COTSWOLD
District Council

2025 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 2025

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Local Responsibilities and Commitment

This ASR was prepared by the Environmental and Regulatory Services Department of Cotswold District Council with the support and agreement of the following officers and departments:

- Phil Measures (Environmental Protection)
- Karen Toomer (Environmental Protection)

In addition, support was also provided by the following officers at Gloucestershire County Council:

- Scott Macaulay-Lowe (Public Health and Communities)
- Sophia Beglinger (Climate Change & Air Quality Officer)

This ASR has been signed off by the Director of Public Health for Gloucestershire County Council.

If you have any comments on this ASR please send them to the Air Quality Officer using the contact details provided above.

Executive Summary: Air Quality in Our Area

Air Quality in Cotswold 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.

Air pollution particularly affects the most vulnerable in society, children, the elderly, and those with existing heart and lung conditions. Low-income communities are also disproportionately impacted by poor air quality, exacerbating health and social inequalities.

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 $PM_{2.5}$)	Particulate matter is everything in the air that is not a gas. 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. PM_{10} refers to particles under 10 micrometres. Fine particulate matter or $PM_{2.5}$ are particles under 2.5 micrometres.

During 2024, nitrogen dioxide (NO_2) continued to be the main pollutant of concern in the Cotswold District. Cotswold District Council (CDC) has continued monitoring NO_2 across the district using diffusion tubes. The monitoring sites are representative of relevant exposure and relate to emissions from traffic.

The monitoring reported within this 2025 Annual Status Report for CDC took place during the whole of 2024. In 2024, our diffusion tube network monitored NO_2 levels at 16 locations across the district and, as with recent years, the monitoring results continue the trend of decreasing NO_2 concentrations. Consequently, the district's air quality remains generally very good, with 2024 proving to be the second year in a row (post pandemic) where NO_2 concentrations were below the UK objective across the district.

The district has one remaining Air Quality Management Area (AQMA) focused on the Air Balloon Roundabout near Birdlip, declared due to NO_2 concentrations above the national objective of 40µg/m^3.

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 main area within our district where air quality improvement is priority is the AQMA at the Air Balloon Roundabout. The construction phase of the National Highways project the 'A417 Missing Link' began in 2023. The project will see the existing road between Brockworth and Cowley, including the Air Balloon roundabout, replaced with a dual carriage way and interchanges. The objective is to improve traffic flow and reduce congestion. Work has continued on this project throughout 2024, with the expected completion date of 2027. CDC continue to monitor NO_2 at this location. Please see Section 2 for more details.

Other actions include:

- Improvements to bus services and fleet
- Improvements to cycle and footpaths
- Commitment to reducing vehicle use in local and neighbourhood plans

Across the district many of our town councils are taking action to improve air quality, e.g. reducing speed limits, investigating the possibility of mobility/transport hubs, and EV charging. Various county, district and town/parish plans and strategies are also in place which include policies and objectives to reduce road traffic and improve air quality. This is detailed later in the report (Section 2).

Finally, planning applications for large developments are reviewed and assessed with regard to their potential impact on local air quality. There is also an expectation that

developers design such developments to encourage alternative modes of travel to petrol or diesel vehicles.

Air Quality Partners

The source of air pollution across the district is principally road vehicles. The majority of the roads in our district are under the control of Gloucestershire County Council and, as the district's highway authority, the county council is CDC's main air quality partner. The two councils regularly work together within a planning context, regarding highways and new developments, either directly or via consultations through the planning process.

The council will also continue to support National Highways with the Missing Link project, as this is likely to deliver significant air quality benefits to the region.

CDC is also beginning to engage with town and parish councils to support them with projects which may benefit air quality, regardless of their current status.

District Air Quality Group

Cotswold Air Quality Officer continues to meet with other officers in the county to share experiences and ideas relating to improving air quality. The aim continues to be the development of a more co-ordinated approach to air quality across Gloucestershire, with the support of GCC's air quality officer and GCC Public Health. GCC continue to update and maintain the air quality webpage as part of the InformGloucestershire site.

Conclusions and Priorities

To conclude, air quality continues to show a steady improvement across the district, with 11 of the 16 locations monitored showing concentrations of NO_2 below half of the national objective. This is positive news for those who live and work in the Cotswold district, particularly those with health conditions which make them more sensitive to air pollution.

Despite the continuing downward trend, even in areas where concentrations meet with the objectives there are multiple benefits of continuing to improve air quality. Such benefits include improved population health, enhancing our natural environment and tackling climate change. Consequently, the county council, district council, town/parish councils, residents and businesses continue to have a part to play in reducing emissions and improving the quality of the air we breathe. It is important that GCC Highways are kept informed of

proposed developments and that developers are aware of the need for appropriate mitigation in respect of associated air pollution.

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. CDC will continue to work with GCC to explore and develop highway improvements, and ensure future 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 in accordance with Defra guidance LAQM TG(22), as well as continuing to seek funding for particulate monitors or sensors.

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 and strategies at county (https://haveyoursaygloucestershire.uk.engagementhq.com/) and district level (https://your.cotswold.gov.uk/en-GB/);
- Joining local campaign 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
- Inform Gloucestershire

Any queries about Air Quality should be directed to the Environmental Protection team within CDC. This team can be contacted by email on: ers@cotswold.gov.uk

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Tables

1 Local Air Quality Management

This report provides an overview of air quality in Cotswold District during 2024. It fulfils the requirements of Local Air Quality Management (LAQM) as set out in Part IV of the Environment Act (1995), as amended by the Environment Act (2021), and the relevant Policy and Technical Guidance documents.

The LAQM process places an obligation on all local authorities to regularly review and assess air quality in their areas, and to determine whether or not the air quality objectives are likely to be achieved. Where an exceedance is considered likely the local authority must declare an Air Quality Management Area (AQMA) and prepare an Air Quality Action Plan (AQAP) setting out the measures it intends to put in place in 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 Cotswold District Council (CDC) 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 CDC can be found in Table 2.1. The table presents a description of the only AQMA that is currently designated within the Cotswold district. Appendix D provides a map of the AQMA (Figure D.1) and also the air quality monitoring locations in relation to the AQMA. The air quality objectives pertinent to the current AQMA designation is as follows:

- NO_2 annual mean

The Birdlip AQMA was declared in 2008, due to exceedance in NO_2 concentrations. The air quality issue at this location is principally related to two factors:

- the steep incline of the A417 as it approaches the Air Balloon Roundabout; and,
- congestion caused by traffic waiting to enter the roundabout itself.

The roundabout causes a backup of traffic along the A417, principally at peak hours, with the incline resulting in slow moving traffic, particularly HGVs, labouring along this section of the road.

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
Birdlip (Air Balloon Roundabout)	08.04.2008	NO_2 Annual Mean	An area encompassing properties adjacent to the roundabout on a strategic trunk route	YES	55 µg/m^3	34 µg/m^3	2 years	Air Quality Action Plan 2011 - Birdlip – Air Balloon Roundabout (review on hold pending completion of major roadworks)	Cotswold District Council Air Quality Pages: https://www.cotswold.gov.uk/environment/noise-pests-pollution-and-air-quality/air-quality/

☒ **Cotswold District Council confirm the information on UK-Air regarding their AQMA(s) is up to date.**

☒ **Cotswold District Council confirm that all current AQAPs have been submitted to Defra.**

2.2 Progress and Impact of Measures to address Air Quality in Cotswold 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
$PM_{2.5}$ is not monitored in the Cotswolds. However, it is noted that the PHF D01 indicator shows that the mortality rate from PM is higher than the southwest average. The council have stated their intention to try and acquire funding for PM monitors. This is encouraged. It would be useful to get a better understanding of PM levels (both PM_{10} and $PM_{2.5}$) in the district.	CDC have installed an indicative particulate matter sensor in the town of Stow on the Wold. This monitor has not been co-located and consequently the data will only be used to observed trends in particulate matter over the course of twelve months.
The council included a detailed QA/QC section, however it was missing some bits of information: a. The council should confirm whether it was Socotec Didcot or Socotec Glasgow that was used. b. The methodology the laboratory used to analyses the tubes is not stated. i.e 20% TEA in water. c. It would be preferable to make a statement in text relating to annualization, even if it was not necessary, for clarity.	All information included in Appendix C of this report.

CDC has taken forward a number of direct measures during the current reporting year of 2024 in pursuit of improving local air quality. Details of all measures completed, in progress or planned, are set out in Table 2.2. Six measures are included within Table 2.2, with the type of measure and the progress CDC and their air quality partners have made during the reporting year of 2024 presented. Where there have been, or continue to be, barriers restricting the implementation of the measure, these are also presented within Table 2.2.

From the measures in Table 2.2, Measure 1 is the most likely measure which will achieve compliance within the Birdlip AQMA. The Government's Road Investment Strategy: 2015-2020 initially identified this road section, known as the "Missing Link" as requiring measures to improve safety, ease congestion and reduce pollution at the location of the Air Balloon Roundabout.

The project began in earnest in 2023, with archaeology and ecology studies being carried out during the spring and summer months, and the construction phase commencing in October 2023. The project has continued throughout 2024, focusing on new road crossings, roundabouts, and the new section of dual carriageway between Brockworth and the Air Balloon Roundabout. The works have required road closures around the Air Balloon Roundabout which, in turn, have resulted in a decrease in NO_2 concentrations in the AQMA. The roundabout continued to be in operation during 2024. More information on the project can be found at https://a417missinglink.com/ which also has details of the Customer Hub where project team members are available to discuss the project.

As detailed in the 2023 report, the new road will replace the Air Balloon roundabout and existing single carriageway on the A417 between Brockworth and Cowley, providing a continuous dual carriage way link between the M4 and M5.

The air quality assessment carried out on behalf of National Highways concluded the following:

- The new section of road will alleviate congestion and air pollution currently experienced within the AQMA, and will also mitigate the effects of future increases in traffic volume, by moving the traffic away from receptors and improving traffic flow;
- Concentrations at the existing receptors will be reduced by 13µg/m^3 with the new road in place, compared to if the current road layout were to remain unchanged;
- Nearby designated habitats would benefit from a 47.8% decrease in nitrogen deposition; and,
- There will be no exceedances of air quality objectives along the proposed route.

A link is available to this report, here: Link to A417 Air Quality Assessment Report

As mentioned above, the construction works have necessitated the need to put in place overnight road closures on the approaches to the AQMA. It is likely these road closures have contributed to the annual average NO_2 concentrations falling to below the UK objective at this location for the second consecutive year. However, although this is good

news, during this construction phase NO_2 concentrations are unlikely to be representative of ‘normal operating conditions’ and consequently will not contribute to the revocation of this AQMA.

CDC will continue to monitor NO_2 at this location throughout the construction phase, and into the full operational phase, to ensure construction does not adversely impact air quality and to confirm the completed project delivers the expected reductions in air pollution.

CDC anticipates that the measures stated above and in Table 2.2 will achieve compliance in Birdlip AQMA.

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	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	A417 Trunk Road Improvements at Air Balloon Roundabout	Transport Planning and Infrastructure	Other – trunk road improvement	2014	2027	National Highways	The second Road Investment Strategy (RIS2)	Not funded	£250-500m	Implementation	Reduced vehicle emissions	Annual average NO_2 to be reduced to meet AQ objective	Construction commenced 2023	Stability of global markets and funding
2	Gloucestershire's Local Transport Plan 2020-41	Promoting Travel Alternatives	Other	2021	Ongoing	Gloucestershire County Council	Gloucestershire County Council	Funded	none	Implementation	Reduced vehicle emissions	Annual average NO_2 to be reduced to meet AQ objective	Implementation on-going	Changing attitudes to active and public transport. Funding to improve active travel infrastructure and public transport services
3	Gloucestershire's Bus Service Improvement Plan (BSIP) 2024	Transport Planning and Infrastructure	Bus route improvements & Public transport improvements-interchanges stations and services	2024	2026	Gloucestershire County Council Private & Community Bus Operators	Gloucestershire County Council / BSIP	Funded	£1m - £10m	Implementation	Reduced vehicle emissions	Annual average NO2 to be reduced to meet AQ objective. Increase in public transport services and passenger numbers	Implementation on-going	Changing attitudes to public transport. Funding to improve active travel infrastructure and public transport services
4	District Planning Policy - Sustainable Transport (POLICY INF3)	Promoting Travel Alternatives	Other	2018	Ongoing	Cotswold District Council	Cotswold District Council	Funded	none	Implementation	Reduced vehicle emissions	Annual average NO_2 to be reduced to meet AQ objective	Implementation on-going	Changing attitudes to active and public transport. Funding to improve active travel infrastructure and public transport services
5	Community Municipal Investment scheme - EV Charging points	Promoting Low Emission Transport	Procuring alternative Refuelling infrastructure to promote Low Emission Vehicles, EV recharging, Gas fuel recharging	2021	2023	Cotswold District Council	Investment fund	Funded		Planning	Reduced vehicle emissions	Before and during diffusion tube measurements to show reduction in NO_2 concentration	Commencement March 2023	None
6	The Robin	Transport Planning and Infrastructure	Bus route improvements	2022	Ongoing	Gloucestershire County Council, Community Connexions & Pulhams & Sons	Gloucestershire County Council	Funded	Not known	Pilot Trial ongoing	Reduce number of private cars on the road, and consequently emissions	Uptake of the service	Pilot Trial ongoing, with service extended to South Cotswolds and extended in all areas to 2025	Ongoing funding and uptake of the service

District Wide Actions

Cotswold District Local Plan Update

CDC continues to update its adopted Local Plan to make it "Green to the Core". The plan includes Policy INF3, which provides details on how the council expects developers to include sustainable transport in their plans, to ensure they are fully integrated into the development and are provided in a timely fashion prior to occupation. In 2024, there was a public consultation on the Local Plan and the Cirencester Town Master Plan, as well as a community meeting in Moreton-in-Marsh to discuss the future of the town. The consultation on the local plan triggered over 200 responses, which have been collated and will be used to inform the review.

The draft update of the 2011 – 2031 plan is expected to go to public consultation again in the autumn of 2025, with full adoption expected in the winter of 2027.

Public Transport

2024 saw the publication of Gloucestershire's Bus Service Improvement Plan (BSIP) 2024. The plan outlines the county's ambitious plans to improve the service throughout the county, through the development of transport hubs and corridors, linking the main settlements both within the county, as well as links to key out-of-county towns and cities. The plan also includes: upgrading of bus stops, including Real Time Information (RTI) at key stops; upgrading of the fleet; a review of fares and ticketing; and, improving reliability. The plan also includes the use of demand responsive transport serving more isolated, rural communities.

Improvements to services in the Cotswold district in 2024 included:

- Increase in the frequency of the 801 service from Cheltenham to Chipping Norton, which serves some of the main Cotswold towns on the A429.
- Introduction of electric buses to the 801 service.
- Extension of the Robin on-demand service – see below.

Robin Bus Service

The Robin bus service is on on-demand service introduced by Gloucestershire County Council (GCC) in 2022. It was initially launched in the North Cotswolds and around Lydney in the Forest of Dean District, and after significant raises in passenger numbers in 2023, the service was expanded to the South Cotswolds and Tewksbury area in 2024.

Between 2023 and 2024 the number of passengers using the North Cotswolds rose by nearly 50%, demonstrating that there is place for an on-demand bus service in more rural communities where main stream services are few and far between.

The service will continue as a trail until May 2026, after which it is expected to continue, however it is unclear in what capacity.

Active Travel

GCC have produced an interactive cycling map which shows all cycle routes within the county, as well as those included in LTP. The county also has dedicated cycling webpages, and has set up a Cycling Advisory Group to assist in delivering the councils cycling projects and schemes.

GCC support and promote the Love to Ride platform, which supports and encourages people to use cycling as one of their main modes of transport. This included promotion of the Cycle September challenge and Winter Wheelers Challenge, both launched in 2024.

The County Council also promotes ModeShift Stars scheme run by the organisation Modeshift. The scheme promotes active travel in schools, providing help and support to schools wanting to increase the number of pupils who walk, wheel or cycle to and from school.

CDC secured 51 bike stands in early 2024 as part of the Take a Stand scheme run by Life Cycle. The stands were installed throughout the Cotswold Water Park area, including Lechlade, Fairford and South Cerney.

Private Vehicle Use

GCC have teamed up with Liftshare to promote car sharing for commuting to school and work. There are currently 2484 members of the scheme in the county.

The county and district councils continue to roll out EV charging points across the district. The current availability can be found here.

Actions Across the District

Town and parish councils across the Cotswold district are also active in taking measures to reduce air pollution. Actions carried out in 2023 are summarised below.

Cirencester

As mentioned above, CDC launched a consultation regarding the Cirencester Town Centre Masterplan during the early part of 2024. The results of the consultation are yet to be published. Aspects of the proposed masterplan which may improve air quality include:

- an improved network of walking and cycling routes that better connects the town to the surrounding area;
- the provision of a new mobility hub; and,
- a review of car parking in the town.

A second public consultation is planned for the summer of 2025, with the document expected to be adopted in the autumn.

Cirencester benefits from being the only town in the Cotswold district to have a Local Cycling and Walking Infrastructure Plan (LCWIP). The plan proposes cycling and pedestrian infrastructure improvements to encourage active travel within the town. Five priority cycle routes have been identified for improvements. Four of the routes link the town centre to: the new Steadings development (extending to Kemble train station); Deer Park School, Cirencester College, and the Royal Agricultural University; Kingshill School; and, Stratton. A final priority route links the A429 at the junction with Chesterton Lane with Kingsmeadow to the east. Similarly, five priority walking routes have also been identified. Four of the routes connect the town centre with: The Beeches residential area and Kingshill School to the east; the new Steadings development; Deer Park School, Cirencester College, and the Royal Agricultural University; and, Watermoor Road to the south east. A fifth route connects London Road and Godsditch Street, following the edge of the abbey grounds. Where applicable, the LCWIP identifies infrastructure improvements needed to deliver these routes.

During 2024, work began on the design aspect of the cycle corridor between the Steadings Development and the town centre. However, funding to take the project beyond the design stage has yet to be sourced.

Cirencester Town's draft Local Neighbourhood Plan, underwent public consultation between 1st February 2024 and 17th March 2024, with the feedback used to revise the draft plan. The revised draft plan continues to support the LCWIP as well as Connecting Places Strategy CPS4 of the GCC's Local Transport Plan. This includes support for a mobility hub proposed in the Cirencester Town Centre Master Plan and demand

responsive travel. The plan also specifically targets air quality in Policy WBC 1, where the town council commits to the following:

- Developments that encourage idling traffic, such as drive-through food outlets, within the Plan area will not be supported.
- Not supporting developments that encourage idling traffic, such as drive-through food outlets.
- Developers will be required to monitor air quality, including particulates, to ensure that an Air Quality Neutral standard is achieved throughout site development for building and construction traffic emissions, and if necessary, to instigate mitigation.

CDC commissioned a Cirencester – Kemble - Tetbury Public Transport Options Study in 2023, which concluded a Very Light Railway would be poor value for money, compared with improving bus services from Cirencester to Kemble and Tetbury. This was supported by GCC, whose preferred choice was an hourly bus service from Cirencester to Tetbury via Kemble. No further progress has been made with regard to this project during 2024, however there continues to be active support for the scheme through the Cirencester Community Development Trust.

As part of the Town Council's Climate and Environmental Action Plan, Cirencester Town Council have purchased two electric vans and installed electric charging points at their Abbey Grounds Depot. They also plan to introduce a 'Staff Cycle to Work' scheme and improve cycling infrastructure within the town.

Bourton on the Water

At the end of 2023, the private coach parking facility in Bourton on the Water was closed. Following the closure, the parish council and local residents have expressed concerns regarding coaches entering the village, causing significant disruption to traffic flow by parking in unsuitable locations. An experimental Traffic Regulation Order (TRO) is currently planned by the highways authority, which will allow a 10 minute time limited coach pick up and drop off in Meadow Way with coach parking on Bourton Industrial Estate. A longer term solution for coach parking at the Cotswold School is currently being investigated by the school and County Councillor.

The parish council are also pursuing a number of other TROs to facilitate improved traffic flow through the village which, if successful, may also have a positive impact on air quality.

Other actions in 2024 include:

- The successful securing of funds to improve a number of footpaths in the village during 2024
- The installation of new EV charging points in the Rissington Road car park

In addition, future plans include the upgrading of two of the bus stops in the village to bus interchange hubs, and the commissioning of a Vehicle Management Strategy.

Fairford

Fairford Town Council accepted the Fairford Neighbourhood Plan in May 2023. The plan supports sustainable travel and the provision of electric vehicle charging, particularly with regards to residential developments. The towns Transport Plan also supports sustainable travel, as well as public transport improvements and increased accessibility.

Two initiatives from the Transport Plan have been brought forward in 2024: installation of cycle racks within the town; and, improvements to the footpath parallel to Leafield Road (between the town and Fairford C Of E Primary School) to encourage walking to school, thus reducing car journeys.

Progress continues on the Fairford to Lechlade multi-use path. The project is supported by Fairford and Lechlade town councils, Kempsford Parish Council and The Lakes by Yoo.

The idea scenario is a circular route, with the northern section utilising a disused railway, and the southern route running through the Cotswold/Lechlade section of the Cotswold Water Park, utilising a section of the Thames & Severn Way as well as other existing footpaths, lanes and roads. Work on the northern route has yet to commence due to ongoing discussions with landowners. On the southern section, GCC have carried out repairs and re-surfacing to approximately 600m of the Thames & Severn Way between Lechlade and the water park, with the section from the water park to Fairford expected to be completed in 2025. Part of the central section, known as Longdoles Lane, has been subject to a ground investigation by SUSTRANS, to determine what work is required to upgrade this section and the costs which are likely to be incurred. The full outcome of this investigation is expected in 2025.

Moreton in Marsh

Moreton in Marsh Town Council are currently preparing their Neighbourhood Development Plan 2031. The plan will address the congestion currently being experienced in the town and will include policies to improve active travel infrastructure and public transport, as well

as improving traffic flow through the town. A draft was completed in early 2025, and is currently being screened by CDC. The plan will then be subject to a consultation.

The Transport Hub progressed during 2024, with the completion of the initial design work followed by a public consultation carried out by the town council. Late 2024 saw the engagement of a demolition project manager to oversee the demolition of an existing building on the proposed transport hub site. 2025 is expected to see submission of the outline planning application for the hub, commencement of the detailed design and bidding for CIL funding. The project is expected to provide cycle storage and connections to local bus services. More information on the project can be found at https://moretoninmarshtowncouncil.gov.uk/council-projects/transport-hub

Moreton-in-Marsh train station makes the town an attractive location for residential housing. However, the main route through the town is frequently congested, which has resulted in local objection to developments of this kind. To facilitate the expansion of the town, consideration is now being given to a relief road, which will bypass the town, easing congestion on the A429 and the A44. The project is still very much in its infancy, however it is expected the road will be routed to the east of the town, avoiding the Cotswold National Landscape to the west.

Stow on the Wold

The Stow-on-the-Wold and the Swells Neighbourhood Plan was approved by CDC in September 2024. The plan supports:

- active travel in policy SSNP14: Walking & Cycling in the Town and Parish;
- Provision of electric vehicle charging in car parks;
- Public transport (included as an overall objective); and,
- Green infrastructure.

In Maugersbury Road Car Park, 4 electric vehicle charging points have been installed by CDC.

Tetbury

Tetbury has an active campaign group known as Greening Tetbury, who work closely with the town council, as part of their Climate Strategy Group, to improve the local environment, including air quality. The group is currently engaged in projects to improving active travel infrastructure and public transport and encouraging residents to sponsor a

tree as part of the Trees for Streets project. The Tetbury Neighbourhood Development Plan also supports active travel within the town.

During 2024, the town council made significant progress with their 'Tetbury 20's Plenty' campaign. A public consultation earlier in the year showed the majority of the town supported the idea, with 75% supporting the speed limit. In addition, using information from the survey, the areas of the town where speed was of the most concern, were identified. A speed working group has been formed, bringing together representatives from key groups, including Tetbury 20's Plenty, the town council and county council. The group has produced a reduced speed concept map for the town, which has now been submitted to the county council. Although the speed restriction is predominantly related to safety, there may be a positive impact on air quality also.

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 Strategy[1] , 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.

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 $\mu g/m^3$
- 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.

[1] Defra. Air Quality Strategy – Framework for Local Authority Delivery, August 2023

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

2.3.1 Particulate Matter in the Cotswold District

CDC currently does not measure particulate matter using Defra approved methods. However, CDC acquired a particulate matter sensor in December 2024, which has been installed on the A429 in Stow-on-the-Wold. The sensor, which measures PM_1, $PM_{2.5}$ and PM_{10}, was supplied free of charge for 12 months under a scheme run by Airly. The sensor has not been co-located and the data will not be subject to verification or validation. Consequently, the data can only be used to indicate the status of these pollutants and identify any trends in concentration fluctuation. Live data from the sensor can be viewed at https://airly.org/map/en/.

The main sources of particulate matter in the district are likely to be vehicles and domestic combustion. No other significant source of $PM_{2.5}$ have been identified within the district in 2024. Measures to reduce vehicle emission will be aligned with many of the measures in Table 2.2 above, which focus on reducing private vehicle use. CDC is also taking the following measures to address $PM_{2.5}$:

- Highlighting the issues of $PM_{2.5}$ including the impacts on health and activities which generate the particles. This will be achieved through campaigns such as responsible use of wood burners, fire pits, garden bonfires etc.
- Seek funding to install $PM_{2.5}$ monitors within the AQMAs and other areas of the Cotswold district.

From Defra background mapping, the calculated background concentration of $PM_{2.5}$ in the Cotswold District in 2024 was an average of 6.2µg/m^3, 0.1µg/m^3 lower than that predicted for 2023 (6.3µg/m^3). Background concentrations are modelled from measured data generated by reference analysers and meteorological data from a specific year, and do not include local sources such as roads and chimney stacks.

Trends in $PM_{2.5}$ in the UK, at urban background and roadside sites, between 2009 and 2023 have been published by DEFRA: Link to: Particulate matter (PM10/PM2.5). The report has yet to be updated to reflect 2024 concentrations, however, headlines from the report detailing data up to 2023 include the following:

- 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.
- Concentrations in 2023 showed temporal changes in $PM_{2.5}$, with concentrations peaking during the winter and spring months.
- Peaks were also recorded in April and September during 2023, thought to be due to agricultural operations across UK and continental Europe during the spring, and the significantly warm and dry start to 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 factor towards elevated concentrations in winter months.

Many of the sources of $PM_{2.5}$ are often trans-boundary or out of the control of the local authority and its residents. However, residents can assist in reducing the concentrations of this pollutant in the air we breathe by minimising the combustion of solid fuels as much as possible. This means:

- only using your solid fuel appliance when you really have to keep warm, not solely for aesthetic purposes;
- making sure the wood you burn meets with the 'Ready to Burn' criteria;
- not burning treated or painted wood, household waste or wet wood; and,
- Keeping your stove/fireplace and chimney clean and well maintained.

For more advice on using an open fire or stove, including what to burn and what not to burn, please visit:

- https://www.hetas.co.uk/consumer/advice-hub/
- Open fires and wood-burning stoves - A practical guide

2.3.2 Public Health Outcomes Framework

UK Health Security Agency (UKHSA) and the Office for Health Improvements and Disparities (OHID) publish various information related to the health of the general public through its Public Health Profiles. The importance of the effect of air pollution on public health is reflected by the inclusion of an indicator described as "D01 - Fraction of mortality attributable to particulate air pollution". This indicator provides an insight into the probable number of deaths which occur within the UK as a direct consequence of particulate air pollution. Data can be broken down into region, county, district, unitary authority, NHS region or integrated care board.

For Gloucestershire as a whole, the estimated Fraction of Mortality attributable to particulate air pollution (2023 data) is 4.3% of the county's population which is over a 1% decrease on the previous year (5.4%). In comparison, the average for the southwest region was 4.3% in 2023, which fell from 4.6% in 2022.

For the Cotswold District, the estimated fraction of mortality attributable to particulate air pollution during 2023 was 4.4% (a fall of 0.8% from 2022), compared with the regional average of 4.3%.

Conversely, the percentage of physical active adults[2] (19 and over) across the district has decreased from 74.5% (2022) to 71% (2023).

[2] 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.

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

This section sets out the monitoring undertaken within 2024 by CDC and how it compares with the relevant air quality objectives. In addition, monitoring results are presented for a five-year period between 2020 and 2024 to allow monitoring trends to be identified and discussed.

3.1 Summary of Monitoring Undertaken

3.1.1 Automatic Monitoring Sites

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

3.1.2 Non-Automatic Monitoring Sites

CDC undertook non- automatic (i.e. passive) monitoring of NO_2 at 16 sites during 2024. Table A.1 in Appendix A presents the details of the non-automatic sites.

The monitoring locations included one background location; two monitoring junctions near the new Chesterton development (Cirencester); and, the remaining monitoring roadside concentrations which are near residential housing. We have long-term results at four of these locations, one within our Air Quality Management area (AQMA), two in Lechlade (former AQMA) and one in Cirencester. The remaining 12 locations are around Cirencester, Tetbury, Moreton in Marsh and at Stow-on-the-Wold. One tube was relocated in 2024; NAS27 was moved to Silver Street, Tetbury, following concerns regarding air quality from a local campaign group.

One tube was relocated for 2024. Tube reference NAS27 was moved from Bourton-on-the-Water to Tetbury, following concerns highlighted by the campaign group Greening Tetbury regarding congestion within the town. The chosen location is on Silver Street, one of the main routes in and out of the town centre.

Maps showing the location of the monitoring sites are provided 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 (NO_2)

Table A.2 in Appendix A compares the ratified and adjusted monitored NO_2 annual mean concentrations for the past five years with the air quality objective of 40µg/m^3. 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 2024 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.

Trends

As with previous years, 2024 saw a fall in NO_2 concentrations across the district. Increases were only detected in Lechlade, which is thought to be due to the reopening of the Ha'Penny Bridge, over the River Thames, to the south of the town. This bridge was close for several months during 2023, resulting in lower than expected NO_2 concentrations within the town.

The most significant reductions were in Cirencester and Stow-on-the-Wold, showing a maximum decrease in concentrations of 5.2µg/m^3 and 6µg/m^3 respectively. Concentrations in the AQMA at Birdlip also showed a drop in concentrations of 7.7µg/m^3, however this is likely to be a consequence of road closures and other changes to traffic flow as a result of the A417 Missing Link project.

The trend of NO_2 concentrations within the district are presented in Figure A.1 and Figure A.2. Both graphs illustrate the decline in NO_2 concentrations as discussed above.

There were no exceedances of the national objective for annual average monthly concentrations of NO_2 in 2024. In addition, during 2024 no annual mean was greater than

60µg/m^3, which indicates that an exceedance of the 1-hour mean objective was unlikely at any of the locations.

The results from 2024 are positive and indicate a general improvement in the air quality within the Cotswold District. With the implementation of the measures described in Table 2.2, we hope to see this trend continue. CDC will continue to work with the county and town councils to implement measures to tackle air pollution in the AQMA.

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)
NAS26	Unicorn PH, Stow on the Wold	Roadside	419003	225693	NO_2		6.5	1.2	No	2.1
NAS27	Silver Street, Tetbury	Roadside	389145	193065	NO_2		0.0	1.5	No	2.5
NAS28	Burford Rd Traffic lights j/w A417, Cirencester	Roadside	403020	202175	NO_2		10.0	1.5	No	2.3
NAS29	Abbey Way j/w Spitalgate, Cirencester	Roadside	402305	202519	NO_2		6.0	1.4	No	2.2
NAS30	London Road,Cirencester	Roadside	402783	201946	NO_2		5.8	2.8	No	2.2
NAS31	Lewis Lane, Cirencester	Roadside	402480	201772	NO_2		2.7	1.5	No	2.1
NAS32	Bartonbury Lodge, Stroud Road, Cirencester	Roadside	401102	201364	NO_2		2.4	1.0	No	2.5
NAS33	Tetbury Road, Cirencester (O/S Steading Cottages)	Roadside	401064	201044	NO_2		3.8	2.9	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)
NAS34	Spratsgate Lane nr j/w Park Way, Cirencester	Rural	402394	199581	NO_2		0.0	2.3	No	2.1
NAS35	Berkeley Road j/w Somerford Road, Cirencester	Kerbside	402439	200297	NO_2		15.0	0.5	No	2.1
NAS36	Somerford Road, Cirencester. (on lamp post 6)	Roadside	402241	201102	NO_2		4.6	1.7	No	2.4
NAS37	Thames Street, Lechlade	Urban Centre	421365	199503	NO_2		0.2	1.3	No	2.4
NAS38	4 High Street, Lechlade	Urban Centre	421367	199515	NO_2		0.0	1.0	No	2.2
NAS39	Air Balloon Roundabout, Birdlip	Roadside	393462	216111	NO_2	Birdlip (Air Balloon Roundabout)	6.4	1.1	No	2.1
NAS42	A429 j/w A44 (White Hart Hotel) Moreton-in-Marsh	Urban Centre	420486	232419	NO_2		2.1	1.2	No	2.4
NAS49	A429 Youth Club / Town Council building Stow on the Wold	Roadside	419044	225879	NO_2		2.5	3.5	No	2.5

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 NO_2 Monitoring Results: Non-Automatic Monitoring (µg/m^3)

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2024 (%) (2)	2020	2021	2022	2023	2024
NAS26	419003	225693	Roadside	92.4	92.5	29.3	31.8	33.3	27.7	25.3
NAS27	389145	193065	Roadside	83.0	83.0	-	-	-	-	17.2
NAS28	403020	202175	Roadside	100.0	100.0	22.1	23.8	23.9	22.5	18.8
NAS29	402305	202519	Roadside	83.2	81.1	23.8	25.3	24.9	23.5	20.6
NAS30	402783	201946	Roadside	100.0	100.0	17.7	18.1	17.4	17.4	16.5
NAS31	402480	201772	Roadside	90.5	90.6	15.7	15.8	16.5	16.1	12.6
NAS32	401102	201364	Roadside	100.0	100.0	-	-	20.5	19.5	16.5
NAS33	401064	201044	Roadside	100.0	100.0	16.2	16.2	15.6	15.9	13.5
NAS34	402394	199581	Rural	83.2	83.0	7.4	7.0	7.1	6.4	5.6
NAS35	402439	200297	Kerbside	100.0	100.0	7.0	7.9	8.0	7.3	7.2
NAS36	402241	201102	Roadside	100.0	100.0	11.2	10.8	10.7	10.5	9.6
NAS37	421365	199503	Urban Centre	90.5	90.6	22.0	23.2	25.1	15.0	20.1

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2024 (%) (2)	2020	2021	2022	2023	2024
NAS38	421367	199515	Urban Centre	90.5	90.6	22.8	29.4	28.7	18.0	20.4
NAS39	393462	216111	Roadside	100.0	100.0	37.7	39.9	**42.1**	38.7	33.2
NAS42	420486	232419	Urban Centre	100.0	100.0	20.0	21.9	19.9	18.3	16.9
NAS49	419044	225879	Roadside	90.5	92.5	-	-	-	20.0	18.9

☒ **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/m^3.

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

NO_2 annual means exceeding 60µg/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%).

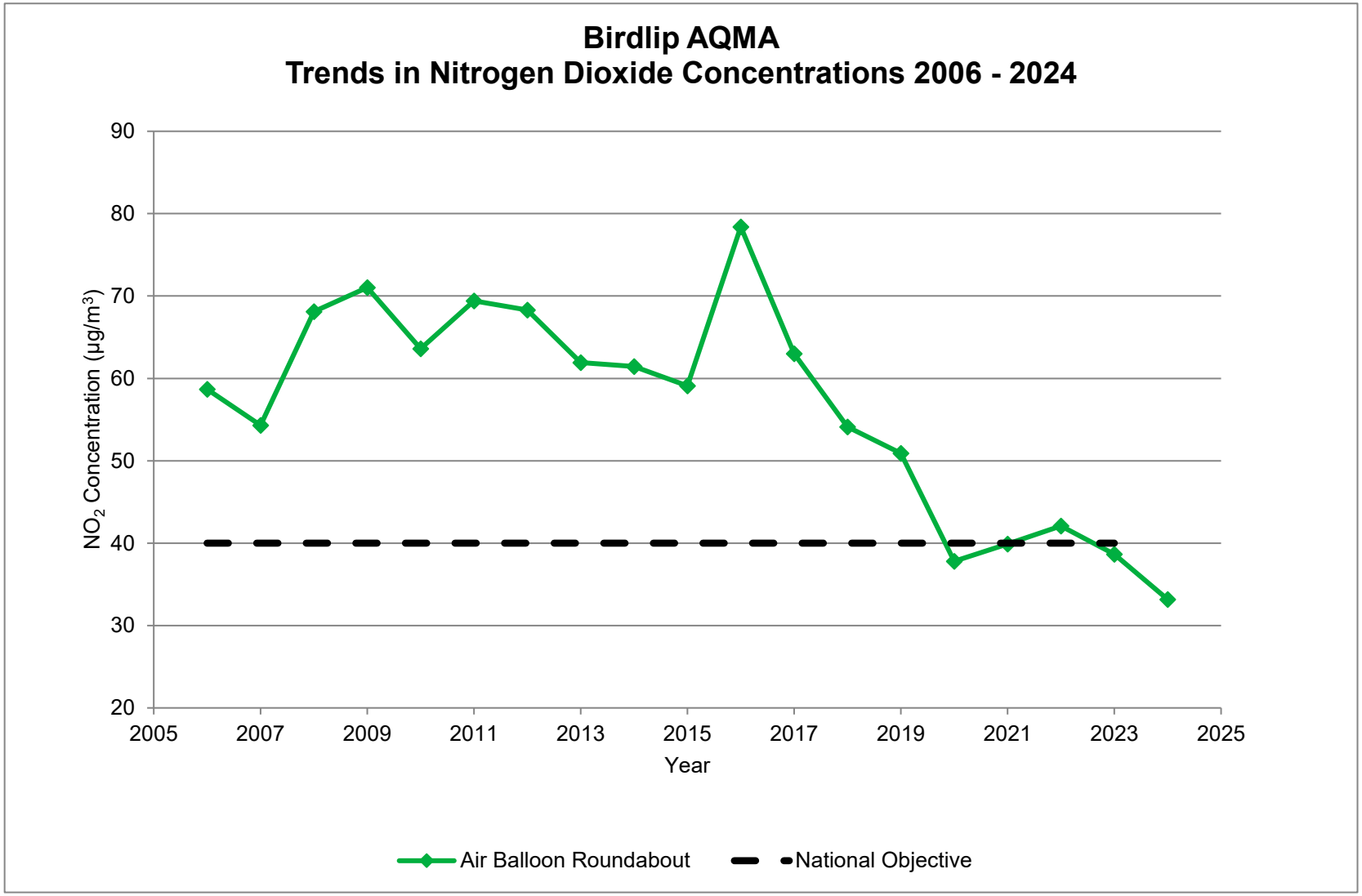


Figure A.1 - Trends in Annual Mean NO_2 Concentrations in Birdlip AQMA

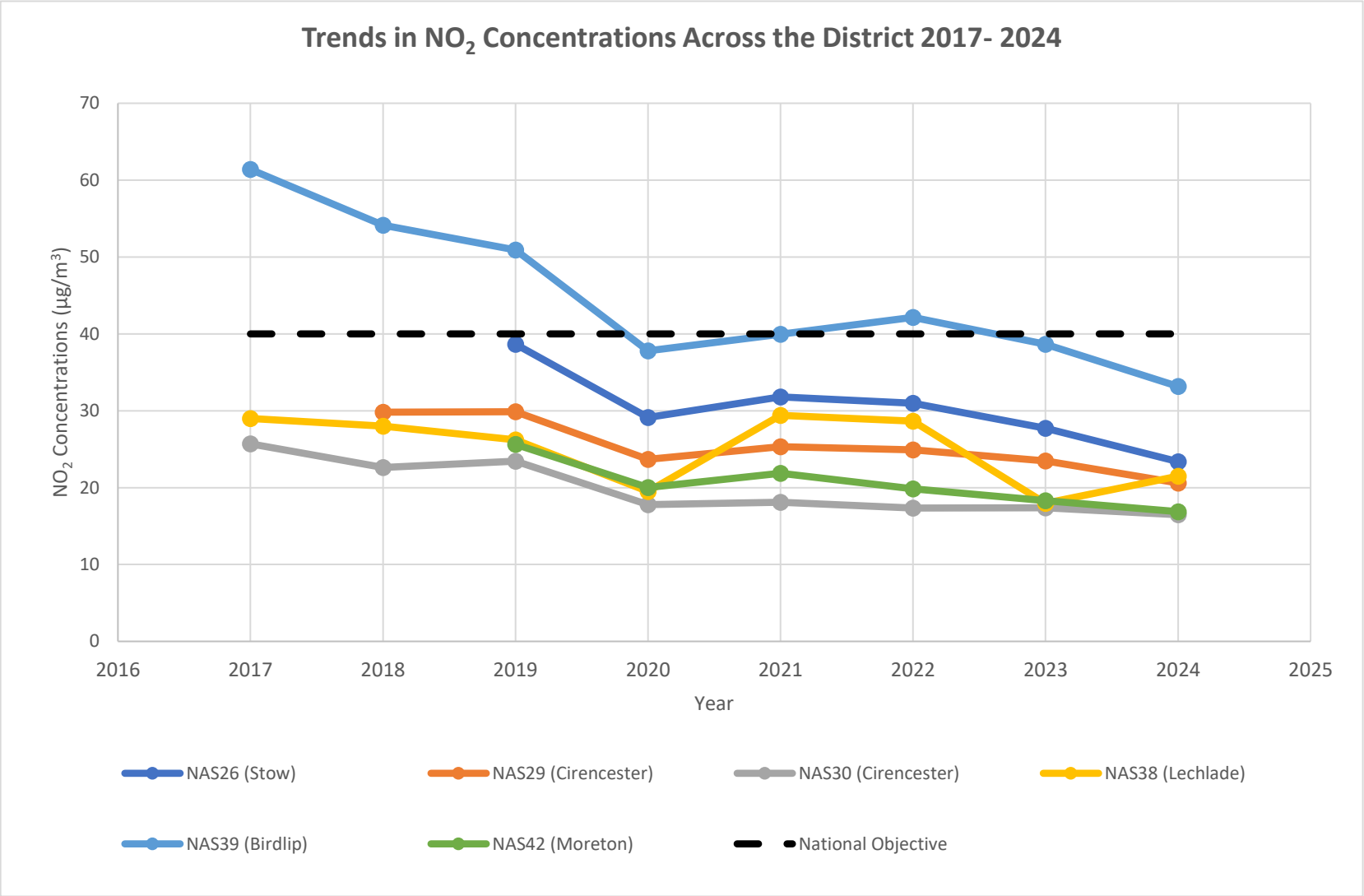


Figure A.2 - Trends in Annual Mean NO_2 Concentrations Across the District

Appendix B: Full Monthly Diffusion Tube Results for 2024

Table B.1 - NO_2 2024 Diffusion Tube Results ($\mu g/m^3$)

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 <(0.78)>	Annual Mean: Distance Corrected to Nearest Exposure	Comment
NAS26	419003	225693	outlier	31.6	28.1	31.1	38.7	33.8	36.9	27.2	31.8	32.7	39.5	25.8	32.5	25.3	-	
NAS27	389145	193065	missing	26.2	18.2	16.2	21.4	21.0	21.7	15.5	24.0	25.6	30.9	missing	22.1	17.2	-	
NAS28	403020	202175	29.0	30.6	19.7	24.6	30.0	24.4	24.3	23.2	26.0	23.6	22.5	10.7	24.1	18.8	-	
NAS29	402305	202519	29.8	26.6	25.9	22.1	27.1	22.2	23.9	Missing	29.3	Black Lid missing	31.2	26.1	26.4	20.6	-	
NAS30	402783	201946	27.6	29.1	22.2	19.9	20.0	14.9	17.4	15.5	17.8	24.6	21.9	22.6	21.1	16.5	-	
NAS31	402480	201772	23.9	22.8	14.4	16.6	17.3	15.4	12.4	13.5	14.4	15.0	11.6	missing	16.1	12.6	-	
NAS32	401102	201364	18.4	25.7	19.2	20.5	23.9	23.1	20.7	18.6	22.0	22.8	19.5	19.2	21.1	16.5	-	
NAS33	401064	201044	17.2	22.2	15.9	15.4	17.0	14.3	15.6	12.6	14.8	22.4	22.4	17.7	17.3	13.5	-	
NAS34	402394	199581	9.4	9.6	7.0	6.0	6.4	4.5	missing	4.4	4.0	8.2	11.8	missing	7.1	5.6	-	
NAS35	402439	200297	12.5	9.7	8.8	7.9	7.6	5.3	7.1	7.2	7.4	13.3	14.8	9.0	9.2	7.2	-	
NAS36	402241	201102	17.4	16.9	4.7	11.0	10.1	8.4	9.5	9.1	10.4	17.9	18.0	14.6	12.3	9.6	-	
NAS37	421365	199503	29.6	25.7	21.5	20.9	27.3	27.9	28.0	25.1	24.5	23.5	29.9	outlier	25.8	20.1	-	
NAS38	421367	199515	28.5	35.6	26.8	27.8	29.6	29.5	15.3	7.7	21.5	30.4	35.1	outlier	26.2	20.4	-	
NAS39	393462	216111	21.5	45.5	44.0	42.5	50.9	48.5	45.2	41.6	41.6	41.9	44.4	42.7	42.5	33.2	-	
NAS42	420486	232419	21.7	26.4	23.4	22.2	24.0	16.3	22.1	20.4	19.6	19.9	27.3	16.4	21.6	16.9	-	
NAS49	419044	225879	21.0	55.4	26.6	19.0	26.9	23.1	26.4	16.3	21.0	21.9	missing	8.6	24.2	18.9	-	

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

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

☐ **Local bias adjustment factor used.**

☒ **National bias adjustment factor used.**

☒ **Where applicable, data has been distance corrected for relevant exposure in the final column.**

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

Notes:

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

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

See Appendix C for details on bias adjustment and annualisation.

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

New or Changed Sources Identified Within Cotswold District During 2024

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

Additional Air Quality Works Undertaken by Cotswold District Council During 2024

CDC has not completed any additional works within the reporting year of 2024.

QA/QC of Diffusion Tube Monitoring

CDC employ Socotec Didcot to carry out the analysis on the diffusion tubes distributed around the district. Diffusion tubes are prepared with 50% TEA in acetone.

Socotec laboratories participate in the AIR NO_2 Proficiency Scheme, which assesses the analytical performance of laboratories analysing NO_2 diffusion tubes. In 2024, four rounds of proficiency testing were carried out, round 62 between January and February, round 63 between April and June, round 65 between July and August and round 66 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 dictates 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 2024.

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 2025 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/NO_2 continuous analysers. Alternatively, the national database of diffusion tube co-location surveys provides bias factors for the relevant laboratory and preparation method.

CDC do not have NO_2 reference analysers within its district and consequently cannot calculate a local bias factor. Consequently, CDC have applied a national bias adjustment factor of 0.78 to the 2024 monitoring data. A summary of bias adjustment factors used by CDC 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
2024	National	04/25	0.78
2023	National	03/24	0.77
2022	National	03/23	0.76
2021	National	03/22	0.78
2020	National	03/21	0.77

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

National Diffusion Tube Bias Adjustment Factor Spreadsheet — Spreadsheet Version Number: 06/25

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 September 2025

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: Select the Laboratory that Analyses Your Tubes from the Drop-Down List

If a laboratory is not shown, we have no data for this laboratory.

Step 2: Select a Preparation Method from the Drop-Down List

If a preparation method is not shown, we have no data for this method at this laboratory.

Step 3: Select a Year from the Drop-Down List

If a year is not shown, we have no data [2]

Step 4:

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 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 To apply your selection, choose [All] from the pop-up list	Year [5] To apply your selection, choose [All]	Site Type	Local Authority	Length of Study (months)	Diffusion Tube Mean Conc. (Dm) (µg/m³)	Automatic Monitor Mean Conc. (Cm) (µg/m³)	Bias (B)	Tube Precision [6]	Bias Adjustment Factor (A) (Cm/Dm)
SOCOTEC Didcot	50% TEA in acetone	2024	R	Cambridge City Council	11	20	15	31.0%	G	**0.76**
SOCOTEC Didcot	50% TEA in acetone	2024	R	Cardiff Council / Shared Regulatory Services	9	35	31	14.2%	G	**0.88**
SOCOTEC Didcot	50% TEA in acetone	2024	R	Ipswich Borough Council	9	24	20	21.0%	G	**0.83**
SOCOTEC Didcot	50% TEA in acetone	2024	R	Ipswich Borough Council	11	36	26	37.9%	G	**0.73**
SOCOTEC Didcot	50% TEA in acetone	2024	UB	City Of York Council	11	13	11	16.0%	P	**0.86**
SOCOTEC Didcot	50% TEA in acetone	2024	R	City Of York Council	11	22	18	22.9%	G	**0.81**
SOCOTEC Didcot	50% TEA in acetone	2024	R	City Of York Council	11	26	20	31.0%	G	**0.76**
SOCOTEC Didcot	50% TEA in acetone	2024	R	East Suffolk Council	9	26	20	32.8%	G	**0.75**
SOCOTEC Didcot	50% TEA in acetone	2024	KS	Marylebone Road Intercomparison	10	47	36	30.5%	G	**0.77**
SOCOTEC Didcot	50% TEA in acetone	2024	UB	Hull City Council	10	21	16	25.4%	P	**0.80**
SOCOTEC Didcot	50% TEA in acetone	2024	R	Hull City Council	9	27	20	35.3%	G	**0.74**
SOCOTEC Didcot	50% TEA in acetone	2024	R	Waverley Borough Council	10	21	18	13.7%	G	**0.88**
SOCOTEC Didcot	50% TEA in acetone	2024	R	Waverley Borough Council	11	22	16	32.3%	G	**0.76**
SOCOTEC Didcot	50% TEA in acetone	2024	R	Wrexham County Borough Council	10	15	13	17.0%	G	**0.85**
SOCOTEC Didcot	50% TEA in acetone	2024	UB	Gravesham Borough Council	11	21	19	9.7%	P	**0.91**
SOCOTEC Didcot	50% TEA in acetone	2024	R	Slough Borough Council	11	35	24	43.5%	G	**0.70**
SOCOTEC Didcot	50% TEA in acetone	2024	R	Slough Borough Council	11	26	20	32.6%	G	**0.75**
SOCOTEC Didcot	50% TEA in acetone	2024	R	Slough Borough Council	11	23	17	34.0%	G	**0.75**
SOCOTEC Didcot	50% TEA in acetone	2024	R	Slough Borough Council	10	31	23	33.4%	G	**0.75**
SOCOTEC Didcot	50% TEA in acetone	2024	R	Slough Borough Council	11	30	23	33.7%	G	**0.75**
SOCOTEC Didcot	50% TEA in acetone	2024	R	Thanet Distric Council	10	19	15	24.3%	G	**0.80**
SOCOTEC Didcot	50% TEA in acetone	2024	UB	Wirral Council	9	14	12	19.9%	G	**0.83**
SOCOTEC Didcot	50% TEA in acetone	2024	R	Derry City And Strabane District Council	11	28	32	-11.8%	G	**1.13**
SOCOTEC Didcot	50% TEA in acetone	2024	UB	Derry City And Strabane District Council	11	11	7	58.1%	G	**0.63**
SOCOTEC Didcot	50% TEA in Acetone	2024	R	Horsham District Council	11	22	17	31.1%	G	**0.76**
SOCOTEC Didcot	50% TEA in Acetone	2024	R	Leeds City Council	10	36	28	32.5%	G	**0.75**
SOCOTEC Didcot	50% TEA in Acetone	2024	KS	Leeds City Council	11	29	20	42.7%	G	**0.70**
SOCOTEC Didcot	50% TEA in Acetone	2024	R	Leeds City Council	11	24	18	36.4%	G	**0.73**
SOCOTEC Didcot	50% TEA in Acetone	2024	UC	Leeds City Council	10	25	19	31.2%	G	**0.76**
SOCOTEC Didcot	50% TEA in Acetone	2024	R	Huntingdonshire District Council	10	28	23	21.1%	G	**0.83**
SOCOTEC Didcot	50% TEA in Acetone	2024	R	North East Lincolnshire Council	11	39	21	84.1%	G	**0.54**
SOCOTEC Didcot	50% TEA in Acetone	2024	UB	North East Lincolnshire Council	10	12	10	20.0%	G	**0.83**
SOCOTEC Didcot	50% TEA in Acetone	2024	R	North East Lincolnshire Council	11	21	18	15.7%	G	**0.86**
SOCOTEC Didcot	50% TEA in Acetone	2024	UI	North Lincolnshire Council	11	13	11	17.3%	P	**0.85**
SOCOTEC Didcot	50% TEA in Acetone	2024	R	Horsham District Council	10	20	16	26.6%	G	**0.79**
SOCOTEC Didcot	50% TEA in Acetone	2024	R	Horsham District Council	11	21	16	27.0%	G	**0.79**
SOCOTEC Didcot	50% TEA in Acetone	2024	R	Vale Of White Horse District Council	11	19	13	44.3%	G	**0.69**
SOCOTEC Didcot	50% TEA in acetone	2024		**Overall Factor [3] (37 studies)**				Use		**0.78**

NO_2 Fall-off with Distance from the Road

Wherever possible, monitoring locations are representative of exposure. However, where this is not possible, the NO_2 concentration at the nearest location relevant for exposure has been estimated using the Diffusion Tube Data Processing Tool/NO_2 fall-off with distance calculator available on the LAQM Support website.

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

Appendix D: Map(s) of Monitoring Locations and AQMAs

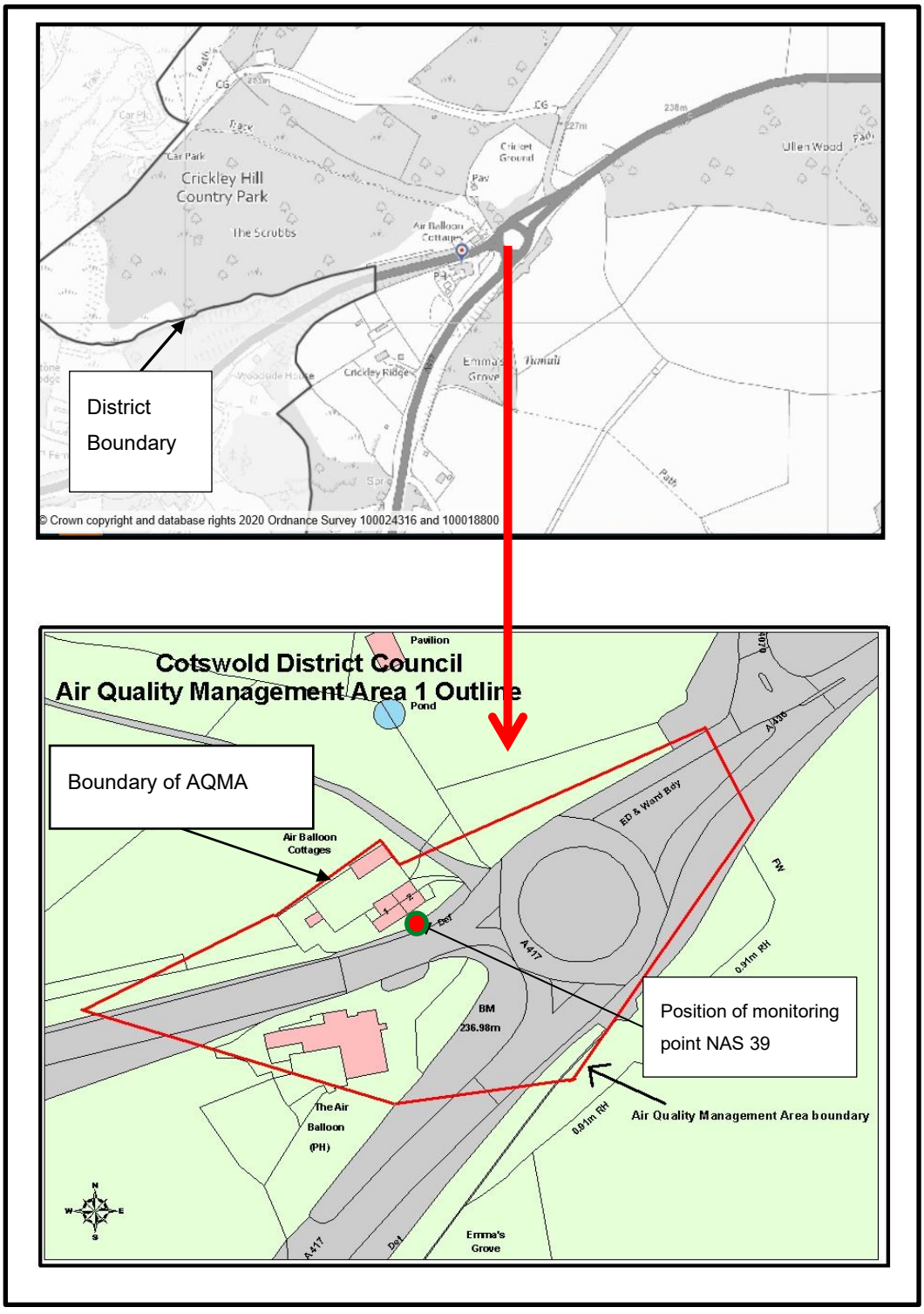


Figure D.1 – Maps of Air Balloon Roundabout AQMA - Location & Boundary

Figure D.2 – Map of Non-Automatic Monitoring Site: Stow on the Wold - NAS26

Figure D.3 – Map of Non-Automatic Monitoring Site: Stow-on-the-Wold – NAS49

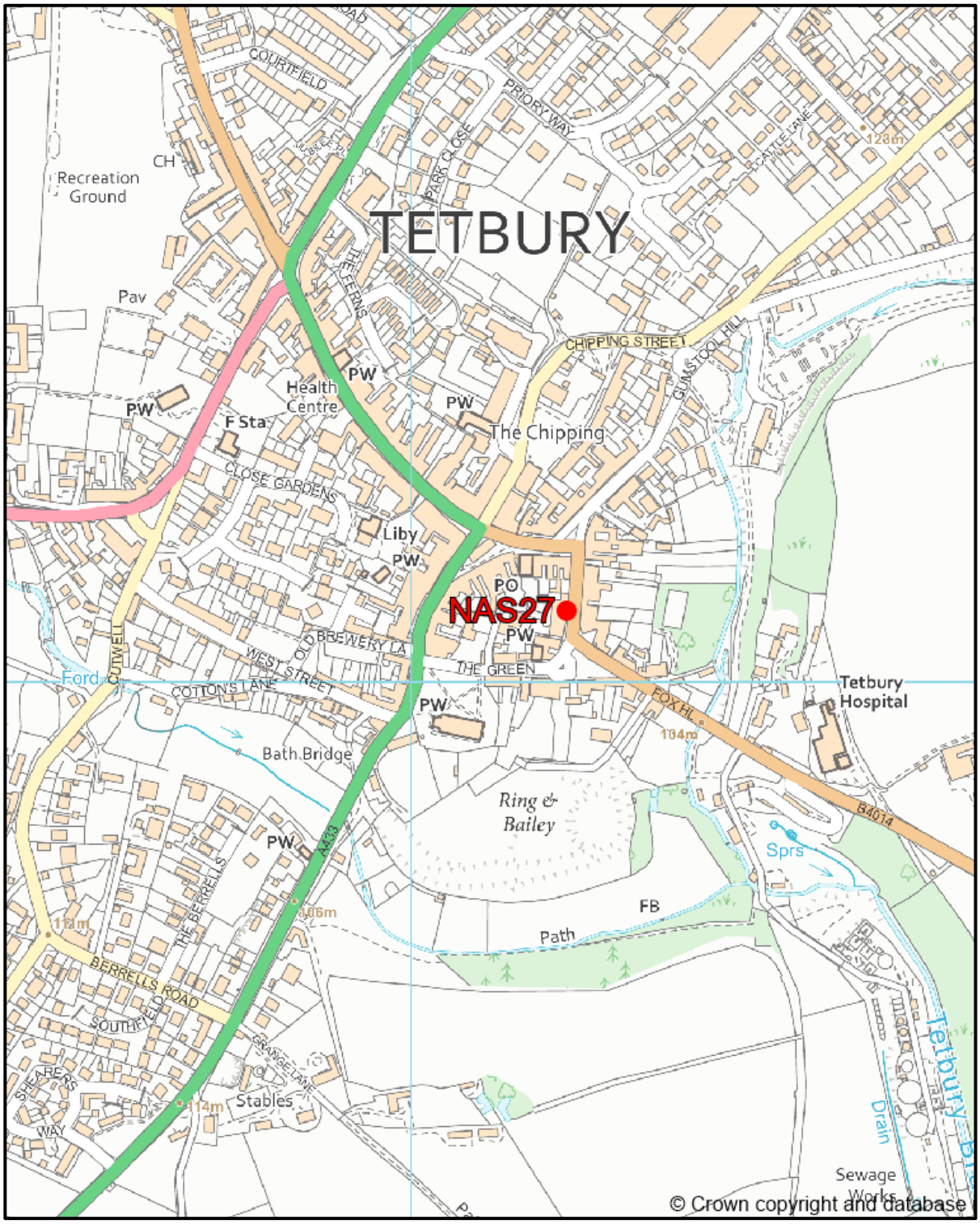


Figure D.4 – Map of Non-Automatic Monitoring Site: Tetbury - NAS27

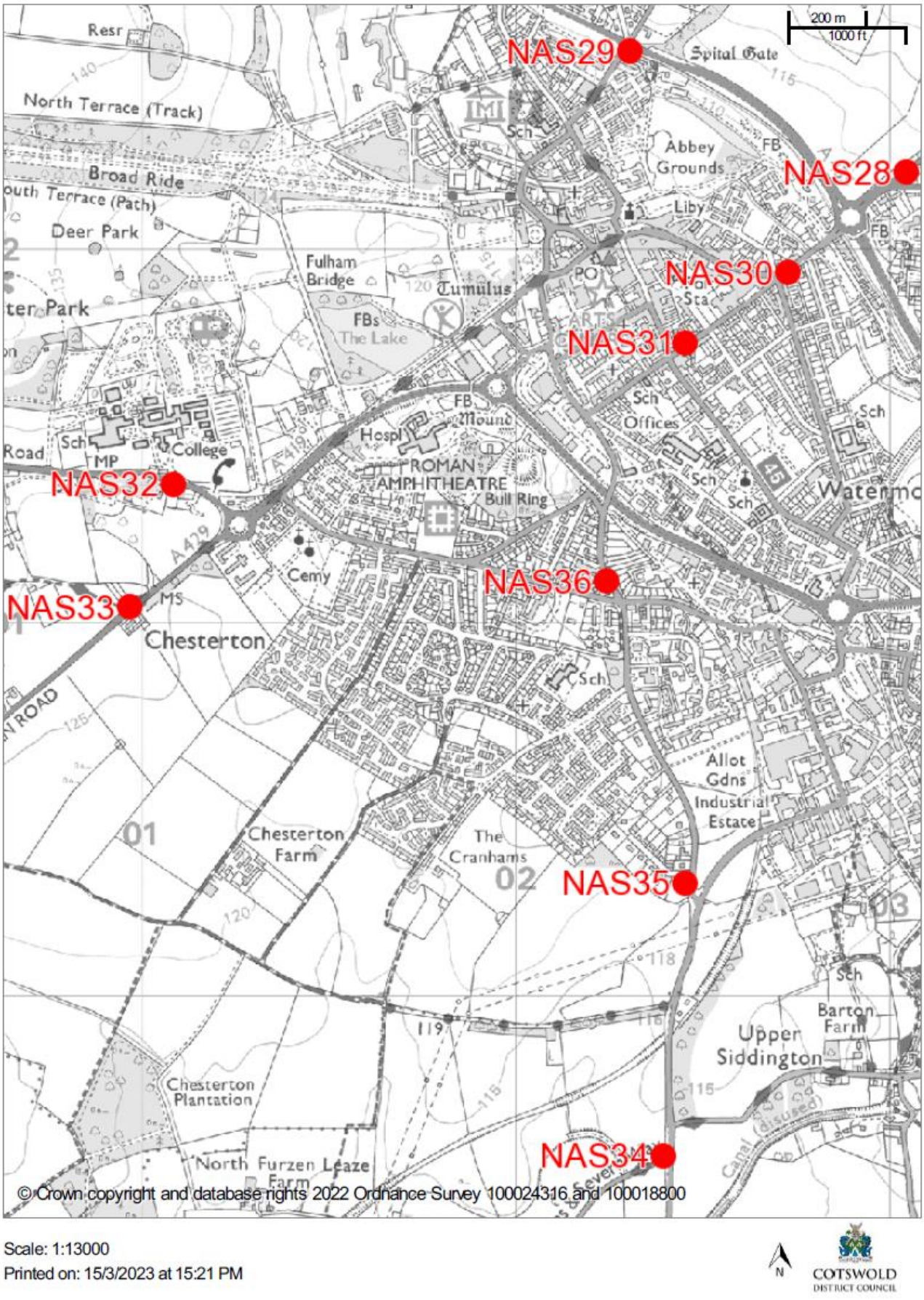


Figure D.5 – Map of Non-Automatic Monitoring Site: Cirencester - NAS28 to NAS36

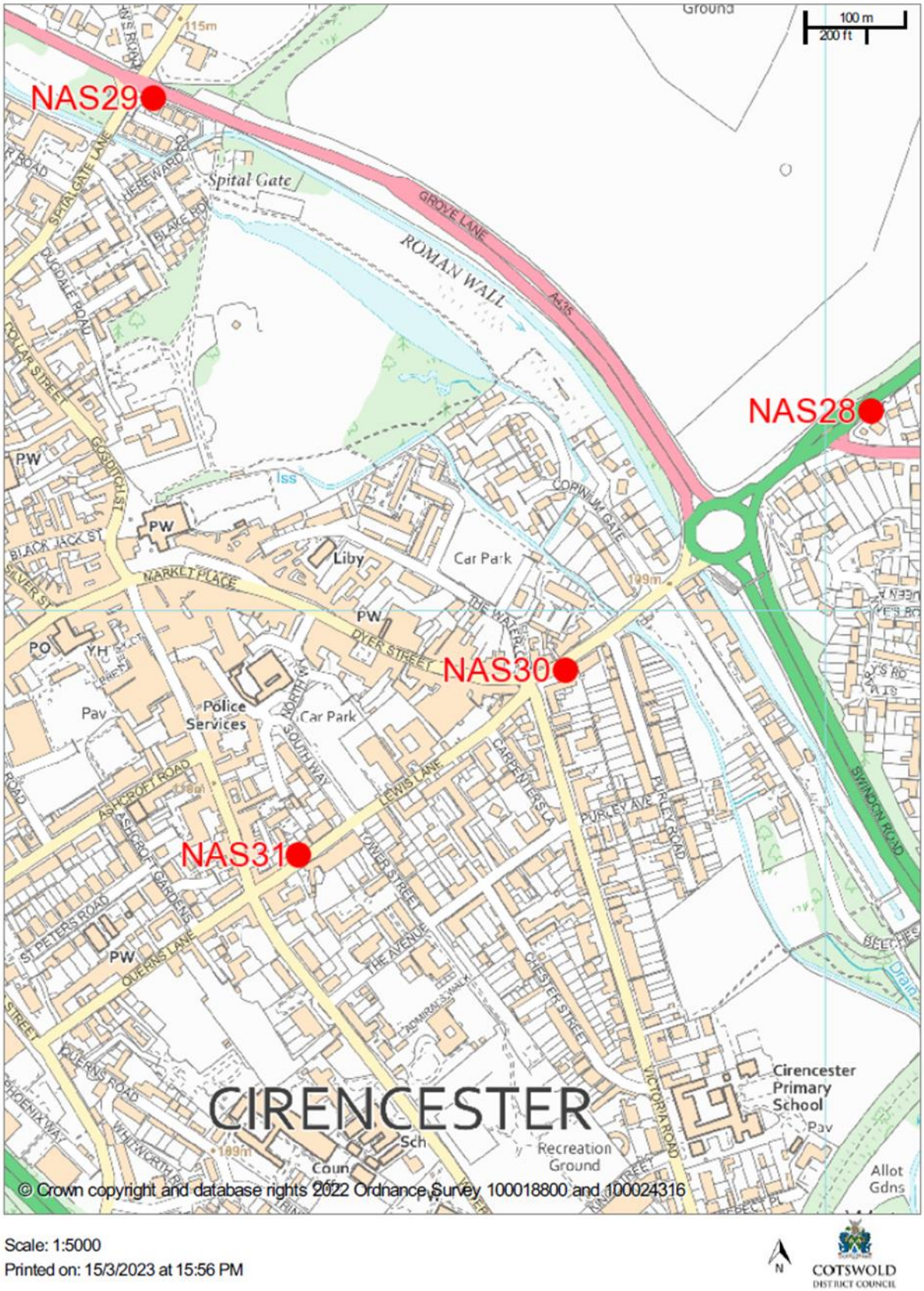
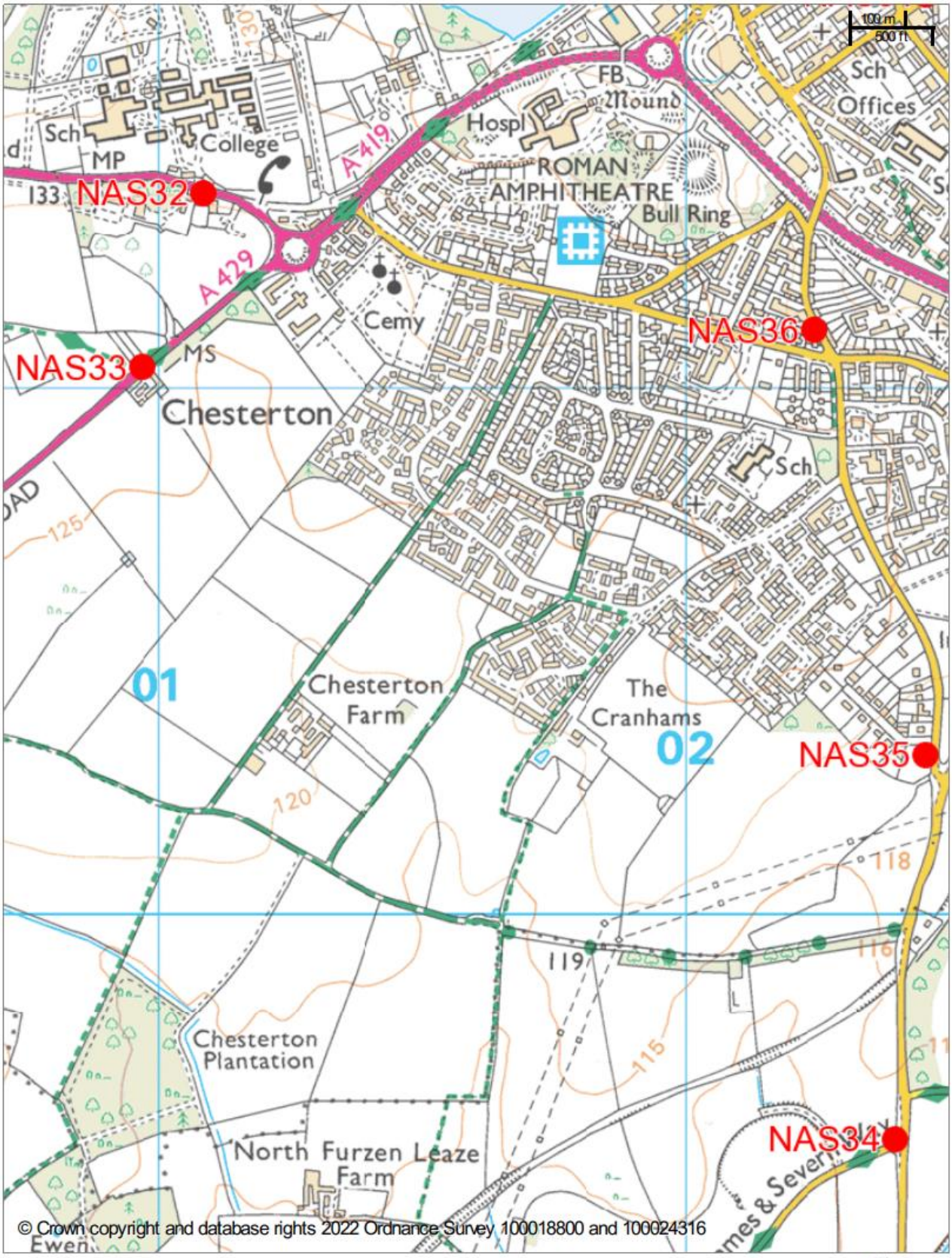


Figure D.6 – Map of Non-Automatic Monitoring Site: Cirencester - NAS28, NAS29, NAS30 and NAS31



Scale: 1:9500
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Figure D.7 – Map of Non-Automatic Monitoring Site: Cirencester – NAS32, NAS33, NAS34, NAS35 and NAS36

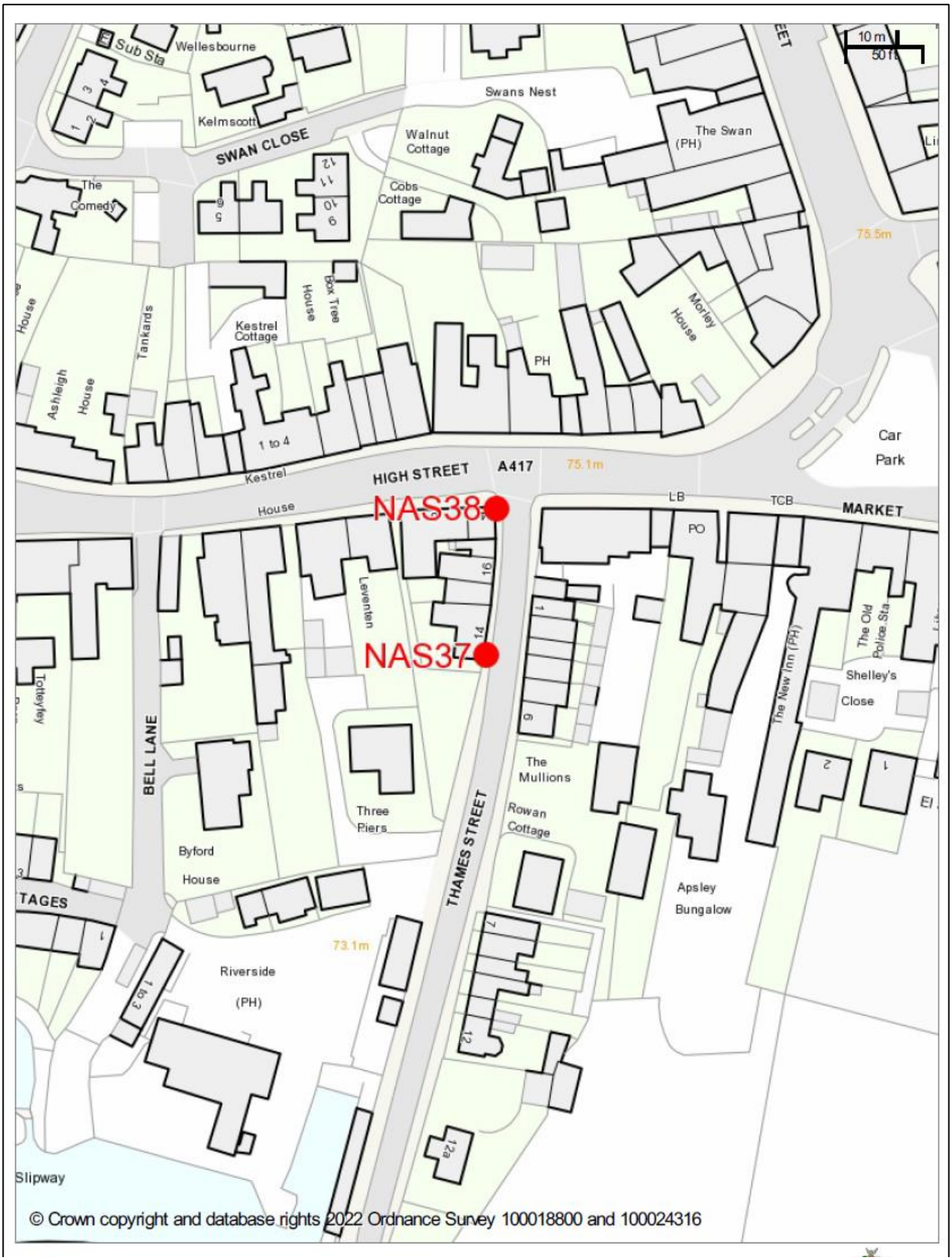

Figure D.8 – Map of Non-Automatic Monitoring Site: Lechlade – NAS37 and NAS38

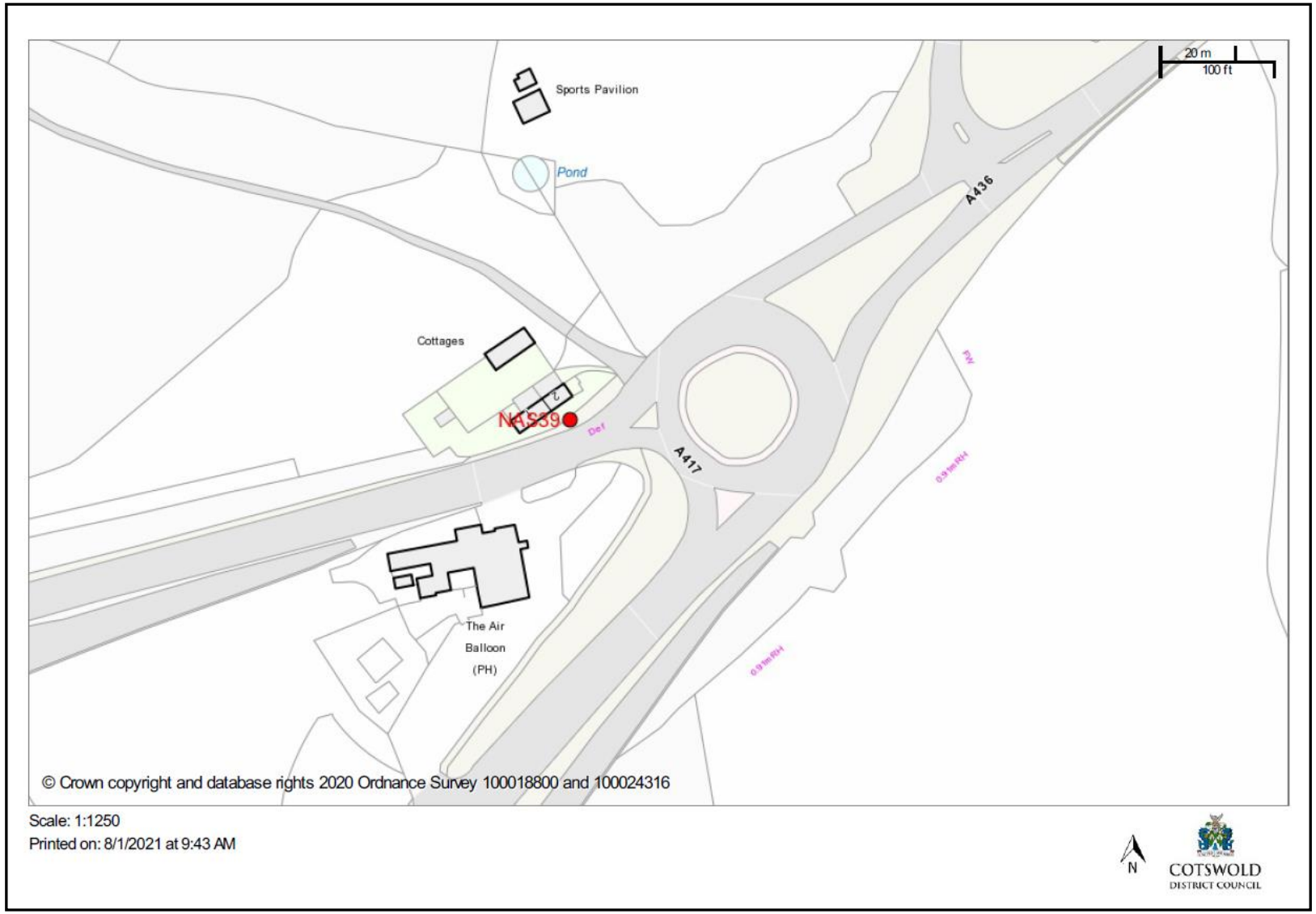

Figure D.9 – Map of Non-Automatic Monitoring Site: Air Balloon Roundabout - NAS39

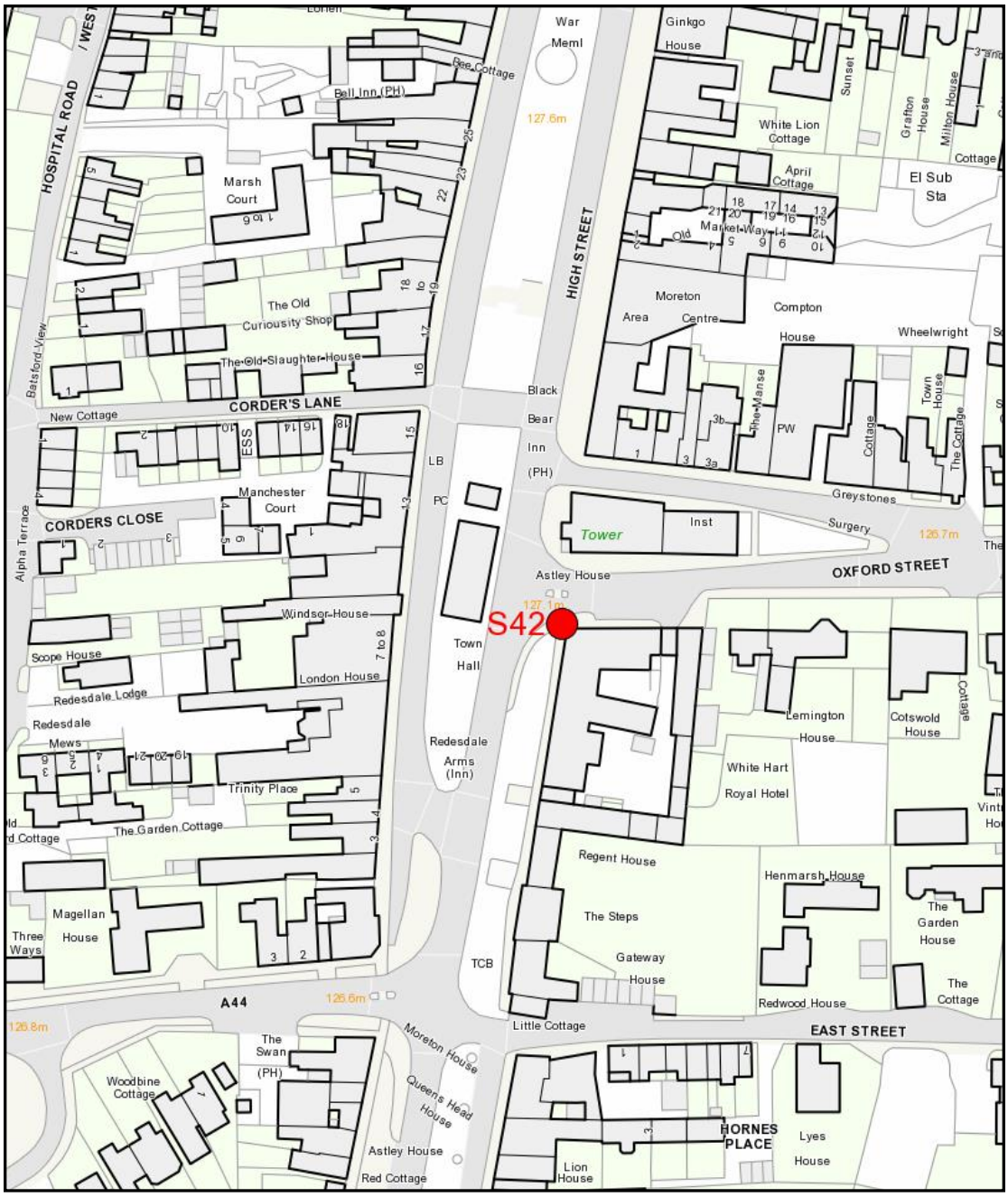

Figure D.10 – Map of Non-Automatic Monitoring Site: Moreton-in-Marsh – NAS42

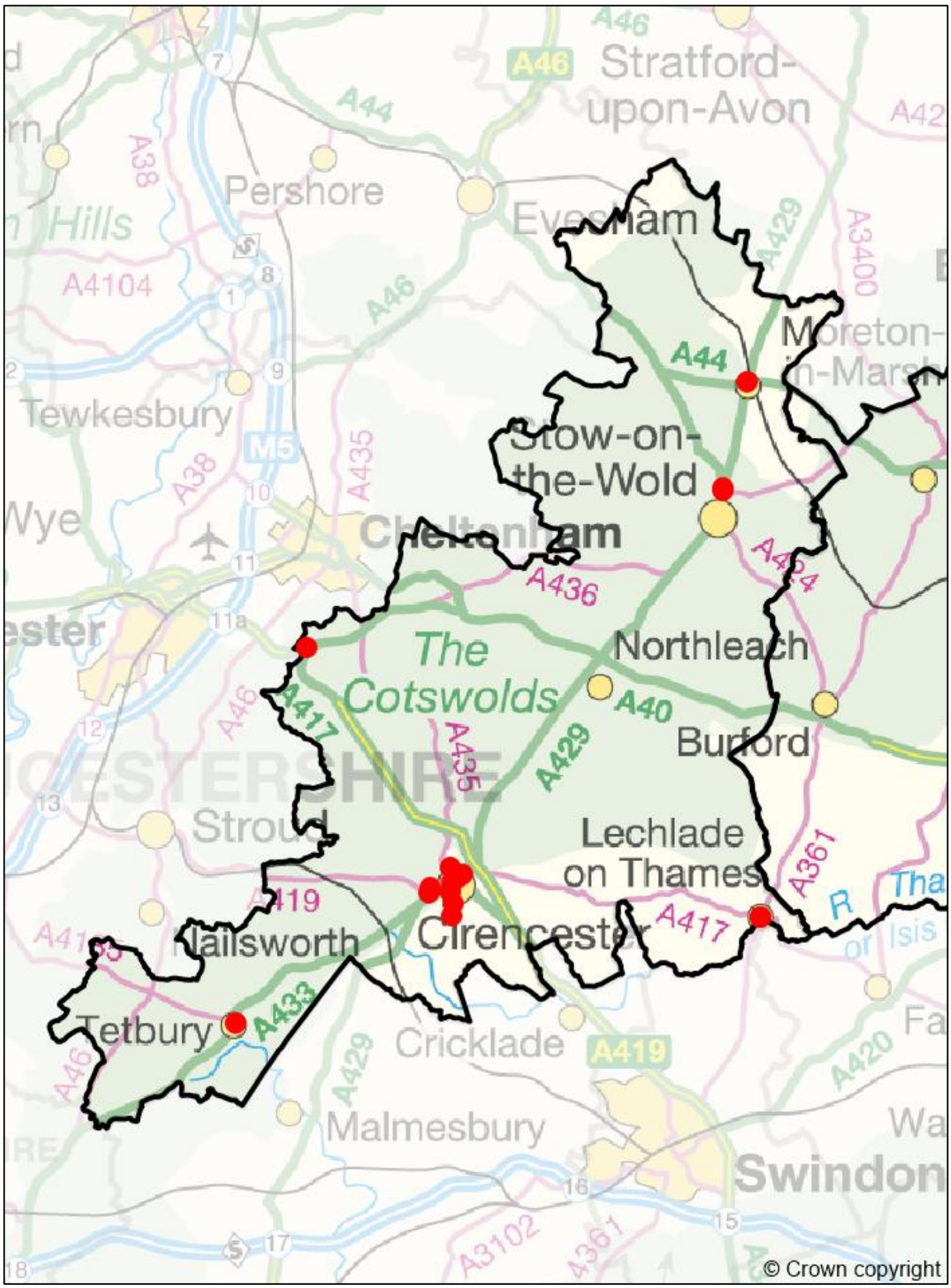

Figure D.11 – Distribution of Non-Automatic Monitoring Sites across Cotswold District

Appendix E: Summary of Air Quality Objectives in England

Table E.1 – Air Quality Objectives in England[3]

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

[3] The units are in microgrammes of pollutant per cubic metre of air (µg/m^3).

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
LAQM	Local Air Quality Management
NO_2	Nitrogen Dioxide
NO_x	Nitrogen Oxides
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

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.
- Chemical hazards and poisons report: Issue 28. June 2022. Published by UK Health Security Agency
- Air Quality Strategy – Framework for Local Authority Delivery. August 2023. Published by Defra.