₁₀ / PM_{2.5} was completed at the King Street, Alloa (CM1) site using a chemiluminescence NO_x analyser and Fidas particulate analyser. These automatic analysers are routinely checked by Clackmannanshire Council on a monthly basis, with the analyser diagnostics and response results sent to Ricardo (on behalf of the Scottish Government). Each analyser is serviced and calibrated every six months by the equipment support unit (ESU - Acoem), which usually occurs in May / June and November / December. Quality Assurance and Quality Control (QA/QC) audits are also undertaken before each service round in June and December and are completed by

Ricardo. Clackmannanshire Council (as the local site operator – LSO) visit the site if called-out for on-site issues which may include power outages, analyser faults or bad weather. The LSO checks the site and resolves issues where possible or escalates an issue to call-out the ESU if the issue cannot be resolved. The data is ratified by Acoem and is available on the [Scottish Government Website](#).

PM₁₀ and PM_{2.5} Monitoring Adjustment

The PM₁₀ and PM_{2.5} data has been adjusted in accordance with the guidance note issued by the Scottish Government in relation to the monitoring of particulate matter (PM) data. For PM data measured via a Fidas 200 instrument, the ratified PM₁₀ annual mean value was divided by 0.909 whilst the annual mean PM_{2.5} value was multiplied by 1.06. Further information on the adjustments applied to the PM data obtained from the automatic monitoring station on King Street, Alloa (CM1) is available in the issued [Guidance Note](#).

Automatic Monitoring Annualisation

All automatic monitoring locations within Clackmannanshire recorded data capture of greater than 75% therefore it was not required to annualise any monitoring data.

NO₂ Fall-off with Distance from the Road

No automatic NO₂ monitoring locations within Clackmannanshire required distance correction during 2025.

Appendix D: Supplementary Data ('AQ Mesh Pod')

		Valid Data Capture for Monitoring Period (%)	Valid Data Capture 2025 (%)	2021	2022	2023	2024	2025
NO ₂	Annual Mean (µg/m ³)	99.2	99.2	17.9	15.6	15.7	25.9	10.9
	1-hr Means > 200 µg/m ³			0	0	0	0	1
PM ₁₀	Annual Mean (µg/m ³)	99.6	99.6	3.7	3.7	2.8	2.1	7.1
	24-hr Means > 50 µg/m ³			0	0	0	0	1
PM _{2.5}	Annual Mean (µg/m ³)	99.6	99.6	2.1	2.0	1.7	1.5	4.8

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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