



2024 Air Quality Annual Status Report (ASR)

In fulfilment of Part IV of the Environment Act 1995
Local Air Quality Management, as amended by the
Environment Act 2021

June 2024

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Executive Summary: Air Quality in Our Area

Air Quality in Cannock Chase

Breathing in polluted air affects our health and costs the NHS and our society billions of pounds each year. Air pollution is recognised as a contributing factor in the onset of heart disease and cancer and can cause a range of health impacts, including effects on lung function, exacerbation of asthma, increases in hospital admissions and mortality. In the UK, it is estimated that the reduction in healthy life expectancy caused by air pollution is equivalent to 29,000 to 43,000 deaths a year¹.

Air pollution particularly affects the most vulnerable in society, children, the elderly, and those with existing heart and lung conditions. Additionally, people living in less affluent areas are most exposed to dangerous levels of air pollution².

Table ES 1 provides a brief explanation of the key pollutants relevant to Local Air Quality Management and the kind of activities they might arise from.

Table ES 1 - Description of Key Pollutants

Pollutant	Description
Nitrogen Dioxide (NO ₂)	Nitrogen dioxide is a gas which is generally emitted from high-temperature combustion processes such as road transport or energy generation.
Sulphur Dioxide (SO ₂)	Sulphur dioxide (SO ₂) is a corrosive gas which is predominantly produced from the combustion of coal or crude oil.
Particulate Matter (PM ₁₀ and PM _{2.5})	<p>Particulate matter is everything in the air that is not a gas.</p> <p>Particles can come from natural sources such as pollen, as well as human made sources such as smoke from fires, emissions from industry and dust from tyres and brakes.</p> <p>PM₁₀ refers to particles under 10 micrometres. Fine particulate matter or PM_{2.5} are particles under 2.5 micrometres.</p>

¹ UK Health Security Agency. Chemical Hazards and Poisons Report, Issue 28, 2022.

² Defra. Air quality and social deprivation in the UK: an environmental inequalities analysis, 2006

As 2023 began, Cannock Chase Council had three air quality management areas (AQMAs), all of which were declared due to concentrations of NO₂ exceeding the annual air quality objective of 40 µg/m³ at a relevant receptor:

- AQMA 1, Watling Street, Cannock (Declared 2006)
- AQMA 2, Watling Street, Norton Canes (Declared 2014)
- AQMA 3, Fiveways, Norton Canes (Declared 2017)

AQMA 1 and AQMA 3 were revoked on 1st May 2023.

Consideration will be given to revoking AQMA 2 in 2024.

Monitoring data on air quality associated with fine particulate matter (PM_{2.5}) is not available, although modelling suggests that two areas exceeded the 2040 10 µg/m³ annual mean target in 2023.

The existing air quality monitoring programme for NO₂ was expanded with an additional five locations in February 2023; the upgrade of an existing automated NO₂ monitoring station at Heath Hayes, to include PM_{2.5} monitoring, is expected in 2024.

Cannock Chase Council will continue with its efforts to improve local air quality by working with partner organisations on air quality awareness campaigns and transport management strategies.

Cannock Chase will encourage residents to reduce pollution by:

- Enforcing the new smoke control order, which will bring moored vessels into the scope of smoke control legislation and simplify the existing arrangements.
- Continuing to work with stakeholders, including Staffordshire County Council, to promote sustainable transport and reduce pollution.

Actions to Improve Air Quality

Whilst air quality has improved significantly in recent decades, there are some areas where local action is needed to protect people and the environment from the effects of air pollution.

The Environmental Improvement Plan³ sets out actions that will drive continued improvements to air quality and to meet the new national interim and long-term targets for fine particulate matter (PM_{2.5}), the pollutant of most harm to human health. The Air Quality Strategy⁴ provides more information on local authorities' responsibilities to work towards these new targets and reduce fine particulate matter in their areas.

The Road to Zero⁵ details the Government's approach to reduce exhaust emissions from road transport through a number of mechanisms, in balance with the needs of the local community. This is extremely important given that cars are the most popular mode of personal travel and the majority of Air Quality Management Areas (AQMAs) are designated due to elevated concentrations heavily influenced by transport emissions.

Conclusions and Priorities

Air quality monitoring data for 2023 suggests that the annual air quality objective for NO₂ of 40 µg/m³ is being met at all monitoring locations and that trends are stable. The revocation of AQMA 2 will be considered in 2024.

If AQMA 2 is revoked, it will be necessary to produce an air quality strategy, which sets out how Cannock Chase Council will continue to work with stakeholders to improve air quality across the District. If AQMA is not revoked, it will be necessary to produce an air quality management area action plan for AQMA 2.

Local Engagement and How to get Involved

Cannock Chase Council welcomes comments and suggestions on how to improve air quality. Enquiries can be directed as follows:

Write to:	Environmental Protection, Cannock Chase Council, Beecroft Road, Cannock, Staffordshire
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³ Defra. Environmental Improvement Plan 2023, January 2023

⁴ Defra. Air Quality Strategy – Framework for Local Authority Delivery, August 2023

⁵ DfT. The Road to Zero: Next steps towards cleaner road transport and delivering our Industrial Strategy, July 2018

	ST18 0YS
Email:	environmentalhealth@cannockchasedc.gov.uk
Telephone:	01543 462621
Website:	https://www.cannockchasedc.gov.uk/residents/environmental-health/environmental-protection/air-quality-management

Local authorities across Staffordshire regularly meet to discuss air quality issues and initiatives as part of the Air Quality Forum.

Local Responsibilities and Commitment

This ASR was prepared by the Environmental Health Service of Cannock Chase Council.

This ASR has been approved by: Gabrielle Whitehouse, Head of Regulatory Services

Endorsement from the Director of Health & Care, Staffordshire County Council

Staffordshire County Council (SCC) is committed to working with partners to ensure that Staffordshire is a place where improved health and wellbeing is experienced by all. Poor air quality has a negative impact on public health, with potentially serious consequences for individuals, families, and communities. Identifying problem areas and ensuring that actions are taken to improve air quality forms an important element in protecting the health and wellbeing of Staffordshire residents. Improving air quality is often a complex issue, presenting a multi-agency challenge – so it is essential that all agencies work together effectively to deliver improvements where they are needed.

As Director of Health and Care across Staffordshire, I endorse this Annual Status Report which sets out the position in all the local authorities across Staffordshire and Stoke-on-Trent (SOT), focusing on human made pollution with particulate matter.

The Air Aware project (phase 2) ran until March 2023 with Defra funding and continues, with joint funding from SCC Public Health and Connectivity Teams, to March 2025. The project delivers behaviour change to increase active travel, decrease car use, and raise awareness of air quality issues through five elements. These are business and school engagement, communications and campaigns, electric vehicles, and air quality monitoring in targeted locations. Campaigns include anti-idling, walking and cycle activities and Clean Air Day. These have been countywide, engaging a large number of businesses and

schools. The programme focuses on reducing levels of NO₂ and PM, which are monitored at key locations.

A number of the Staffordshire authorities are currently involved in implementing measures to reduce levels of NO₂ within their areas, which are detailed elsewhere in their ASR. Since the update of the Environment Act 2021, there is now a statutory duty imposed on local authorities in England to reduce PM_{2.5}, a number of the measures are complementary with those being undertaken to improve air quality. A mapping exercise completed by the Staffordshire Air Quality Forum members details the measures currently in place which are considered to have an impact in reducing PM_{2.5} within the County.

Post Covid the Staffordshire and SOT Air Quality Forum has resumed meeting on a quarterly basis. This forum involves all the districts and boroughs and both SCC and SOT and is chaired on a rotating basis.

In addition, Levelling Up Fund 2 Schemes will improve a number of major roads around the County, reduce journey times, put greener, cleaner buses on main roads, improve walking and cycling routes and reduce the impact of housing and commercial developments. They will benefit East Staffordshire, Cannock Chase, and Stafford Borough. Total package cost circa £20m.

Finally, it's worth mentioning both Climate Change and The Local Transport Plan 4 (LTP4). SCC have signed up to the Climate Emergency and since signing up have reduced its Carbon footprint by 50%. We are now also now working towards LTP4, with our local authority partners. LTP4 will come into effect in 2025 and will have a positive effect on air quality over the coming years

Dr Richard Harling



Director of Health and Care

Staffordshire County Council

June 2024

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1 Local Air Quality Management

This report provides an overview of air quality in the District of Cannock Chase during 2023. 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 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 order to achieve and maintain the objectives and the dates by which each measure will be carried out. This Annual Status Report (ASR) is an annual requirement showing the strategies employed by Cannock Chase Council to improve air quality and any progress that has been made.

The statutory air quality objectives applicable to LAQM in England are presented in Table E.1.

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 should prepare an Air Quality Action Plan (AQAP) within 18 months. The AQAP should specify how air quality targets will be achieved and maintained and provide dates by which measures will be carried out.

A summary of AQMAs declared by Cannock Chase Council can be found in Table 2.1. The table presents a description of the AQMAs that were designated within the District of Cannock Chase. Appendix D: Maps of Monitoring Locations and AQMAs provides maps of the AQMAs and air quality monitoring locations in relation to the AQMAs. The relevant air quality objective for NO₂ is 40 µg/m³ (annual mean).

The Council will consider revocation of AQMA 2 during 2024

Table 2.1 – Declared Air Quality Management Areas

AQMA Name	Date of Declaration	Pollutants and Air Quality Objectives	One Line Description	Is air quality in the AQMA influenced by roads controlled by Highways England?	Level of Exceedance: Declaration	Level of Exceedance: Current Year	Number of Years Compliant with Air Quality Objective	Name and Date of AQAP Publication	Web Link to AQAP
AQMA 2	Declared 1/9/2014	NO ₂ annual mean	A5 Watling Street, Churchbridge to Norton Canes	YES	36.2	27.4	4	AQMA declared after publication of latest AQAP	https://uk-air.defra.gov.uk/aqma/details?aqma_ref=1575

- Cannock Chase Council confirms the information on UK-Air regarding their AQMAs is up to date.
- Cannock Chase Council confirms that all current AQAPs have been submitted to Defra.

2.2 Progress and Impact of Measures to address Air Quality in Cannock Chase

Defra's appraisal of last year's ASR is presented in Table 2.2.

Table 2.2 – 2022 ASR Appraisal.

DEFRA Comment	Cannock Chase Council Response
Continue with Reference to the Public Health Outcomes Framework, following the positive work made in this submission.	Noted.
Continue analysis of trends in the air quality data in comparison to the Air Quality Objectives.	Noted.
Continue maintaining high standards of QA/QC procedures with sufficient supporting evidence provided, with robust analysis shown in this submission	Noted.
It is unclear from this submission what diffusion type was used for analysis, between 20% TEA/Water or 50% TEA/Acetone.	Staffordshire County Council Highways Laboratory prepare their diffusion tubes with 20% TEA/Water

Progress on measures identified for completion in the 2023 ASR is outlined in Table 2.3.

Table 2.3 – Progress on 2023 Air Quality Priorities

Priority	Measure	2023 ASR Comments	2024 ASR Comments
1	Revoke AQMAs 1 and 3	AQMAs 1 and 3 were revoked on 1 st May 2023.	AQMAs 1 and 3 were revoked on 1 st May 2023.
2	Ongoing air quality monitoring and data review	Data collected in 2023 will be analysed as part of the 2024 ASR.	This report demonstrates Cannock Chase Council's ongoing commitment to review air quality within the District.
3	Review current air quality monitoring arrangements	Additional diffusion tube locations (NO ₂) established in January 2023. AURN PM _{2.5} monitoring station establishment anticipated in 2023.	The proposed PM _{2.5} monitoring station at Watling Street has been cancelled; the existing AURN monitoring station (HHMS) should be upgraded in 2024 instead.
4	Review Cannock Chase Council Smoke Control Orders	Cannock Chase Council currently has 15 smoke control orders which, in aggregate, cover the whole District; the current arrangements (including Cannock Council's Enforcement Policy) are to be reviewed following changes to the Clean Air Act 1993.	The Cannock Chase Council Smoke Control Order was made on 26 th January 2024; this consolidates previous Orders and brings moored vessels within scope, and comes into force on 1 st September 2024.
5	Revision to Taxi Licensing Policy to encourage transition to low emissions vehicles	The Hackney Carriage/Private Hire Driver, Vehicle & Operator Licensing Policy is due to be adopted in July 2023.	The Hackney Carriage/Private Hire Driver, Vehicle & Operator Licensing Policy was adopted in November 2023; policy changes took effect on 1 st April 2024. Key changes are: From 1 April 2024, the Council will stop licensing vehicles which are of Euro 4 emissions standard and are powered solely by petrol, diesel or liquified petroleum gas (LPG). From 1 April 2026, the Council will no longer issue new licences for vehicles which are powered solely by petrol, diesel or LPG. From 31 March 2030, the Council will stop licensing vehicles which are powered solely by petrol, diesel or LPG.
6	Adoption of a Green Travel Strategy	Cannock Chase Council is developing a Green Travel Strategy with the following key aims: <ul style="list-style-type: none"> To Increase the uptake of active and green transportation whilst reducing the number of car journeys across the District. To drive the uptake of ULEV vehicle use, whilst reducing the number of petrol and diesel vehicle journeys. To work with partners to support the future increase in number of publicly available vehicle charging/ fuelling points. To understand current reasons and choices of modes of transport within the District to understand how we can influence the uptake of future sustainable modes of transport and improve air quality. To help develop complementary planning policies and strategic projects. <p>To set an example, by developing an ULEV local authority fleet, adopting a staff travel plan, running green events and engaging with businesses through economic development programmes.</p>	Work is continuing on development of a Green Travel Strategy.
7	Adoption of an Ultra-Low Emission Vehicle Charging Delivery Strategy	Cannock Chase Council is developing an Ultra-low Emission Vehicle Strategy with the following key aims: <ul style="list-style-type: none"> To work towards Cannock Chase Council's vehicle fleet producing zero emissions by 2030 or as early as practicable after that date. To provide adequate, safe and secure charging/fuelling locations across the District. <p>To provide suitable dedicated charging locations within the District for our taxi operators.</p>	Subject to approval, it is anticipated that this will start to be rolled out in 2024/25.
8	Develop planning policies that require developer contributions towards sustainable transport	The Cannock Chase Council Local Plan 2018-2039 is in development; it is anticipated that this will be adopted in 2024. The current draft includes policies on sustainable transport.	The Cannock Chase Council Local Plan 2018-2039 is in development; it is anticipated that this will be adopted in 2024. The current draft includes policies on sustainable transport.
9	Produce a Developer's Guide to Air Quality	A draft Air Quality Developer's Guide has been prepared. However, the guide requires a review to ensure alignment with the policies under the 2018-2039 Local Plan. The Developer Guide should be published following adoption of the 2018-2039 Local Plan (anticipated in 2024).	A draft Air Quality Developer's Guide has been prepared. However, the guide requires a review to ensure alignment with the policies under the 2018-2039 Local Plan. The Developer Guide should be published following adoption of the 2018-2039 Local Plan (anticipated in 2024).

Priority	Measure	2023 ASR Comments	2024 ASR Comments
10	Partnership working with Staffordshire County Council	Staffordshire County Council have significant influence on schools and run educational and business awareness campaigns, including 'Air Aware' and the 'Staffordshire Business and Environment Network'. Staffordshire County Council have been successful in obtaining 'Levelling Up' funding to deliver local highways infrastructure improvements on the A34 at Cannock town centre and to provide a low/zero emission bus service between Stafford and Cannock. Subject to final approval, the project is scheduled for completion in 2024.	Staff in Environmental Health joined Staffordshire County Council to promote sustainability at public events in Hednesford and Stafford; Cannock Council continues to promote sustainability issues with local schools. Levelling Up Funded infrastructure improvements in Cannock Town Centre, including electric vehicle charging facilities, will progress in 2024 following approval of the first phase of development.
11	Develop an air quality management action plan for AQMA 2	Monitoring data suggests that air quality continues to meet the NO ₂ objective; monitoring will continue with a view to revocation in 2024. Development of an AQAP for AQMA 2 is an inefficient use of limited Council resources.	AQMA 2 will be considered for revocation in 2024. An AQAP is no longer necessary.

Cannock Chase Council air quality priorities for 2024 are presented in Table 2.4.

Table 2.4 – Air Quality Priorities for 2024

Priority	Measure	Comment
1	Proposed revocation of AQMA 2	The air quality objectives at AQMA 2 have been achieved for four consecutive years. It is appropriate to consider revoking AQMA 2 in 2024.
2	Ongoing air quality monitoring and data review	Data collected in 2024 will be analysed as part of the 2025 ASR.
3	Review current air quality monitoring arrangements	AURN PM _{2.5} monitoring station upgrade anticipated in 2024. It may be appropriate to review the diffusion tube monitoring programme.
4	Develop a local air quality strategy or air quality management action plan.	It will be necessary to develop an air quality strategy or an air quality management area action plan.
5	Partnership working with Staffordshire County Council	Staffordshire County Council have significant influence on schools and run educational and business awareness campaigns, including 'Air Aware' and the 'Staffordshire Business and Environment Network'. Staffordshire County Council have been successful in obtaining 'Levelling Up' funding to deliver local highways infrastructure improvements on the A34 at Cannock town centre and to provide a low/zero emission bus service between Stafford and Cannock.
6	Adoption of a Green Travel Strategy	Cannock Chase Council is developing a Green Travel Strategy with the following key aims: <ul style="list-style-type: none"> To increase the uptake of active and green transportation whilst reducing the number of car journeys across the District. To drive the uptake of ULEV vehicle use, whilst reducing the number of petrol and diesel vehicle journeys. To work with partners to support the future increase in number of publicly available vehicle charging/ fuelling points. To understand current reasons and choices of modes of transport within the District to understand how we can influence the uptake of future sustainable modes of transport and improve air quality. To help develop complementary planning policies and strategic projects. To set an example, by developing an ULEV local authority fleet, adopting a staff travel plan, running green events and engaging with businesses through economic development programmes.
7	Adoption of an Ultra-Low Emission Vehicle Charging Delivery Strategy	Cannock Chase Council is developing an Ultra-low Emission Vehicle Strategy with the following key aims: <ul style="list-style-type: none"> To work towards Cannock Chase Council's vehicle fleet producing zero emissions by 2030 or as early as practicable after that date. To provide adequate, safe and secure charging/fuelling locations across the District. To provide suitable dedicated charging locations within the District for our taxi operators.
8	Develop planning policies that require developer contributions towards sustainable transport	The Cannock Chase Council Local Plan 2018-2039 is in development; it is anticipated that this will be adopted in 2024. The current draft includes policies on sustainable transport.
9	Produce a Developer's Guide to Air Quality	A draft Air Quality Developer's Guide has been prepared. However, the guide requires a review to ensure alignment with the policies under the 2018-2039 Local Plan. The Developer Guide should be published following adoption of the 2018-2039 Local Plan (anticipated in 2024).

The principal challenges and barriers to implementation that Cannock Chase Council anticipates facing are:

- Staff resource (time).
- Funding to deliver sustainable transport infrastructure.
- In 2023, Cannock Chase Council and Stafford Borough Council entered into a shared services model which, in the short to mid-term may present both challenges and opportunities to both councils.

Cannock Chase Council and partner organisations have taken forward direct measures during the reporting year of 2023 in pursuit of improving local air quality. Details of all measures completed or in progress are set out in Table 2.5. Eight measures are included within Table 2.5, with the type of measure and the progress Cannock Chase Council have made during the reporting year of 2023. Where there have been, or continue to be, barriers restricting the implementation of the measure, these are also presented within Table 2.5.

Table 2.5 – Progress on Measures to Improve Air Quality

Measure No.	Measure	Category	Classification	Year Measure Introduced	Estimated / Actual Completion Date	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Barriers to Implementation
1	Air Aware - School Travel Plans	Promoting Travel Alternatives	School Travel Plans	2018	2024	Staffordshire County Council	DEFRA/ Staffordshire County Council	YES	Partially Funded	£100k - £500k	Implementation	Unknown	Number of schools participating	5 schools participated in the scheme, 2 of which are still engaged. SCC gave assembly presentations to 4 schools in 2023.	Air Aware has been incorporated into mainstream school engagement through SCC. https://www.staffordshire.gov.uk/Transport/Sustainable-Travel/Air-Quality/Schools.aspx
2	Air Aware - School anti-Idling Campaigns	Public Information	Via other mechanisms	2019	2024	Staffordshire County Council	DEFRA/ Staffordshire County Council	YES	Partially Funded	< £10k	Implementation	Unknown	Number of schools participating	4 schools participated in the campaign.	Awareness campaign for those who drive to school. Participants sign a pledge and receive reminder emails.
3	Public awareness campaigns	Public Information	Via other mechanisms	2018	2040	Staffordshire County Council	DEFRA/ Staffordshire County Council	YES	Funded	£50k - £100k	Implementation	Unknown	N/A	SCC and CCDC participated in the 'Carbon Bubble Tour' in Cannock and Stafford in 2023.	
4	Staffordshire Business Environment Network	Promoting Travel Alternatives	Workplace Travel Planning	2012	2040	Staffordshire County Council	Staffordshire County Council	NO	Not Funded	< £10k	Implementation	Unknown	Number of businesses participating	60 businesses engaged within Cannock in 2023.	
5	Home working	Promoting Travel Alternatives	Encourage / Facilitate homeworking	2013	2040	Cannock Chase Council	N/A	NO	Not Funded	< £10k	Implementation	Unknown	N/A	Home working policy implemented in 2013.	
6	Cycle 2 Work Scheme	Promoting Travel Alternatives	Promotion of cycling	2015	2040	Cannock Chase Council	Cyclescheme	NO	Not Funded	< £10k	Implementation	Unknown	Number of staff taking up measure	No staff uptake in 2023.	
7	Active Travel Fund	Promoting Travel Alternatives	Intensive active travel campaign & infrastructure	2021	2024	Staffordshire County Council	Department of Transport	NO	Funded	£1 million - £10 million	Implementation	Unknown	Length of cycle path installed/ upgraded	850m (2022-23)	
8	Taxi Licensing Policy	Promoting Low Emission Transport	Taxi Licensing conditions	2023	2030	Cannock Chase Council	N/A	NO	Funded	< £10k	Implementation	Unknown	Proportion of licensed vehicles as hybrid or electric	2023 (baseline): Diesel – 74.6% Petrol – 8.6% Hybrid – 16.4% LPG – 0.4%	2023 baseline

Note:

The wider measures that Staffordshire County Council take to reduce pollution emissions are provided in their Climate Change Annual Reports (see Table 2.6).

Cannock Chase Council worked to implement these measures in partnership with the following stakeholders during 2023:

- Staffordshire County Council.
- Energy Saving Trust.
- Staffordshire Air Quality Forum (liaison group representing local authority officers across Staffordshire).

Policies which are relevant to air quality are presented in [Table 2.6](#).

Table 2.6 – Plans and Strategies Aligned to Air Quality

Plan or Strategy	Authority	Summary	Web Link
Costed Net Zero Action Plan	Cannock Chase Council	This policy identifies and assesses measures to achieve net zero carbon emissions by 2030.	https://www.cannockchasedc.gov.uk/sites/default/files/costed_net_zero_action_plan.pdf (2.3 Mb).
Cannock Chase Local Plan 2018-2039	Cannock Chase Council	The proposed Local Plan sets planning policy. Strategic objective 5 is focused on the provision of sustainable transport and communications infrastructure.	https://www.cannockchasedc.gov.uk/sites/default/files/06-local_plan_2018_to_2039_reg_19_consultation_rpt_cabinet_250822.pdf (10.3 Mb).
		Planning policies require the potential impact of nitrogen emissions from development on the Cannock Chase Special Area of Conservation to be assessed.	https://www.cannockchasedc.gov.uk/residents/planning-building/planning-policy/cannock-chase-special-area-conservation-sac
Hackney Carriage/Private Hire Driver, Vehicle & Operator Licensing Policy	Cannock Chase Council	Annex F details the migration toward hybrid, electric and hydrogen vehicles in the licensed private hire/taxi fleet.	https://www.cannockchasedc.gov.uk/sites/default/files/document-library/Revised%20Taxi%20Policy%202023%20Final_0.pdf (0.5 Mb)
Climate Change Action Plan 2021-2025	Staffordshire County Council	This plan includes measures to reduce transport emissions. Progress is reported on annually.	https://www.staffordshire.gov.uk/environment/Climate-change/Climate-change.aspx
Public Electric Vehicle Charging Infrastructure Strategy 2023	Staffordshire County Council	This strategy seeks to coordinate the development of electric vehicle charge points across the county.	https://www.staffordshire.gov.uk/Transport/Sustainable-travel/Electric-vehicles/02-SCC-Public-EV-Charging-Strategy-V3-3.pdf%20 (17 Mb)
Cannock Chase Integrated Transport Strategy 2013-2028	Staffordshire County Council	This strategy prioritises expenditure on transport improvements across Cannock.	https://www.staffordshire.gov.uk/Transport/transportplanning/documents/Documents/Cannock-Transport.pdf (2.7 Mb)
Local Transport Plan 2011	Staffordshire County Council	The Local Transport Plan is supported by a series of complementary policies: <ul style="list-style-type: none"> • Bus Service Improvement Plan 2021 • Local Cycling and Walking Infrastructure Plan 2021 • Freight Strategy Plan 2019 • Highways Infrastructure Asset Management Plan 2022 • Rail Strategy 2016 	https://www.staffordshire.gov.uk/Transport/transportplanning/localtransportplan/home.aspx

2.3 PM_{2.5} – Local Authority Approach to Reducing Emissions and/or Concentrations

As detailed in Policy Guidance LAQM.PG22 (Chapter 8) and the Air Quality Strategy⁶, local authorities are expected to work towards reducing emissions and/or concentrations of fine particulate matter (PM_{2.5} - particulate matter smaller than 2.5 micrometres). There is clear evidence that PM_{2.5} has a significant impact on human health, including premature mortality, allergic reactions, and cardiovascular diseases.

The Environmental Targets (Fine Particulate Matter) (England) Regulations 2023 establish the following targets for PM_{2.5}:

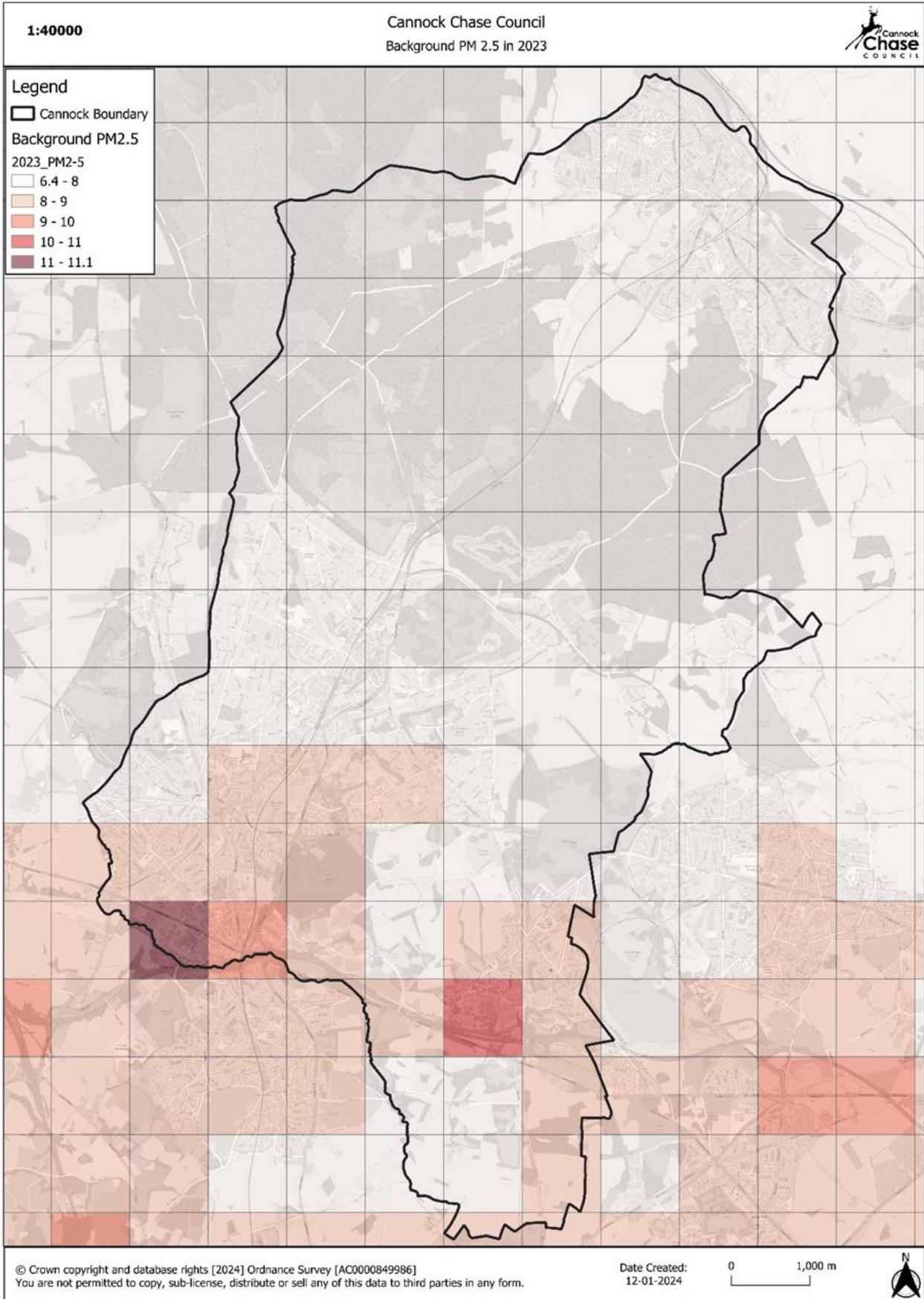
- 10 µg/m³ annual mean (to be achieved by 2040).
- A 35% reduction in population exposure by 2040 (2016-2018 baseline).

2.3.1 Background PM_{2.5} in Cannock Chase

DEFRA modelled background concentrations of PM_{2.5}, based on 2018 data (with a resolution of 1 km²), are presented as Figure 2.1. Background concentrations of PM_{2.5} peak in Bridgtown (11.1 µg/m³) and Norton Canes (10.1 µg/m³), but otherwise decrease from the south to the north.

⁶ Defra. Air Quality Strategy – Framework for Local Authority Delivery, August 2023

Figure 2.1 - Modelled Background PM_{2.5} in Cannock



Elevated background PM_{2.5} concentrations coincide with two major highways:

- The A5/Watling Street.
- The M6 Toll.

Watling Street runs northwest to southeast through the south of the District and is split into two parts. The western part cuts through Bridgtown, a mixed commercial and residential area. The eastern part passes through a largely agricultural area, lined with sporadic residential and commercial properties.

The M6 Toll runs west to east through the south of the District, along the southern extent of Norton Canes, before meeting the District boundary at Brownhills West.

At the time of writing, it is understood that the Automatic and Urban Rural Network (AURN) NO₂ monitoring station on the A5190 will be upgraded to incorporate monitoring for PM_{2.5}.

Cannock Chase Council will review the published data and consider the implications for local air quality management when it becomes available.

2.3.2 Public Health Outcomes Framework

The contribution of particulate air pollution to mortality across Cannock Chase District (according to the Office for Health Improvement and Disparities 'Public Health Outcomes Framework') is presented as Figure 2.2 (please note that whilst the latest data has been used, it covers the period 2018-2022).

This data suggests that mortality associated with particulate air pollution is below the average for England. However, the following caveats should be considered:

- Cannock Chase District contains many former coalfields; the last colliery in the area closed in 1990.
Coal miners are at a higher risk of developing respiratory ailments, such as silicosis, coal workers pneumoconiosis and COPD, from occupational exposure to particulates.
Figures for the proportion and age of the local population who worked in the mining industry are not available.
- The figures for England take in a wide range of local authorities. Standards of air quality will be highly variable for reasons of natural and economic geography; mortality rates are also related to other socioeconomic factors.

Figure 2.2 - Fraction of Mortality Attributable to Particulate Air Pollution

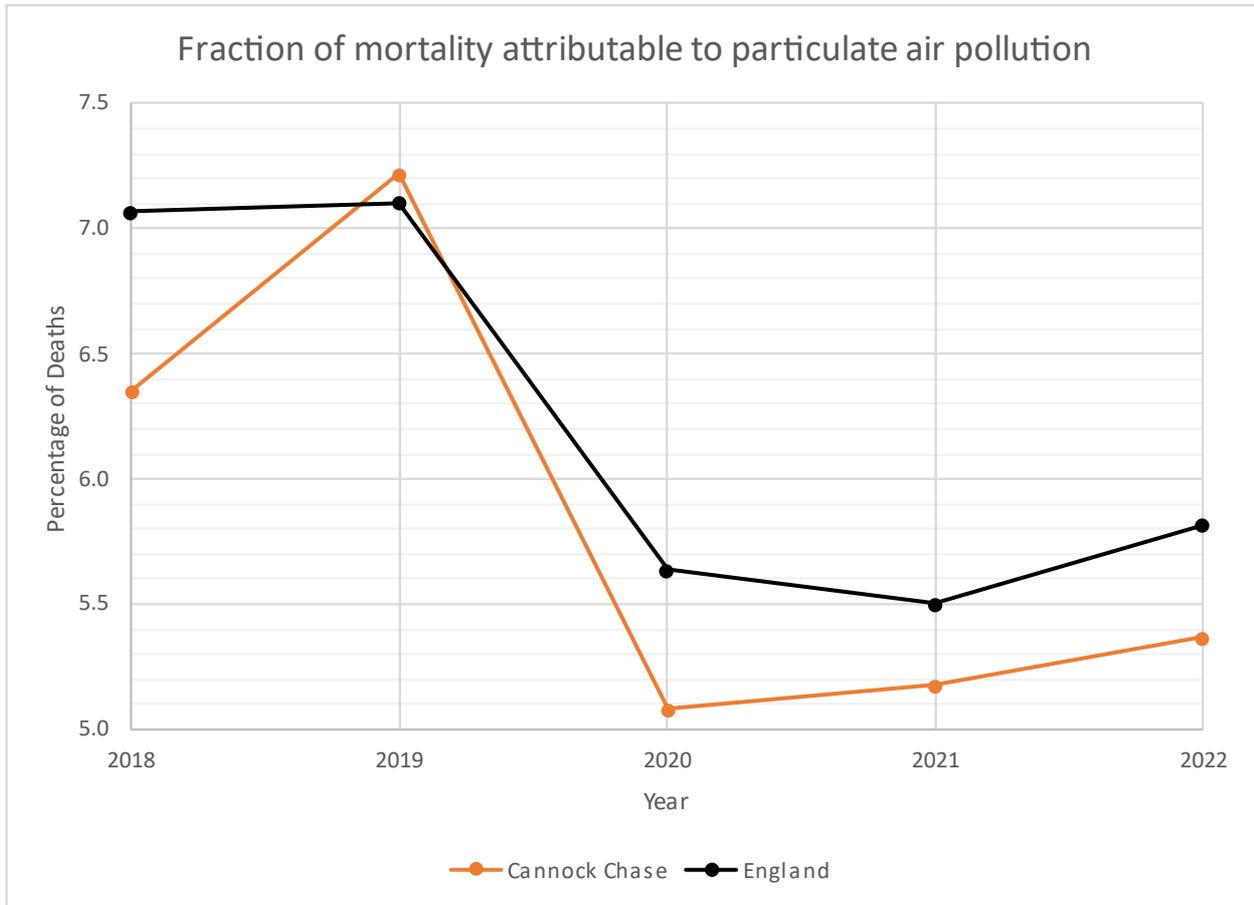


Table 2.7 – Fraction of Mortality Attributable to Particulate Air Pollution

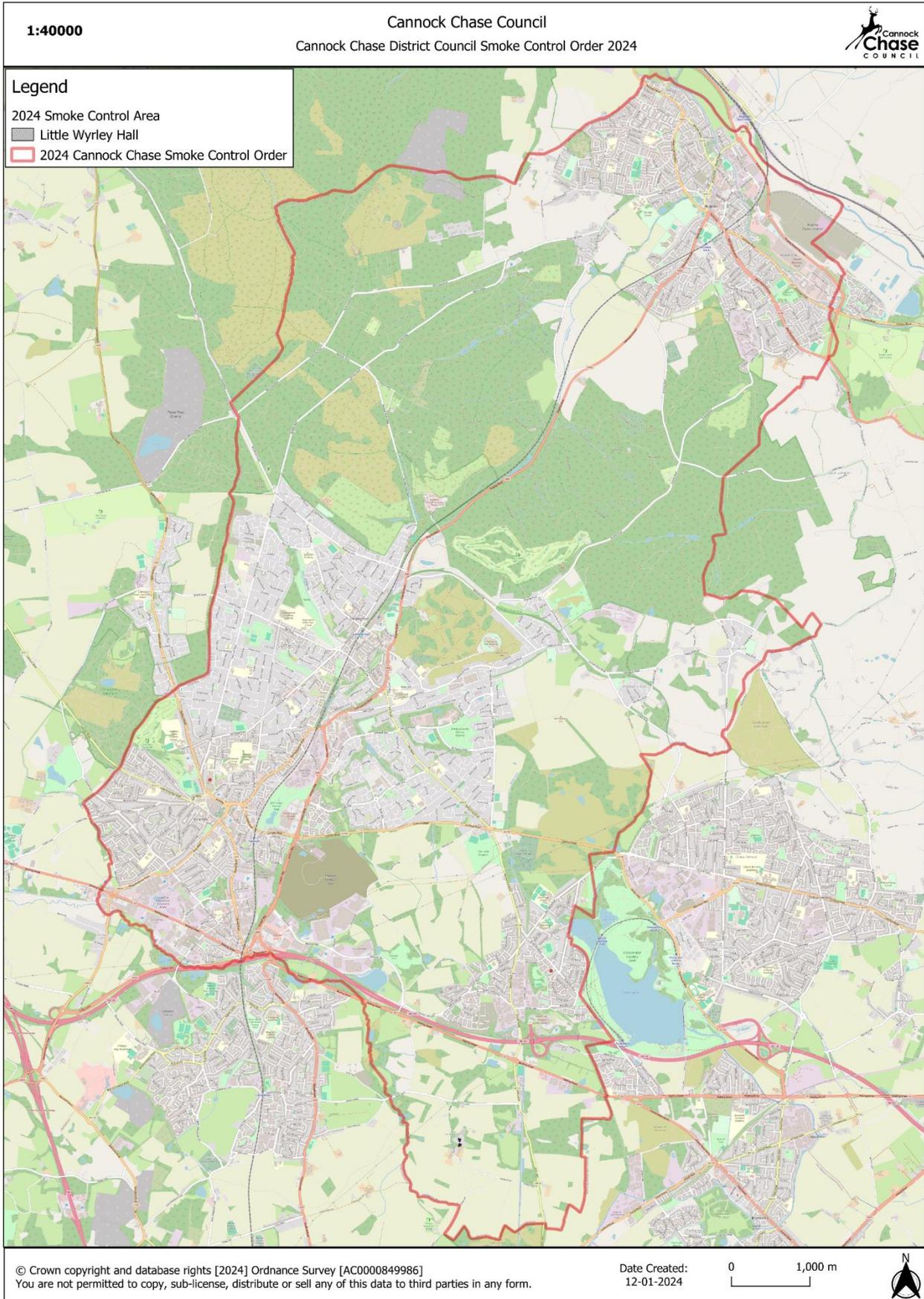
Year	Area	Result (%)	Area	Result (%)
2018	England	7.1	Cannock Chase District	6.4
2019	England	7.1	Cannock Chase District	7.2
2020	England	5.6	Cannock Chase District	5.1
2021	England	5.5	Cannock Chase District	5.2
2022	England	2.8	Cannock Chase District	5.4

2.3.3 Smoke Control

Cannock Chase Council declared 15 smoke control orders between 1988 and 1998 which, in aggregate, cover the entire District. The existing smoke control orders will be revoked by the Cannock Chase District Council Smoke Control Order 2024, which comes into force on 1st September 2024 (Figure 2.3). Moored vessels, including narrowboats on the Trent and Mersey Canal and the Cannock Extension Canal, fall within the scope of the new smoke control order.

Smoke control is enforced by Environmental Health.

Figure 2.3 - Cannock Chase District Council Smoke Control Order 2024



3 Air Quality Monitoring Data and Comparison with Air Quality Objectives and National Compliance

This section sets out the monitoring undertaken in 2023 by Cannock Chase Council and how it compares with the relevant air quality objectives. In addition, monitoring results are presented for a five-year period between 2019 and 2023 to allow trends to be identified and discussed.

3.1 Summary of Monitoring Undertaken

3.1.1 Automatic Monitoring Sites

Automatic (continuous) monitoring for NO₂ was undertaken at the Cannock A5190 Roadside monitoring site in 2023. Table A.1 in Appendix A provides further details.

Maps showing the location of monitoring site are provided in Appendix D (please note that the monitoring station is co-located with diffusion tubes HHMS 1-3).

Details on how the monitor is calibrated and how the data has been adjusted are included in Appendix C.

3.1.2 Non-Automatic Monitoring Sites

Cannock Chase Council undertook non-automatic (i.e. passive) monitoring of NO₂ at 21 sites during 2023. Table A.2 in Appendix A presents the details of the non-automatic sites.

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

Further details on Quality Assurance/Quality Control (QA/QC) for the diffusion tubes, including bias adjustments and any other adjustments applied (e.g. annualisation and/or distance correction), are included in Appendix C.

3.2 Individual Pollutants

The air quality monitoring results presented in this section are, where relevant, adjusted for bias, annualisation (where the annual mean data capture is below 75% and greater than 25%), and distance correction. Further details on adjustments are provided in Appendix C.

3.2.1 Nitrogen Dioxide (NO₂)

Table A.4 and Table A.5 in Appendix A compare the ratified and adjusted monitored NO₂ annual mean concentrations for the past five years with the air quality objective of 40 µg/m³. Note that the concentration data presented represents the concentration at the location of the monitoring site, following the application of bias adjustment and annualisation, as required (i.e. the values are exclusive of any consideration to fall-off with distance adjustment).

For diffusion tubes, the full 2023 dataset of monthly mean values is provided in Appendix B. Note that the concentration data presented in Table B.1 includes distance corrected values, only where relevant.

Table A.6 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.

The monitoring data is discussed below.

Former AQMA 1

The monitoring results suggest:

- BTL-B (87 Watling Street) exhibits a steady trend between 2019-2023.
- 54 WS and 67 WS fell between 2019-2020, following which trends have remained steady.

All monitoring results comfortably meet the annual objective - the greatest concentration of NO₂ in 2023 was 25.5 µg/m³.

AQMA 2

Air quality monitoring is undertaken within AQMA 2 at three locations:

- 268 WS (south side of Watling Street, 1.9 m from carriageway; the relevant receptor is an additional 0.3 m from the carriageway).
- 268 WSA (north side of Watling Street, 5.2 m from carriageway - no adjacent relevant receptors).
- 268 WSB (north side of Watling Street, 1.2 m from carriageway - no adjacent relevant receptors).

The monitoring results for 268 WS and 268 WSA show a fall between 2018 and 2019, following which results have remained steady. 268 WSB shows an erratic trend, particularly in 2021.

Monitoring data for 268 WS and 268 WSA appears to be closely correlated, whilst also returning significantly lower concentrations of NO₂ than found at 268 WSB.

The data suggests that 268 WS and 268 WSB are not significantly influenced by road traffic emissions; this conclusion is supported by the following:

1. NO₂ concentrations are significantly lower at 268 WS and 268 WSA than at 268 WSB.
2. The erratic trend at 268 WSB during 2020 and 2021 is likely due to disruption in traffic due to Covid-19; there are no significant deviations in the data for 268 WS and 268 WSA, suggesting a less pronounced impact from road traffic.

Four years of monitoring data have returned annual concentrations of NO₂ below 30 µg/m³ at 268 WS and 268 WSA. 268 WS is of particular significance, as it is indicative of the air quality that the relevant receptor is exposed to. The threshold for review of the AQMA for annual NO₂ is 36 µg/m³.

Former AQMA 3

The monitoring results again exhibit a broadly similar trend to those observed in AQMA 1 and AQMA 2.

Monitoring at HHFW indicates NO₂ concentrations have stabilised, with the 2023 data returning a concentration of 36.9 µg/m³; the relevant receptor at this location (a public house) is on the first floor, and previous modelling (presented in the 2022 ASR) had determined likely compliance with the air quality objective. Traffic congestion at this

location is relatively high (as it is close to a roundabout), resulting in elevated concentrations of NO₂ (relative to other monitoring locations in AQMA 3).

NO₂ concentrations at CNKRD are stable, 2023 data returned a concentration of 26.2 µg/m³, which meet the air quality objective.

Monitoring results from HH01 and FW01 (both situated at primary schools) comfortably meet the air quality objective, as do the results from HHMS (which is co-located with an automated monitoring station).

Non-AQMA Locations

Monitoring is undertaken at the A460 to record background NO₂ in the Cannock Chase Special Area of Conservation, for town and country planning purposes; there are no relevant receptors (vis-a-vis local air quality management) at that location, but the data is included for information.

Monitoring at HH01, FW01 and GM01 is undertaken as part of the Air Aware campaign for the associated schools. There are no specific air quality concerns at these locations.

Monitoring results outside of AQMA 1, AQMA 2 and AQMA 3 suggest that air quality comfortably complies with the air quality objective.

Summary

Monitoring data suggests that the typical reduction in annual atmospheric concentrations of NO₂ following Covid-19 are being maintained.

The monitoring data suggests that NO₂ concentrations within the former AQMA 1 and former AQMA 3 are steady.

Five years of monitoring data demonstrate continuous compliance with the annual NO₂ air quality objective at 268 WS. The monitoring data supports the revocation of AQMA 2.

Appendix A: Monitoring Results

Table A.1 – Details of Automatic Monitoring Sites

Site ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Monitoring Technique	Distance to Relevant Exposure (m)	Distance to kerb of nearest road (m) ⁽¹⁾	Inlet Height (m)
HHMS	Cannock A5190 Roadside	Roadside	401392	309954	NO ₂	No	Chemiluminescent	3.6	6.6	1.8

Notes:

(1) N/A if not applicable

(2) Site information can be found here: https://www.airqualityengland.co.uk/site/latest?site_id=CANK.

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

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	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)
MORT-2	Cannock Mortuary	Urban Background	397588	309730	NO ₂	No	NA	NA	No	2.3
BTL-B	87 Watling Street, Bridgtown	Roadside	397952	308567	NO ₂	No	0	4.7	No	2.1
67 WS	67 Watling Street, Bridgtown	Roadside	398051	308512	NO ₂	No	-0.2	7.5	No	2.0
54 WS	54 Watling Street, Bridgtown	Roadside	398250	308428	NO ₂	No	0	4.9	No	2.1
268 WS	268 Watling Street	Roadside	400726	307423	NO ₂	AQMA 2	0.3	1.9	No	2.0
268 WSA	268 Watling Street A	Roadside	400635	307478	NO ₂	AQMA 2	NA	5.2	No	1.5
268 WSB	268 Watling Street B	Roadside	400864	307385	NO ₂	AQMA 2	NA	1.2	No	2.1
HHFW	Five Ways Inn, Heath Hayes	Roadside	401565	309939	NO ₂	No	0	1.5	No	2.3
CNKRD	Cannock Road, Heath Hayes	Roadside	401465	309956	NO ₂	No	11.8	1.5	No	2.1
HHMS1 HHMS2 HHMS3	Cannock A5190 AURN	Roadside	401392	309954	NO ₂	No	6.6	3.6	Yes	2.0
HF	Horsefair, Rugeley	Roadside	404475	317730	NO ₂	No	0	6.4	No	2.4
LICH RD	A5190 Lichfield Road, Cannock	Roadside	398976	309865	NO ₂	No	12.9	1.6	No	2.4
HH01	Heath Hayes Academy, Cannock	Roadside	401630	310593	NO ₂	No	NA	1.6	No	2.7
FW01	Five Ways Primary, Heath Hayes	Roadside	400900	310607	NO ₂	No	NA	2.0	No	2.8
GM01	Gorsemoor Primary, Heath Hayes	Roadside	400723	310186	NO ₂	No	NA	5.1	No	2.0
A460	A460, Rugeley	Roadside	403009	315930	NO ₂	No	NA	1.5	No	2.0
69 CH ST	69 Church Street, Rugeley	Roadside	404081	318200	NO ₂	No	0.3	0.9	No	2.2
3 FORGE RD	3 Forge Road, Rugeley	Roadside	404607	318006	NO ₂	No	0.3	1.1	No	2.2
104 MAIN RD	104 Main Road, Brereton	Roadside	405385	316306	NO ₂	No	0.7	2.8	No	2.2
28 STN RD	28 Station Road, Hednesford	Roadside	400015	312651	NO ₂	No	0.9	1.4	No	2.3
CRC	219 Cannock Road, Chadsmoor	Roadside	399017	311653	NO ₂	No	0.1	2.2	No	2.3

Notes:

(1) 0 m 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.3 – Details of New Non-Automatic Monitoring Sites

Diffusion Tube ID	Site Name	Comment
MORT-2	Cannock Mortuary	'MORT' became inaccessible in October 2022; this was replaced with 'MORT-2' in January 2023.
69 CH ST	69 Church Street, Rugeley	Additional location established to improve monitoring distribution.
3 FORGE RD	3 Forge Road, Rugeley	Additional location established to improve monitoring distribution.
104 MAIN RD	104 Main Road, Brereton	Additional location established to improve monitoring distribution.
28 STN RD	28 Station Road, Hednesford	Additional location established to improve monitoring distribution.
CRC	219 Cannock Road, Chadsmoor	Additional location established to improve monitoring distribution.

Table A.4 – 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 2023(%) ⁽²⁾	2019	2020	2021	2022	2023
HHMS	401392	309954	Roadside	98	98	21.5	14.4	15.7	13.8	14.6

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

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

Notes:

The annual mean concentrations are presented as µg/m³.

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

All means have been “annualised” as per LAQM.TG22 if valid data capture for the full calendar year is less than 75%. See Appendix C for details.

Concentrations are those at the location of monitoring and not those following any fall-off with distance adjustment.

(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 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 2023 (%) ⁽²⁾	2019	2020	2021	2022	2023
MORT-2	397588	309730	Urban Background	92.3	92.3					12.0
BTL-B	397952	308567	Roadside	100	100.0	25.6	25.6	27.0	25.9	25.5
67 WS	398051	308512	Roadside	92.3	92.3	33.8	17.9	20.1	18.6	17.6
54 WS	398250	308428	Roadside	100	100.0	31.2	24.7	21.9	26.6	25.5
268 WS	400726	307423	Roadside	100	100.0	37.0	27.6	27.1	28.9	27.4
268 WSA	400635	307478	Roadside	100	100.0	41.5	28.2	29.0	28.2	27.1
268 WSB	400864	307385	Roadside	100	100.0	57.0	31.6	18.4	38.7	39.7
HHFW	401565	309939	Roadside	92.3	92.3	43.9	31.4	32.5	36.6	36.9
CNKRD	401465	309956	Roadside	92.3	92.3	34.2	25.0	25.7	26.7	26.2
HHMS1 HHMS2 HHMS3	401392	309954	Roadside	100	100.0	31.2	16.2	19.3	17.1	16.6
HF	404475	317730	Roadside	82.7	82.7	23.3	24.1	25.8	25.2	22.7
LICH RD	398976	309865	Roadside	100	100.0	19.4	23.4	26.2	24.8	25.1
HH01	401630	310593	Roadside	100	100.0	19.4	14.1	17.6	14.9	14.6
FW01	400900	310607	Roadside	84.9	84.9	13.0	18.3	25.1	19.0	18.4
GM01	400723	310186	Roadside	100	100.0	15.4	12.9	16.1	14.2	13.3
A460	403009	315930	Roadside	100	100.0				16.8	16.3
69 CH ST	404081	318200	Roadside	84.6	84.6					18.1
3 FORGE RD	404607	318006	Roadside	84.6	84.6					18.0
104 MAIN RD	405385	316306	Roadside	76.9	76.9					12.4
28 STN RD	400015	312651	Roadside	75	75.0					21.7
CRC	399017	311653	Roadside	84.6	84.6					23.1

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

Diffusion tube data has been bias adjusted.

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

Notes:

The annual mean concentrations are presented as µg/m³.

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.TG22 if valid data capture for the full calendar year is less than 75%. See Appendix C for details.

Concentrations are those at the location of monitoring and not those following any fall-off with distance adjustment.

(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 Concentrations for Former AQMA 1

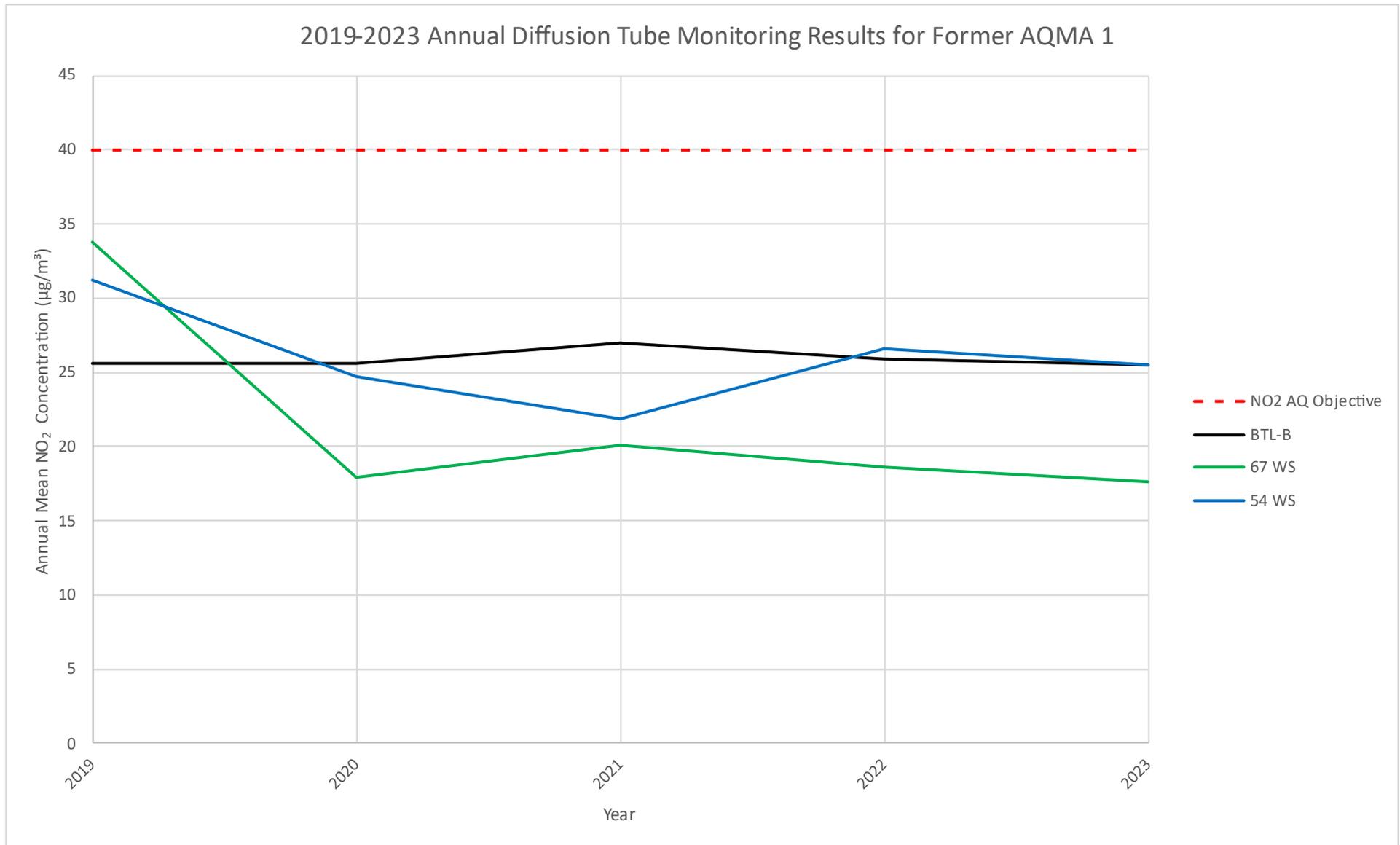


Figure A.2 – Trends in Annual Mean NO₂ Concentrations for AQMA 2

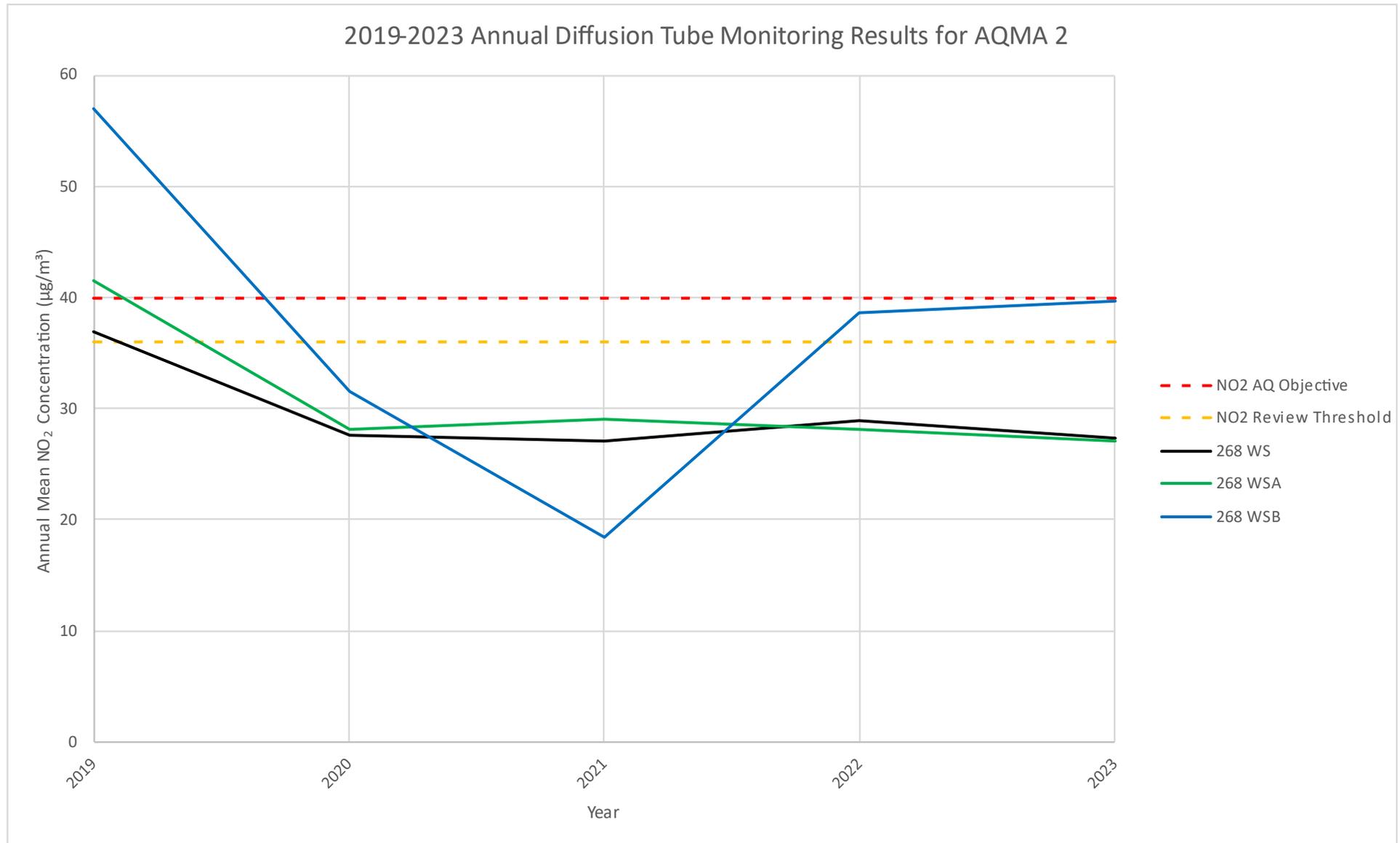


Figure A.3 – Trends in Annual Mean NO₂ Concentrations for Former AQMA 3

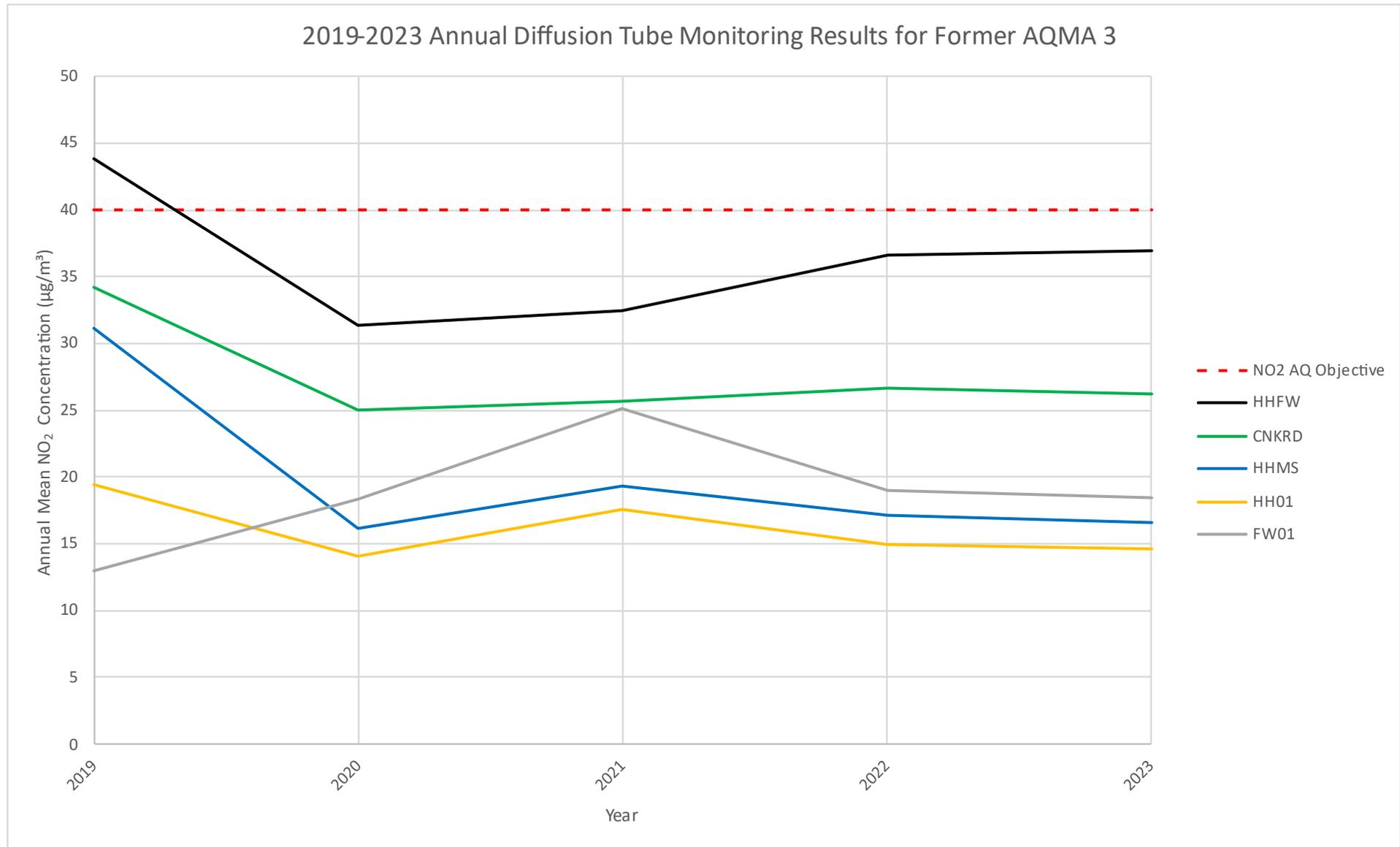


Figure A.4 – Trends in Annual Mean NO₂ Concentrations in Non-AQMA Locations

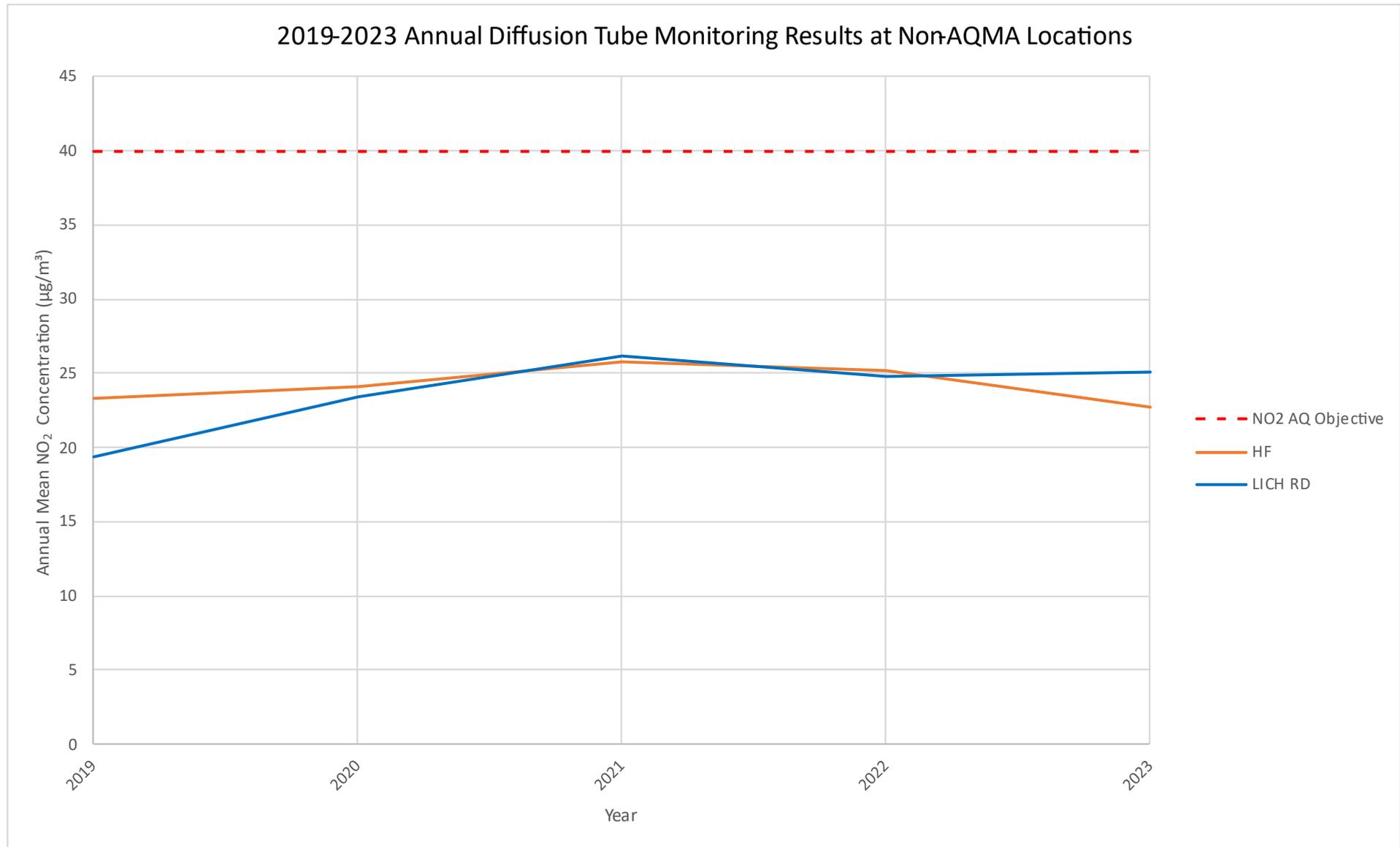


Figure A.5 – Trends in Annual Mean NO₂ Concentrations at School Locations

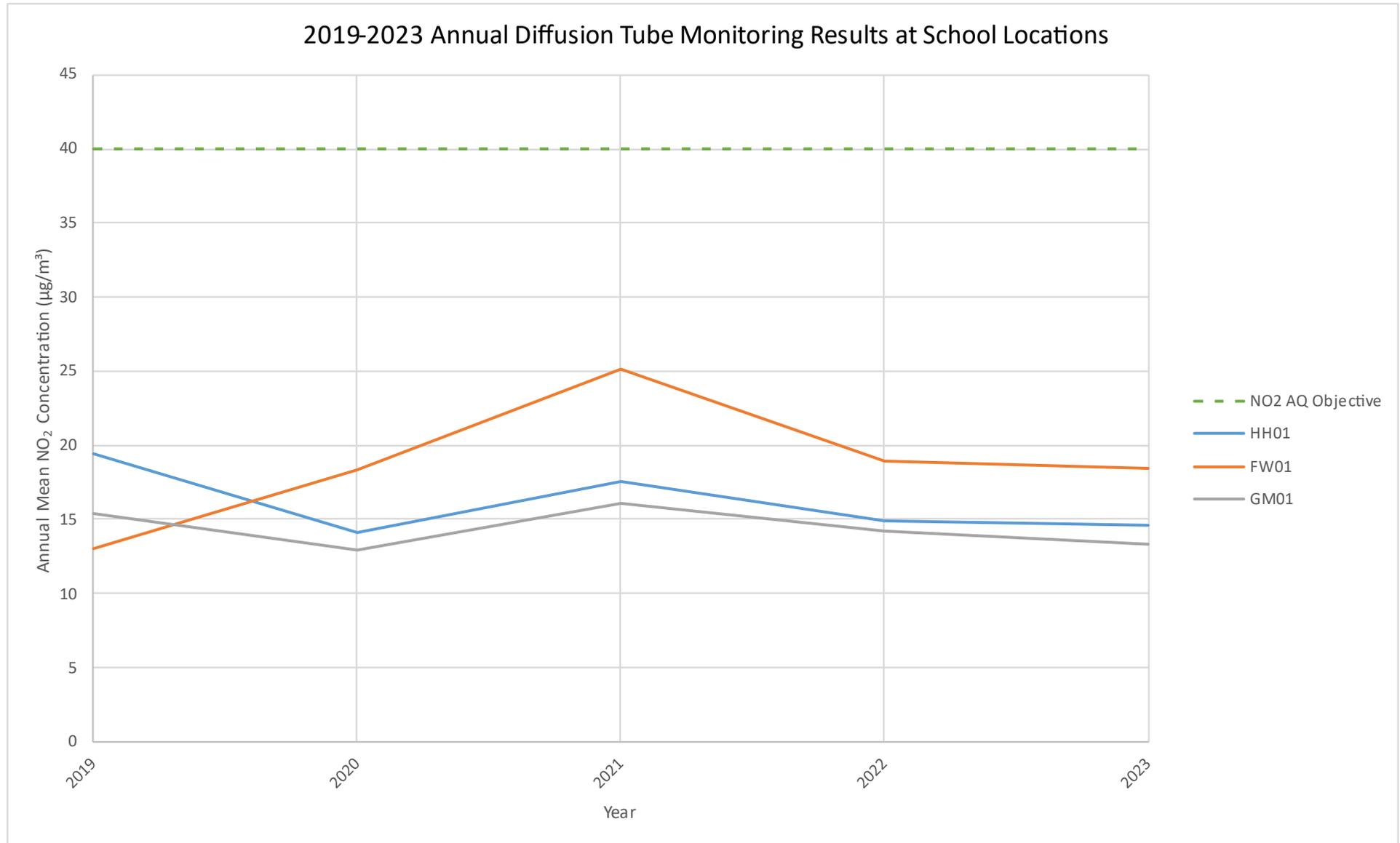


Table A.6 – 1-Hour Mean NO₂ Monitoring Results, Number of 1-Hour Means > 200µg/m³

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2023 (%) ⁽²⁾	2019	2020	2021	2022	2023
HHMS	401392	309954	Roadside	98	98	0	0	0	0	0

Notes:

Results are presented as the number of 1-hour periods where concentrations greater than 200 µg/m³ have been recorded.

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%).

Appendix B: Full Monthly Diffusion Tube Results for 2023

Table B.1 – NO₂ 2023 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 (0.86)	Annual Mean: Distance Corrected to Nearest Exposure	Comment
MORT-2	397588	309730		20.1	14.4	12.8	9.1	9.6	8.7	11.0	15.4	18.3	19.7	14.8	14.0	12.0		
BTL-B	397952	308567	32.0	35.1	31.5	27.0	27.2	28.5	24.0	28.1	31.6	32.2	32.7	25.3	29.6	25.5		
67 WS	398051	308512		24.6	22.0	20.4	18.2	19.2	13.6	18.5	21.4	22.8	26.1	18.1	20.4	17.6	17.6	
54 WS	398250	308428	32.0	32.4	32.0	31.3	31.7	35.5	20.1	23.3	31.5	31.3	32.0	22.3	29.6	25.5		
268 WS	400726	307423	26.2	36.7	31.4	36.1	35.4	35.3	22.5	32.8	34.8	33.9	36.1	21.8	31.9	27.4		
268 WSA	400635	307478	35.7	37.8	30.8	27.0	27.7	27.3	27.5	31.6	38.4	33.6	34.8	26.1	31.5	27.1		
268 WSB	400864	307385	45.9	49.2	44.1	47.0	52.5	46.5	42.3	49.7	52.7	46.9	45.6	32.2	46.2	39.7		
HHFW	401565	309939	39.0	46.7	42.1	45.4	48.7	45.5	33.1	40.5	46.7		47.1	37.2	42.9	36.9		
CNKRD	401465	309956		35.9	28.7	29.6	30.1	29.2	20.3	24.5	33.0	36.7	37.8	29.1	30.4	26.2		
HHMS1	401392	309954	23.3	25.8	17.4	19.0	16.6	17.2	11.3	15.2	19.3	22.3	26.0	19.9	-	-		Triplicate Site with HHMS1, HHMS2 and HHMS3 - Annual data provided for HHMS3 only
HHMS2	401392	309954	26.0	25.0	19.5	17.7	16.3	17.1	11.3	14.9	16.9	23.6	25.8	19.5	-	-		Triplicate Site with HHMS1, HHMS2 and HHMS3 - Annual data provided for HHMS3 only
HHMS3	401392	309954	20.9	24.9	19.0	17.8	16.1	17.2	11.2	14.7	18.8	23.3	26.4	18.0	19.3	16.6		Triplicate Site with HHMS1, HHMS2 and HHMS3 - Annual data provided for HHMS3 only
HF	404475	317730	32.1			23.0	20.9	22.7	26.2	25.4	29.2	26.2	29.6	28.1	26.3	22.7		
LICH RD	398976	309865	34.4	37.2	31.1	25.5	26.1	26.8	23.5	23.8	35.9	25.7	31.6	29.3	29.2	25.1		
HH01	401630	310593	23.4	22.9	16.2	12.6	12.2	11.8	13.0	12.2	18.9	20.0	23.1	16.8	16.9	14.6		
FW01	400900	310607	31.1	30.1	21.1	18.5	14.4	12.2		11.4		23.3	28.6	23.6	21.4	18.4		
GM01	400723	310186	20.7	20.2	15.4	12.0	9.5	9.0	12.1	11.1	15.5	18.3	22.2	19.8	15.5	13.3		
A460	403009	315930	19.6	22.4	18.6	17.1	18.2	13.7	15.7	14.9	21.5	29.1	22.2	13.9	18.9	16.3		
69 Ch St	404081	318200			23.4	18.9	18.4	19.2	15.3	17.5	26.0	25.2	25.8	20.4	21.0	18.1		
3 Forge Rd	404607	318006			22.5	17.4	16.5	15.7	16.4	17.2	24.9	29.1	28.1	22.0	21.0	18.0		
104 Main Rd	405385	316306			16.2	15.3	13.6	11.5	10.6	13.7	16.3		16.8	15.6	14.4	12.4		
28 Stn Rd	400015	312651			27.5	23.2	21.4	24.8	19.0	20.5	30.5	31.8		27.9	25.2	21.7		
CRC	399017	311653			26.3	23.6	27.3	22.6	21.8	25.8	30.6	30.2	32.8	27.4	26.8	23.1		

- 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.TG22.
- Local bias adjustment factor used.
- National bias adjustment factor used.
- Where applicable, data has been distance corrected for relevant exposure in the final column.
- Cannock Chase Council confirms that all 2023 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.

Table B.2 – 2023 Diffusion Tube Monitoring Data Notes

Month	Data Removed	Comments
January	MORT-2 - 26.6 $\mu\text{g}/\text{m}^3$ 67 WS CNKRD	MORT-2 - Result abnormally high. 67 WS - Tube missing. CNKRD - Dirt on discs, analysis not undertaken.
February	HF	HF - Tube not returned.
March	HF - 28.9 $\mu\text{g}/\text{m}^3$	HF - Tube exposed for 2 months.
April		
May		
June		
July	FW01	FW01 - Tube missing.
August		
September	FW01	FW01 - Tube missing.
October	HHFW - 79.6 $\mu\text{g}/\text{m}^3$ 104 Main Rd	HHFW - Result abnormally high. 104 Main Rd - Tube missing.
November	28 Stn Rd - 49.5 $\mu\text{g}/\text{m}^3$	28 Stn Rd - Result abnormally high.
December		

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

New or Changed Sources Identified Within Cannock Chase Council During 2023

Table C.1 provides information on planning applications that were submitted in 2023 with the potential to impact air quality.

Table C.1 – Significant Planning Applications in 2023

Planning Reference	Registration Date	Location	Proposal	Comments
CH/23/0131	13 March 2023	Cannock town centre	Town centre regeneration	An air quality assessment was submitted in support of this application.

Note:

Planning applications can be viewed on the Council's website

<https://planning.agileapplications.co.uk/cannock/search-applications/>

Additional Air Quality Works Undertaken by Cannock Chase Council During 2023

Cannock Chase Council has not completed any additional works within the reporting year of 2023.

QA/QC of Diffusion Tube Monitoring

Staffordshire County Council Highways Laboratory

NO₂ diffusion tube analysis QC results

AIR PT Scheme (LGC)

[The laboratory prepares their diffusion tubes with 20% TEA/Water.]

Results for each round are classified on z-scores for each tube as SATISFACTORY (≤ 2), QUESTIONABLE (between 2 and <3) and UNSATISFACTORY (>3).

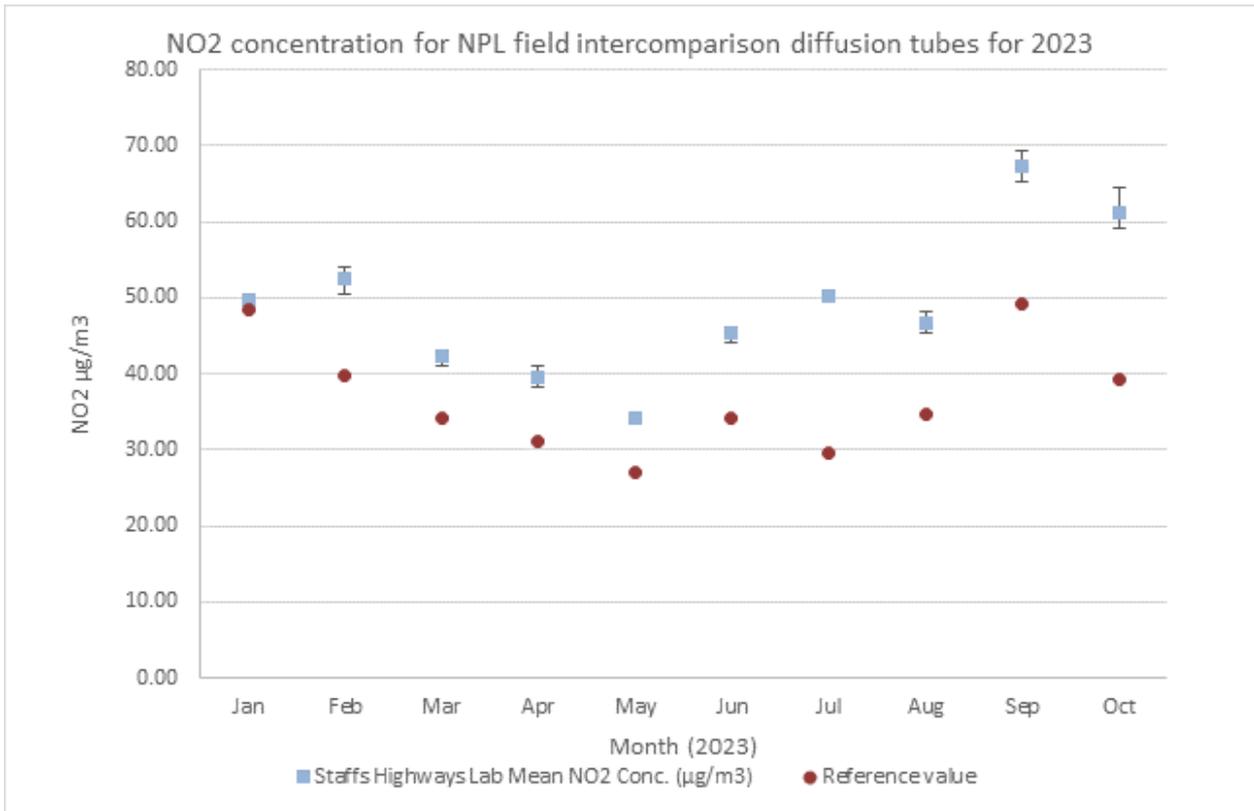
- Round 55 – Feb 2023. 100% satisfactory results.
- Round 56 – July 2023. 100% satisfactory results.
- Round 58 – Aug 2023. 100% satisfactory results.
- Round 59 – Oct 2023. 100% satisfactory results.

PT Round	Technician	z-scores	Performance
55 – Feb 2023	1	0.19, 0.00, -1.16, -1.45	100% SATISFACTORY
	2	-0.19, -1.31, -1.71, -1.73	
56 – July 2023	1	0.21, 0.11, 0.00, 0.30	100% SATISFACTORY
	2	-0.64, -0.16, -1.59, 0.15	
58 – Aug 2023	1	-0.12, -0.12, -0.19, -0.97	100% SATISFACTORY
	2	-0.37, -0.12, -0.86, -1.34	
59 – Oct 2023	1	0.42, 0.25, 0.34, 0.34	100% SATISFACTORY
	2	0.08, -0.59, -0.61, -0.14	

For the more information on the AIR PT Scheme and older results see the Defra website:

<https://laqm.defra.gov.uk/air-quality/air-quality-assessment/qa-qc-framework/>

Field Intercomparison (NPL)



Our performance for all results of 2023 received so far (Jan-Oct 2023) was classified as 'GOOD' (CoV <20). The chart below shows our results (blue squares), compared to the reference value (orange dots) for each month.

Diffusion Tube Annualisation

Annualisation of the 2023 data was not necessary.

Diffusion Tube Bias Adjustment Factors

The diffusion tube data presented within the 2024 ASR has been corrected for bias using an adjustment factor. Bias represents the overall tendency of the diffusion tubes to under or over-read relative to the reference chemiluminescence analyser. LAQM.TG22 provides guidance on the application of a bias adjustment factor to correct diffusion tube monitoring. Triplicate co-location studies can be used to determine a local bias factor based on the comparison of diffusion tube results with data taken from NO_x/NO₂ continuous analysers. Alternatively, the national database of diffusion tube co-location surveys provides bias factors for the relevant laboratory and preparation method.

Cannock Chase Council have applied the national bias adjustment factor of 0.86 to the 2023 monitoring data. A summary of bias adjustment factors used by Cannock Chase Council over the past five years is presented in Table C.2.

Table C.2 – Bias Adjustment Factor

Monitoring Year	Local or National	Version of National Spreadsheet	Adjustment Factor
2023	National	03/24	0.86
2022	National	03/23	0.87
2021	National	03/22	0.86
2020	National	03/21	0.85
2019	National	Not recorded	0.93

Table C.3 – Local Bias Adjustment Calculation

	Local Bias Adjustment
Periods used to calculate bias	12
Bias Factor A	0.75 (0.71 - 0.8)
Bias Factor B	33% (25% - 40%)
Diffusion Tube Mean (µg/m ³)	19.3
Mean CV (Precision)	3.6%
Automatic Mean (µg/m ³)	14.6
Data Capture	98%
Adjusted Tube Mean (µg/m ³)	14 (14 - 15)

Notes:

A local bias adjustment factor of 0.75 is calculated for 2023 but has not been used.

Figure C.1 – 2023 National Diffusion Tube Bias Adjustment Factor for Staffordshire Analytical Services

National Diffusion Tube Bias Adjustment Factor Spreadsheet							Spreadsheet Version Number: 03/24			
Follow the steps below in the correct order to show the results of relevant co-location studies Data only apply to tubes exposed monthly and are not suitable for correcting individual short-term monitoring periods Whenever presenting adjusted data, you should state the adjustment factor used and the version of the spreadsheet This spreadsheet will be updated every few months: the factors may therefore be subject to change. This should not discourage their immediate use.									This spreadsheet will be updated at the end of June 2024 LAQM Helpdesk Website	
The LAQM Helpdesk is operated on behalf of Defra and the Devolved Administrations by Bureau Veritas, in conjunction with contract partners AECOM and the National Physical Laboratory.						Spreadsheet maintained by the National Physical Laboratory. Original compiled by Air Quality Consultants Ltd.				
Step 1:	Step 2:	Step 3:	Step 4:							
Select the Laboratory that Analyses Your Tubes from the Drop-Down List	Select a Preparation Method from the Drop-Down List	Select a Year from the Drop-Down List	Where there is only one study for a chosen combination, you should use the adjustment factor shown with caution. Where there is more than one study, use the overall factor ³ shown in blue at the foot of the final column.							
If a laboratory is not shown, we have no data for this laboratory.	If a preparation method is not shown, we have no data for this method at this laboratory.	If a year is not shown, we have no data ²	If you have your own co-location study then see footnote ⁴ . If uncertain what to do then contact the Local Air Quality Management Helpdesk at LAQMHelpdesk@bureauveritas.com or 0800 0327953							
Analysed By ¹	Method ³ <small>To undo your selection, choose (All) from the pop-up list</small>	Year ⁵ <small>To undo your selection, choose (All)</small>	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 ⁶	Bias Adjustment Factor (A) (Cm/Dm)
Staffordshire Scientific Services	20% TEA in water	2023	R	Wigan Council	12	26	21	21.2%	G	0.82
Staffordshire Scientific Services	20% TEA in water	2023	UB	Salford City Council	11	22	20	8.2%	G	0.92
Staffordshire Scientific Services	20% TEA in water	2023	UB	Salford City Council	12	13	12	4.7%	G	0.96
Staffordshire Scientific Services	20% TEA in water	2023	R	Salford City Council	12	39	33	15.2%	G	0.87
Staffordshire Scientific Services	20% TEA in water	2023	KS	Manchester City Council	12	48	43	11.7%	G	0.90
Staffordshire Scientific Services	20% TEA in water	2023	UC	Manchester City Council	12	28	27	6.0%	G	0.94
Staffordshire Scientific Services	20% TEA in water	2023	SI	Manchester City Council	12	17	15	12.1%	G	0.89
Staffordshire Scientific Services	20% TEA in water	2023	KS	Marylebone Road intercomparison	11	50	38	31.8%	G	0.76
Staffordshire Scientific Services	20% TEA in water	2023	R	Stoke-on-trent City Council	12	50	37	35.4%	G	0.74
Staffordshire Scientific Services	20% TEA in water	2023	R	Stoke-on-trent City Council	12	53	44	20.8%	G	0.83
Staffordshire Scientific Services	20% TEA in water	2023	UB	Stoke-on-trent City Council	12	21	18	16.6%	G	0.86
Staffordshire Scientific Services	20% TEA in water	2023		Overall Factor³ (11 studies)				Use		0.86

NO₂ Fall-off with Distance from the Road

Diffusion Tube Locations

Monitoring location data (Ordnance Survey grid references and distances to the kerb/receptor) were verified (by measurement in the field) in May 2023.

Wherever possible, monitoring locations are representative of exposure. However, where this is not possible, the NO₂ concentration at the nearest location relevant for exposure has been estimated using the Diffusion Tube Data Processing Tool/NO₂ fall-off with distance calculator available on the LAQM Support website. Where appropriate, non-automatic annual mean NO₂ concentrations corrected for distance are presented in Table B.1.

Table C.4 – NO₂ Fall off With Distance Calculations (concentrations presented in µg/m³)

Site ID	Distance (m): Monitoring Site to Kerb	Distance (m): Receptor to Kerb	Monitored Concentration (Annualised and Bias Adjusted)	Background Concentration	Concentration Predicted at Receptor	Comments
67 WS	7.5	7.3	17.6	15.3	17.6	67 WS

QA/QC of Automatic Monitoring

All management of the Cannock A5190 Roadside monitoring site is undertaken by Bureau Veritas; information on this site is available here:

https://www.airqualityengland.co.uk/site/latest?site_id=CANK

Please note the discrepancy between the website provided location (401394, 309957) and Cannock Chase Council's derived location (401392, 309954), which is possibly due to website location being derived from Google Maps (which uses the Mercator projection); Cannock Chase Council derived the location from its geographical information system (which uses the OSGB36).

Appendix D: Maps of Monitoring Locations and AQMAs

Figure D.1 – Map of District and Air Quality Monitoring Locations

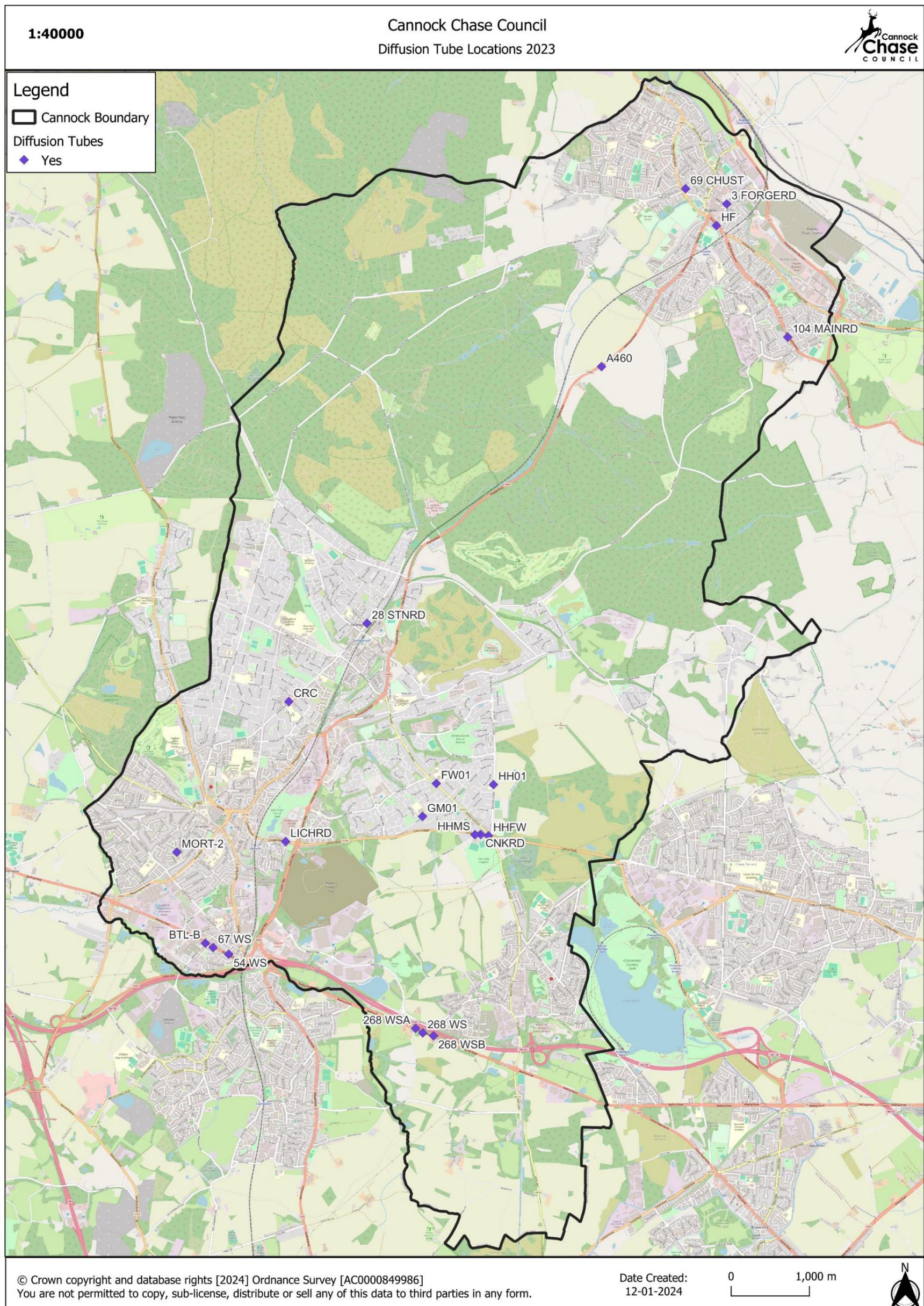


Figure D.2 – Map of District, Air Quality Monitoring Locations and AQMAs

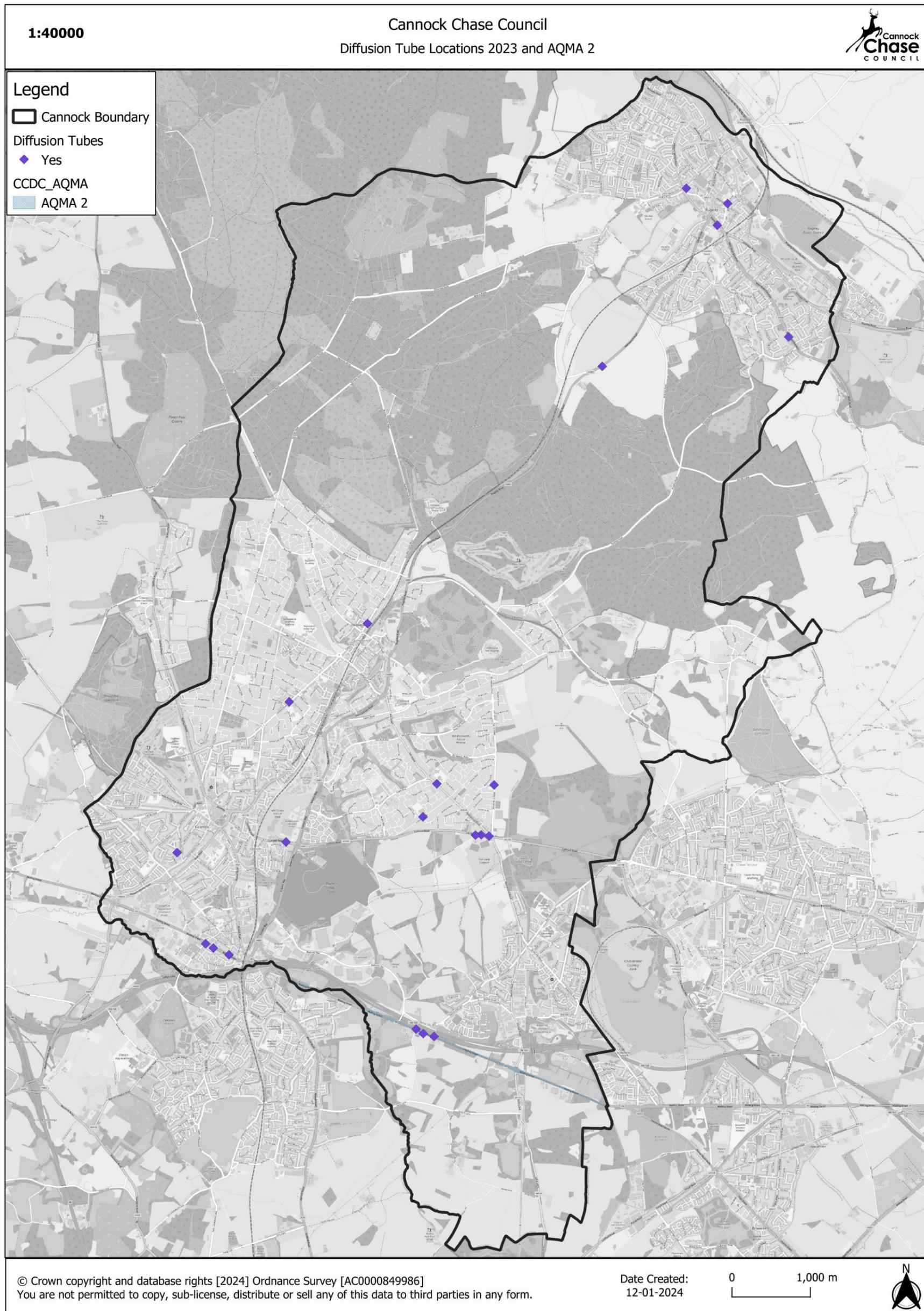


Figure D.3 – Former AQMA 1 Overview

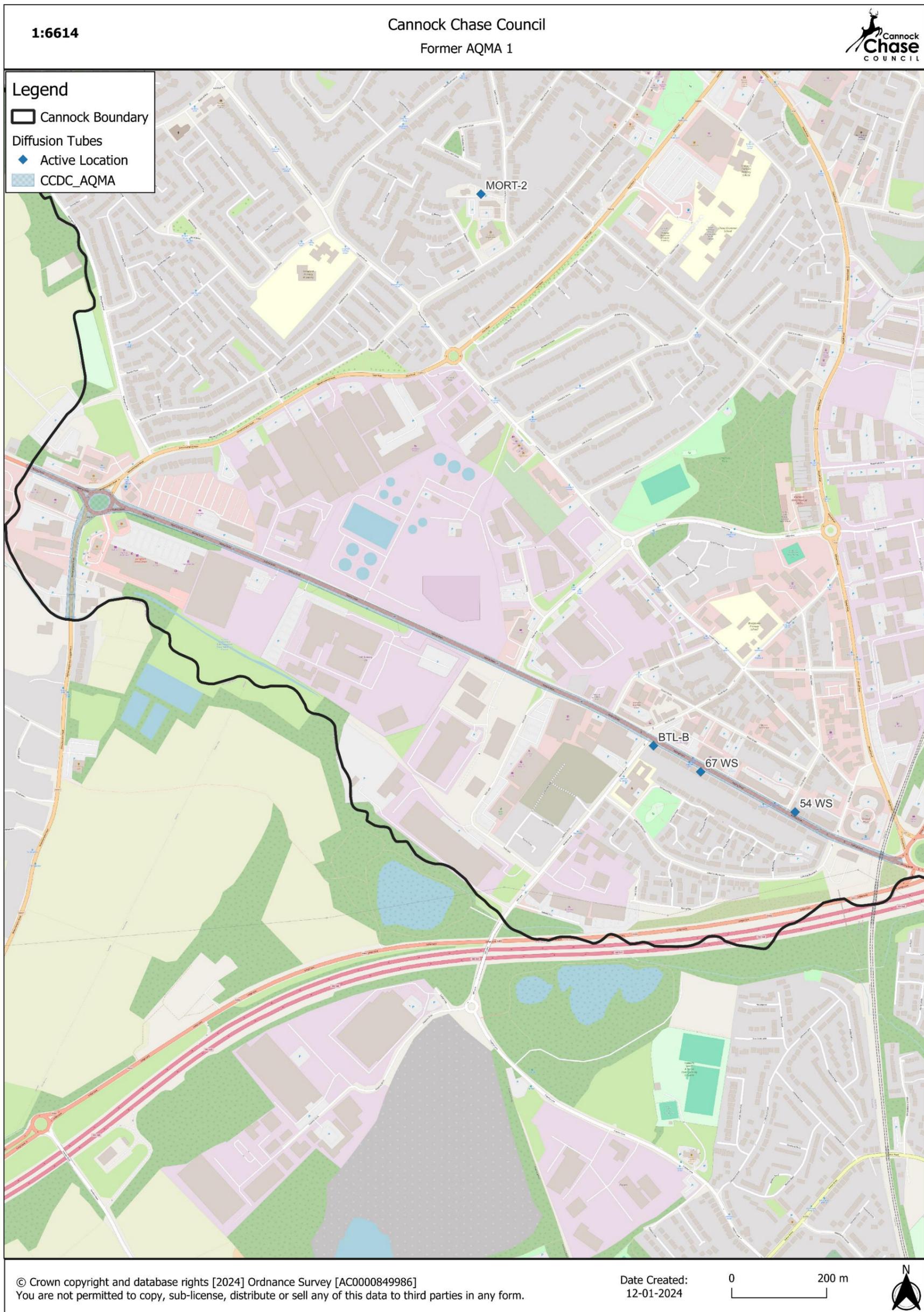


Figure D.4 – AQMA 2 Overview

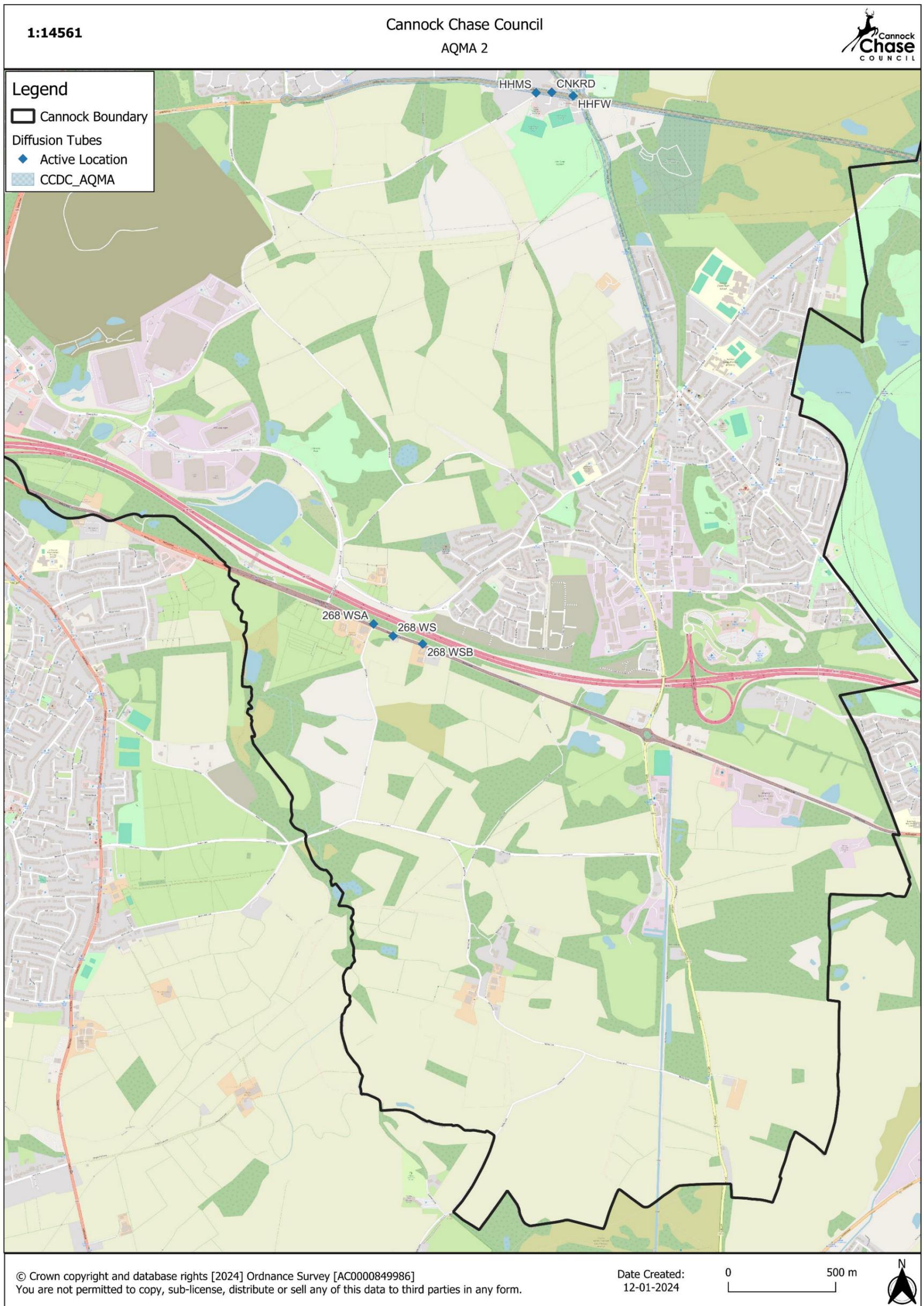
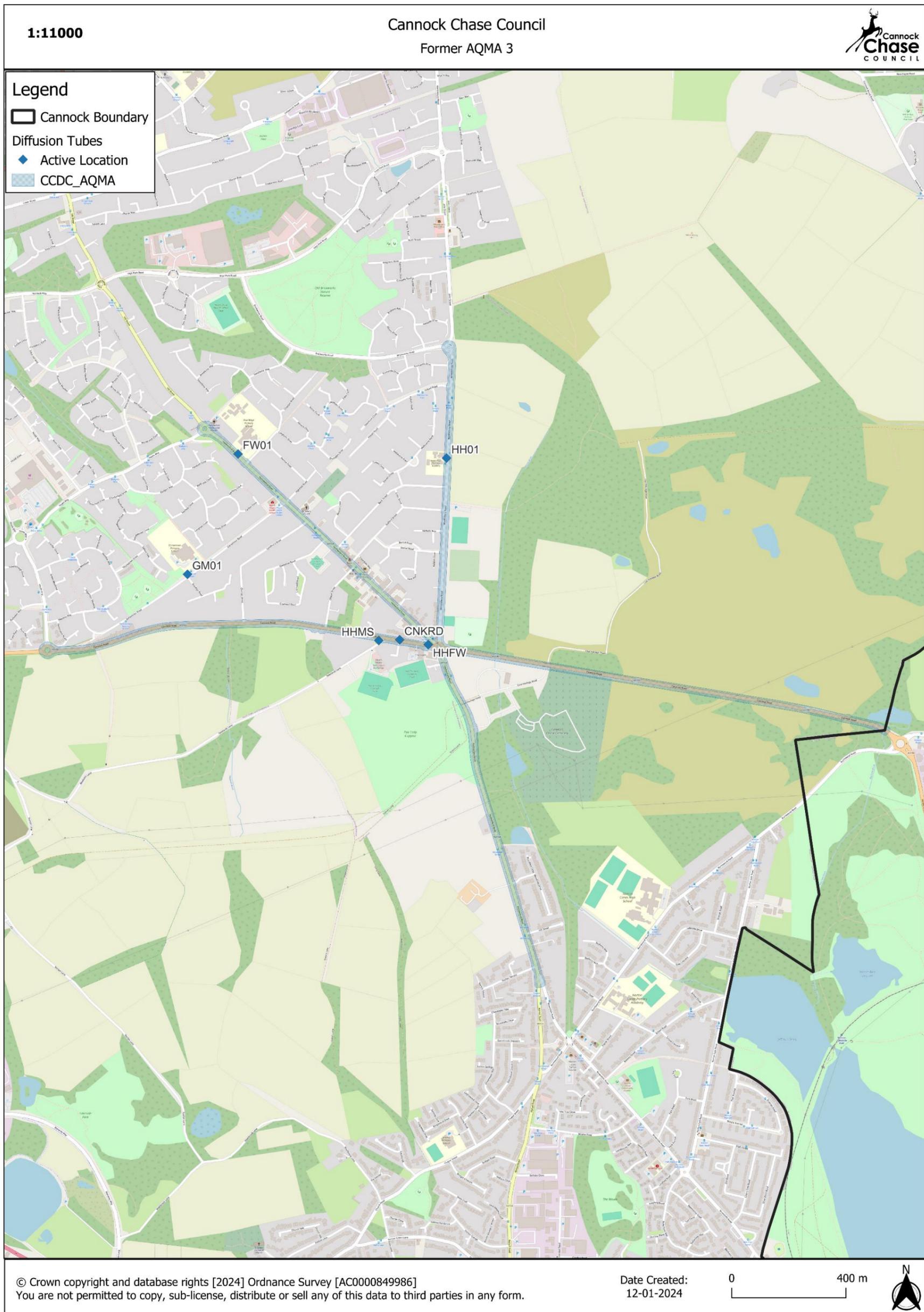


Figure D.5 – AQMA 2 Monitoring Locations



Figure D.6 – Former AQMA 3 Overview



Appendix E: Summary of Air Quality Objectives in England

Table E.1 – Air Quality Objectives in England⁷

Pollutant	Air Quality Objective: Concentration	Air Quality Objective: Measured as
Nitrogen Dioxide (NO ₂)	200 µg/m ³ not to be exceeded more than 18 times a year	1-hour mean
Nitrogen Dioxide (NO ₂)	40µg/m ³	Annual mean
Particulate Matter (PM ₁₀)	50 µg/m ³ , not to be exceeded more than 35 times a year	24-hour mean
Particulate Matter (PM ₁₀)	40 µg/m ³	Annual mean
Sulphur Dioxide (SO ₂)	350 µg/m ³ , not to be exceeded more than 24 times a year	1-hour mean
Sulphur Dioxide (SO ₂)	125 µg/m ³ , not to be exceeded more than 3 times a year	24-hour mean
Sulphur Dioxide (SO ₂)	266 µg/m ³ , not to be exceeded more than 35 times a year	15-minute mean

⁷ The units are in microgrammes of pollutant per cubic metre of air (µg/m³).

Glossary of Terms

Abbreviation	Description
AQAP	Air Quality Action Plan - A detailed description of measures, outcomes, achievement dates and implementation methods, showing how the local authority 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
AURN	Automatic and Urban Rural Network - The AURN is the UK's largest automatic monitoring network and is the main network used for compliance reporting against the Ambient Air Quality Directives. It includes automatic air quality monitoring stations measuring oxides of nitrogen (NO _x), sulphur dioxide (SO ₂), ozone (O ₃), carbon monoxide (CO) and particles (PM ₁₀ , PM _{2.5}). These sites provide high resolution hourly information which is communicated rapidly to the public using a wide range of electronic, media and web platforms.
ASR	Annual Status Report
Defra	Department for Environment, Food and Rural Affairs
DMRB	Design Manual for Roads and Bridges – Air quality screening tool produced by National Highways
EU	European Union
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 10 µm or less
PM _{2.5}	Airborne particulate matter with an aerodynamic diameter of 2.5 µm or less
QA/QC	Quality Assurance and Quality Control
SO ₂	Sulphur Dioxide

References

- Local Air Quality Management Technical Guidance LAQM.TG22. August 2022. Published by Defra in partnership with the Scottish Government, Welsh Assembly Government and Department of the Environment Northern Ireland.
- Local Air Quality Management Policy Guidance LAQM.PG22. August 2022. Published by Defra in partnership with the Scottish Government, Welsh Assembly Government and Department of the Environment Northern Ireland.