



WEST OXFORDSHIRE
DISTRICT COUNCIL

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

Date: June, 2024

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Executive Summary: Air Quality in Our Area

Air Quality in West Oxfordshire District

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

The monitoring reported within this 2024 Annual Status Report for West Oxfordshire District Council (WODC) took place during the whole of 2023. The main pollutant of concern within the district is NO₂, which is mainly emitted from petrol and diesel vehicles. The district has two Air Quality Management Areas (AQMAs):

- Witney AQMA, located in Bridge Street and immediate area
- Chipping Norton AQMA, located in Horsefair and immediate area.

Both were declared as a consequence of elevated NO₂ concentrations which, at the time, were above the UK annual average national objective of 40 µg/m³. The Air Quality Action Plan for both AQMAs has recently been revised and is currently being appraised by Defra.

The WODC centralised national AQMA page is located [here](#).

The results of NO₂ monitoring during 2023 have shown concentrations are continuing to fall across the district, with no sign of a return to pre-pandemic concentrations.

Consequently, there is increasing confidence that the concentrations of NO₂ which have been observed in 2022 and 2023 reflect the 'new norm' for this pollutant. This has had a particularly positive effect on both AQMAs, which have had average annual concentrations of NO₂ below the national objective for two consecutive years (post-pandemic). The reasons for this continual decline are still considered to be a consequence of the uptake of low emission vehicles, improvements in engine efficiency, the popularity of working from home and virtual meetings.

New Developments

There were no proposed industrial developments with significant air pollution implications within the district during 2023.

All residential development proposals were considered with regard to their potential to increase traffic pollution in the AQMAs and other areas. Each application is considered as an individual case, and required to demonstrate it will not significantly impact air quality. In addition, all developments are expected to promote the use of electric vehicles, active travel and public transport.

There are four strategic development areas (SDAs) allocated in the West Oxfordshire district, North Witney (1400 units), East Witney (450 units), West Eynsham (1000 units) and East Chipping Norton (1200 units). An outline planning application has recently been submitted for North Witney; the most recent application for East Witney was refused in

2023; the masterplan for West Eynsham has been approved by the local planning authority, and planning applications are being prepared; and, East Chipping Norton is currently on hold due to significant archaeological findings on the proposed site. These sites are discussed further in Section 2.2

WODC Environmental Health will review these developments as planning applications are submitted and will ensure monitoring is in place to confirm air quality is not significantly impacted.

Air Quality Partners

As the district's highways authority, Oxfordshire County Council (OCC) is West Oxfordshire's main air quality partner. This is predominantly due to road traffic being the main pollution source within the district. The two councils regularly work together within a planning context, regarding highways and new developments. Furthermore, OCC have been the main contributor in the review of the Air Quality Action Plan for the two AQMAs in the district.

WODC are also beginning to engage with town and parish councils to support them with projects which may benefit air quality, regardless of the existing pollutant concentrations.

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 harmful 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.

³ Defra. Environmental Improvement Plan 2023, January 2023

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

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.

Road Transport & Infrastructure

As previously mentioned, air pollution in West Oxfordshire District is predominately caused by road traffic, particularly where there is congestion coupled with street canyons.

Various road infrastructure projects are currently underway or in the pipeline which should improve air quality in the Witney AQMAs. These include:

- The A40 dual carriageway extension between Witney and Oxford, including a cycle route between Witney and Oxford. This project has been delayed due to global inflationary pressures. The project was reviewed in 2023, and will now be a phased programme, initially focusing on bus priority and active travel routes. A start date for the project is yet to be announced.
- The construction of the west facing slip roads at the Shores Green junction. The planning application for this project has been approved, with the construction works expected to begin in late 2024.
- Improvements to the Dukes Cut bridge (outside the district boundary). This will improve the active transport route between Witney and Oxford and provide dedicated bus lanes. The construction start date for this project has yet to be determined.

Other A40 improvement schemes include:

- The construction of the Eynsham Park and Ride. This project is near completion, however the opening date has yet to be announced.

In addition, OCC is currently assessing a number of options to ease congestion within the Witney AQMA, particularly on Bridge Street. The possible options are currently being assessed for robustness prior to public consultation.

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

As part of Oxfordshire County Council's 20mph Transformation Project, many towns and villages in West Oxfordshire have applied for speed limits in their town and village centre to be reduced to 20mph. Both Witney and Chipping Norton town centres are now restricted to 20mph.

Electric Vehicle Charging & Car Clubs

Facilities to charge electric vehicles continue to be installed across the district, and later this year OCC will be providing the opportunity for residents who do not have off road parking to install roadside charging facilities.

April 2023 saw the launch of the OCC 12 month electric vehicle car club pilot. Due to the success of the pilot, the initial 12 month period has now been extended to 18 months.

Public Transport

Bus services have been improved over the last year with the introduction of new services serving Witney and Carterton, and, more recently, Chipping Norton.

OCC have recently carried out a feasibility study on the construction of a railway line linking Carterton, Witney and Eynsham to Oxford. The study identified a need for such infrastructure, both in terms of benefits to the residents of the towns in question and to the environment due to the consequential reduction in road traffic carbon emissions.

Town Councils

Initiatives under consideration or actioned by Witney and Chipping Norton town councils are summarised below (status in brackets):

Witney

- Installation of 8 new bus shelters (complete)
- Continued funding towards community transport (ongoing)
- Installation of bicycle storage (complete)
- Conversion of vehicle fleet to electric (ongoing)

Chipping Norton Council

- Moss filter – (feasibility)

- Rusty Riders – (implemented)

Local Plans

Air quality in both towns may benefit from a number of strategic plans at county, district and town council level. These are summarised in Table ES 2 below:

Table ES 2 - Summary of Plans with the potential to improve air quality within the AQMAs

Plan	Responsible Authority	Witney	Chipping Norton	Status
Local Transport and Connectivity Plan 2022 – 2050	OCC	✓	✓	Adopted
West Oxfordshire District Travel Plan	OCC	✓	✓	In development
Witney Local Cycling and Walking Infrastructure Plan 2023	OCC	✓		Adopted
Chipping Norton Local Cycling and Walking Infrastructure Plan 2023	OCC		✓	In development
West Oxfordshire Local Plan 2031	WODC	✓	✓	Adopted
Chipping Norton Neighbourhood Plan	CNTC		✓	Adopted

OCC – Oxfordshire County Council; WODC – West Oxfordshire District Council; CNTC – Chipping Norton Town Council

Oxfordshire Air Quality Website

The development of the Oxfordshire Air Quality Website, funded by the DEFRA Air Quality Grant scheme, was launched in September 2023. The project is the result of active liaison

between WODC, 3 neighbouring District Councils, Oxford City Council and Oxfordshire County Council.

Air Quality Action Plan Review

WODC is currently finalising its Air Quality Actions Plans for Witney and Chipping Norton. Many of the measures are focused on active travel and electric vehicles, and are already set in District and County policies and strategies.

We have engaged both with a steering group and via public consultation, the outcome of which is detailed in the AQAP. The final version of the AQAP is currently being appraised by DEFRA.

Oxfordshire County Council Air Quality Strategy

[The Oxfordshire County Council Air Quality Strategy](#), outlines the county's vision and objectives for tackling air pollution across Oxfordshire as a whole. The Strategy will support local councils in delivering their statutory duties, delivering initiatives and schemes to reduce air quality, and will influence planning and highways to consider air quality at the planning stages. It will also focus on other areas of air pollution, such as solid fuel burning in homes. The strategy is linked to the Healthy Place Shaping initiative which seeks to improve the environments where people live. Link: [Healthy Place Shaping](#) Oxfordshire County Council's Director for Public Health published the [2023-2024 Annual Report on Climate Change and Health](#) which discusses the health implications of poor air quality and the measures the county council are taking to address the issue.

Conclusions and Priorities

2023 has continued the trend in NO₂ concentrations set by the Covid-19 pandemic, providing increased confidence that this scenario is the 'new norm'. Overall, all but one of the locations monitored saw a fall in NO₂ concentrations compared with 2022. Nitrogen dioxide levels in Bridge Street (Witney) remained below the national air quality objective. The annual average results of 31.6 µg/m³ and 29.3 µg/m³ can be compared with last year when the levels at the same locations were 36.1 µg/m³ and 32.6 µg/m³ respectively.

Similar reductions have been noted in Chipping Norton. The highest annual mean of 32.2 µg/m³ was recorded in Horsefair, compared to the previous year's result of 34.3 µg/m³.

Levels recorded by the other tubes in Chipping Norton were typical of busy roadsides around the whole of the UK.

Despite the continued trend of concentrations below the UK objective across the district, air pollution remains a contributing factor to poor health. Consequently, the County Council, District Council, town councils, residents and businesses continue to have a part to play in reducing emissions and improving the quality of the air we breathe. The residential developments outlined above are likely to have an impact on the AQMAs. Consequently, it is important that county, district and town councils continue to review proposed developments with regard to air quality and, that developers are aware of the need for appropriate mitigation to prevent unacceptable increases in air pollution.

Overall, there is a cautious positive outlook for air quality in the two AQMAs, which reflects changes in how we work and the technology in the cars we drive. Over the coming years, we anticipate further improvements as a consequence of changes in the way we travel, how our roads are used and further improvements in car technology. WODC will continue to work with OCC to explore and develop highway improvements, and ensure large developments include, or provide funding for, mitigation measures to minimise the impact of the consequential additional traffic.

Over the next year we will continue the diffusion tube monitoring survey, as well as continue to seek funding for particulate monitors or sensors.

Local Engagement and How to get Involved

We can all contribute to improving air quality in our district by:

- Reducing how much we use petrol/diesel vehicles;
- Where driving diesel/petrol cars is necessary, using 'eco-driving' styles, which reduces fuel usage, and consequently reduces emissions;
- Consider [car sharing](#) – encourage your workplace to co-ordinate car sharing;
- Using car clubs instead of buying a car. Even better, join an [electric car club](#);
- Using [public transport](#); and,
- If you are able, use alternative travel modes such as [walking or cycling](#);

These measures not only improve air quality, but also will contribute to tackling climate change and, in the case of cycling and walking, will improve your health too!

Other ways which you can get involved include:

- Participating in consultations on plans such as those listed in Table ES 2;
- Joining local campaign or [community action](#) groups;
- Communicating issues or ideas to town/parish councils, district council or county council;

More information on air quality can be found on the following websites:

- [Defra UK Air](#)
- [Action for Clean Air](#)
- [Oxon Air](#)

Any queries about Air Quality should be directed to the Environmental Protection team within WODC. This team can be contacted by e mail on:
customer.services@westoxon.gov.uk

Local Responsibilities and Commitment

This ASR was prepared by the Environmental Protection department of WODC supported by Oxfordshire County Council, with the support and agreement of the following officers:

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This ASR has been approved and signed off by the Oxfordshire Head of Public Health, Ansaf Azhar.

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1 Local Air Quality Management

This report provides an overview of air quality in West Oxfordshire District 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 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 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 West Oxfordshire District Council (WODC) 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 WODC can be found in Table 2.1. The table presents a description of the two AQMAs that are currently designated within West Oxfordshire District. Appendix D provides maps of AQMAs which includes the monitoring locations within these areas (Figure D.2 and Figure D.3). The air quality objectives pertinent to the current AQMA designations are as follows:

- NO₂ annual mean

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
Witney	Declared 01/03/2005	NO ₂ Annual Mean	An area encompassing Bridge Street and part of High Street, Witney	No	48	31.6	4 (including Covid pandemic)	Witney Air Quality Action Plan (pending) 2023	AQAP will be available at https://www.westoxon.gov.uk/environment/noise-pests-pollution-and-air-quality/air-quality/ following cabinet approval.
Chipping Norton	Declared 01/03/2005	NO ₂ Annual Mean	An area of the town centre encompassing Banbury Road, Horsefair and Market Place	No	49	32.2	4 (including Covid pandemic)	Chipping Norton Air Quality Action Plan (pending) 2023	AQAP will be available at https://www.westoxon.gov.uk/environment/noise-pests-pollution-and-air-quality/air-quality/ following cabinet approval.

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

2.2 Progress and Impact of Measures to address Air Quality in West Oxfordshire District

Defra's appraisal of last year's ASR concluded '*The report is well structured, detailed, and provides the information specified in the Guidance*'. The appraisal provided the following suggested improvements to subsequent reports:

Comment	Action
It would be good if the council verify if tube deployments are in line with the Defra Calendar, or if there was any reason as to why this couldn't happen.	Where relevant, this has been included in Appendix C.
The council have included some continuous monitors within the excel files but have also stated that no automatic monitoring was undertaken by the council, nor have they included such monitors in the report.	All reference to continuous monitoring has been removed in the 2024 report.
The council states that there are 26 monitoring sites but only 25 have been reported, as well as this there are references to tables within the report that display errors and should be updated.	This was rectified in the previous report and has been checked prior to submission in the 2024 report.

WODC has taken forward a number of direct measures during the current reporting year of 2023 in pursuit of improving local air quality. Details of all measures completed, in progress or planned are set out in [Table 2.2](#). Seventeen measures are included within [Table 2.2](#), with the type of measure and the progress WODC have made during the reporting year of 2023 presented. Where there have been, or continue to be, barriers restricting the implementation of the measure, these are also presented within [Table 2.2](#).

Table 2.2 – Progress on Measures to Improve Air Quality

Measure No.	Measure Title	Category	Classification	Year Measure Introduced in AQAP	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	Improvements at B4022/A40 Shores Green junction in Witney.	Traffic Management	Strategic highway improvements, Re-prioritising road space away from cars, including Access management, Selective vehicle priority, bus priority, high vehicle occupancy lane	2022 (planning application submitted)	Estimated 2024	Oxfordshire County Council and its partners	Housing and Growth Deal (HGD) funds and Section 106 developer contributions	No	Fully funded	> £10 million	Planning	Reduced traffic density	Reduction in local concs NO ₂	Construction expected to start mid 2023, and be completed 2024 - https://www.oxfordshire.gov.uk/residents/roads-and-transport/roadworks/future-transport-projects/a40-improvements/a40-access-witney	None to date
2	Local Cycling and Walking Infrastructure Plans	Promoting Travel Alternatives	Promotion of cycling	2023	2031	Oxfordshire County Council	Various including Central Government and OxLEP	NO	Partially Funded	Not known	Implemented for Witney; Draft being prepared for Chipping Norton	Increase in active travel and reduction in vehicle emissions	Reduction in local concs NO ₂	Ongoing Witney LCWIP - https://www.oxfordshire.gov.uk/sites/default/files/file/roads-and-transport-policies-and-plans/Witney_LCWIP.pdf	The success will depend on changing attitudes and behaviours of residents and businesses
3	Freight & Logistics Strategy 2022 - 2050	Freight and Delivery Management	Route Management Plans/ Strategic routing strategy for HGV's	2022	2040	Oxfordshire County Council	Oxfordshire County Council	No	Partially Funded	£1 million - £10 million	Planning	Reduction in number of HGV travelling through Chipping Norton	Reduction in local concs NO ₂	Strategy published, actions yet to be implemented. Strategy can be found at - https://www.oxfordshire.gov.uk/sites/default/files/file/roads-and-transport-connecting-oxfordshire/FreightandLogisticsStrategy.pdf	Complexity of freight system, need for goods, amounts of goods transported, market forces, modal shift, impacts on businesses and consumers

Measure No.	Measure Title	Category	Classification	Year Measure Introduced in AQAP	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
4	Oxfordshire Local Transport and Connectivity Plan 2022 – 2050	Policy Guidance and Development Control	Other policy	2022	2040	Oxfordshire County Council	Oxfordshire County Council	No	Fully funded	Not known	Implementation	Reduced traffic density	Public awareness Increasing awareness within health monitoring policy	Published Link to https://www.oxfordshire.gov.uk/residents/roads-and-transport/connecting-oxfordshire/ltcp	Replaced the previous Local Transport Plan 2015-2031 in 2022
5	Oxfordshire Active & Healthy Travel Strategy 2022	Promoting Travel Alternatives	Intensive active travel campaign & infrastructure	2022	2031	Oxfordshire County Council and LA	Oxfordshire County Council	NO	Fully funded	Not known	Implementation	Reduced traffic density	Reducing car use and thus emissions. Increased cycle network	Published https://www.oxfordshire.gov.uk/sites/default/files/file/roads-and-transport-policies-and-plans/ActiveTravelStrategy.pdf	Implemented to support Measure 1 above
6	Witney Active Travel Scheme	Transport Planning and Infrastructure	Cycle network	2020	2021	Oxfordshire County Council and Oxfordshire Local Enterprise Partnership	Government Active Travel Fund, Oxfordshire Local Enterprise Partnership, S106 funding	NO	Fully funded	£1 million - £10 million	Completed	Reduced vehicle emissions	Increased cycling	Complete https://www.oxfordshire.gov.uk/residents/roads-and-transport/connecting-oxfordshire/active-travel/witney-active-travel-route	None to date
7	New Park & Ride at A40 Eynsham	Alternatives to private vehicle use	Bus based Park & Ride	2019	2024	Oxfordshire County Council and its partners	Department for Transport retained Local Growth Fund Housing Growth Deal Oxfordshire Local Enterprise Partnership S106 contributions	NO	Fully funded	> £10 million	Implementation	Fewer vehicles travelling on A40	Usage of facility	Construction work has begun - https://www.oxfordshire.gov.uk/residents/roads-and-transport/roadworks/future-transport-projects/a40-improvements/eynsham-park-and-ride	None to date

Measure No.	Measure Title	Category	Classification	Year Measure Introduced in AQAP	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
8	A40 Highway improvement (ext of dual carriageway between Witney and Eynsham Park and Ride	Traffic Management	Strategic highway improvements, Re-prioritising road space away from cars, including Access management, Selective vehicle priority, bus priority, high vehicle occupancy lane	2022	Estimated 2024	Oxfordshire County Council and its partners	Department for Transport retained Local Growth Fund (LGF) Homes England Housing Infrastructure Fund (HIF) Oxfordshire Local Enterprise Partnership The Housing Growth Deal (HGD) various S106 developer contributions	No	Fully funded	>£10m	Planning	Reduced traffic density	Reduction in local concs NO ₂	Planning has now been approved, with works expected to start in Autumn 2023 - https://www.oxfordshire.gov.uk/residents/roads-and-transport/roadworks/future-transport-projects/a40-improvements/a40-dual-carriageway-extension	None to date
9	Oxfordshire Park & Charge - Electric vehicle charging points scheme	Promoting Low Emission Transport	Procuring alternative Refuelling infrastructure to promote Low Emission Vehicles, EV recharging, Gas fuel recharging	2020	Completed 2021	The Office for Zero Emission Vehicles and Innovate UK, and delivered by Oxfordshire County Council, SSE Enterprise, Zeta Specialist Lighting, Urban Integrated Ltd, EZ Charge and University of Oxford	The Office for Zero Emission Vehicles and Innovate UK	No	Fully funded	£1m - £10m	Implementation	Increase in low emission vehicles	Uptake by EV users	Installation complete https://parkandchargeoxfordshire.co.uk/faqs/	None to date
10	Oxfordshire Air Quality Information Website	Public Information	Via the Internet	2020	2023	Oxfordshire County Council and all District LAs	DEFRA AQ Grant and LAs	Yes	Fully funded	£100-500k	Implementation	Information on local air quality to impact lifestyle choice	"Hits" on website	Due to be complete and launched mid 2023	Officer time constraints
11	Burford speed restriction	Traffic Management	Other policy	2020	2020	Oxfordshire County Council	Oxfordshire County Council	No	Fully funded	Not known	Implemented	Reduced vehicle emissions	Reduction in local concs NO ₂	Completed	N/a
12	Electric vehicle car club trial	Alternatives to private vehicle use	Car club	2023	2024	Oxfordshire County Council, Las and commercial car clubs	Commercial partners	No	Fully funded	Not known	Implemented	Reduced vehicle emissions	Reduction in local concs NO ₂	Ongoing https://www.oxfordshire.gov.uk/residents/roads-and-transport/electric-vehicle-pilot	Success will depend on cost to the consumer and availability of vehicles and charging stations.

Measure No.	Measure Title	Category	Classification	Year Measure Introduced in AQAP	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
13	Oxfordshire Air Quality Strategy	Policy Guidance and Development Control	Other Policy	2023	2030	Oxfordshire County Council, supported by all District LAs	Oxfordshire County Council	No	Fully funded	<£20	Implemented	Improvement in air quality	Reduction in local concs NO ₂ & exposure to air pollution	Ongoing https://news.oxfordshire.gov.uk/download/2cc66521-8108-4b7e-9143-2ef812745a6f/oxfordshirecounty-council-cleanairstrategy-onepagesummary.pdf	Changing attitudes and behaviours; availability of funding for associated projects; spatial limitations for developments.
14	20mph Transformation Programme	Traffic Management	Reduction of speed limits, 20mph zones	2022	2025	Oxfordshire County Council	Oxfordshire County Council	No	Fully funded	£8 million	Implemented	Reduced vehicle emissions and improved traffic flow	Reduction in local concs NO ₂	Ongoing https://www.oxfordshire.gov.uk/residents/roads-and-transport/traffic/20mph-scheme/20mph-transformation-programme	Changing attitudes and behaviours; availability of funding for associated projects; spatial limitations for developments.
15	Witney High Street and Market Square Public Realm scheme	Promoting Travel Alternatives	Promotion of walking	2023	2025	Oxfordshire County Council	Oxfordshire County Council	NO	Funded	£1 million - £10 million	Planning	Encourage modal switch from cars to active and public transport	Reduction in local concs NO ₂ , and health benefits of active travel	Scheme is currently at the consultation stage	Changing attitudes and behaviours
16	Rusty Riders Cycling Group	Promoting Travel Alternatives	Promotion of cycling	2023	2025	Chipping Norton Town Council	Chipping Norton Town Council	NO	Funded	< £10k	Implementation	Encourage modal switch from cars to active transport	Reduction in local concs NO ₂ , and health benefits of active travel	Scheme was launched in March 2024	The scheme aims to support those are returning or are new to cycling
17	Installation of Moss Filter	Pollutant Capture/Barrier	Green Infrastructure	2023	2025	Chipping Norton Town Council	TBC	NO	Not Funded	£10k - 50k	Planning	Potential to reduce numerous air pollutants, including NO ₂ and PM	Reduction in local concs NO ₂	The town council is currently finalising the location and design, before seeking funding for the project.	Securing funding, and agreement with local businesses

More detail on these measures can be found in their respective Action Plans, Oxfordshire's Local Transport and Connectivity Plan 2022-2050, West Oxfordshire's Local Plan 2031, Witney Local Cycling and Walking Infrastructure Plan 2023 and Chipping Norton Neighbourhood Plan. Many of the measures detailed on the aforementioned plans are further supported by climate and carbon strategies and plans both at county and district level. Key completed/progressed measures briefly described below.

Witney & Chipping Norton Air Quality Action Plans

WODC has completed the final draft of the AQAP following consultation. The plan has been submitted to Defra for appraisal. The AQAPs include long term measures currently being prepared by Oxfordshire County Council, including Local Travel Plans for both towns, and Local Cycling and Walk Infrastructure Plans. Other measures relating to highways and freight are also in progress. Also included are more short-term measures such as campaigns to raise public awareness to air quality issues such as wood burners and idling vehicles, and the launch of the new Oxfordshire Air Quality Website.

Oxfordshire Air Quality Website

The new [Oxfordshire Air Quality Website](#), was launched in September 2023. The new site, funded by the DEFRA Air Quality Grant scheme, is a collaboration between the district councils, city council and county council in Oxfordshire, and will deliver: up to date (as far as practicable) air quality data, including alerts when air pollution is high; an interactive map; advice on reducing harmful emissions; advice on how to minimise exposure; a page specifically to help children understand air quality; poor air quality text alerts for those with health conditions; and, many other features. The website will benefit residents of Oxfordshire and those who travel into the county for work or leisure, highlighting the areas where air quality needs to be improved. Since the launch, the site has had 27,073 views.

Local Transport and Connectivity Plan 2022 - 2050

OCC's Local Transport and Connectivity Plan 2022 – 2050 (LTCP5) was fully adopted in July 2022, replacing the previous plan (LTP4). Targets for the County include:

- reduce 1 in 4 car trips by 2030

- deliver a net-zero transport network by 2040
- and have zero, or as close as possible, road fatalities or life-changing injuries by 2050.

The plan sets out three ways to achieve the targets:

- reducing the need to travel
- reducing emissions by either encouraging improvements in vehicle fleet or reducing the number of vehicles by encouraging car clubs and car sharing
- and making walking, cycling, public and shared transport the natural first choice.

LTCP5 also includes the preparation of area strategies for each district, focusing on specific towns, including Witney and Chipping Norton.

Many of the following improvements form part of the LTCP

Link: [Local Transport and Connectivity Plan 2022 - 2050](#)

A40 Improvement scheme

A review of the planned improvements to the A40 corridor was completed in July 2023, in the light of global inflationary pressures. The outcome of the review was for a more phased approach, focusing on the Eynsham Park & Ride, improving access to Witney at the Shore Green Junction, dedicated bus lanes between Oxford and Eynsham Park & Ride and improvements to the shared cycle/footpath between Eynsham and Shores Green. Other improvements in the original scheme will be progressed as funding becomes available. An update on the scheme is summarised below:

- Construction of the Eynsham Park and ride commenced in the autumn of 2022, and is expected to be complete by the end of 2024;
- A start date for the commencement of the dedicated bus lanes between Eynsham and Oxford has yet to be announced;
- The construction of the west facing slip roads on the Shores Green Junction to the southeast of Witney is expected to commence later this year, following completion of the necessary compulsory purchases;
- Improvements in shared active travel paths will be carried out simultaneously with the construction of the new dedicated bus lanes and Shores Green improvements. Improvements to the remaining existing path between Witney and Eynsham will be

carried out alongside the delayed scheme to dual the A40 between these two towns.

Although there will be a delay in delivering the dualling of the A40 between Witney and Eynsham, the improvements to the Shores Green Junction will deliver considerable benefits to Witney and significantly reduce the flow of traffic through the AQMA. However, the delay in the dualling scheme will also delay improvements in public transport and active travel between Witney and Oxford.

Local Cycling and Walking Infrastructure Plans (LCWIP) and Active Travel

Work has commenced on the proposed improvements outlined in the [Witney LCWIP](#), with funding secured for the design element for a number of the schemes. In addition, some of the schemes presented in the LCWIP will also be delivered as part of the Witney High Street and Market Square public realm improvement project, currently under consultation. Witney Town Council have also installed new cycle racks in the town centre and are committed to improving active travel facilities in the town.

Chipping Norton's LCWIP is currently being drafted by OCC, with a draft plan expected shortly. To help encourage cycling within the town, Chipping Norton Town Council have recently set up the Rusty Riders Clinic in collaboration with Transition Chipping Norton, to help new and returning cyclists improve proficiency, learn about bike maintenance, as well as organising social rides.

Electric Vehicle Charging

Both county and district councils continue to roll out EV charging infrastructure across the district. OCC were recently awarded £3.6 million to triple its number of public electric vehicle (EV) chargers after the county's Local EV Infrastructure (LEVI) bid was approved. The programme aims to create a reliable, easy-to-use, contactless EV charging network spanning the county, giving more people the opportunity to switch to an EV – regardless of their parking situation. This is expected to include charging hubs in more rural areas within the district.

Residents of Oxfordshire can also suggest locations where they would like to have EV chargers or car clubs using an interactive [tracker map](#).

The county council are currently trialling pavement gully EV chargers, which enable residents without off-street parking to install a charger on the roadside. The county council intend to open applications to residents across Oxfordshire during the summer this year (2024) and hope to see the first installations in late autumn.

Car Clubs

OCC launched an electric vehicle car club trial in April 2023, with West Oxfordshire locations in Witney and Eynsham. The trial was intended to be for 12 months, but this has now been extended until September 2024. To date, Eynsham reports a higher usage rate compared with Witney, with 130 and 27 trips respectively during 2023.

Freight & Logistics Strategy 2022 - 2050

The County Council's Freight & Logistics Strategy 2022 – 2050 (FLS) was developed as a supporting strategy for the LTCP5. The FLS has 40 actions to deliver 5 key principles:

- Appropriate movement
- Efficient movement
- Net-zero movement
- Safe movement
- Partnership working

2023 saw the completion of the weight restriction feasibility study, and there are currently ongoing HGV studies being carried out in the Windrush Valley area which are expected to continue until March 2025. The Oxfordshire Freight Steering Group has also been established to consult on the work.

Town Centre 20mph Zones

As part of the County Council's commitment to 'Vision Zero' (the elimination of deaths and serious injuries from road traffic collisions in Oxfordshire) communities are able to request the introduction of 20mph areas. In February 2022, Cabinet approved funding of up to £8,000,000 to deliver the 20mph areas, meaning the implementation of schemes comes at no cost to town or parish councils. The scheme is completely voluntary and is being rolled

out in three phases. Witney applied to the scheme during Phase 1 and successfully implemented the 20mph area in November 2022.

Chipping Norton town centre became 20mph in 2019. Last year saw the successful application for the lower speed limit to be extended to wider areas of the town, which became live in December 2023.

Public Transport

Witney has benefitted from new and enhanced bus services during 2023, including a Witney – Carterton – Swindon service, and an enhanced 700 service serving the John Radcliff Hospital. Enhancements to the existing H2 service, also serving the John Radcliff Hospital are planned for later in 2024. There were also improvements to community transport services in 2023 within the town, providing local transport to the town centre.

Public transport improvements in Chipping Norton in 2023, were primarily in the community transport sector. The Villager community bus service added two new services serving Chipping Norton in 2023, V26 from Oddington to Witney, and V4 from Oddington to Chipping Norton. As of April 1st 2024, bus route 801, which was already providing a service between Moreton in the Marsh and Cheltenham, was extended to serve Chipping Norton. This provides an almost hourly service for those travelling from the town to locations such as Stow on the Wold, Bourton on the Water and Andoversford.

October 2023 saw the publishing of the [Carterton-Witney-Oxford Rail Corridor Study](#) commissioned by OCC. The study investigated the feasibility of such a project from various perspectives including demand and revenue, engineering and integration into the existing rail service. The study was triggered by a local special interest group known as the Witney Oxford Transport Group (WOTG) who developed the proposal for the railway and submitted an application to the Department for Transport (DfT) for Restore Your Railway funding. In brief, the outcome of the study was in favour of the project as an 'economic enabler', based on the predication that even with the proposed improvements to the A40, this road will still reach capacity within the next decade. Consequently, residents of Carterton, Witney and Eynsham working and learning in Oxford will need an alternative method of transportation, which the proposed railway will provide. In addition, providing a train service to Oxford as an alternative to using the A40, will remove vehicles off the road, and will consequently have a positive impact on air pollution and climate change.

The study is the initial part of the journey, and much work is still to be undertaken before the scheme can be approved and funding secured.

Oxfordshire County Council Air Quality Strategy

2023 saw the launch of OCC's Air Quality Strategy, which has been developed with the support of the district and city council's air quality officers. The strategy has three objectives:

- Work in partnership to support the work to improve air quality undertaken by the district and city councils
- Work with air quality partners to maintain a downward air pollution trajectory and develop population exposure targets.
- Deliver the OCC Air Quality Strategy [Route Map](#)

To facilitate the delivery of the strategy the County Council secured wider OCC staff engagement by the end of 2023, forming the Air Quality Partnership Group, to actively support the development, updating and implementation of the district and city councils' air quality action plans and other appropriate projects.

Involvement in air quality at county level, will enable a more strategic and co-ordinated approach in tackling the issue across all district and city councils. [Link: Oxfordshire County Council Air Quality Strategy.](#)

Collaboration between the county and district/city councils has also provided an opportunity to invest in the development of a local air quality health impact assessment tool to enable the impact of new measures to be assessed both in terms of improvements in air quality, and improvements in health.

Planning

The planning process remains a key factor in ensuring new developments do not have a significant impact on air quality. Planning applications are regularly reviewed to identify those which may require intervention at the planning stage to prevent unacceptable emissions, either by recommending approval subject to conditions or refusal. Air quality assessments, submitted as part of a planning application, are expected to consider cumulative effects of the application site combined with other developments planned for the area, particularly where the developments are close to an AQMA.

Challenges & Barriers

The principal challenges and barriers to implementation that WODC anticipates facing remain unchanged from 2023, namely:

- financial constraints hampering progress with highway improvements and the development of implementation plans.
- the potential for an increase in traffic in the AQMAs in the future, due to proposed residential developments.
- changing attitudes and behaviours to encourage less car use and more active travel and use of public transport.

WODC anticipates that the measures stated above and in [Table 2.2](#) will achieve compliance in both the Witney and Chipping Norton AQMA.

2.2.1 Forthcoming developments impacting air quality - Active housing developments

East Witney Strategic Development Area (EWSDA)

Some 450 homes are planned in this area of land southeast of Oxford Hill, Witney. A planning application received during 2020 was refused during 2023, however this development is still expected to go ahead pending an acceptable application. Any new applications will be expected to review the existing air quality assessment to take into account any new developments or infrastructure which have come to light since 2020.

North Witney Strategic Development Area (NWSDA)

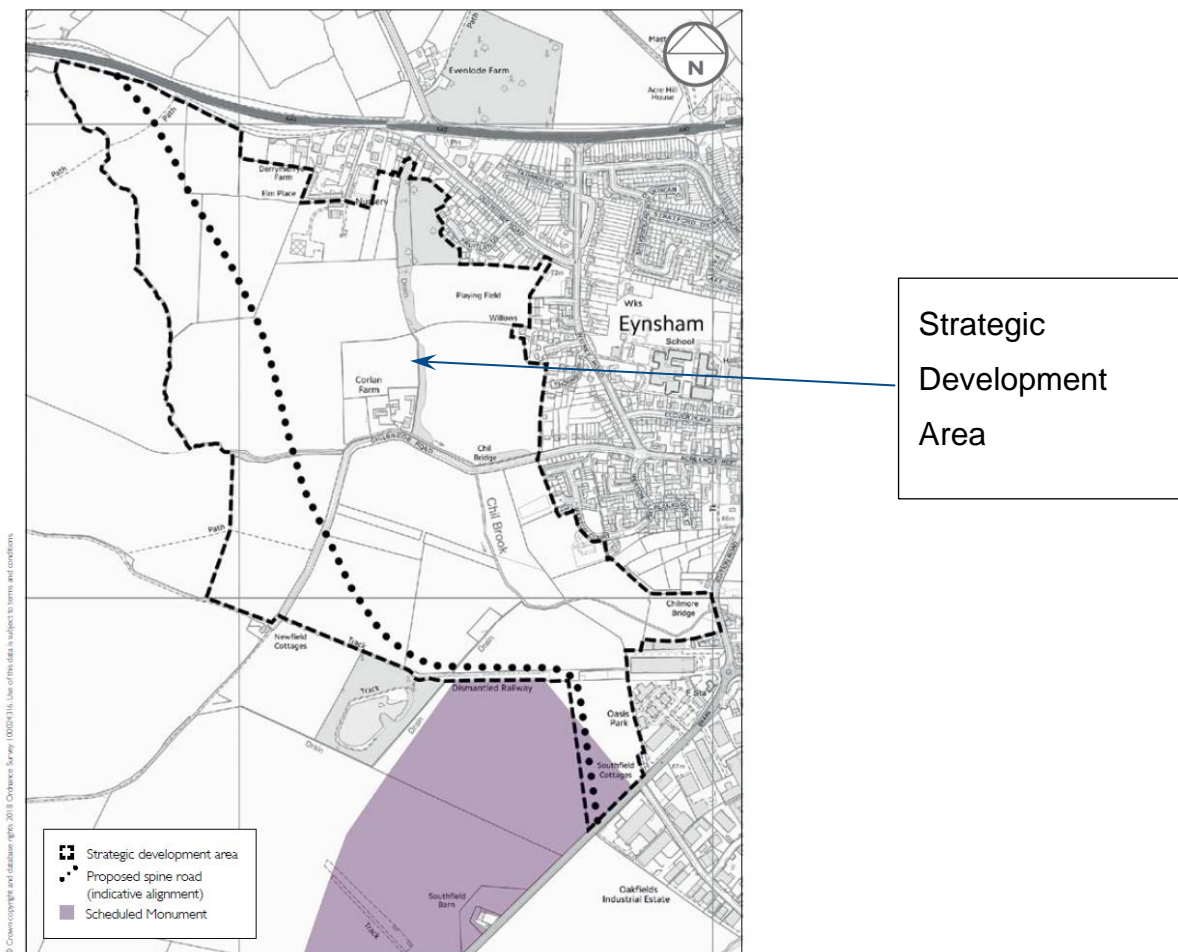
The North Witney Strategic Development Area has an expected capacity of 1250 homes. This is currently split between two planning applications; 110 homes on land west of Hailey Road (refused in 2023, and currently under appeal); and 1140 homes in the remaining area north of Witney, between Hailey Road and Woodstock Road. The later application includes construction of the Northern Distributor Road, which will allow traffic from the development to travel east to west and vice versa, avoiding the need to travel through the AQMA.

2.2.2 Forthcoming developments impacting air quality - Planned housing developments

In addition to the above there are other major developments planned, which are in the process of being brought forward.

West Eynsham Strategic Development Area (SDA)

The West Eynsham SDA is located to the west of the existing settlement at Eynsham and will provide an urban extension of the town, comprising around 1000 new homes. The masterplan has been approved by the local planning authority, and discussions are currently in place regarding the planning applications. The location is shown in Figure 2.1. Some of these (450 homes) are to contribute to West Oxfordshire District's own housing needs whilst the balance is to meet the housing needs of Oxford City. The proposal forms District planning policy EW2. An additional point is the provision of a new western spine road funded by and provided as an integral part of the proposed development and to link the A40 and B4449.

Figure 2.1 – Location of West Eynsham SDA (from District Plan)

Eynsham Garden Village (Salt Cross)

A key element of the West Oxfordshire Local Plan 2031 is the establishment of a new garden village to the north of the A40 near Eynsham. Salt Cross Garden Village is a large, proposed development north of Eynsham and the A40, to the east of the new Eynsham Park and Ride. The development will include 2,200 dwellings, leisure, hotel and retail facilities and a science park.

An Area Action Plan (AAP) for the development was first submitted to the Planning Inspectorate in 2021. WODC received the Inspectorate's final report in March 2023, which was subsequently challenged by a third party campaign group, Rights Community Action (RCA). The challenge focused on the conclusions reached by the Inspector in relation to the soundness of AAP Policy 2 – Net Zero Carbon Development. The case was heard in the High Court in November 2023, and the recent decision was found in favour of RCA. The challenged section of the inspector's report (Policy 2) will now be independently examined. It is understood the development will not proceed until the independent examination is complete.

East Chipping Norton Strategic Development Area

The East Chipping Norton SDA is allocated for development under Policy CN1 of the West Oxfordshire Local Plan 2031. This comprises of land east of Chipping Norton and will include around 1200 homes. The original area identified for this development has now been designated a Scheduled Monument due to the presence of a Romano-British rural settlement, dating from the 1st to the 4th century AD, with evidence of possible Iron Age origins. As a consequence there is currently some uncertainty regarding the future of the SDA.

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}). There is clear evidence that PM_{2.5} (particulate matter smaller 2.5 micrometres) has a significant impact on human health, including premature mortality, allergic reactions, and cardiovascular diseases.

Other than the potential source from vehicles, no other significant source of PM_{2.5} has been identified within the district. Therefore, the control at this stage is aligned with the measures designed to achieve a reduction in vehicular emissions.

In addition, WODC is taking the following measures to address PM_{2.5}:

- As part of the AQAP review process, the Council has carried out an PM_{2.5} assessment, using published data;
- Highlight the issues of PM_{2.5} including the impacts on health and activities which generate the particles. This will be achieved through the new Oxfordshire Air Quality Website, and other campaigns such as responsible use of wood burners, fire pits, garden bonfires etc.

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

- Seek funding to install PM_{2.5} monitors within the AQMAs and other areas of West Oxfordshire.

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

This section sets out the monitoring undertaken within 2023 by WODC 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 monitoring trends to be identified and discussed.

3.1 Summary of Monitoring Undertaken

3.1.1 Automatic Monitoring Sites

WODC has no automatic (continuous) monitoring sites within its area.

3.1.2 Non-Automatic Monitoring Sites

WODC undertook non-automatic (i.e. passive) monitoring of NO₂ at 25 sites during 2023. Table A.1 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.

The survey focused upon locations where there is “relevant public exposure”, in accordance with Defra LAQM Technical Guidance Note TG(22) (Reference E). This year, only one location was changed: NAS11 was relocated from Heath Lane, Bladon to Milestone Road, Carterton, following air quality concerns from a nearby resident.

To the knowledge of the Council, no third party monitoring was carried out in the district during 2022.

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

Overall NO₂ levels are lower across the district in comparison with 2022 data, with the greatest fall seen in NAS5, located on West End, Witney, and the smallest fall in NAS13, Hensington Road, Woodstock. This continual decline across the district provides a strong indication NO₂ concentrations are unlikely to revert to pre-pandemic levels, most likely due to the increase in the number of people working from home, coupled with improvements in engine technology and the uptake of hybrid and fully electric vehicles.

Trends in NO₂ concentrations are presented in Appendix A, Figures A.1 – A.3. Figure A.1 and Figure A.2 compares monthly NO₂ concentrations (raw, unadjusted) in both of the District's AQMAs between 2019 and 2023. Figure A.3 compares annual average adjusted NO₂ concentrations at four locations across the district.

Although the results from 2023 are positive and indicate a general improvement in the air quality withing both Witney's and Chipping Norton's AQMAs, we are also mindful that both towns will see large housing developments constructed in the coming years. Such developments will invariably increase road traffic in both towns, potentially delaying future improvements in air quality or even reversing the current trend. In the event air quality continues to show improvements during 2024, WODC is likely to be in a position to consider revoking both AQMAs, as both areas would have demonstrated three consecutive years of bias and distance adjusted data below 90% of the objective concentration (36µg/m³). The decision to revoke will be taken in consultation with members of the council and may require an independent assessment of the likely effects of the proposed developments on the future air quality in the AQMAs.

It is also noted that during 2023 no annual means greater than $60\mu\text{g}/\text{m}^3$ were measured, which indicates that an exceedance of the 1-hour mean objective was unlikely at any of the locations.

3.2.2 Particulate Matter (PM_{2.5} & PM₁₀)

Measurements of particulate matter were not made within the District during 2022.

Particulate matter can enter the respiratory system and have consequential health implications. Particulates which are routinely monitored in the UK are PM₁₀ and PM_{2.5}. PM₁₀ are particles that have a diameter of $10\mu\text{m}$ or less, and can pass through the upper respiratory system and travel deep into the lungs. PM_{2.5} particles have a diameter of $2.5\mu\text{m}$ or less, and can pass into the deepest parts of the lungs, and potentially through the lung walls into the blood stream. These particles have been strongly connected with respiratory problems such as asthma, chronic obstructive pulmonary disease and cardiovascular disease.

The Environment Act 2021 required the Secretary of State to set PM_{2.5} objectives for the UK, which were laid out in The Environmental Targets (Fine Particulate Matter) (England) Regulations 2023. The targets set within the 2023 Regulations are:

- *The annual mean concentration target is that by the end of 31st December 2040 the annual mean level of PM_{2.5} in ambient air must be equal to or less than $10\mu\text{g}/\text{m}^3$*
- *The population exposure reduction target is that there is at least a 35% reduction in population exposure by the end of 31st December 2040, as compared with the average population exposure in the three-year period from 1st January 2016 to 31st December 2018.*

To monitor progress in meeting these objectives, new monitors are expected to be installed across the country to provide concentration data for fine particles in the air. These will predominantly be in urban areas.

Trends in PM_{2.5} in the UK between 2009 and 2023 have been published by DEFRA: [Link to: Particulate matter \(PM10/PM2.5\)](#). Annual average concentration of the fine particles peaked in 2011 and have since shown a steady decline. In 2023 concentrations fell to their lowest since 2019.

The data for 2023 showed temporal changes in PM_{2.5}, with concentrations peaking during the winter and spring months, although in 2023 there was also a peak in concentrations during September.

Residential combustion of wood and coal in stoves and open fires is a large contributor to emissions of particulate matter both in the UK, contributing towards elevated concentrations in winter months. Emissions from this source are typically located closer to urban background sites than roadside sites, which may partially explain the reduction in the gap between concentrations recorded at urban background and roadside sites during the winter. The contribution of solid fuel stoves is further reflected in the average hourly concentrations, which show the highest emissions of PM_{2.5} occurred mid to late evening.

Peaks were also recorded in April and September during 2023. These are thought to be due to elevated concentrations of nitrates transported from agricultural operations across UK and continental Europe during the spring, and the significantly warm and dry start to September.

The impact of solid fuel stoves and open fires demonstrates the importance of the Air Quality (Domestic Solid Fuels Standards) (England) Regulations 2020, which stipulates that wet wood (that is, wood having a moisture content of more than 20%) cannot be sold in units of less than 2m³. The same legislation outlaws sale of bags of coal for domestic fireplaces. This is intended to encourage use of approved kiln-dried logs which produce much less smoke and thus particulates.

3.2.3 Public Health Outcomes Framework

Public Health England publishes various information related to public health, in particular in relation to particulate matter.

The importance of the effect of air pollution on public health is reflected by the inclusion of an indicator of mortality associated with particulate matter in the Public Health Outcomes Framework. This is a series of “indicators” prepared by Central Government as a measure of public health in various categories and across the regions of the UK. One category of data is “D01 - Fraction of mortality attributable to particulate air pollution” (2020⁷).

⁷ Footnote Source: Background annual average PM_{2.5} concentrations for the year of interest are modelled on a 1km x 1km grid using an air dispersion model, and calibrated using measured concentrations taken from

For Oxfordshire as a whole, the estimated Fraction of Mortality attributable to particulate air pollution (2022 data) is 6% of the county's population which is a slight increase on 2021 (5.5%). In comparison, the average for the southeast region was 5.7% in 2022, which rose from 5.4% in 2021.

For the West Oxfordshire District, the estimated fraction of mortality attributable to particulate air pollution is 5.6% (a rise of 0.4% from 2021), compared with the regional average of 5.7%.

The rise in mortality attributed to particulate matter coincides with a decrease in physical activity in adults⁸ (19 and over) across the district from 71.2% (2021) to 70.2% (2022).

Link: [Public Health England Public Health Profiles](#) data. Further information on mortality and particulate matter in Oxfordshire can be found in Joint Strategic Needs Assessment [Health and Wellbeing Facts and Figures, April 2023](#).

background sites in Defra's Automatic Urban and Rural Network (<http://uk-air.defra.gov.uk/interactive-map>.) Data on primary emissions from different sources and a combination of measurement data for secondary inorganic aerosol and models for sources not included in the emission inventory (including re-suspension of dusts) are used to estimate the anthropogenic (human-made) component of these concentrations. By approximating LA boundaries to the 1km by 1km grid, and using census population data, population weighted background PM_{2.5} concentrations for each lower tier LA are calculated. This work is completed under contract to Defra, as a small extension of its obligations under the Ambient Air Quality Directive (2008/50/EC). Concentrations of anthropogenic, rather than total, PM_{2.5} are used as the basis for this indicator, as burden estimates based on total PM_{2.5} might give a misleading impression of the scale of the potential influence of policy interventions (COMEAP, 2012).

⁸ Based on the number of respondents aged 19 and over, with valid responses to questions on physical activity, doing at least 150 moderate intensity equivalent (MIE) minutes physical activity per week in bouts of 10 minutes or more in the previous 28 days expressed as a percentage of the total number of respondents aged 19 and over.

Appendix A: Monitoring Results

Table A.1– 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)
NAS1	25 Bridge Street, Witney	Roadside	435872	210318	NO ₂	Witney AQMA	0.1	1.6	No	2.3
NAS2	10 Bridge Street, Witney	Roadside	435821	210243	NO ₂	Witney AQMA	0.6	2.5	No	2.6
NAS3	20 Bridge Street, Witney	Roadside	435849	210280	NO ₂	Witney AQMA	0.2	2.2	No	2.3
NAS4	9 Mill Street, Witney	Roadside	435682	210195	NO ₂		1.0	1.4	No	2.7
NAS5	4A West End, Witney	Roadside	435911	210380	NO ₂	Witney AQMA	0.1	1.2	No	2.3
NAS6	Woodgreen Hill, Witney	Roadside	435955	210362	NO ₂	Witney AQMA	0.1	3.1	No	2.3
NAS7	Newland, Witney	Roadside	435946	210326	NO ₂	Witney AQMA	1.0	2.7	No	2.3
NAS9	A40 j/w Southleigh Turn	Roadside	440082	210435	NO ₂		>50	3.3	No	2.2
NAS10	Park Street, Bladon	Roadside	444783	214667	NO ₂		0.1	3.0	No	2.7
NAS11A	The Drey 44 Milestone Road Carterton	Roadside	427762	206122	NO ₂		15.5	0.5	No	2.2

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)
NAS12	Grove Rd, Bladon	Roadside	444873	214977	NO ₂		8.2	2.1	No	2.3
NAS13	3 Hensington Road, Woodstock (New from 1/1/19)	Urban Background	444667	216727	NO ₂		0.0	2.3	No	2.7
NAS14B	42 Oxford Street, Woodstock (new 06/01/2022)	Roadside	444576	216800	NO ₂		0.1	3.5	No	2.5
NAS15	Woodstock, Rosamund Drive	Urban Background	444182	217345	NO ₂		6.8	1.8	No	2.3
NAS16	Withers Way, Chipping Norton	Urban Background	431203	226866	NO ₂		4.5	1.9	No	2.4
NAS17	West St, Chipping Norton	Roadside	431299	226975	NO ₂	Chipping Norton AQMA	0.3	1.8	No	2.7
NAS21	7 Horsefair, Chipping Norton	Roadside	431453	227316	NO ₂	Chipping Norton AQMA	0.1	5.1	No	2.7
NAS22	Horsefair (opp No.7), Chipping Norton	Roadside	431436	227326	NO ₂	Chipping Norton AQMA	0.1	1.0	No	2.4
NAS23	Lower High Street, Burford	Roadside	425179	212443	NO ₂		0.7	2.0	No	2.3
NAS24	High Street (Near Barclays Bank), Burford	Roadside	425153	212178	NO ₂		1.0	1.2	No	2.2
NAS25A	Black Bourton Road, Carterton (new 06/01/2022)	Urban Background	428153	206588	NO ₂		7.4	2.6	No	2.5

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)
NAS40	Witney Road, Eynsham (New 1/5/19)	Roadside	442728	209942	NO ₂		6.0	1.3	No	2.4
NAS41	Hanborough Road, Eynsham. (New 1/5/19)	Roadside	443664	210024	NO ₂		28.0	2.0	No	2.3
NAS44	83 Oxford Hill, Witney (New from 06/01/21)	Roadside	436759	209830	NO ₂		5.0	1.7	No	2.3
NAS45, NAS46, NAS47	23 High St Chipping Norton (new 06/05/2021)	Roadside	431414	227217	NO ₂	Chipping Norton AQMA	3.0	2.4	No	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 – 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
NAS1	435872	210318	Roadside	83.2	83.2	44.8	36.8	37.6	36.1	31.6
NAS2	435821	210243	Roadside		100.0	37.1	27.5	31.8	30.5	27.1
NAS3	435849	210280	Roadside		100.0	41.9	32.2	35.1	32.6	29.3
NAS4	435682	210195	Roadside	90.4	90.4	33.9	26.2	26.9	26.5	21.8
NAS5	435911	210380	Roadside		100.0	33.1	25.9	28.4	29.7	24.2
NAS6	435955	210362	Roadside		100.0	35.5	26.6	29.9	27.9	25.6
NAS7	435946	210326	Roadside		100.0	34.3	27.0	28.0	26.3	24.4
NAS9	440082	210435	Roadside		100.0	18.7	14.9	17.0	15.7	12.8
NAS10	444783	214667	Roadside		100.0	27.0	19.7	21.2	21.0	18.7
NAS11A	427762	206122	Roadside		100.0	-	-	-	-	7.8
NAS12	444873	214977	Roadside		100.0	16.6	12.3	13.2	12.3	11.2
NAS13	444667	216727	Urban Background		100.0	22.3	19.2	16.0	14.6	14.0

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
NAS14B	444576	216800	Roadside		100.0	14.5	10.4	10.7	14.2	12.9
NAS15	444182	217345	Urban Background		100.0	10.1	9.1	7.0	8.2	6.5
NAS16	431203	226866	Urban Background		100.0	8.6	7.0	6.7	6.4	5.4
NAS17	431299	226975	Roadside	90.4	90.4	21.5	17.7	18.9	18.5	15.3
NAS21	431453	227316	Roadside		100.0	19.8	16.4	16.5	15.6	13.3
NAS22	431436	227326	Roadside		100.0	43.9	37.8	38.2	34.3	32.2
NAS23	425179	212443	Roadside		100.0	28.2	21.3	21.4	21.0	19.3
NAS24	425153	212178	Roadside		100.0	21.0	16.5	16.9	16.9	15.6
NAS25A	428153	206588	Urban Background		100.0	-	-	-	12.8	10.5
NAS40	442728	209942	Roadside	90.1	90.1	18.3	14.6	16.3	15.1	11.7
NAS41	443664	210024	Roadside		100.0	16.3	14.1	14.4	14.6	12.6
NAS44	436759	209830	Roadside		100.0	-	-	18.1	15.9	14.7
NAS45, NAS46, NAS47	431414	227217	Roadside		100.0	-	-	24.7	21.4	19.6

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 $\mu\text{g}/\text{m}^3$.

Exceedances of the NO_2 annual mean objective of $40\mu\text{g}/\text{m}^3$ are shown in **bold**.

NO_2 annual means exceeding $60\mu\text{g}/\text{m}^3$, indicating a potential exceedance of the NO_2 1-hour mean objective are shown in **bold and underlined**.

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

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%).

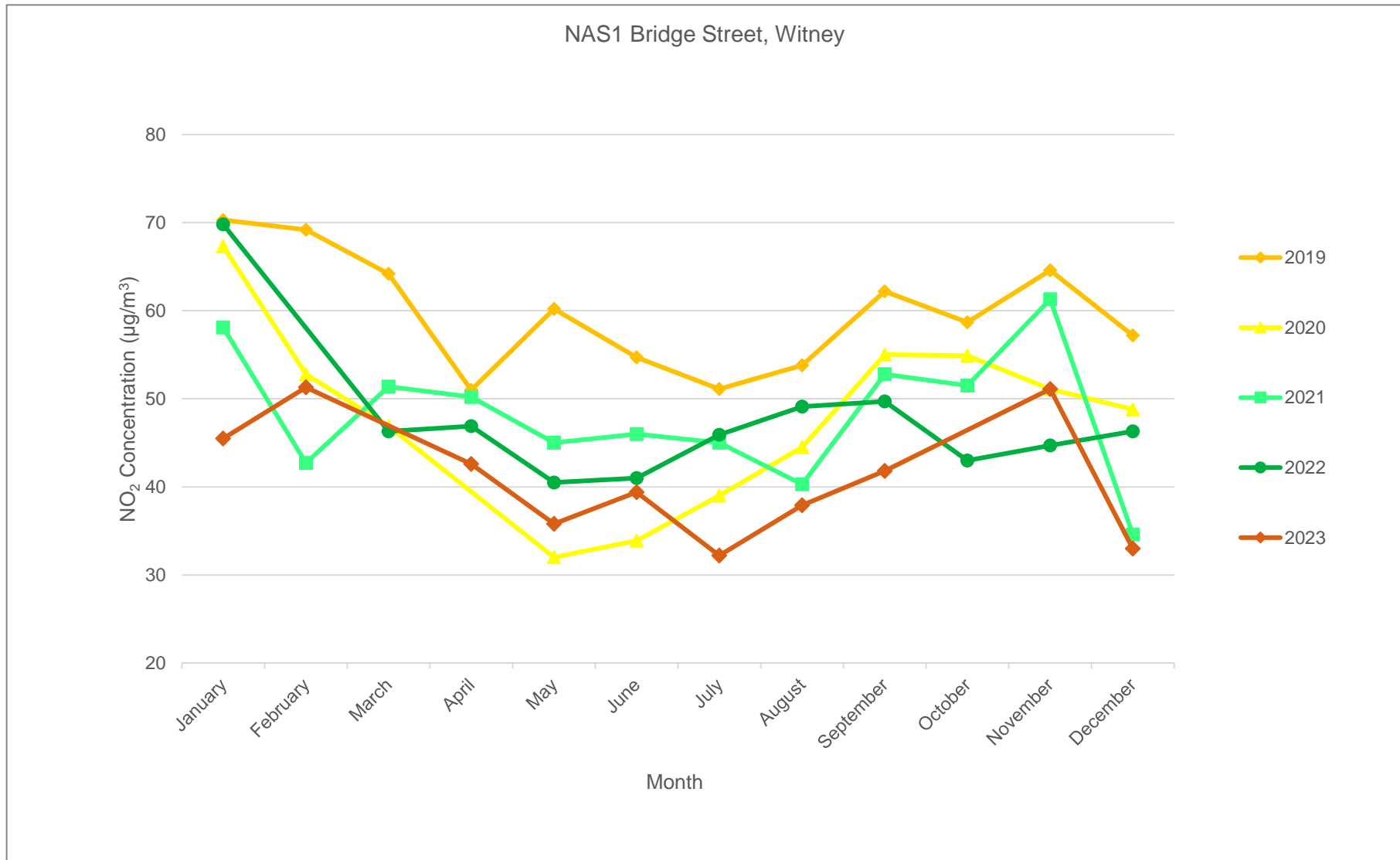


Figure A.1 - Trends in Monthly Unadjusted NO₂ Concentrations at Bridge St, Witney.

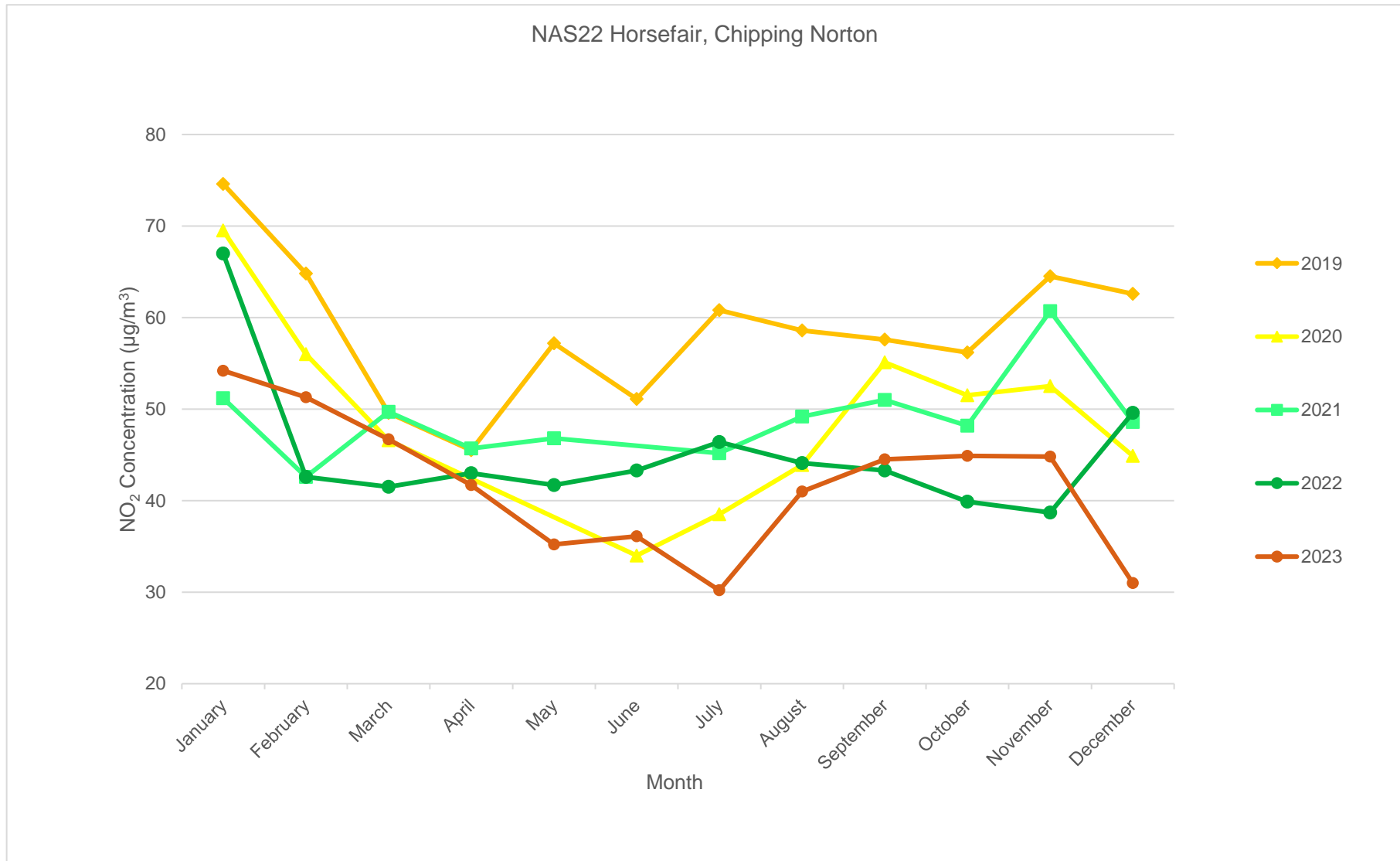


Figure A.2 - Trends in Monthly Unadjusted NO₂ Concentrations at Horsefair, Chipping Norton.

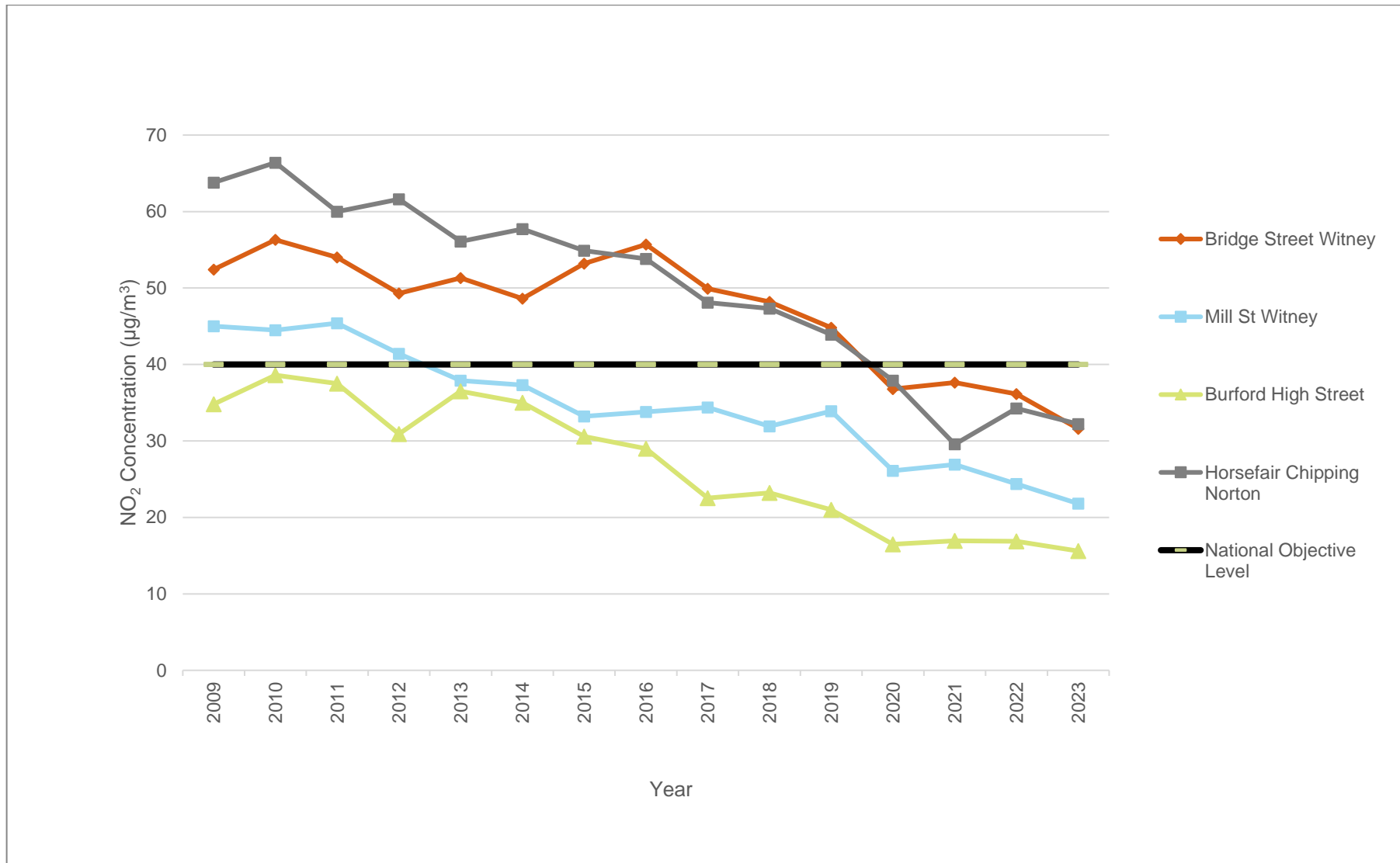


Figure A.3 - Trend in NO₂ Concentrations (adjusted) at selected locations between 2009 and 2023

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 (0.77)	Annual Mean: Distance Corrected to Nearest Exposure	Comment
NAS1	435872	210318	45.5	51.3	Outlier	42.6	35.8	39.4	32.2	37.9	41.8	missing	51.1	33.0	41.1	31.6	-	
NAS2	435821	210243	38.1	39.9	38.0	38.3	33.0	33.5	21.7	32.3	35.8	40.9	42.8	27.5	35.2	27.1	-	
NAS3	435849	210280	42.9	41.9	43.9	41.4	31.5	37.2	29.9	35.9	38.3	44.2	38.4	30.8	38.0	29.3	-	
NAS4	435682	210195	30.4	23.2	35.1	28.8	18.6	missing	22.3	29.3	34.7	37.3	29.2	22.7	28.3	21.8	-	
NAS5	435911	210380	37.4	39.4	33.4	35.2	28.5	28.5	19.5	28.9	31.6	35.5	35.1	24.3	31.4	24.2	-	
NAS6	435955	210362	36.7	37.0	37.0	37.3	32.6	29.2	26.2	39.8	36.7	36.8	30.6	18.9	33.2	25.6	-	
NAS7	435946	210326	43.5	36.0	35.8	30.2	17.0	24.1	28.9	26.6	30.3	32.1	39.2	36.2	31.7	24.4	-	
NAS9	440082	210435	23.1	20.0	15.3	18.4	15.4	17.3	10.0	18.1	15.9	17.2	17.5	11.8	16.7	12.8	-	
NAS10	444783	214667	32.4	31.8	26.7	24.1	20.8	20.2	17.2	21.2	23.7	27.1	25.9	19.8	24.2	18.7	-	
NAS11A	427762	206122	15.8	8.5	12.8	10.9	8.4	7.5	6.1	9.3	9.6	12.4	11.1	9.2	10.1	7.8	-	
NAS12	444873	214977	21.4	17.6	18.4	13.6	10.9	12.3	9.4	11.5	15.9	14.2	12.7	15.9	14.5	11.2	-	
NAS13	444667	216727	27.0	19.2	18.2	17.7	16.0	16.0	14.8	16.6	19.4	20.3	20.0	13.5	18.2	14.0	-	
NAS14B	444576	216800	21.8	19.4	18.0	19.0	15.5	14.7	9.7	16.1	16.9	17.6	20.5	11.6	16.7	12.9	-	
NAS15	444182	217345	13.4	9.3	9.3	8.1	4.9	7.2	4.9	6.8	7.6	9.6	13.4	7.4	8.5	6.5	-	
NAS16	431203	226866	11.0	7.8	9.1	5.2	5.2	5.3	4.3	6.0	7.2	6.2	10.9	5.8	7.0	5.4	-	
NAS17	431299	226975	27.7	25.2	22.6	21.0	18.5	missing	15.8	23.0	22.6	21.2	12.5	8.7	19.9	15.3	-	
NAS21	431453	227316	13.5	20.0	21.7	22.9	18.5	18.9	10.6	20.3	16.1	11.6	17.5	15.6	17.3	13.3	-	
NAS22	431436	227326	54.2	51.3	46.7	41.7	35.2	36.1	30.2	41.0	44.5	44.9	44.8	31.0	41.8	32.2	-	
NAS23	425179	212443	32.0	28.0	27.8	25.5	19.3	22.8	24.8	25.3	24.9	25.5	19.5	24.7	25.0	19.3	-	

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 (0.77)	Annual Mean: Distance Corrected to Nearest Exposure	Comment
NAS24	425153	212178	25.3	23.5	24.6	22.4	17.5	20.2	13.9	18.0	19.8	21.6	22.7	14.2	20.3	15.6	-	
NAS25A	428153	206588	22.2	18.6	16.3	14.6	12.9	10.6	6.7	12.3	11.5	13.8	13.7	11.1	13.7	10.5	-	
NAS40	442728	209942	21.1	15.0	15.3	17.0	18.4	15.0	8.3	16.3	14.4	14.9	missing	10.9	15.1	11.7	-	
NAS41	443664	210024	19.5	18.4	16.5	18.9	14.7	17.5	8.7	18.2	17.5	16.5	18.7	11.0	16.3	12.6	-	
NAS44	436759	209830	23.9	21.1	20.0	20.5	12.9	16.6	13.0	19.8	21.3	21.5	23.0	14.9	19.0	14.7	-	
NAS45	431414	227217	23.9	30.2	28.6	30.7	28.8	27.1	14.5	25.3	25.1	25.5	21.5	18.4	-	-	-	Triplicate Site with NAS45, NAS46 and NAS47 - Annual data provided for NAS47 only
NAS46	431414	227217	31.1	27.9	29.9	27.9	28.8	26.1	19.1	25.3	24.8	27.6	27.4	16.3	-	-	-	Triplicate Site with NAS45, NAS46 and NAS47 - Annual data provided for NAS47 only
NAS47	431414	227217	21.3	34.5	28.5	29.1	26.7	23.9	14.2	26.9	27.0	29.3	23.6	18.2	25.4	19.6	-	Triplicate Site with NAS45, NAS46 and NAS47 - Annual data provided for NAS47 only

- 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.
- West Oxfordshire District Council confirm 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 40µg/m³ are shown in **bold**.

NO₂ annual means exceeding 60µg/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 West Oxfordshire District During 2023

WODC has not identified any new sources relating to air quality within the reporting year of 2023.

Additional Air Quality Works Undertaken by West Oxfordshire District Council During 2023

WODC has not completed any additional works within the reporting year of 2023.

QA/QC of Diffusion Tube Monitoring

Diffusion Tube Annualisation

All diffusion tube monitoring locations recorded data capture of >75% and therefore annualisation was not required.

Diffusion Tube Bias Adjustment Factors

The diffusion tube data presented within the 2024 ASR have 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 with regard to 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.

WODC have applied a national bias adjustment factor of 0.77 to the 2023 monitoring data. A summary of bias adjustment factors used by WODC over the past five years is presented in Table C.1.

Table C.1 – Bias Adjustment Factor

Monitoring Year	Local or National	If National, Version of National Spreadsheet	Adjustment Factor
2023	National	03/24	0.77
2022	National	03/23	0.76
2021	National	03/22	0.78
2020	National	03/21	0.77
2019	National	03/20	0.75

A copy of the National Diffusion Tube Bias Adjustment Factor Spreadsheet is provided below.

National Diffusion Tube Bias Adjustment Factor Spreadsheet							Spreadsheet Version Number: 03/24				
<p>Follow the steps below in the correct order to show the results of relevant co-location studies</p> <p>Data only apply to tubes exposed monthly and are not suitable for correcting individual short-term monitoring periods</p> <p>Whenever presenting adjusted data, you should state the adjustment factor used and the version of the spreadsheet</p> <p>This spreadsheet will be updated every few months; the factors may therefore be subject to change. This should not discourage their immediate use.</p>							<p>This spreadsheet will be updated at the end of June 2024</p> <p>LAQM Helpdesk Website</p>				
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 ² . If uncertain what to do then contact the Local Air Quality Management Helpdesk at LAQMHelpdesk@bureauveritas.com or 0800 0327953					
Analysed By ¹	Method ¹ <small>To select your location, please (All) from the pop-up list</small>	Year ¹ <small>To select your preparation, please (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 ³	Bias Adjustment Factor (A) (Cm/Dm)	
SOCOTEC Didcot	50% TEA in acetone	2023	UB	City Of York Council	11	15	12	27.3%	G	0.78	
SOCOTEC Didcot	50% TEA in acetone	2023	R	City Of York Council	11	22	17	26.8%	G	0.79	
SOCOTEC Didcot	50% TEA in acetone	2023	R	City Of York Council	9	22	17	33.7%	G	0.75	
SOCOTEC Didcot	50% TEA in acetone	2023	R	City Of York Council	10	31	25	26.1%	G	0.79	
SOCOTEC Didcot	50% TEA in acetone	2023	UB	Gravesham Borough Council	12	19	15	25.6%	G	0.80	
SOCOTEC Didcot	50% TEA in acetone	2023	UB	Gravesham Borough Council	12	23	19	18.4%	G	0.84	
SOCOTEC Didcot	50% TEA in acetone	2023	R	Ipswich Borough Council	9	26	20	33.0%	G	0.75	
SOCOTEC Didcot	50% TEA in acetone	2023	R	Ipswich Borough Council	12	36	27	34.3%	G	0.74	
SOCOTEC Didcot	50% TEA in acetone	2023	R	North East Lincolnshire Council	12	43	26	61.9%	G	0.62	
SOCOTEC Didcot	50% TEA in acetone	2023	UB	North East Lincolnshire Council	10	13	10	23.1%	G	0.77	
SOCOTEC Didcot	50% TEA in acetone	2023	R	North East Lincolnshire Council	11	24	21	18.0%	G	0.85	
SOCOTEC Didcot	50% TEA in acetone	2023	R	Cardiff Council / Shared Regulatory Services	11	41	34	22.2%	G	0.82	
SOCOTEC Didcot	50% TEA in acetone	2023	UB	Torfaen County Borough Council	11	12	9	43.3%	G	0.70	
SOCOTEC Didcot	50% TEA in Acetone	2023	R	East Suffolk Council	12	29	21	38.9%	G	0.72	
SOCOTEC Didcot	50% TEA in Acetone	2023	R	Wrexham County Borough Council	11	17	14	25.2%	G	0.80	
SOCOTEC Didcot	50% TEA in Acetone	2023	R	Horsham District Council	12	21	17	23.5%	G	0.81	
SOCOTEC Didcot	50% TEA in Acetone	2023	R	Horsham District Council	10	25	17	43.5%	G	0.70	
SOCOTEC Didcot	50% TEA in Acetone	2023	R	Horsham District Council	10	23	24	-5.4%	G	1.06	
SOCOTEC Didcot	50% TEA in Acetone	2023	UI	North Lincolnshire Council	10	14	11	26.2%	G	0.79	
SOCOTEC Didcot	50% TEA in acetone	2023	R	Bridgend Council	11	32	27	20.8%	G	0.83	
SOCOTEC Didcot	50% TEA in acetone	2023	R	Cambridge City Council	12	22	18	24.8%	G	0.80	
SOCOTEC Didcot	50% TEA in acetone	2023	R	Leeds City Council	10	39	29	32.3%	G	0.76	
SOCOTEC Didcot	50% TEA in acetone	2023	KS	Leeds City Council	10	30	20	48.9%	G	0.67	
SOCOTEC Didcot	50% TEA in acetone	2023	R	Leeds City Council	12	25	19	30.0%	G	0.77	
SOCOTEC Didcot	50% TEA in acetone	2023	UC	Leeds City Council	11	26	19	40.0%	G	0.71	
SOCOTEC Didcot	50% TEA in acetone	2023	KS	Marleybone Road Intercomparison	11	53	38	41.4%	G	0.71	
SOCOTEC Didcot	50% TEA in acetone	2023	R	Vale Of White Horse District Council	10	22	18	21.2%	G	0.83	
SOCOTEC Didcot	50% TEA in acetone	2023	UB	Wirral Council	11	15	13	16.7%	G	0.86	
Overall Factor² (28 studies)							Use		0.77		

Other QA/QC Information

Socotec laboratories participate in the AIR NO₂ Proficiency Scheme, which assesses the analytical performance of laboratories analysing NO₂ diffusion tubes. In 2023, four rounds of proficiency testing were carried out, round 55 between January and February, round 56 between May and June, round 58 between July and August and round 59 between September and October. During each round, Socotec laboratories scored 100%, which provides confidence in the diffusion tube analysis for the district. The full results from 2015 onwards can be found at <https://laqm.defra.gov.uk/air-quality/air-quality-assessment/qa-qc-framework/>.

DEFRA dictate the dates when the diffusion tubes are exchanged, and the local authority are expected to adhere to these dates +/- 2 days. All tubes were exchanged within the acceptable timeframe throughout 2023.

NO₂ Fall-off with Distance from the Road

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.

No diffusion tube NO₂ monitoring locations within West Oxfordshire District required distance correction during 2023

Appendix D: Maps of Monitoring Locations and AQMAs

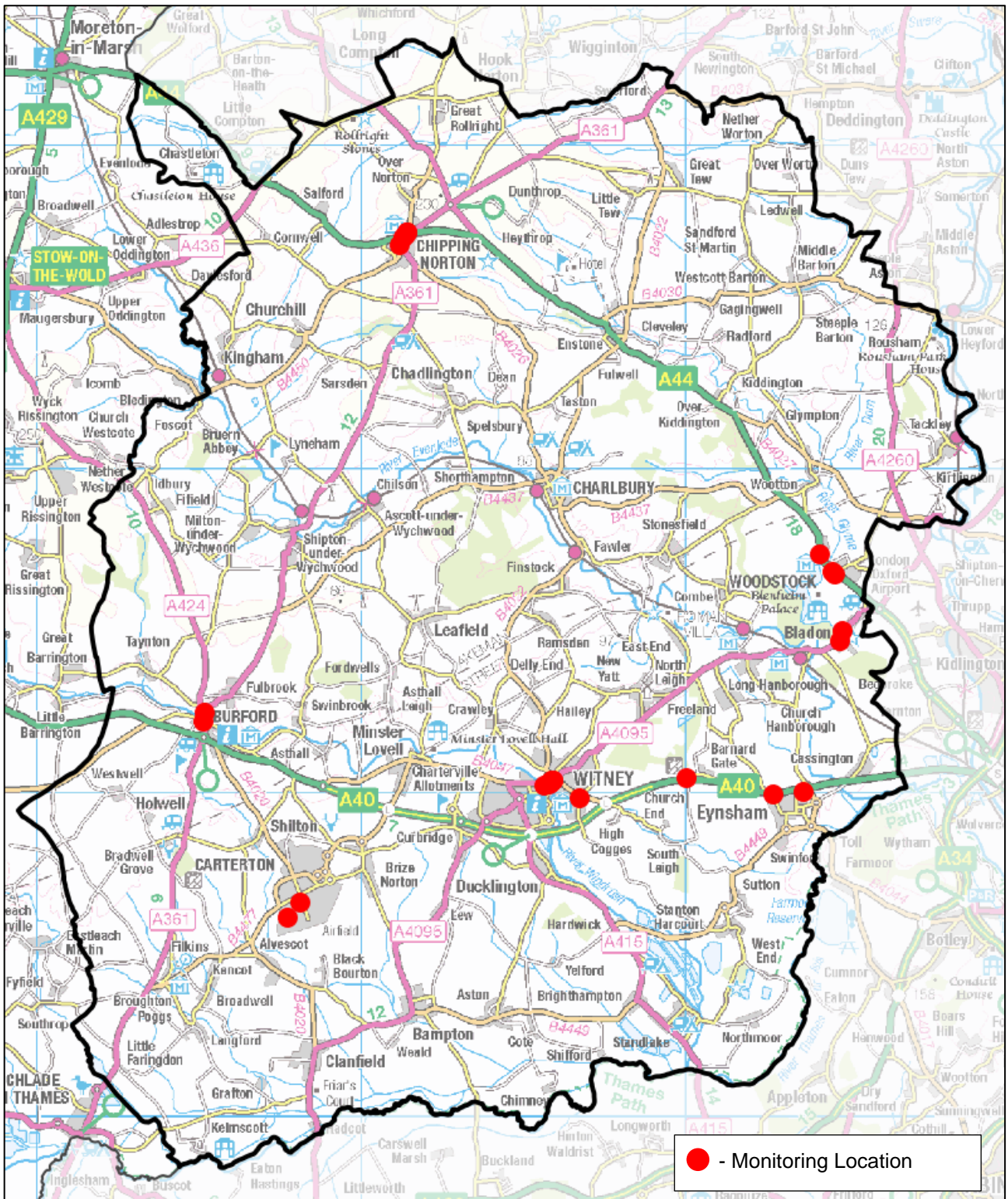


Figure D.1 - Distribution of NO₂ Monitoring Locations Across the District

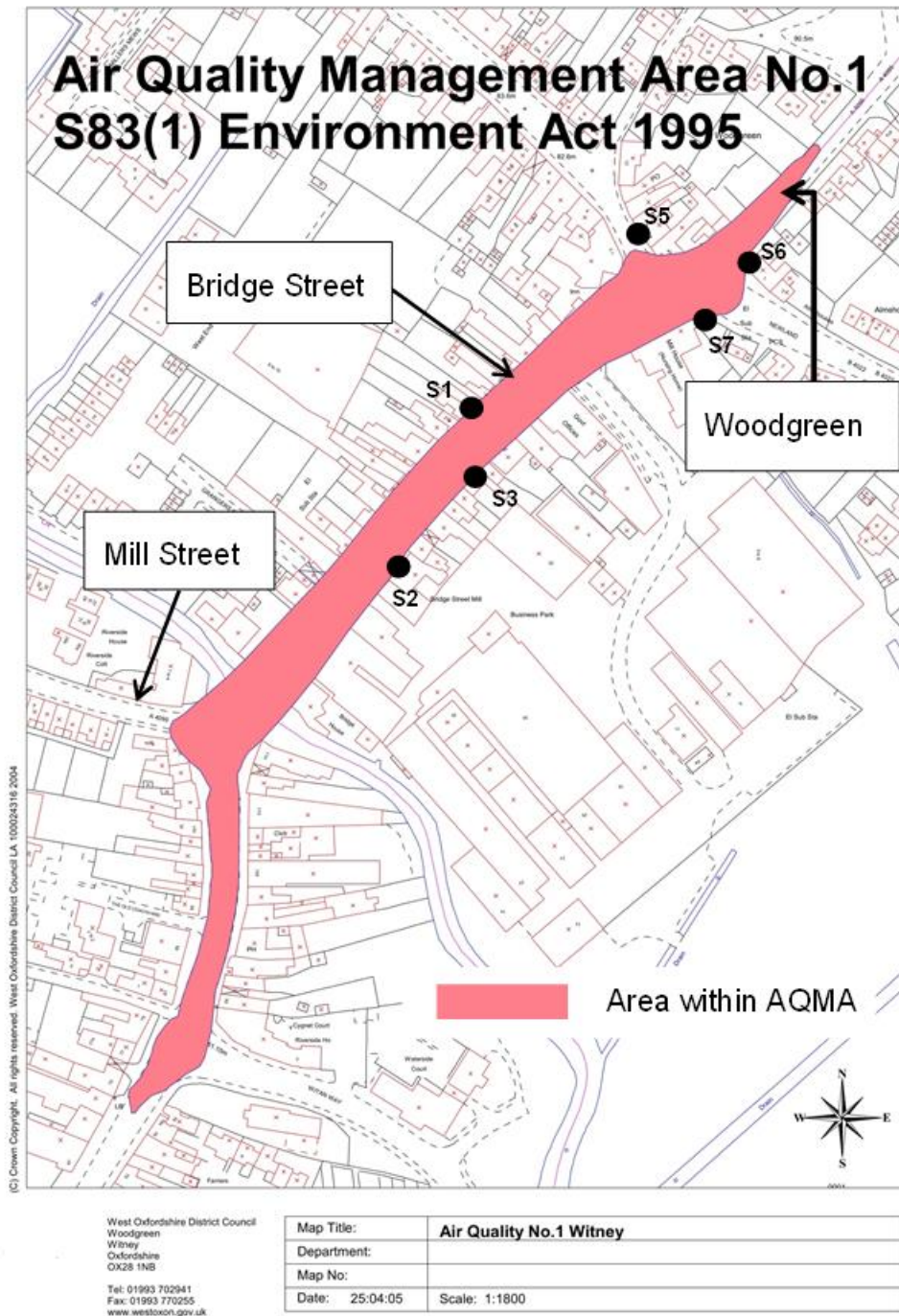
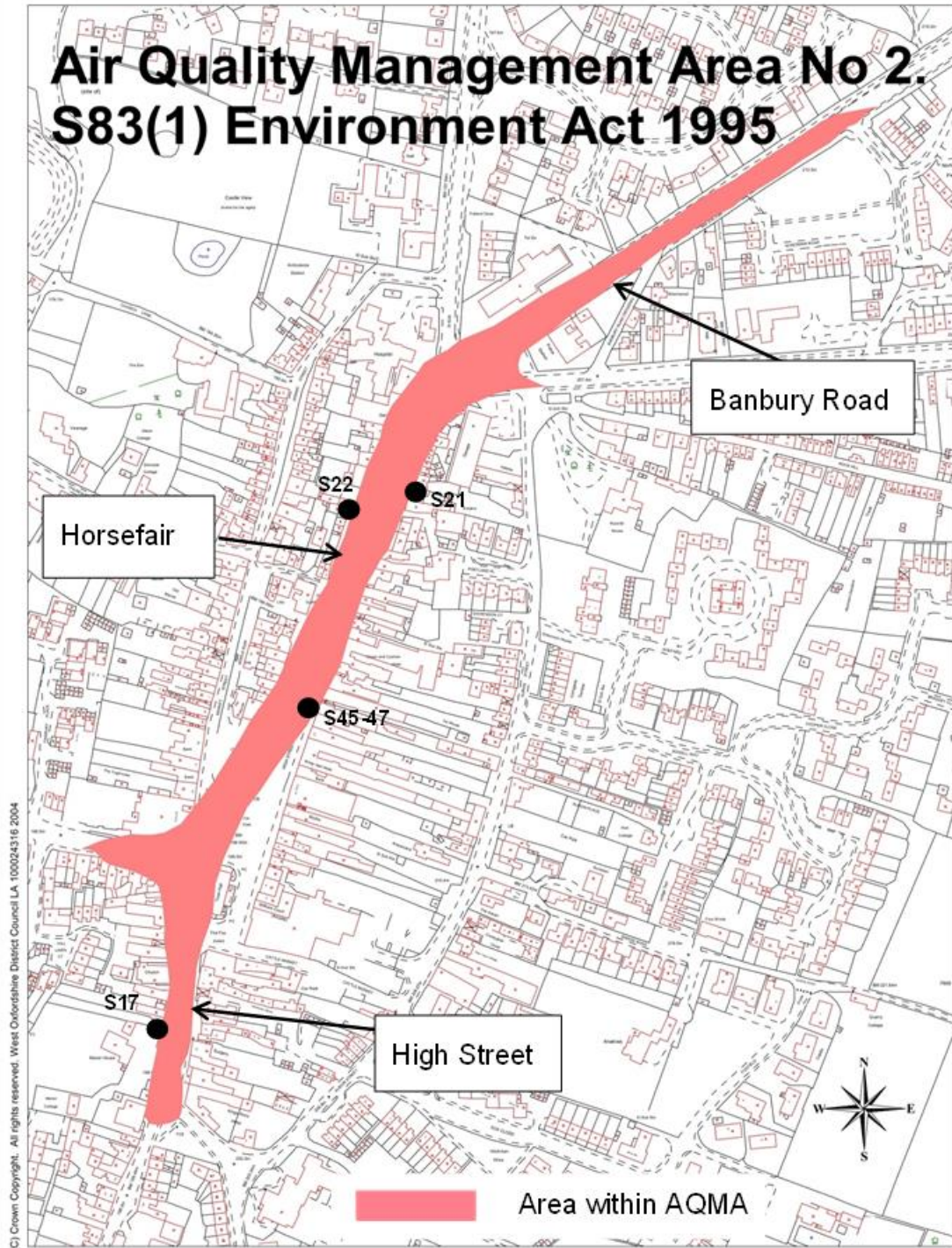


Figure D.2 – Map of Witney AQMA with Diffusion Tube Monitoring Locations



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 Woodgreen
 Witney
 Oxfordshire
 OX28 1NB
 Tel: 01993 702941
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 www.westoxon.gov.uk

Map Title:	Air Quality Management Area No 2. Chipping Norton
Department:	
Map No:	
Date: 25:04:05	Scale: 1:3000

Figure D.3 – Map of Chipping Norton AQMA with Diffusion Tube Monitoring Locations

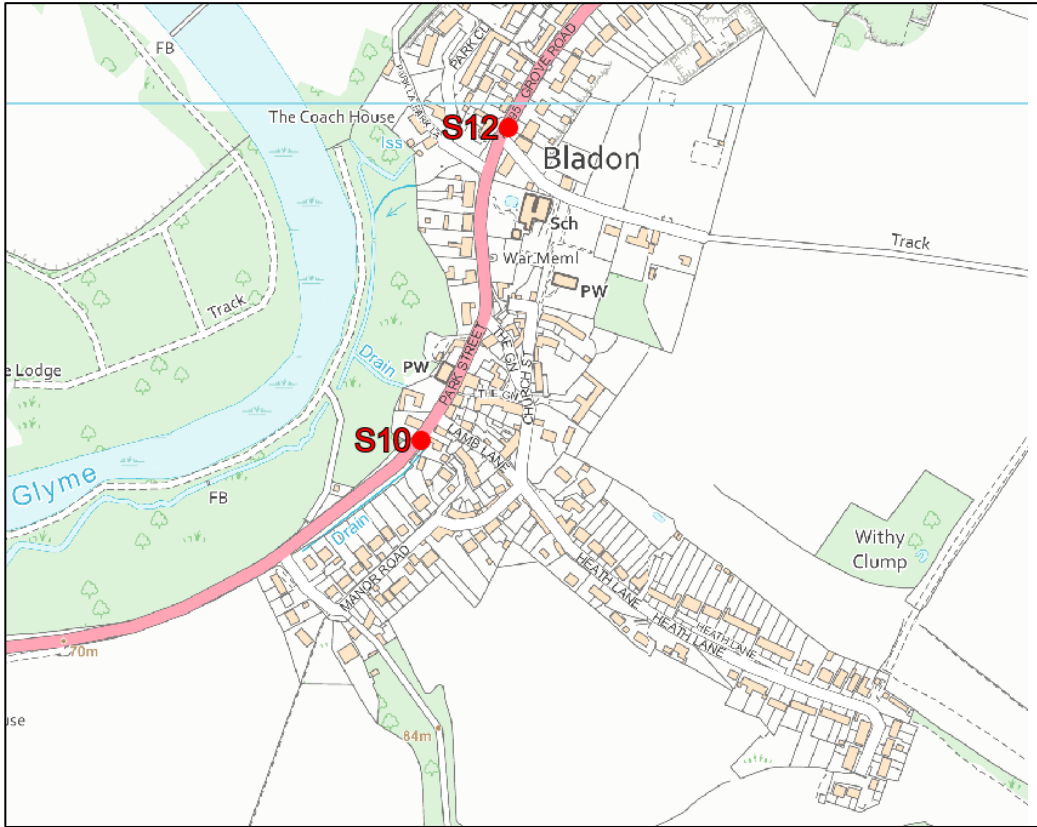


Figure D.4 - Bladon Monitoring Locations



Figure D.6 - Carterton Monitoring Locations

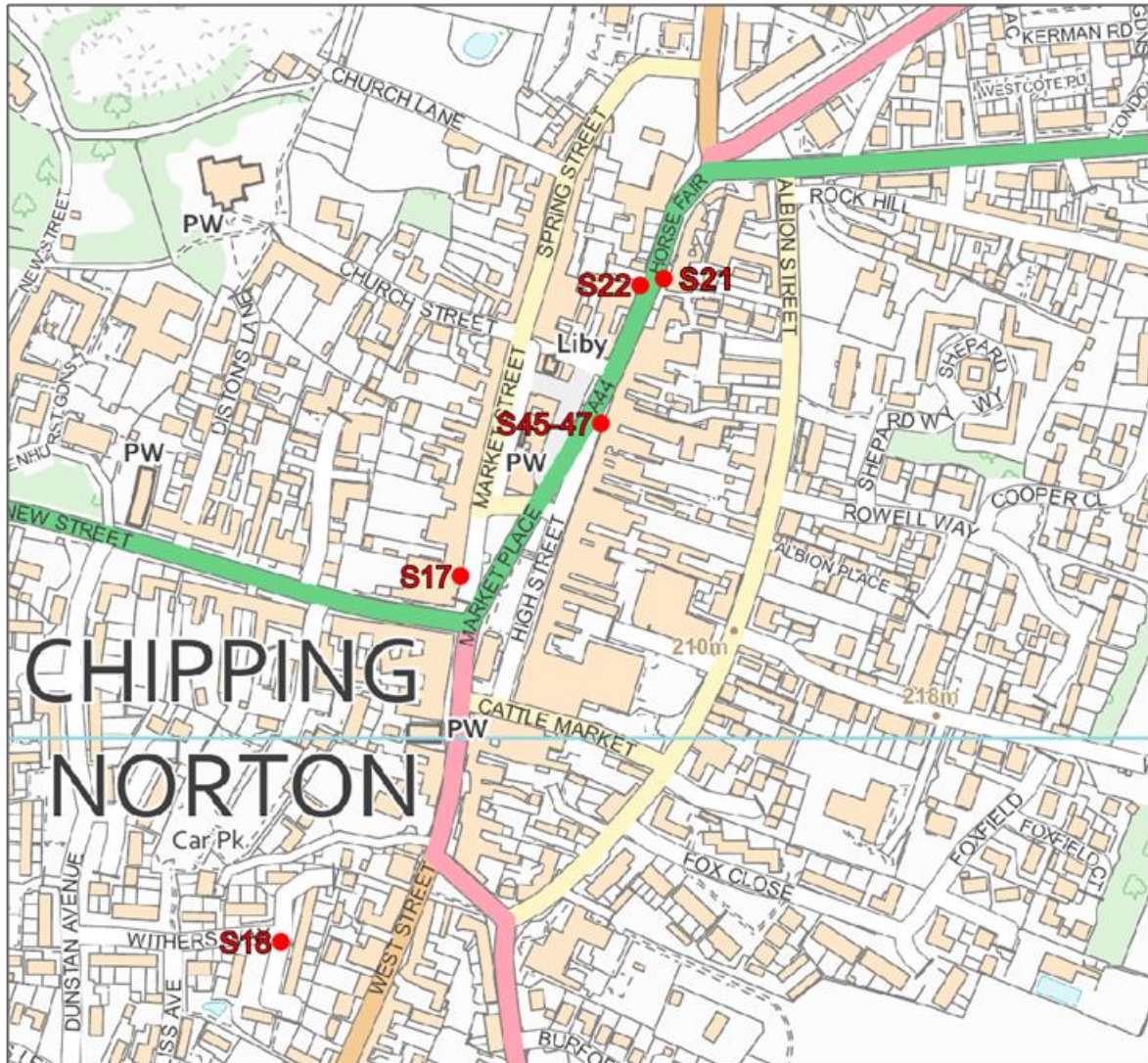


Figure D.7 - Chipping Norton Monitoring Locations

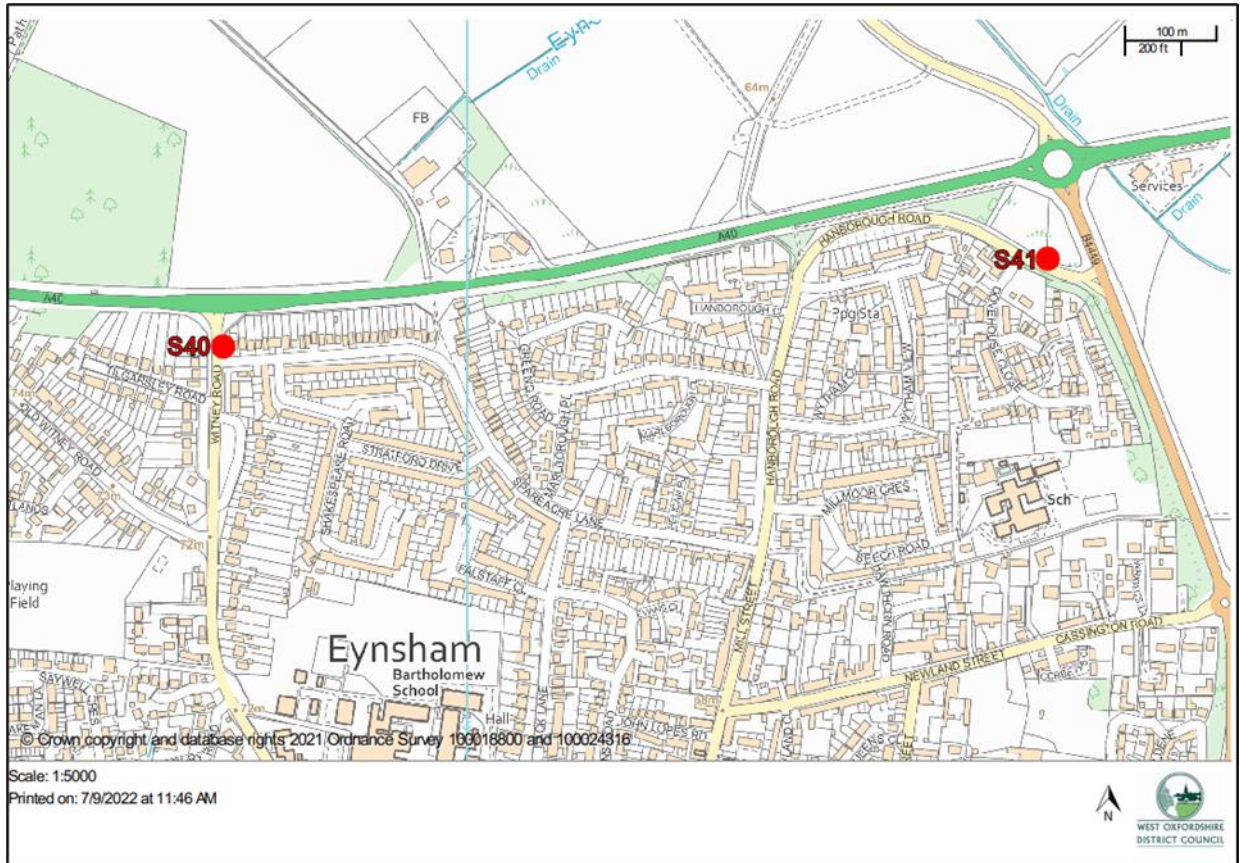


Figure D.8 - Eynsham Monitoring Locations

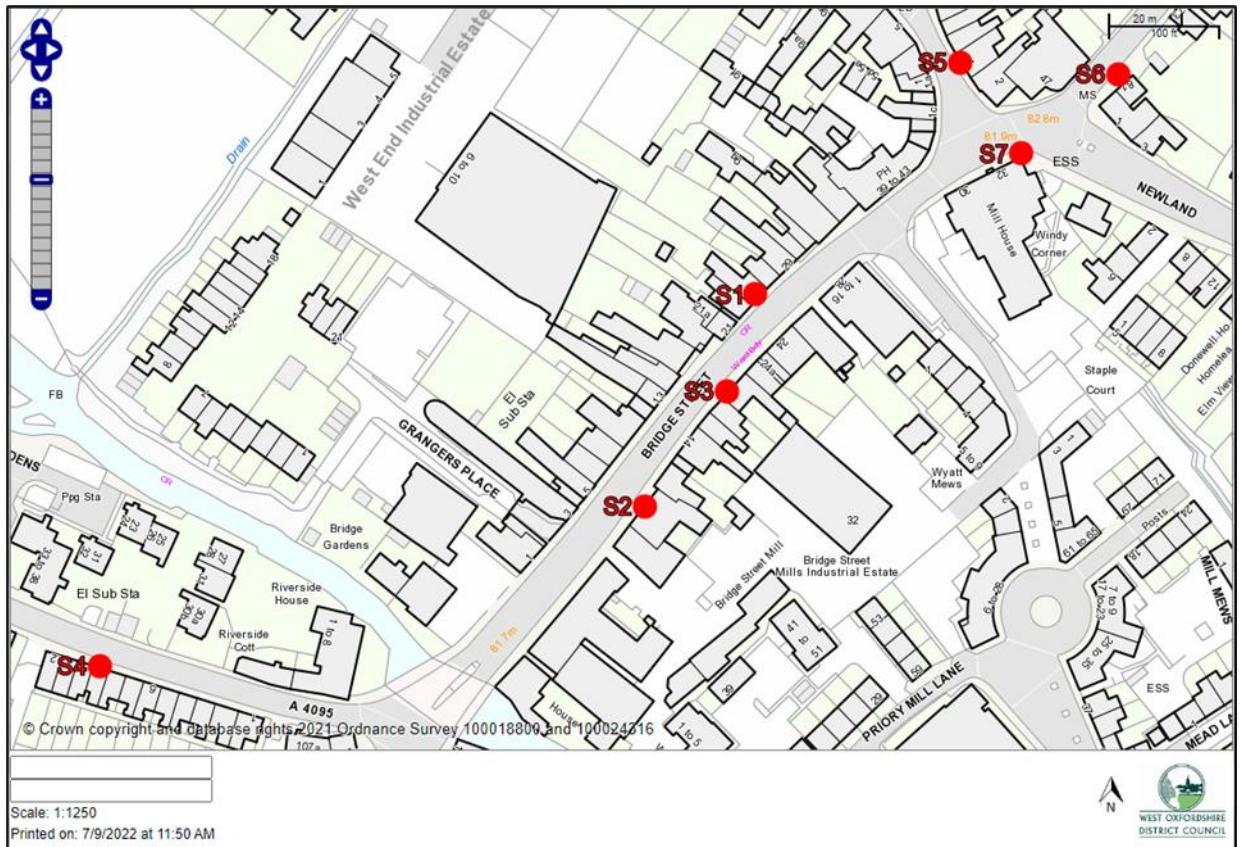


Figure D.9 - Witney Monitoring Locations (including AQMA)

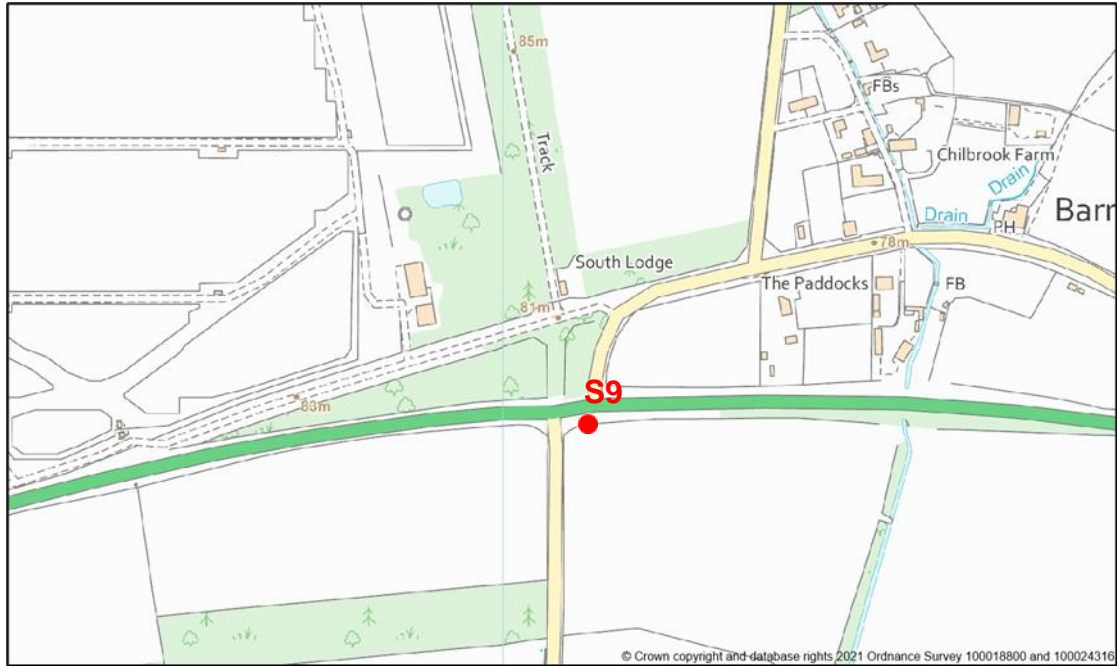


Figure D.11 - A40 East of Witney Monitoring Location

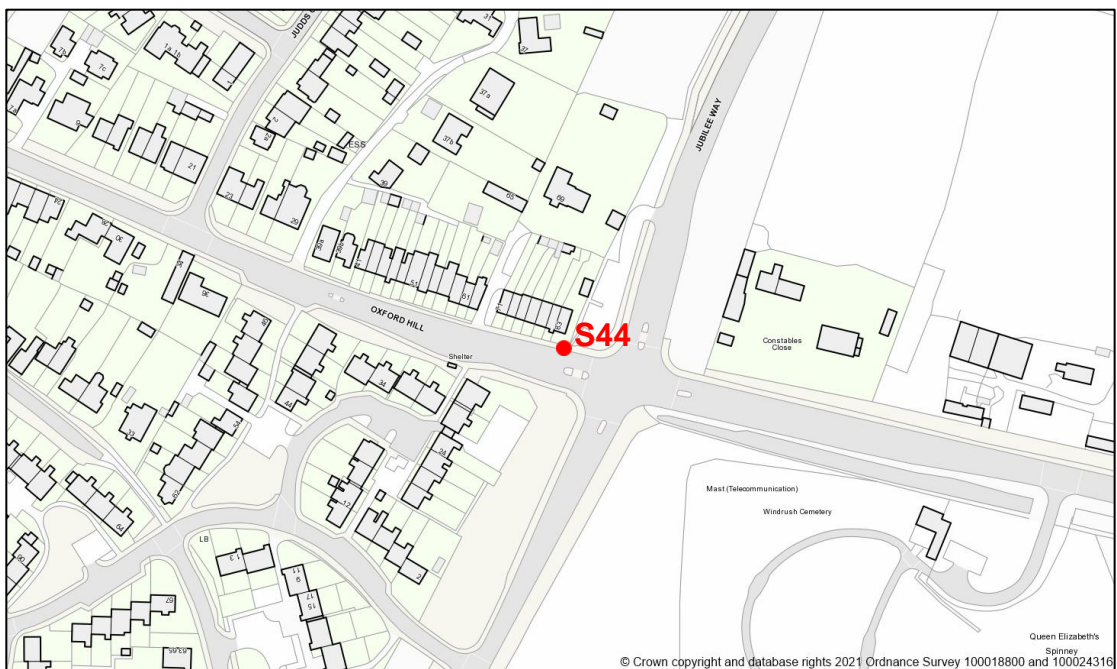


Figure D.10 - East of Witney Monitoring Location (near Proposed EWSDA)



Figure D.12 - Woodstock Monitoring Locations

Appendix E: Summary of Air Quality Objectives in England

Table E.1 – Air Quality Objectives in England⁹

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

⁹ 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
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
OCC	Oxfordshire County Council
PM ₁₀	Airborne particulate matter with an aerodynamic diameter of 10µm 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
WODC	West Oxfordshire District Council

References

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