



Listening Learning Leading

## **2022 Air Quality Annual Status Report (ASR)**

In fulfilment of Part IV of the Environment Act 1995 Local Air Quality Management

**Date: June 2022**

Information	South Oxfordshire District Council Details
<b>Local Authority Officer</b>	Carmen Cubillas Martinez
<b>Department</b>	Environmental Services
<b>Address</b>	South Oxfordshire District Council, 135 Eastern Avenue, Milton Park, Abingdon, Oxfordshire, OX14 4SB
<b>Telephone</b>	01235 422403
<b>E-mail</b>	carmen.cubillas.martinez@southandvale.gov.uk
<b>Report Reference Number</b>	SODC-ASR2022
<b>Date</b>	30 June 2022

## Executive Summary: Air Quality in Our Area

### Air Quality in South Oxfordshire District Council

Air pollution is associated with a number of adverse health impacts. It is recognised as a contributing factor in the onset of heart disease and cancer. Additionally, air pollution particularly affects the most vulnerable in society: children, the elderly, and those with existing heart and lung conditions. There is also often a strong correlation with equalities issues because areas with poor air quality are also often less affluent areas<sup>1,2</sup>.

The mortality burden of air pollution within the UK is equivalent to 28,000 to 36,000 deaths at typical ages<sup>3</sup>, with a total estimated healthcare cost to the NHS and social care of £157 million in 2017<sup>4</sup>.

South Oxfordshire District Council (the council) declared Air Quality Management Areas (AQMA's) in three towns within the district: Henley, Wallingford and Watlington, all because of high levels of NO<sub>2</sub> from traffic sources. These can be viewed at the following link: <https://oxfordshire.air-quality.info/> and are also included in Appendix D of this report.

The monitoring results recorded in 2021 show a decrease in pollution levels from 2020 in most monitoring sites, following the downward trend identified last year. This decrease, however, is not as significant as the decrease in levels in 2020, due to traffic levels increasing in 2021 with measures to prevent the spread of Covid-19 being lifted.

In order to improve air pollution across the district, the council works in collaboration with partners like Oxfordshire County Council (OCC), bus companies operating in the district and other local authorities within Oxfordshire, putting in place some measures to reduce

---

1 Public Health England. Air Quality: A Briefing for Directors of Public Health, 2017

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

3 Defra. Air quality appraisal: damage cost guidance, July 2021

4 Public Health England. Estimation of costs to the NHS and social care due to the health impacts of air pollution: summary report, May 2018

NO<sub>2</sub> and particulate matter (PM) levels further, both in the AQMAs and also across the entire district. The best example of joint working in 2021 was the progress made on phase one of our joint work on developing a new website for the Oxfordshire Air Quality Group. This involved a public consultation on what information and accessibility the community wanted from an air quality website. The website is being developed following a successful joint bid to Defra's AQ Grant Scheme. (More information on this and other measures can be found on Table 2.2 below).

Meetings of the Oxfordshire Air Quality Group are held quarterly and include representatives from Oxfordshire County Council's Public Health Team, enabling joint working and a more comprehensive approach to our future projects. In 2021, these meetings focused on the development of the countywide AQ website, identifying the features that would make the new website most useful to members of the public. The specification for developing the website has now been put out to tender and the group is now at the stage of selecting a supplier to develop the website. Oxfordshire Air Quality Group's work will focus on this project over the coming year, and it is hoped that the development of the new website will be sufficiently advanced for the new version to be launched next year to coincide with Clean Air Day 2023.

## Actions to Improve Air Quality

Whilst air quality has improved significantly in recent decades and will continue to improve due to national policy decisions, there are some areas where local action is needed to improve air quality further.

The 2019 Clean Air Strategy<sup>5</sup> sets out the case for action, with goals to reduce exposure to harmful pollutants. The Road to Zero<sup>6</sup> sets out the approach to reduce exhaust emissions from road transport through a number of mechanisms; this is extremely important given that the majority of Air Quality Management Areas (AQMAs) are designated due to elevated concentrations heavily influenced by transport emissions.

---

5 Defra. Clean Air Strategy, 2019

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

A Climate Emergency was declared by the South Oxfordshire District Council in 2019 and, following this declaration, the council's Climate and Ecological Emergencies Advisory Committee (CEEAC) has set ambitious targets to:

- become carbon neutral within its own operations by 2025, and
- to become a carbon neutral district by 2030.

These targets and associated policies will take into account the desire to reduce NO<sub>2</sub> in the district, as well as carbon dioxide emissions.

The councils' Corporate Plan 2020 – 2024 was formally adopted in October 2020, and we will be working to ensure the new Air Quality Action Plan (AQAP) builds on and reflects these corporate targets.

The council's NO<sub>2</sub> monitoring network did not register any exceedance of either the hourly or annual average objectives in 2021 despite the post-Covid 19 pandemic increase in traffic levels.

To improve air quality within the district, the council have still undertaken several initiatives over the past year, involving different partner organisations. These include working on the development of an updated AQ Website with other LAs in Oxfordshire, stage 3 of the anti-idling campaign Turn it Off in collaboration with schools in the district, the installation of EV charging points in Council run car parks in partnership with Oxfordshire County Council and other stakeholders (more examples can be found in Table 2.1 below). Despite not being able to know whether these initiatives had an impact on the recorded air pollution levels, they all focus on the basis of air quality improvement: behavioural change, promotion of sustainable means of transport and reducing personal exposure and will therefore result in local air quality improvement even if unquantified.

## Conclusions and Priorities

No exceedances of either of the NO<sub>2</sub> objectives were identified in South Oxfordshire district, with 2021 monitoring data supporting the decreasing five-year trend of NO<sub>2</sub> levels observed in previous years.

Work on the production of the new Air Quality Action Plan has commenced in accordance with the council's Corporate Plan. In terms of the Local Air Quality Management (LAQM), the council's priority for the following reporting year (2022) will be the preparatory work for this project.

Another priority will be continuing to work on the development of the new Oxfordshire Air Quality Website in collaboration with other Oxfordshire local authorities.

## Local Engagement and How to get Involved

There are many ways in which the public can get involved in helping to improve air quality in their area, from using your car less, driving more efficiently when you do have to drive, or considering a cleaner vehicle when you choose to upgrade your car.

Many smart travel choices and other tips to reduce air pollution can be found in the links below:

- <http://www.traveline.info/>
- <https://oxfordshire.air-quality.info/what-can-you-do-to-improve-air-quality>
- <https://www.southandvale.gov.uk/turnitoff/>

## Local Responsibilities and Commitment

This ASR was prepared by the Environmental Protection Team of South Oxfordshire District Council with the support and agreement of the following officers and departments:

List officers involved in the preparation of the ASR:

- Carmen Cubillas Martinez, Air Quality Officer
- Simon Hill, Environmental Protection Team Leader

This ASR has been approved by:

- Suzanne Malcolm, Deputy Chief Executive-Place
- Cllr Sue Cooper (South Oxfordshire District Council's Cabinet member for environment, climate change and nature recovery)
- Rosie Rowe (Healthy Place Shaping Lead for Oxfordshire County Council with the responsibility within the Public Health Team for Air Quality).

If you have any comments on this ASR, please send them to:

Environmental Protection Team, South Oxfordshire and Vale of White Horse District Councils, 135 Eastern Avenue, Milton Park, Abingdon, Oxfordshire, OX14 4SB

01235 422403

[env.health@southandvale.gov.uk](mailto:env.health@southandvale.gov.uk)

## Table of Contents

<b>Executive Summary: Air Quality in Our Area</b> .....	<b>ii</b>
Air Quality in South Oxfordshire District Council .....	ii
Actions to Improve Air Quality .....	iii
Conclusions and Priorities .....	iv
Local Engagement and How to get Involved.....	v
Local Responsibilities and Commitment .....	v
<b>1 Local Air Quality Management</b> .....	<b>1</b>
<b>2 Actions to Improve Air Quality</b> .....	<b>2</b>
2.1 Air Quality Management Areas .....	2
2.2 Progress and Impact of Measures to address Air Quality in South Oxfordshire.....	4
2.3 PM <sub>2.5</sub> – Local Authority Approach to Reducing Emissions and/or Concentrations .....	13
<b>3 Air Quality Monitoring Data and Comparison with Air Quality Objectives and National Compliance</b> .....	<b>20</b>
3.1 Summary of Monitoring Undertaken.....	20
3.1.1 Automatic Monitoring Sites .....	20
3.1.2 Non-Automatic Monitoring Sites .....	20
3.2 Individual Pollutants .....	21
3.2.1 Nitrogen Dioxide (NO <sub>2</sub> ) .....	21
<b>Appendix A: Monitoring Results</b> .....	<b>22</b>
<b>Appendix B: Full Monthly Diffusion Tube Results for 2021</b> .....	<b>47</b>
<b>Appendix C: Supporting Technical Information / Air Quality Monitoring Data QA/QC</b> .....	<b>57</b>
New or Changed Sources Identified Within South Oxfordshire District Council During 2021 .....	57
Additional Air Quality Works Undertaken by South Oxfordshire District Council During 2021. ...	57
QA/QC of Diffusion Tube Monitoring .....	57
Diffusion Tube Annualisation .....	58
Diffusion Tube Bias Adjustment Factors .....	58
NO <sub>2</sub> Fall-off with Distance from the Road.....	59
QA/QC of Automatic Monitoring .....	59
Automatic Monitoring Annualisation .....	62
NO <sub>2</sub> Fall-off with Distance from the Road.....	62
<b>Appendix D: Map(s) of Monitoring Locations and AQMAs</b> .....	<b>65</b>
<b>Appendix E: Summary of Air Quality Objectives in England</b> .....	<b>74</b>
<b>Glossary of Terms</b> .....	<b>75</b>
<b>References</b> .....	<b>76</b>

## Figures

Figure 1 One of the posters designed to promote sustainable means of transport to get to school .....	5
Figure 2 Anti-idling poster including the superhero competition winning design .....	6
Figure 3 Modelled background PM <sub>2.5</sub> levels in South Oxfordshire in 2021 .....	13
Figure 4 Recorded PM <sub>10</sub> levels at Henley Greys Road monitoring station in 2021 (Jan-Sept survey).....	14
Figure 5 Recorded PM <sub>2.5</sub> levels at Henley Greys Road monitoring station in 2021 (Jan-Sept survey).....	15
Figure 6 Public Health Outcomes Framework: Fraction of female mortality attributable to PM <sub>2.5</sub> in South Oxfordshire .....	17
Figure 7 Public Health Outcomes Framework: Fraction of male mortality attributable to PM <sub>2.5</sub> in South Oxfordshire .....	17
Figure A. 1 Trends in Annual Mean NO <sub>2</sub> Concentrations in Wallingford AQMA .....	37
Figure A. 2 Trends in Annual Mean NO <sub>2</sub> Concentrations in Wallingford (outside AQMA).....	38
Figure A. 3 Trends in Annual Mean NO <sub>2</sub> Concentrations in Henley AQMA .....	39
Figure A. 4 Trends in Annual Mean NO <sub>2</sub> Concentrations in Henley (outside AQMA) .....	40
Figure A. 5 Trends in Annual Mean NO <sub>2</sub> Concentrations in Watlington .....	41
Figure A. 6 Trends in Annual Mean NO <sub>2</sub> Concentrations in Adwell, Little Milton, Stadhampton, Benson .....	42
Figure A. 7 Trends in Annual Mean NO <sub>2</sub> Concentrations in Chinnor .....	43
Figure A. 8 Trends in Annual Mean NO <sub>2</sub> Concentrations in Thame.....	44
Figure A. 9 Trends in Annual Mean NO <sub>2</sub> Concentrations in Wheatley and Horspath.....	45
Figure C. 1 Wallingford Continuous Analyser - Annual Graph .....	60
Figure C. 2 Watlington Continuous Analyser - Annual Graph .....	61
Figure C. 3 Henley Continuous Analyser - Annual Graph.....	62
Figure D. 1 Map of Non-Automatic Monitoring Sites in Adwell and Benson.....	65
Figure D. 2 Map of Non-Automatic Monitoring Sites in Horspath and Wheatley.....	66
Figure D. 3 Map of Non-Automatic Monitoring Sites in Little Milton and Clifton Hampden .....	67
Figure D. 4 Map of Non-Automatic Monitoring Sites in Whitchurch on Thames and Stadhampton .....	68
Figure D. 5 Map of Non-Automatic Monitoring Sites in Chinnor.....	69
Figure D. 6 Map of Non-Automatic Monitoring Sites in Thame .....	70
Figure D. 7 Map of AQMA and Monitoring Sites in Watlington .....	71



Figure D. 8 Map of AQMA and Monitoring Sites in Wallingford .....	72
Figure D. 9 Map of AQMA and Monitoring Sites in Henley on Thames .....	73

## Tables

Table 2. 1 Declared Air Quality Management Areas .....	3
Table 2. 2 Progress on Measures to Improve Air Quality.....	9
Table 2. 3 Indicative PM monitoring data recorded in Henley in 2021 .....	15
Table 2. 4 Fraction of mortality attributable to PM2.5: an overview .....	16
Table 2. 5 List of measures in SODC's 2014 Action Plan that target PM2.5 reduction according to LAQM.TG16 Action Toolbox.....	18
Table A. 1 Details of Automatic Monitoring Sites .....	22
Table A. 2 Details of Non-Automatic Monitoring Sites .....	23
Table A. 3 Annual Mean NO <sub>2</sub> Monitoring Results: Automatic Monitoring (µg/m <sup>3</sup> ).....	30
Table A. 4 Annual Mean NO <sub>2</sub> Monitoring Results: Non-Automatic Monitoring (µg/m <sup>3</sup> ) .....	31
Table A. 5 1-Hour Mean NO <sub>2</sub> Monitoring Results, Number of 1-Hour Means > 200µg/m <sup>3</sup> .....	46
Table B. 1 NO <sub>2</sub> 2021 Diffusion Tube Results (µg/m <sup>3</sup> ) .....	47
Table C. 1 Bias Adjustment Factor .....	59
Table C. 2 Annualisation Summary (concentrations presented in µg/m <sup>3</sup> ).....	63
Table C. 3 Local Bias Adjustment Calculation .....	64

# 1 Local Air Quality Management

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

The LAQM process places an obligation on all local authorities to regularly review and assess air quality in their areas, and to determine whether or not the air quality objectives are likely to be achieved. Where an exceedance is considered likely, the local authority must declare an Air Quality Management Area (AQMA) and prepare an Air Quality Action Plan (AQAP) setting out the measures it intends to put in place in pursuit of the objectives. This Annual Status Report (ASR) is an annual requirement showing the strategies employed by South Oxfordshire District Council to improve air quality and any progress that has been made.

The statutory air quality objectives applicable to LAQM in England are presented in [Error! Reference source not found.](#)

## 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 12 months setting out measures it intends to put in place in pursuit of compliance with the objectives.

A summary of AQMAs declared by South Oxfordshire District Council can be found in **Error! Reference source not found.** The table presents a description of the three AQMAs that are currently designated within South Oxfordshire District Council.

Appendix D: Map(s) of Monitoring Locations and AQMAs provides maps of the AQMAs and the air quality monitoring locations in relation to the AQMAs. The air quality objective pertinent to the current AQMA designations is the NO<sub>2</sub> 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 National Highways?	Level of Exceedance: Declaration	Level of Exceedance: Current Year	Name and Date of AQAP Publication	Web Link to AQAP
Henley	01/01/2003	NO <sub>2</sub> Annual Mean	An area encompassing Duke Street and Bell Street in 2002 and was further extended in 2004 to include the Market Place, Hart Street and Reading Road.	NO	45.1	34	Air Quality Action Plan 2014: Henley	<a href="#">2014 AQ Action Plan</a>
Wallingford	28/03/2008	NO <sub>2</sub> Annual Mean	An area encompassing the High Street and part of Castle Street, St Marys Street and St Martins Street	NO	48.3	29.2	Air Quality Action Plan 2014: Wallingford	<a href="#">2014 AQ Action Plan</a>
Watlington	31/03/2009	NO <sub>2</sub> Annual Mean	An area encompassing Shirburn Street, Couching Street and Brook Street	NO	51.3	28.5	Air Quality Action Plan 2014: Watlington	<a href="#">2014 AQ Action Plan</a>

South Oxfordshire District Council confirm the information on UK-Air regarding their AQMAs is up to date.

South Oxfordshire District Council confirm that all current AQAPs have been submitted to Defra.

\*Note: 2014 AQ Action Plan is available at: [https://oxfordshire.air-quality.info/documents/air\\_quality\\_action\\_plan.pdf](https://oxfordshire.air-quality.info/documents/air_quality_action_plan.pdf)

## 2.2 Progress and Impact of Measures to address Air Quality in South Oxfordshire

Defra's appraisal of last year's ASR concluded that:

1. *An updated AQAP is required for all AQMAs. It is encouraging that the Council have highlighted this as a priority for the coming year. The Council are encouraged to continue with the development of the updated AQAP, and report updated actions to be included in the AQAP in the 2021 ASR.*

Please see page 6 for progress on the production and adoption of the Council's new AQAP.

2. *The Council have included a very detailed section on PM<sub>2.5</sub> emissions in the district and actions being taken that can reduce PM<sub>2.5</sub>. This is commended and the Council should continue to report in this level of detail in future ASRs.*

This report contains the information regarding PM<sub>2.5</sub> provided in last years' report.

3. *For consistency across tables, all coordinates should be provided with no decimal places. The coordinates of the automatic monitoring sites should be corrected.*

The coordinates provided in this report do not include decimal places.

4. *COVID-19 impacts have been discussed in Appendix F and we welcome the detailed information provided by the Council surrounding impacts of the pandemic on air quality. The Council have appropriately applied impact ratings to the challenges and constraints faced during the pandemic.*

This report does not include a section on Covid-19 impacts as per the template.

5. *In addition to the ASR Table Template excel file, it would be beneficial if the Council provided the Diffusion Tube Data Processing Tool used in QA/QC of the monitoring results.*

The Diffusion Tube Data Processing Tool used to produce this report has been uploaded to the submission portal.

6. *Overall, the Council have provided a very thorough and detailed report which contains the required content and more.*

South Oxfordshire District Council has taken forward a number of direct measures during the current reporting year of 2021 in pursuit of improving local air quality. Details of all measures completed, in progress or planned are set out in Table 2.2. Twenty-seven

measures are included within **Error! Reference source not found.2**, with the type of measure and the progress South Oxfordshire District Council have made during the reporting year of 2021 presented. Where there have been, or continue to be, barriers restricting the implementation of the measure, these are also presented within **Error! Reference source not found.2**.

More detail on these measures can be found in South Oxfordshire District Council's 2014 Action Plan, available here [https://oxfordshire.air-quality.info/documents/air\\_quality\\_action\\_plan.pdf](https://oxfordshire.air-quality.info/documents/air_quality_action_plan.pdf).



**Figure 1 One of the posters designed to promote sustainable means of transport to get to school**

One of the completed measures is the **third stage of the anti-idling campaign “Turn it Off”**, which targeted pollution at school gates by encouraging parents and students to travel to school by sustainable means such as walking, cycling or scooting.

For this third stage, new posters (see Figure 1) to promote the campaign's message were created and made available to all schools in the district via the campaign website.

Also, as part of this campaign, an artwork competition where children were challenged to create superheroes to combat air pollution was launched in May 2021. The winning design, selected out of the 66

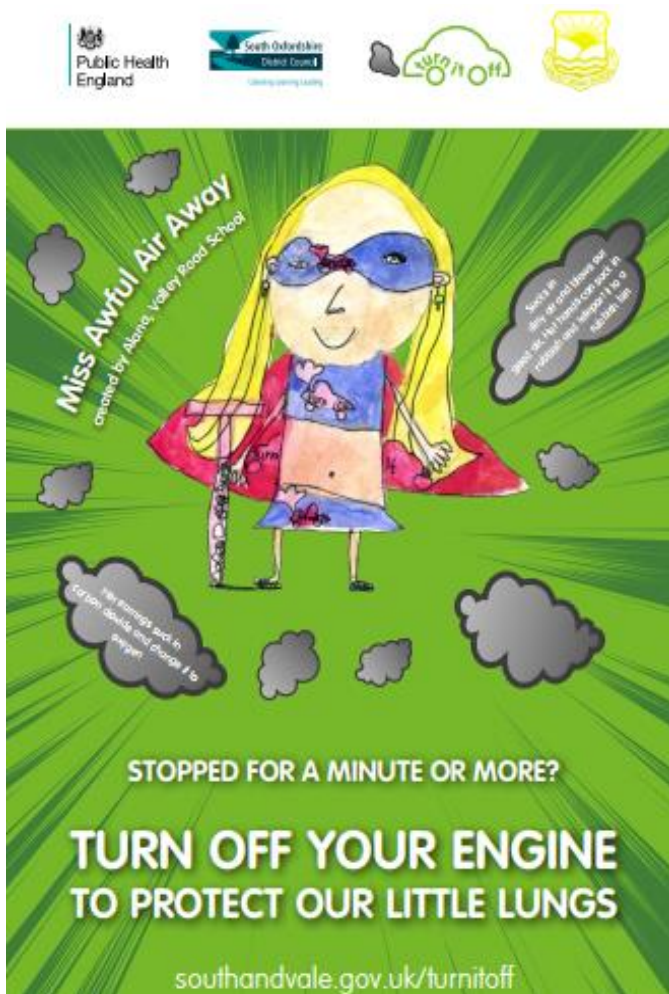
entries by the competition judges, was made into posters (see Figure 2) and banners for the winner's school to display at their gates. The winner was also presented with a scooter and helmet at an event held at school, where Councillor Sue Cooper discussed what they can do to improve air quality.

In 2021 a **new Taxi Licensing Policy** was adopted by the Council. This will result in further reduced emissions from the taxi fleet in future years and addresses the issue of engine idling at taxi ranks.

Another completed measure was **Phase 1 of the project to update the Oxfordshire Air Quality Website**. Following the successful bid to Defra's AQ Grant Programme, a social research exercise was carried out in 2021 to understand what information members of the

public would like to find in the Oxfordshire AQ Website and what tools would make this information easily accessible. The research consisted of a public consultation in Oxford City, including telephone interviews to different groups of the population. The outcomes of this research informed the features that will be included in the new website, that will be developed in Phase 2 of the project.

**Figure 2 Anti-idling poster including the superhero competition winning design**



South Oxfordshire District Council expects the following measures to be completed over the course of the next reporting year:

- Production and adoption of the Council's new AQAP.
- Installation of 60 new EV charging points in council run car parks across the district, as part of the Oxfordshire EV Charging Project. These charging points will be available in Wallingford (Cattle Market and Goldsmiths Lane car parks), Henley (Kings Road and Greys Road car parks) and Thame (Southern Road car park) and will give residents with no off-street parking the ability to park for free overnight and charge their electric vehicles with competitive prices.
- Phase 2 of the project to update the Oxfordshire Air Quality Website, in partnership with other LAs in Oxfordshire.
- Cholsey Primary School to be provided with a Zephyr sensor as part of the Active Travel to Schools pilot.

South Oxfordshire District Council's priority for the coming year is the production and adoption of the new AQAP and starting to implement the measures outlined in the document. In 2021 the production and adoption of a new AQ Action Plan was included in

the Council's Corporate Plan and declared one of the Council's priorities for 2022 in terms of LAQM.

Following the internal preparatory work to support this project and the allocation of funds and resources to ensure its delivery, it has been decided that the production of the new AQAP will be aided by commissioning an experienced air quality consultancy.

A transport survey will also be commissioned prior to the production of the AQAP. This survey will be carried out in 2022 and will focus on traffic within the three AQMAs in the district to ensure the data used for the source apportionment is representative of the current situation.

The procurement for these two contracts will start in June 2022, with the traffic survey taking place in the summer and being followed by the production of the AQAP. The Council will work closely with the appointed consultant and community groups, Town and Parish Councils in the district and Oxfordshire County Council to ensure the measures considered, and especially those finally shortlisted, don't just target air pollution efficiently and cost effectively but are also feasible within reasonable timescales.

It is estimated that the new AQAP will be adopted following the public consultation stage, by the end of 2022.

Progress on the production and adoption of the new AQAP has been slower than expected due to internal pressures and staffing issues that have delayed the procurement stage of the project.

South Oxfordshire District Council worked to implement the above measures in partnership with the following stakeholders during 2021:

- Oxfordshire County Council
- Oxford Bus Company
- Primary schools in the district, such as Valley Road Primary School (Henley)

The principal challenges and barriers to implementation that South Oxfordshire District Council anticipates are some action's progress depends on third parties, changing policies or lack of resources.



Whilst the measures stated above and in **Error! Reference source not found.** will help to contribute towards compliance, South Oxfordshire District Council anticipates that further additional measures not yet prescribed, which will be included in the new AQ Action Plan, will be required in subsequent years to achieve compliance and enable the potential revocation of the AQMAs in the district.

**Table 2. 2 Progress on Measures to Improve Air Quality**

Measure No.	Measure	Category	Classification	Year Measure Introduced	Estimated / Actual Completion Year	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	LES	Policy Guidance and Development Control	Low Emissions Strategy	2017	2017	SODC	SODC	NO	Fully funded	£50k - £100k	Completed	16% NO <sub>2</sub> reduction in Wallingford, 35% in Watlington and an overall 5% reduction districtwide	New policies in place. NO <sub>2</sub> levels reduced	LES adopted	LES adopted in Oct2017. Further implementation will progressively take place during the following years
2	Oxfordshire Park and Charge project	Transport Planning and Infrastructure	Other	2017	2022	SODC	Innovate UK, OCC, SODC	NO	Funded	£1 million - £10 million	Implementation	Not quantified	EV infrastructure in place	Planning phase completed in 2021	60 EV chargers will be installed in council owned car parks in Wallingford, Henley and Thame. Operational in May/June 2022
3	Watlington Edge Road	Traffic Management	Strategic highway improvements, Re-prioritising road space away from cars, including Access management, Selective vehicle priority, bus priority, high vehicle occupancy lane	2014	2024/25	OCC	OCC		Funded	£10m +	Planning	Not quantified	Project (bypass road) completed	Design complete	2024/25 completion
4	Smoothing traffic flow in Watlington	Traffic Management	Strategic highway improvements, Re-prioritising road space away from cars, including Access management, Selective vehicle priority, bus priority, high vehicle occupancy lane	2014	2021/22	OCC	OCC	NO	Funded	£10-50k	Planning	Not quantified	Parking restrictions implemented	Scheme identified for delivery by developer. Scheme will result in a reduced number of parking spaces along Shirburn Street which will improve traffic flow	2021/22 completion
5	Parking permit incentives for green vehicles	Promoting Low Emission Transport	Priority parking for LEV's	2014	2015	SODC	SODC	YES	Funded	< £10k	Completed	Not quantified	Policy in place	Council's new Off-street parking places Order, which came into force April 2021, includes:  a) the introduction of half-price tickets for electric vehicles (able to run at least 20 miles on zero CO <sub>2</sub> ) and revocation of the current offer of half-price tickets for low emission vehicles, with the exception of Goldsmiths Lane, Wallingford  b) the introduction of spaces reserved for electric vehicles whilst charging and enforcement for unauthorised parking in those reserved spaces for i) parking in those spaces with a vehicle that is not an electric vehicle and ii) for parking an electric vehicle in those spaces but without charging the vehicle	
6	Feasibility study for freight consolidation	Freight and Delivery Management	Freight Consolidation Centre	2017		OCC	OCC				Aborted	Not quantified	Study completion	New freight strategy to be included in Local Transport & Connectivity Plan	

	centre / freight quality partnerships														
7	Taxi incentives for LEVs	Promoting Low Emission Transport	Taxi Licensing conditions	2015	2015	SODC	SODC	NO	Funded	< £10k	Completed	Not quantified	Full sliding scale for fees	Current taxi licensing policy promotes the uptake of LEV: From 1 January 2022 proprietors will be required to have vehicles of at least Euro 4 standard to renew their licence; and Euro 4, Euro 6 or zero-emission capable to receive a new licence. From 1 January 2026, proprietors will be required to have vehicles of at least Euro 6 standard to receive a new or renewed licence. This policy also offers reduced licence fees for LEV/EV. The current policy also addresses engine idling, with idling for more than a minute constituting a breach licensing conditions.	
8	Improved use and enforcement of traffic regulation orders	Traffic Management	Other	2014		OCC	OCC	NO	Not Funded		Aborted	Not quantified			Not being progressed other than as part of specific projects listed elsewhere
9	AQ Planning Guidance	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	2014	2020	SODC	SODC	NO	Funded	£10k - 50k	Completed	Not quantified	Guidance available to the public. All developments adhering to guidance	Updated guidance including most up to date best practice design published and available to the public	Adopting the AQ Planning Guidance as SPD will be one of the options reviewed to potentially be included in the new AQAP
10	Increased use of the Ring Road: Wallingford	Traffic Management	Other	2014		OCC	OCC	NO				Not quantified			Not currently being progressed - review as part of Local Transport Connectivity Plan, which will be adopted in 2022
11	Increased enforcement and review of the weight restriction zone: Watlington	Traffic Management	Other	2014	2018	OCC, Thames Valley Police	OCC	NO	Fully funded	Not costed	Implementation	Not quantified	Penalty charge notices issued	During stop checks in 2019, 61 vehicles were stopped and 25 FPNs were issued. In 2020, 36 vehicles were stopped and only 6 FPNs were issued. The % of stopped vehicles that were issued an FPN therefore decreased from 41% to 17%, which indicates that despite the number of vehicles remaining high in the area, the number of breaches of the WRZ is dropping.	No updated figures provided by colleagues in OCC.
12	Low Emission Bus Strategy	Transport Planning and Infrastructure	Vehicle Retrofitting programmes	2017		SODC, Oxford Bus Company, Arriva	SODC, Oxford Bus Company, Arriva	NO	Funded	£50k - £100k	Implementation	Not quantified	% of Euro VI buses	Thames Travel fleet is currently 56% EuroVI and 42% Euro V. Oxford Bus Company is 100% EuroVI. In the past year an additional 5 EuroVI buses have been purchased.	The successful bid to the DfT's ZEBRA fund for up to 159 zero-emission buses for Oxford city will likely result 100 zero emission buses being introduced to OxfordBus/Thames Travel fleet in 2023
13	Promoting the installation of EV charging points	Transport Planning and Infrastructure	Other	2017	2022	SODC	Developer funded	NO	Funded	£10k - 50k	Implementation	Not quantified	EV infrastructure in place for new developments	Encouragement through the planning process, best practice design outlined on the councils Developers Guidance states that, where on-site parking is provided in new developments, electric vehicle charging points of suitable kW/h charging rate should be installed. A minimum of: o 1 per household for each of the houses; o 1 per every 10 flats (with unallocated parking, or 1 for every dwelling if there are allocated spaces or garages);	

															o 1 'rapid charge' per 1000m2 of commercial/retail/industrial floorspace (or 10% of parking spaces with electric vehicle charging8 , whichever is greater).	
14	Anti-idling Campaign: "Turn it Off"	Public Information	Via other mechanisms	2019	2019	SODC	SODC	NO	Funded	< £10k	Implementation	Not quantified	Campaign launched. Number of projects launched.	First stage: shared information on the impacts of engine idling during a series of promotional events, provided promotional materials (car stickers, key rings) for member of the public and advertised the campaign on council car parks and in the nozzles of petrol stations. Second stage (May 2021): targeted idling at school gates by launching an artwork competition where children designed an air quality superhero. The creator of the best superhero won a scooter, and their school received banners including the winning design (see Figure 1).		
15	Review of Council and contractors' fleet	Promoting Low Emission Transport	Company Vehicle Procurement - Prioritising uptake of low emission vehicles	-	2019	SODC, Biffa	Biffa	NO	Funded	£10k - 50k	Implementation	Not quantified	New Policies in Place; Greener Vehicles Procured	Our waste contractor (Biffa) updated its fleet to Euro 6 vehicles in October 2017. Council vehicles being purchased include an emission levels appraisal as part of the selection process.		
16	Updating of the Oxfordshire Air Quality Website to improve AQ communication	Public Information	Via the Internet	2021	2023	SODC, Other LAs in Oxfordshire	SODC, Other LAs in Oxfordshire, Defra grant	YES	Funded	£100k - £500k	Planning	Not quantified	Number of website visitors. Number of website downloads. Reduction of public requests for AQ information	Original website launched in 2009. funding to update it secured in 2021 and followed shortly by Phase 1 of the updating project. This included a social research exercise to understand the public's needs which will inform the development of the new website.	Phase 2 (procurement of the contract) launches May 2022	
17	A low emission freight strategy: Delivery service plans	Freight and Delivery Management	Delivery and Service plans	2017		OCC	OCC	None	Not funded	Not costed	Not currently being progressed	Not quantified	N/A	Not currently being progressed	New freight strategy to be included in Local Transport & Connectivity Plan which will be adopted in 2022	
18	Scheme to part fund Parish Councils' projects aimed at improving air quality	Other	Other	2019	2021	SODC, Henley Town Council, Watlington Parish Council	SODC, Henley Town Council	NO	Funded	£10k - £50k	Implementation	Not Quantified	Projects completed	Projects funded are now completed: PM monitoring study and car club in Henley; purchase and installation of cycling racks for Watlington.		
19	School Streets	Traffic Management	Strategic highway improvements, Re-prioritising road space away from cars, including Access management, Selective vehicle priority, bus priority, high vehicle occupancy lane	2021	2021	OCC	OCC	N/A	Fully funded	£50k-£100k	Planning	Not quantified	Roll out of Active Travel to School programme and pilot of Active Travel to Work scheme	Currently reviewing schools to form second Active Travel to Schools pilot with Cholsey Primary School being selected as a control site. As part of this program air pollution will be monitored at the school gates by mean of Zephyr sensors.	Funding required to support roll out of active travel to school programme that includes school streets and active travel to work	
20	"Park and Stride" Campaign	Promoting Travel Alternatives	Promotion of walking	-	2021	OCC	OCC	NO	Funded	< £10k		Not quantified	Delivery of Park & Stride initiatives	Not currently being progressed	Funding required to support roll out of active travel to school programme that includes park and stride	
21	Awareness campaigns to promote walking	Promoting Travel Alternatives	Promotion of walking	2014		SODC OCC	SODC OCC	NO	Developer funding available for some projects	£10k - £50k	Implementation	Not quantified	Delivery of various behavioural change projects	Street Tag initiative underway countywide to promote walking; in SODC there were 140 users of the app with participation peaking in October. More than half of participants walked at least 1.5 miles/week every month (except January)		

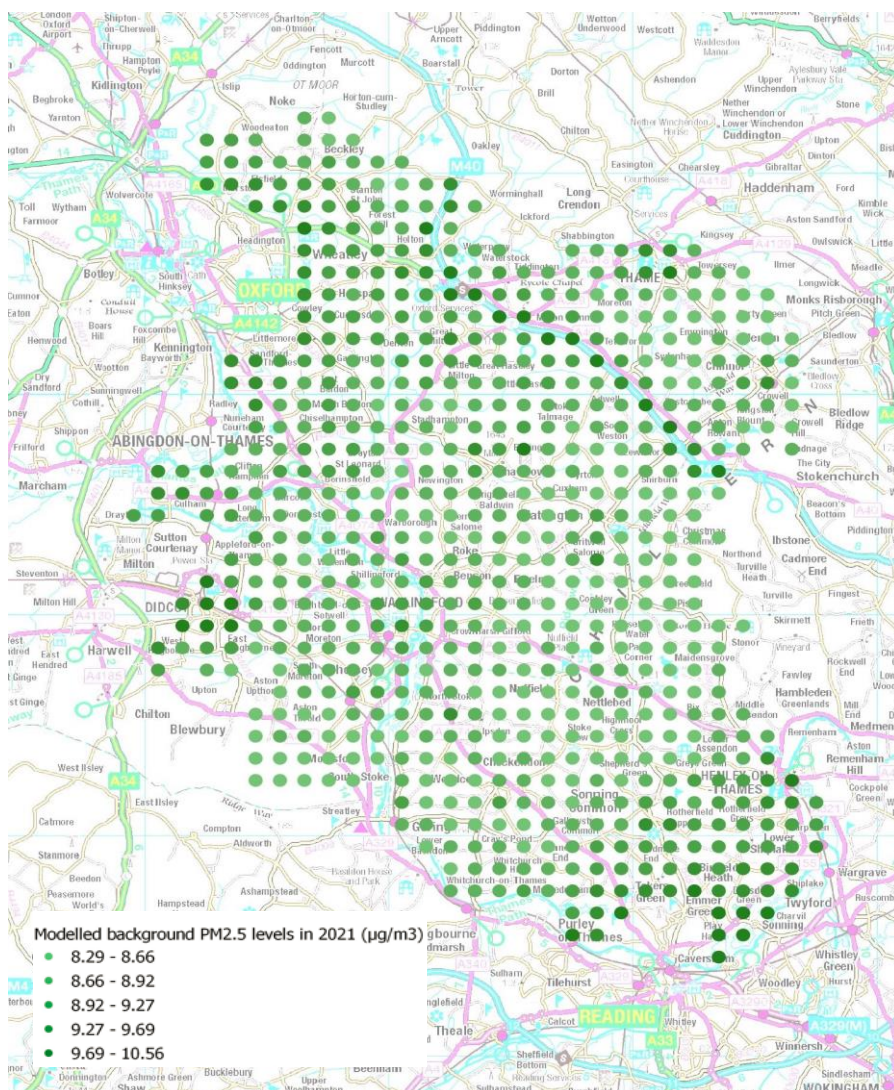
														Developer funded schemes approved	
22	South & Vale Active Travel Phase 2	Promoting Travel Alternatives	Cycling and walking schemes	2021	2022-25	OCC	OCC		Partially funded	£1m-£10m	Feasibility	Not quantified	Delivery of walking and cycling improvements	Scoping of feasibility work underway; work underway to identify gaps in the network and high priority schemes. £1m available, split across 3 years 22/23-24/25	
23	Didcot LCWIP	Promoting Travel Alternatives	Cycling and walking schemes	2021	2022-25	OCC SODC	OCC SODC(DGT)		Fully funded	£50k-£100k	Planning	Not quantified	Delivery of walking and cycling improvements	Funding available for study and LCWIP development through Didcot Garden Town. Procurement process underway, led by SODC	
24	Scheme to promote sustainable school travel	Promoting Travel Alternatives	School Travel Plans	2020	Ongoing	OCC Schools	OCC DfT Active Travel Fund Tranche 2	None	Fully funded	£0-£10k	Implementation	Not quantified	Development of voluntary school travel plans	School travel plans developed through Modeshift Stars programme	
25	Scheme to promote sustainable travel to the workplace	Promoting Travel Alternatives	Workplace Travel Planning	2014	Ongoing	OCC Developers SODC	Developers, OCC	None	Fully funded	£100k-£500k	Implementation	Not quantified	Development of workplace travel plans for new employment sites	Workplace travel plans secured on all new developments above size threshold	
26	Eco-driver training	Vehicle Fleet Efficiency	Driver training and ECO driving aids	2020	2020	SODC	SODC	NO	Funded	< £10k	Completed	Not quantified	Training Complete	Eco-driving workshop took place in December 2020 with 80 officers taking part	
27	Promotion of car & lift sharing schemes	Alternatives to private vehicle use	Car & lift sharing schemes	2020	2025	OCC, LiftShare	OCC	None	Fully funded	£0-10k	Implementation	Not quantified	Delivery of various initiatives including LiftShare	Oxfordshire LiftShare in operation	

## 2.3 PM<sub>2.5</sub> – Local Authority Approach to Reducing Emissions and/or Concentrations

As detailed in Policy Guidance LAQM.PG16 (Chapter 7), local authorities are expected to work towards reducing emissions and/or concentrations of PM<sub>2.5</sub> (particulate matter with an aerodynamic diameter of 2.5µm or less). There is clear evidence that PM<sub>2.5</sub> has a significant impact on human health, including premature mortality, allergic reactions, and cardiovascular diseases.

Regarding particulate matter levels in the district, examples from councils across the country who have traffic related AQMA's highlight that where NO<sub>2</sub> levels are typically around 60-70 µg/m<sup>3</sup>, measured particulate matter (PM<sub>10</sub>) levels at the same location remain below 25 µg/m<sup>3</sup>, which is well below the national objective level of 40 µg/m<sup>3</sup>.

**Figure 3 Modelled background PM<sub>2.5</sub> levels in South Oxfordshire in 2021**

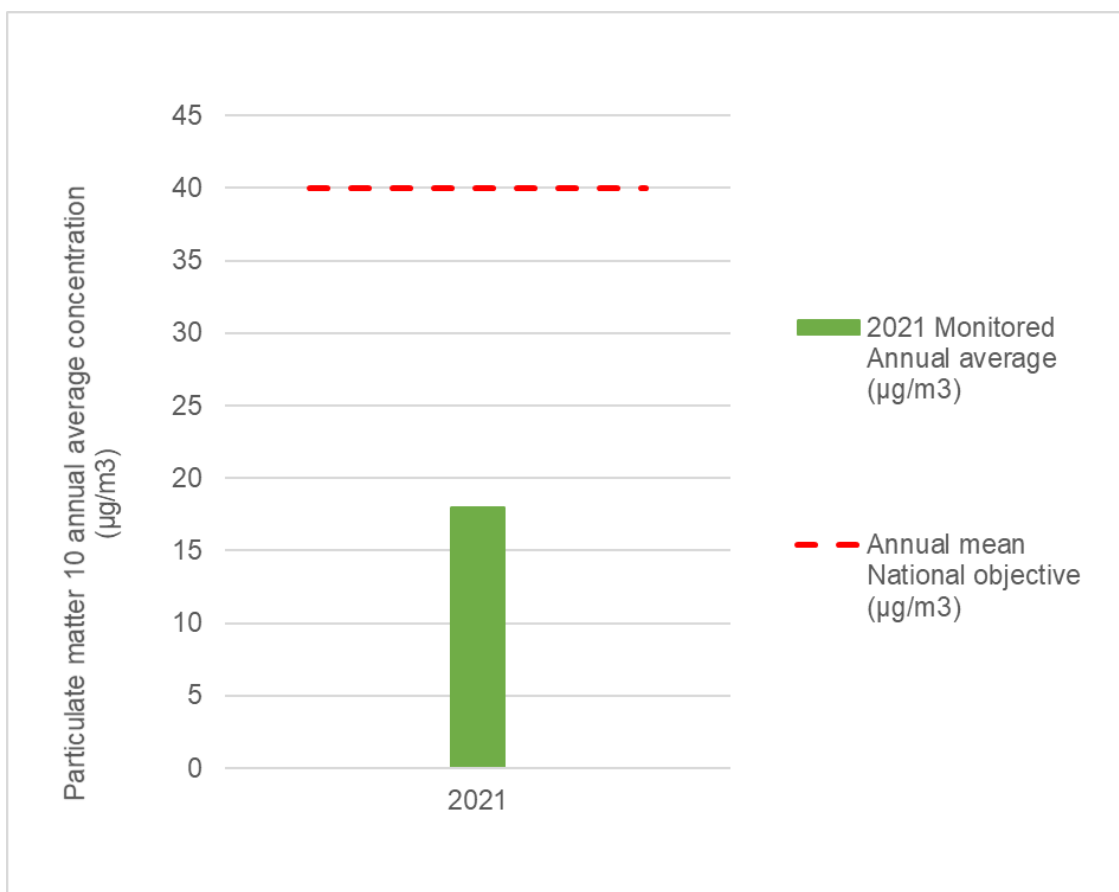


Although there are both primary and secondary traffic related PM<sub>10</sub> sources, the majority of the PM<sub>10</sub> and PM<sub>2.5</sub> fraction in our District is made up from background sources. No other significant PM sources have been identified in South Oxfordshire (see below Appendix F) and therefore the DEFRA background mappings of PM are believed to be accurate putting PM<sub>2.5</sub> levels below 8.88 µg/m<sup>3</sup> in 2021 (please see Figure 4 for an illustration of Defra’s PM<sub>2.5</sub> modelled levels in the district), which is just half that of the national objective level.

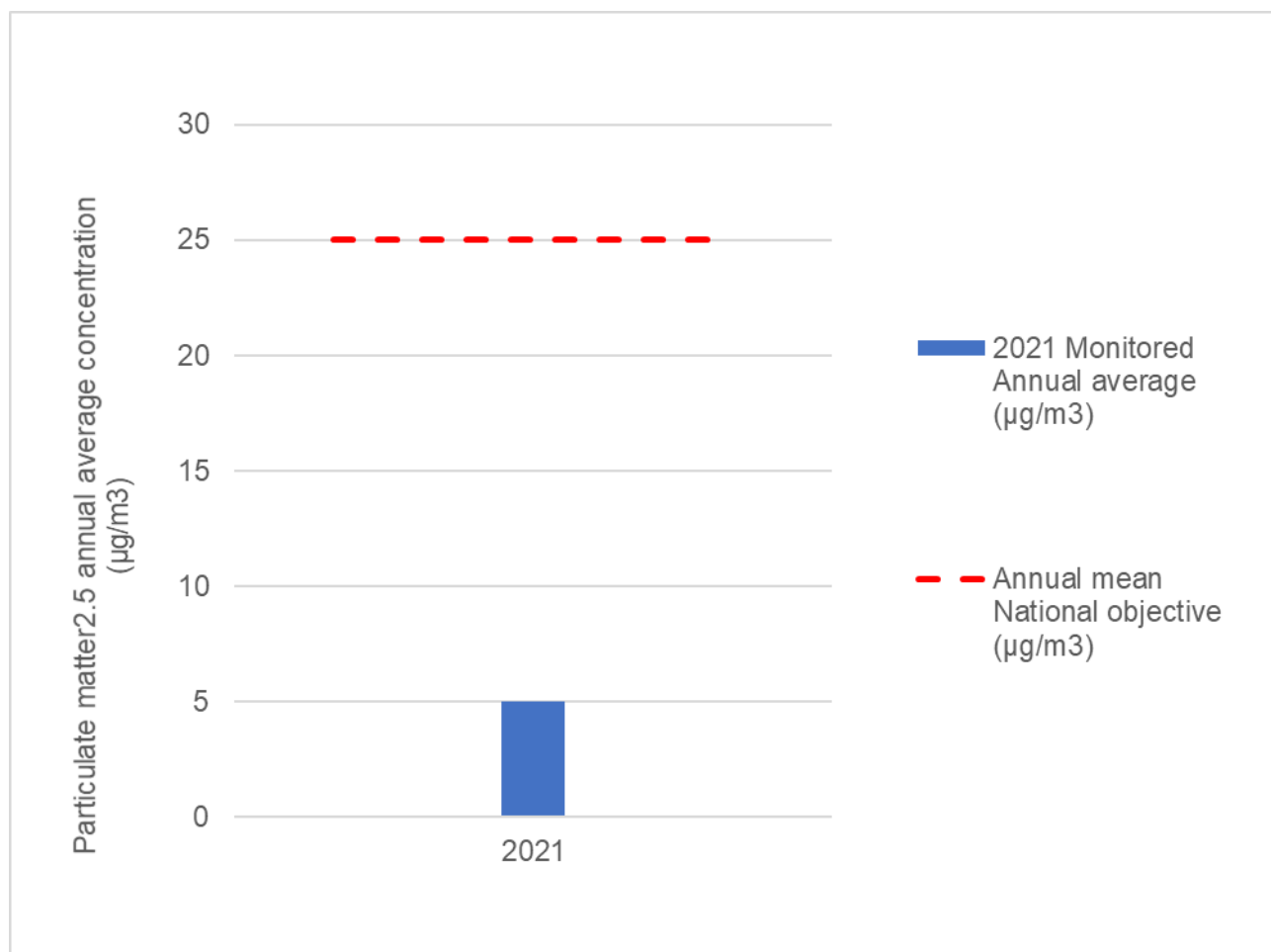
One of the projects match funded by South Oxfordshire District Council in 2020-2021 was the [particulate matter monitoring study](#) commissioned by Henley Town Council. This study monitored NO<sub>2</sub>, PM<sub>10</sub> and PM<sub>2.5</sub> levels by means of a Vaisala indicative AQ sensor, in a location within Henley AQMA, where NO<sub>2</sub> levels were highest on South Oxfordshire.

The provisional data obtained from this study in 2021, presented in Figures 3 and 4 and Table 2.3, are only indicative due to the traceability of the instrument and low data capture, but they support the idea of particulate matter concentrations falling well below national objective levels at all locations throughout the district.

**Figure 4 Recorded PM<sub>10</sub> levels at Henley Greys Road monitoring station in 2021 (Jan-Sept survey)**



**Figure 5 Recorded PM<sub>2.5</sub> levels at Henley Greys Road monitoring station in 2021 (Jan-Sept survey)**



**Table 2. 3 Indicative PM monitoring data recorded in Henley in 2021**

Pollutant	Monthly averages									Annual average
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	
PM <sub>2.5</sub> hourly mean (µg/m <sup>3</sup> )	1.3	4.9	6.3	10.8	4.5	4.9	4.2	4.5	6.0	5
PM <sub>10</sub> hourly mean (µg/m <sup>3</sup> )	9.8	21.0	23.5	28.1	15.4	15.0	15.0	15.5	22.2	18

Despite current particulate matter levels meeting the national objective, particulate matter has an impact on the health of South Oxfordshire’s residents. The Public Health Outcomes



Framework sets out a vision for public health, that is to improve and protect the nation's health, and improve the health of the poorest fastest. They have developed a set of supporting indicators that help focus our understanding of how well we are doing, one of them being the fraction of mortality attributable to particulate air pollution.

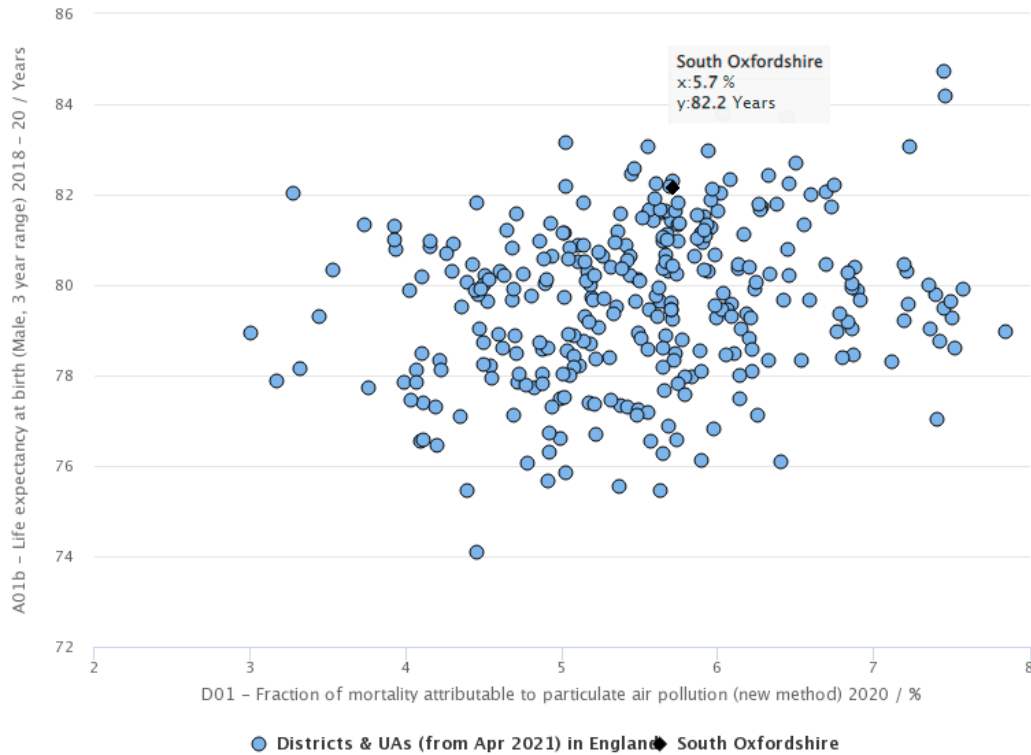
Indicator D.01 represents the fraction of annual all-cause adult mortality attributable to human-made particulate air pollution (PM<sub>2.5</sub>).

The Public Health Outcomes Framework research, shown below in Figures 5 and 6, has determined that, in South Oxfordshire, 5.7 per cent of deaths from all causes in those aged 30 years plus are attributable to long-term exposure to PM<sub>2.5</sub>. This figure puts South Oxfordshire just below both the county average fraction of mortality attributable to PM<sub>2.5</sub> but over that of the national average (as shown on Table 2.4 below).

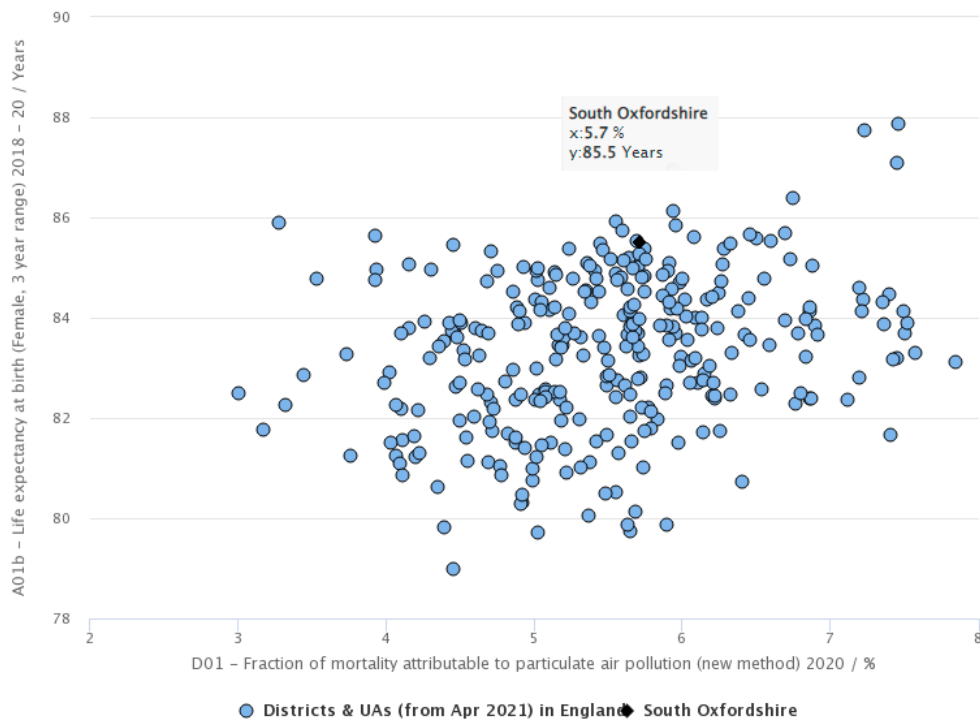
**Table 2. 4 Fraction of mortality attributable to PM2.5: an overview**

Indicator	England	Southeast Region	Oxfordshire	South Oxfordshire District Council	Vale of White Horse District Council
D01 - Fraction of mortality attributable to particulate air pollution (new method)	5.6%	6%	5.8%	5.7%	5.7%

**Figure 6 Public Health Outcomes Framework: Fraction of female mortality attributable to PM<sub>2.5</sub> in South Oxfordshire**



**Figure 7 Public Health Outcomes Framework: Fraction of male mortality attributable to PM<sub>2.5</sub> in South Oxfordshire**



To reduce PM levels further and working towards achieving the new 2021 Guideline values set by the World Health Organisation, some of the measures taken by the council to tackle NO<sub>2</sub> levels will also result in a reduction of PM emissions. Table 2.5 below shows which of the council's actions also target the reduction of the existing PM<sub>2.5</sub> levels in the district.

**Table 2. 5 List of measures in SODC's 2014 Action Plan that target PM2.5 reduction according to LAQM.TG16 Action Toolbox**

Measure	Reduces PM2.5 emissions
LES	✓
Installation of EV charging points	✓
Parking permit incentives for green vehicles	✓
Feasibility study for freight consolidation centre / freight quality partnerships	✓
Taxi incentives for LEVs	✓
Improved use and enforcement of traffic regulation orders	
Review of Council and contractors' fleet	✓
Eco-driver training	✓
AQ planning guidance	
Increased use of the Wallingford ring road	✓
Community projects	
Awareness campaigns	
Behavioural change projects	

A low emission freight strategy: Delivery service plans	✓
"Park and Stride" Campaign	✓
Anti-idling Campaigns	✓
Smoothing traffic flow in Watlington	✓
Increased enforcement and review of the weight restriction zone in Watlington	✓
A low emission bus strategy	✓
Mini Park and Ride	✓

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

This section sets out the monitoring undertaken within 2021 by South Oxfordshire District Council and how it compares with the relevant air quality objectives. In addition, monitoring results are presented for a five-year period between 2017 and 2021 to allow monitoring trends to be identified and discussed.

### 3.1 Summary of Monitoring Undertaken

#### 3.1.1 Automatic Monitoring Sites

South Oxfordshire District Council undertook automatic (continuous) monitoring at 3 sites during 2021. **Error! Reference source not found.** in Appendix A shows the details of the automatic monitoring sites. NB. Local authorities do not have to report annually on the following pollutants: 1,3 butadiene, benzene, carbon monoxide and lead, unless local circumstances indicate there is a problem. Page 30 presents automatic monitoring results for South Oxfordshire District Council, with automatic monitoring results also available through the UK-Air website.

Maps showing the location of the monitoring sites are provided in Appendix D. Further details on how the monitors are calibrated and how the data has been adjusted are included in Appendix C.

#### 3.1.2 Non-Automatic Monitoring Sites

South Oxfordshire District Council undertook non-automatic (i.e. passive) monitoring of NO<sub>2</sub> at 83 sites during 2021. **Error! Reference source not found.** in Appendix A presents the details of the non-automatic sites.

Maps showing the location of the monitoring sites are provided in Appendix D and the Oxfordshire Air Quality Website: <https://oxfordshire.air-quality.info>. 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<sub>2</sub>)

**Error! Reference source not found.** and **Error! Reference source not found.** in Appendix A compare the ratified and adjusted monitored NO<sub>2</sub> annual mean concentrations for the past five years with the air quality objective of 40µg/m<sup>3</sup>. 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 2021 dataset of monthly mean values is provided in Appendix B. Note that the concentration data presented in **Error! Reference source not found.** includes distance corrected values, only where relevant.

**Error! Reference source not found.** in Appendix A compares the ratified continuous monitored NO<sub>2</sub> hourly mean concentrations for the past five years with the air quality objective of 200µg/m<sup>3</sup>, not to be exceeded more than 18 times per year.

No exceedances of either the annual mean or 1-hour objective were recorded in South Oxfordshire in 2021.

Over half the monitoring sites, 54% of the 82, recorded lower NO<sub>2</sub> concentrations than they did in 2020, supporting the 5 year downward trend followed as shown on [Figures A1-A9](#).

During 2021 the behavioural changes resulting from Covid 19 restrictions continued, and so 2021 cannot be relied upon as a typical year. It is difficult to draw any distinction between how these behavioural changes have impacted on the improvements in air quality, and the benefits from improvements in traffic emissions overall..

## Appendix A: Monitoring Results

**Table A. 1 Details of Automatic Monitoring Sites**

Site ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Monitoring Technique	Distance to Relevant Exposure (m) <sup>(1)</sup>	Distance to kerb of nearest road (m) <sup>(2)</sup>	Inlet Height (m)
Wallingford	Wallingford 83 High St	Roadside	460800	189500	NO2	YES	Chemiluminescent	0	1.2	1.5
Henley	Henley 45 Duke St	Roadside	476116	182531	NO2	YES	Chemiluminescent	0	3.5	1.5
Watlington	Watlington Town hall	Kerbside	468973	194487	NO2	YES	Chemiluminescent	0	0.2	1.5

**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 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) <sup>(1)</sup>	Distance to kerb of nearest road (m) <sup>(2)</sup>	Tube Co-located with a Continuous Analyser?	Tube Height (m)
S27	S27: 50 High Street, Wheatley	Kerbside	459532	205740	NO <sub>2</sub>	No	0.0	1.0	No	2.0
S78	S78: 2 Old London Road, Wheatley	Kerbside	460228	205720	NO <sub>2</sub>	No	4.0	1.0	No	2.0
S79	S79: 16 Old London Road, Wheatley	Kerbside	460504	205642	NO <sub>2</sub>	No	8.0	1.0	No	1.5
S73	S73: 41 Aylesbury Road, Thame	Roadside	470605	206554	NO <sub>2</sub>	No	2.0	2.0	No	2.0
S29	S29: 16 Park Street, Thame	Kerbside	471010	205598	NO <sub>2</sub>	No	1.0	1.0	No	2.0
S80	S80: 1 Youens drive, Thame	Roadside	471103	205107	NO <sub>2</sub>	No	3.0	4.0	No	2.0
S81	S81: 3 Massey Road, Thame	Kerbside	471155	205016	NO <sub>2</sub>	No	2.0	1.0	No	2.0
S82	S82: 2 Robin Gibb Road, Thame	Kerbside	471078	204851	NO <sub>2</sub>	No	13.0	1.0	No	2.0
S83	S83: 12 Markus Avenue, Thame	Kerbside	470964	204914	NO <sub>2</sub>	No	7.0	1.0	No	2.0
S84	S84: 1 Thame Park Road (The Falcon), Thame	Kerbside	471212	205340	NO <sub>2</sub>	No	9.0	1.0	No	2.0
S85	S85: Opp 1 Howland Road, Thame	Kerbside	471918	204934	NO <sub>2</sub>	No	17.0	1.0	No	2.0



S74	S74: Churchill Crescent, Kingsey Rd, Thame	Roadside	471695	205806	NO <sub>2</sub>	No	0.0	2.0	No	2.0
S28	S28: 1 Ludlow Drive, Thame	Roadside	471283	205977	NO <sub>2</sub>	No	6.0	2.0	No	2.0
S86	S86: 43 Mill Lane, Chinnor	Kerbside	474930	201039	NO <sub>2</sub>	No	9.0	1.0	No	2.0
S26	S26: 3 Lower Road, Chinnor	Roadside	475250	201230	NO <sub>2</sub>	No	2.0	2.0	No	2.0
S87	S87: 35 High Street, Chinnor	Kerbside	475703	201120	NO <sub>2</sub>	No	9.0	1.0	No	2.0
S88	S88: 20 Church Road, Chinnor	Kerbside	475720	200930	NO <sub>2</sub>	No	9.0	1.0	No	2.0
S89	S89: 31 Station Road, Chinnor	Roadside	475415	200942	NO <sub>2</sub>	No	6.0	2.0	No	2.0
S90	S90: Plum Cottage, Crowell Road, Chinnor	Kerbside	475001	200196	NO <sub>2</sub>	No	1.0	1.0	No	2.0
S61	S61: 10 Adwell Cottages, Tetsworth	Roadside	470207	200190	NO <sub>2</sub>	No	0.0	15.0	No	2.0
S103	S103: Whitchurch - 1Duchess Close	Kerbside	463527	177174	NO <sub>2</sub>	No	0.0	1.0	No	2.0
S104	S104: Whitchurch - Hawthorn House	Kerbside	463555	177099	NO <sub>2</sub>	No	0.0	1.0	No	2.0
S75	S75: 63 High Street (Plumtree Cottage), Little Milton	Kerbside	461901	200989	NO <sub>2</sub>	No	0.0	1.0	No	2.0
S76	S76: 2 Cratlands Close, Stadhampton	Kerbside	460279	198618	NO <sub>2</sub>	No	10.0	1.0	No	2.0

S77	S77: Holme Cottage, Newington Rd, Stadhampton	Kerbside	460163	198398	NO <sub>2</sub>	No	2.0	1.0	No	2.0
S39	S39: 17 St Leonards Close, Watlington	Urban Background	468479	194721	NO <sub>2</sub>	No	0.0	6.0	No	2.0
S37	S37: 27 Brook Street, Watlington	Kerbside	468756	194360	NO <sub>2</sub>	Watlington AQMA	2.0	1.0	No	2.0
S38	S38: 57 Brook Street, Watlington	Roadside	468856	194293	NO <sub>2</sub>	Watlington AQMA	5.0	2.0	No	2.0
S36	S36: 9 Couching St, Watlington	Roadside	468852	194343	NO <sub>2</sub>	Watlington AQMA	3.0	2.0	No	2.0
S33	S33: 41 Couching St, Watlington	Kerbside	468951	194457	NO <sub>2</sub>	Watlington AQMA	0.0	1.0	No	2.0
S32	S32: 48 Couching St (Co-Op), Watlington	Kerbside	468962	194458	NO <sub>2</sub>	Watlington AQMA	0.0	1.0	No	2.0
S31	S31: 23 Shirburn Street, Watlington	Kerbside	469061	194590	NO <sub>2</sub>	Watlington AQMA	0.0	1.0	No	2.0
S30	S30: 8 Shirburn St, Watlington	Kerbside	469017	194514	NO <sub>2</sub>	No	0.0	1.0	No	2.0
S67	S67: 11A Watlington Road, Benson	Kerbside	461724	191785	NO <sub>2</sub>	No	4.0	0.0	No	2.0
S68	S68: 3A The Street (New house), Wallingford	Kerbside	461298	189367	NO <sub>2</sub>	No	3.0	1.0	No	2.0
S12	S12: 2 Station Road, Wallingford	Roadside	460389	189498	NO <sub>2</sub>	Wallingford AQMA	0.0	2.0	No	2.0

S13	S13: 68 High Street, Wallingford	Kerbside	460640	189483	NO <sub>2</sub>	Wallingford AQMA	0.0	1.0	No	2.0
S15	S15: 33 Castle Street, Wallingford	Kerbside	460736	189567	NO <sub>2</sub>	Wallingford AQMA	1.0	1.0	No	2.0
S19, S20, S21	S21: George Hotel, High St (co-location), Wallingford	Roadside	460799	189500	NO <sub>2</sub>	Wallingford AQMA	0.0	2.0	Yes	1.5
S23	S23: 102 High St (The Gate House), Wallingford	Roadside	460938	189496	NO <sub>2</sub>	Wallingford AQMA	0.0	2.0	No	2.0
S16	S16: 52 St Mary's Street, Wallingford	Roadside	460713	189279	NO <sub>2</sub>	No	0.0	2.0	No	2.0
S18	S18: 10 St Martins Street, Wallingford	Roadside	460684	189204	NO <sub>2</sub>	No	0.0	1.5	No	2.0
S63	S63: 19 St Johns Road, Hithercroft, Wallingford	Kerbside	460152	189130	NO <sub>2</sub>	No	3.0	1.0	No	2.0
S17	S17: 57 Brookmead Drive, Wallingford	Urban Background	460282	188807	NO <sub>2</sub>	No	16.0	1.0	No	2.0
S69	S69: Outside Bartlett Close, Reading Road, Wallingford	Urban Background	460470	188224	NO <sub>2</sub>	No	9.0	1.0	No	2.0
S93	S93: The Lodge, Wallingford Rd, Wallingford	Roadside	460110	187862	NO <sub>2</sub>	No	14.0	3.0	No	1.0
S94	S94: Willow Cottage, 68	Roadside	459805	187574	NO <sub>2</sub>	No	38.0	2.0	No	2.0

	Wallingford Rd, Wallingford									
S70	S70: Newham Manor Farm, A4074, Wallingford	Roadside	461916	188424	NO <sub>2</sub>	No	25.0	1.0	No	1.5
S42	S42: 82 Northfield End, Henley	Roadside	475869	183217	NO <sub>2</sub>	No	2.0	2.0	No	2.0
S66	S66: 39 Kings Road, Henley	Kerbside	475878	182760	NO <sub>2</sub>	No	1.0	1.0	No	2.0
S47	S47: 2 Greys Road, Henley	Kerbside	476103	182506	NO <sub>2</sub>	Henley AQMA	1.0	1.0	No	2.0
S46	S46: 35 Reading Road, Henley	Roadside	476174	182396	NO <sub>2</sub>	Henley AQMA	3.0	1.0	No	2.0
S43	S43: Imperial Court, Station Road, Henley	Roadside	476286	182290	NO <sub>2</sub>	No	6.0	2.0	No	2.0
S48, S49, S50	S50: 45 Duke St (co-location), Henley	Roadside	476115	182532	NO <sub>2</sub>	Henley AQMA	1.0	4.0	Yes	1.5
S51	S51: 4 Duke Street, Henley	Kerbside	476071	182612	NO <sub>2</sub>	Henley AQMA	0.0	1.0	No	2.0
S53	S53: 27 Market Place, Henley	Roadside	475997	182614	NO <sub>2</sub>	Henley AQMA	0.0	3.0	No	2.0
S40	S40: 82 Bell Street (Atlantic House), Henley	Kerbside	476080	182951	NO <sub>2</sub>	No	1.0	1.0	No	2.0
S41	S41: 33 New Street, Henley	Kerbside	476209	182831	NO <sub>2</sub>	No	0.0	1.0	No	2.0
S65	S65: 23 Thameside, Henley	Roadside	476308	182760	NO <sub>2</sub>	No	0.0	2.0	No	2.0

S45	S45: Upton Close, Reading Road, Henley	Roadside	476288	182078	NO <sub>2</sub>	No	18.0	2.0	No	2.0
S52	S52: 40 Hart St, Henley	Roadside	476223	182652	NO <sub>2</sub>	Henley AQMA	0.0	2.0	No	2.0
S44	S44: 178 Reading Road, Henley	Roadside	476547	181735	NO <sub>2</sub>	No	1.0	3.0	No	2.0
S54	S54: 15 Lovell Close, Henley	Urban Background	475104	181557	NO <sub>2</sub>	No	6.0	1.0	No	2.0
S5	S5: 8 Lune Close, Didcot	Urban Background	453499	190384	NO <sub>2</sub>	No	2.0	1.0	No	2.0
S96	S96: Marsh Play Area, Didcot	Kerbside	453357	190030	NO <sub>2</sub>	No	0.0	1.0	No	2.0
S4	S4: 55 Broadway, Didcot	Roadside	453099	190031	NO <sub>2</sub>	No	4.0	3.0	No	2.0
S7	S7: 77 The Broadway, Didcot	Roadside	453023	189999	NO <sub>2</sub>	No	0.0	5.0	No	2.0
S11	S11: 110 The Broadway, Didcot	Roadside	452865	189979	NO <sub>2</sub>	No	2.0	2.0	No	2.0
S95	S95: 18 Mereland Road, Didcot	Kerbside	452753	189729	NO <sub>2</sub>	No	9.0	1.0	No	2.0
S97	S97: 4 Cronshaw Close, Didcot	Kerbside	452358	190521	NO <sub>2</sub>	No	5.0	1.0	No	2.0
S71	S71: 8 Great Western Drive, Station road, Didcot	Roadside	452084	190694	NO <sub>2</sub>	No	9.0	2.0	No	2.0
S1	S1: 20 Wantage Road, Didcot	Kerbside	451780	189920	NO <sub>2</sub>	No	9.0	1.0	No	2.0
S2	S2: 100 Park Road, Didcot	Kerbside	451643	189369	NO <sub>2</sub>	No	15.0	1.0	No	2.0

S98	S98: 1 Blackthorn Road, Didcot	Kerbside	450870	190495	NO <sub>2</sub>	No	6.0	2.0	No	2.0
S72	S72: 6 Mendip Heights, Station Road, Didcot	Roadside	451424	190943	NO <sub>2</sub>	No	0.0	7.0	No	1.5
S100	S100: Bus stop, Abingdon Road, Clifton Hampden	Roadside	454637	195614	NO <sub>2</sub>	No	0.0	2.0	No	2.0
S6	S6: Magnolia Cottage, Near Post Office, Clifton Hampden	Roadside	454710	195562	NO <sub>2</sub>	No	0.0	3.0	No	2.0
S101	S101: 52 Oxford Road, Clifton Hampden	Roadside	454760	195794	NO <sub>2</sub>	No	7.0	2.0	No	2.0
S102	S102: The Green bus stop, Horspath	Roadside	457228	204708	NO <sub>2</sub>	No	3.0	17.0	No	2.0

**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.3 Annual Mean NO<sub>2</sub> Monitoring Results: Automatic Monitoring (µg/m<sup>3</sup>)**

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) <sup>(1)</sup>	Valid Data Capture 2021 (%) <sup>(2)</sup>	2017	2018	2019	2020	2021
Henley	476116	182531	Roadside	96.78	96.78	28.2	30	28	19	18
Wallingford	460800	189500	Roadside	99.08	99.08	35.4	37	35	29	33
Watlington	468973	194487	Kerbside	99.6	99.6	32	31	32	22	24

☒ Annualisation has been conducted where data capture is <75% and >25% in line with LAQM.TG16.

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

**Notes:**

The annual mean concentrations are presented as µg/m<sup>3</sup>.

Exceedances of the NO<sub>2</sub> annual mean objective of 40µg/m<sup>3</sup> are shown in **bold**.

All means have been “annualised” as per LAQM.TG16 if valid data capture for the full calendar year is less than 75%. See Appendix C for details.

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

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

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

**Table A. 4 Annual Mean NO<sub>2</sub> Monitoring Results: Non-Automatic Monitoring (µg/m<sup>3</sup>)**

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) <sup>(1)</sup>	Valid Data Capture 2021 (%) <sup>(2)</sup>	2017	2018	2019	2020	2021
S27	459532	205740	Kerbside	92.3	92.3	25.8	22.1	21.3	15.2	14.3
S78	460228	205720	Kerbside	100.0	100.0			23.2	14.0	13.5
S79	460504	205642	Kerbside	73.1	73.1			18.8	14.0	14.3
S73	470605	206554	Roadside	100.0	100.0	35.0	31.3	28.3	22.9	22.7
S29	471010	205598	Kerbside	100.0	100.0	25.0	21.9	22.6	15.9	16.0
S80	471103	205107	Roadside	100.0	100.0			14.3	9.4	9.0
S81	471155	205016	Kerbside	100.0	100.0			14.1	9.5	9.3
S82	471078	204851	Kerbside	100.0	100.0			13.5	9.6	8.8
S83	470964	204914	Kerbside	100.0	100.0			12.9	10.2	8.6
S84	471212	205340	Kerbside	100.0	100.0			17.0	12.0	12.0
S85	471918	204934	Kerbside	100.0	100.0			18.4	14.7	14.9
S74	471695	205806	Roadside	100.0	100.0	22.1	18.8	19.4	14.4	13.4
S28	471283	205977	Roadside	100.0	100.0	15.7	13.5	12.7	9.6	9.2



S86	474930	201039	Kerbside	92.3	92.3			16.0	13.0	10.4
S26	475250	201230	Roadside	100.0	100.0	33.1	28.3	24.6	17.1	21.2
S87	475703	201120	Kerbside	100.0	100.0			19.7	13.3	13.0
S88	475720	200930	Kerbside	100.0	100.0			20.2	16.0	14.7
S89	475415	200942	Roadside	100.0	100.0			24.4	15.0	17.6
S90	475001	200196	Kerbside	100.0	100.0			22.3	16.5	17.5
S61	470207	200190	Roadside	100.0	100.0	37.9	32.2	30.3	19.9	15.2
S103	463527	177174	Kerbside	92.3	92.3					15.2
S104	463555	177099	Kerbside	82.7	82.7					19.3
S75	461901	200989	Kerbside	100.0	100.0	32.6	25.9	22.4	17.8	18.4
S76	460279	198618	Kerbside	100.0	100.0	21.6	18.9	19.6	13.3	12.9
S77	460163	198398	Kerbside	100.0	100.0	26.3	23.9	19.4	16.0	16.5
S39	468479	194721	Urban Background	90.4	90.4	13.0	10.5	10.7	5.6	6.9
S37	468756	194360	Kerbside	100.0	100.0	31.5	23.5	25.5	18.1	18.7
S38	468856	194293	Roadside	100.0	100.0	26.5	24.2	23.0	16.7	17.0

S36	468852	194343	Roadside	92.3	92.3	27.8	23.5	22.6	17.0	16.7
S33	468951	194457	Kerbside	100.0	100.0	<b>45.7</b>	38.5	40.0	28.1	28.5
S32	468962	194458	Kerbside	100.0	100.0	<b>40.4</b>	35.3	35.8	25.7	25.6
S31	469061	194590	Kerbside	90.4	90.4	34.6	29.6	29.1	19.6	23.2
S30	469017	194514	Kerbside	90.4	90.4	<b>41.9</b>	39.2	36.0	27.6	27.5
S67	461724	191785	Kerbside	92.3	92.3	30.2	27.9	24.9	17.2	18.0
S68	461298	189367	Kerbside	90.4	90.4	22.5	18.4	17.4	12.8	13.6
S12	460389	189498	Roadside	100.0	100.0	28.2	26.3	27.4	20.6	20.5
S13	460640	189483	Kerbside	92.3	92.3	28.9	21.5	29.7	21.0	21.5
S15	460736	189567	Kerbside	90.4	90.4	30.4	27.0	26.2	18.3	22.5
S19, S20, S21	460799	189500	Roadside	100.0	100.0	<b>40.0</b>	37.4	35.9	28.4	29.2
S23	460938	189496	Roadside	90.4	90.4	34.7	32.1	31.0	22.0	23.9
S16	460713	189279	Roadside	100.0	100.0	29.3	29.1	24.9	19.2	21.0
S18	460684	189204	Roadside	100.0	100.0	30.3	28.4	22.9	16.9	17.1
S63	460152	189130	Kerbside	100.0	100.0	21.4	18.5	16.6	13.5	12.7

S17	460282	188807	Urban Background	100.0	100.0	16.4	13.3	14.0	9.2	9.2
S69	460470	188224	Urban Background	100.0	100.0	18.4	19.4	17.1	13.9	13.2
S93	460110	187862	Roadside	100.0	100.0			14.8	11.3	11.0
S94	459805	187574	Roadside	100.0	100.0			20.6	14.0	14.1
S70	461916	188424	Roadside	100.0	100.0	32.7	31.0	29.5	25.2	22.8
S42	475869	183217	Roadside	100.0	100.0	28.0	25.1	24.4	17.5	18.2
S66	475878	182760	Kerbside	84.6	84.6	23.9	21.1	23.7	16.4	15.4
S47	476103	182506	Kerbside	90.4	90.4	34.6	32.5	32.1	25.1	24.1
S46	476174	182396	Roadside	90.4	90.4	30.4	27.8	29.8	20.3	20.8
S43	476286	182290	Roadside	100.0	100.0	29.0	26.5	27.8	17.4	17.4
S48, S49, S50	476115	182532	Roadside	100.0	100.0	32.3	28.8	28.2	20.0	19.3
S51	476071	182612	Kerbside	100.0	100.0	<b>47.5</b>	39.6	<b>49.0</b>	38.7	34.0
S53	475997	182614	Roadside	100.0	100.0	27.5	24.9	22.1	15.6	16.3
S40	476080	182951	Kerbside	90.4	90.4	29.4	29.9	30.3	21.1	20.6
S41	476209	182831	Kerbside	92.3	92.3	27.9	25.4	25.1	17.4	17.3

S65	476308	182760	Roadside	90.4	90.4	23.6	30.6	36.6	26.6	26.8
S45	476288	182078	Roadside	92.3	92.3	27.3	22.4	23.5	23.2	21.8
S52	476223	182652	Roadside	92.3	92.3	35.1	31.4	32.9	17.5	15.6
S44	476547	181735	Roadside	100.0	100.0	27.7	26.4	25.9	19.3	18.6
S54	475104	181557	Urban Background	65.4	65.4	12.4	12.1	12.1	8.4	9.3
S5	453499	190384	Urban Background	100.0	100.0	21.3	17.8	16.2	10.6	10.9
S96	453357	190030	Kerbside	100.0	100.0			24.6	18.7	19.4
S4	453099	190031	Roadside	100.0	100.0	33.6	29.5	30.7	22.5	22.2
S7	453023	189999	Roadside	100.0	100.0	30.7	26.3	26.7	20.1	18.9
S11	452865	189979	Roadside	100.0	100.0	30.0	25.6	24.1	18.9	18.7
S95	452753	189729	Kerbside	92.3	92.3			15.1	11.4	10.8
S97	452358	190521	Kerbside	92.3	92.3			23.1	17.2	17.0
S71	452084	190694	Roadside	100.0	100.0	35.1	27.7	27.2	19.5	19.7
S1	451780	189920	Kerbside	100.0	100.0	27.2	25.1	23.9	18.8	16.9
S2	451643	189369	Kerbside	82.7	82.7	25.0	18.9	19.4	12.9	13.5

S98	450870	190495	Kerbside	100.0	100.0			19.6	15.0	15.7
S72	451424	190943	Roadside	100.0	100.0	<b><u>66.4</u></b>	<b>47.3</b>	16.7	12.6	12.3
S100	454637	195614	Roadside	100.0	100.0			21.1	14.9	14.5
S6	454710	195562	Roadside	100.0	100.0	32.5	24.3	22.2	15.8	17.0
S101	454760	195794	Roadside	100.0	100.0			19.9	13.7	14.1
S102	457228	204708	Roadside	100.0	100.0				14.8	10.8

Annualisation has been conducted where data capture is <75% and >25% in line with LAQM.TG16.

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<sub>2</sub> annual mean objective of  $40\mu\text{g}/\text{m}^3$  are shown in **bold**.

NO<sub>2</sub> annual means exceeding  $60\mu\text{g}/\text{m}^3$ , indicating a potential exceedance of the NO<sub>2</sub> 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.TG16 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<sub>2</sub> Concentrations in Wallingford AQMA

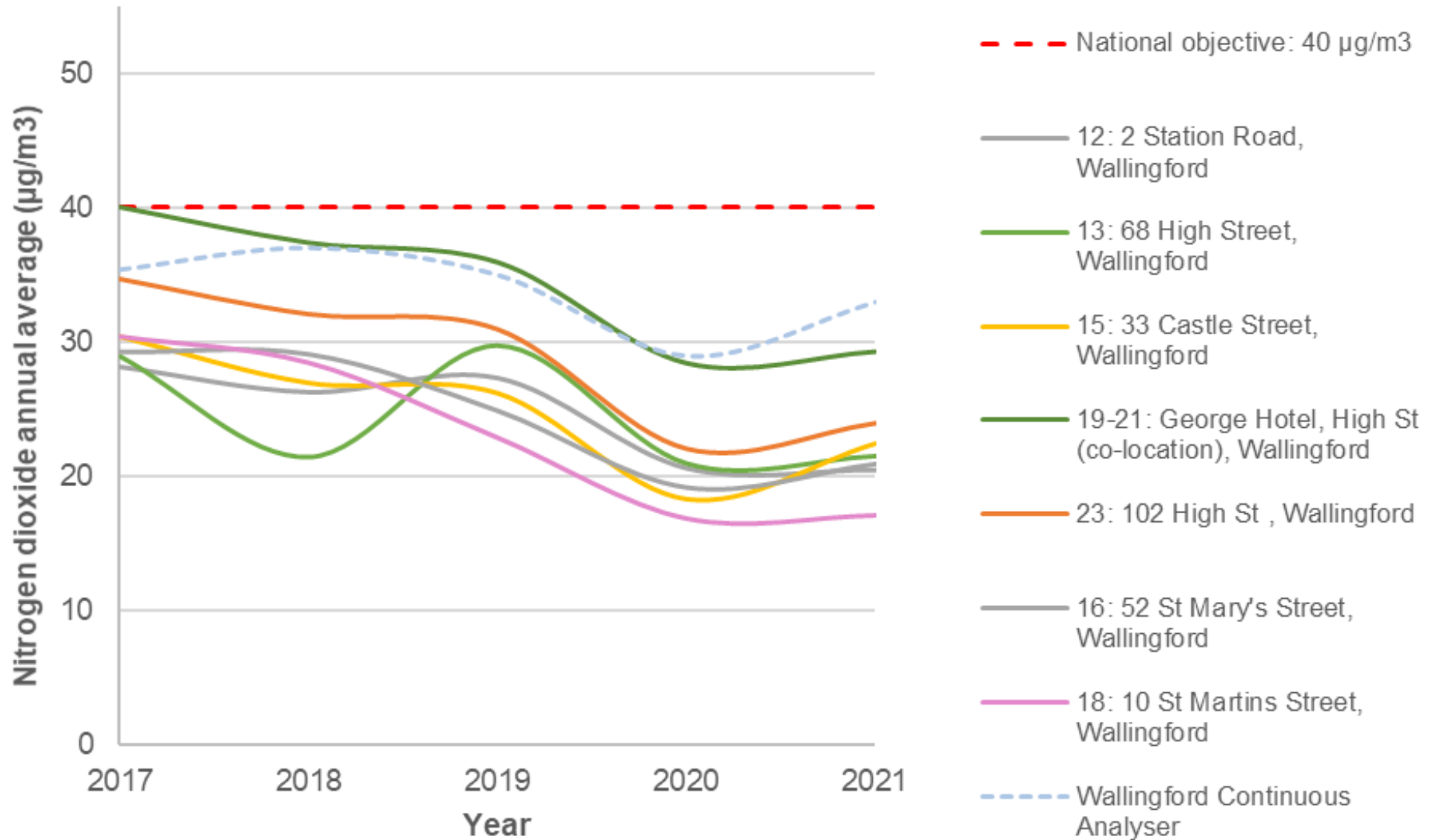


Figure A. 2 Trends in Annual Mean NO<sub>2</sub> Concentrations in Wallingford (outside AQMA)

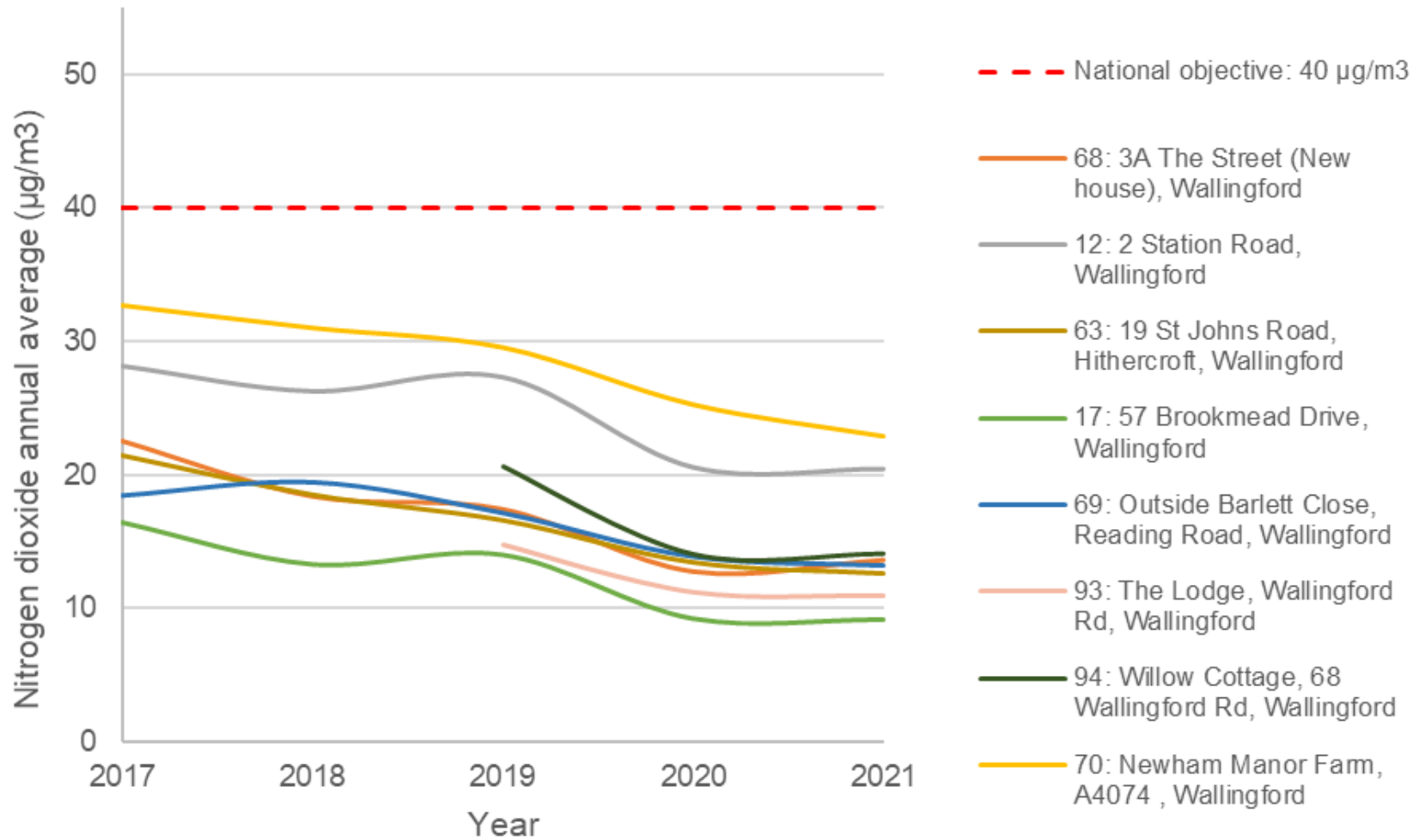
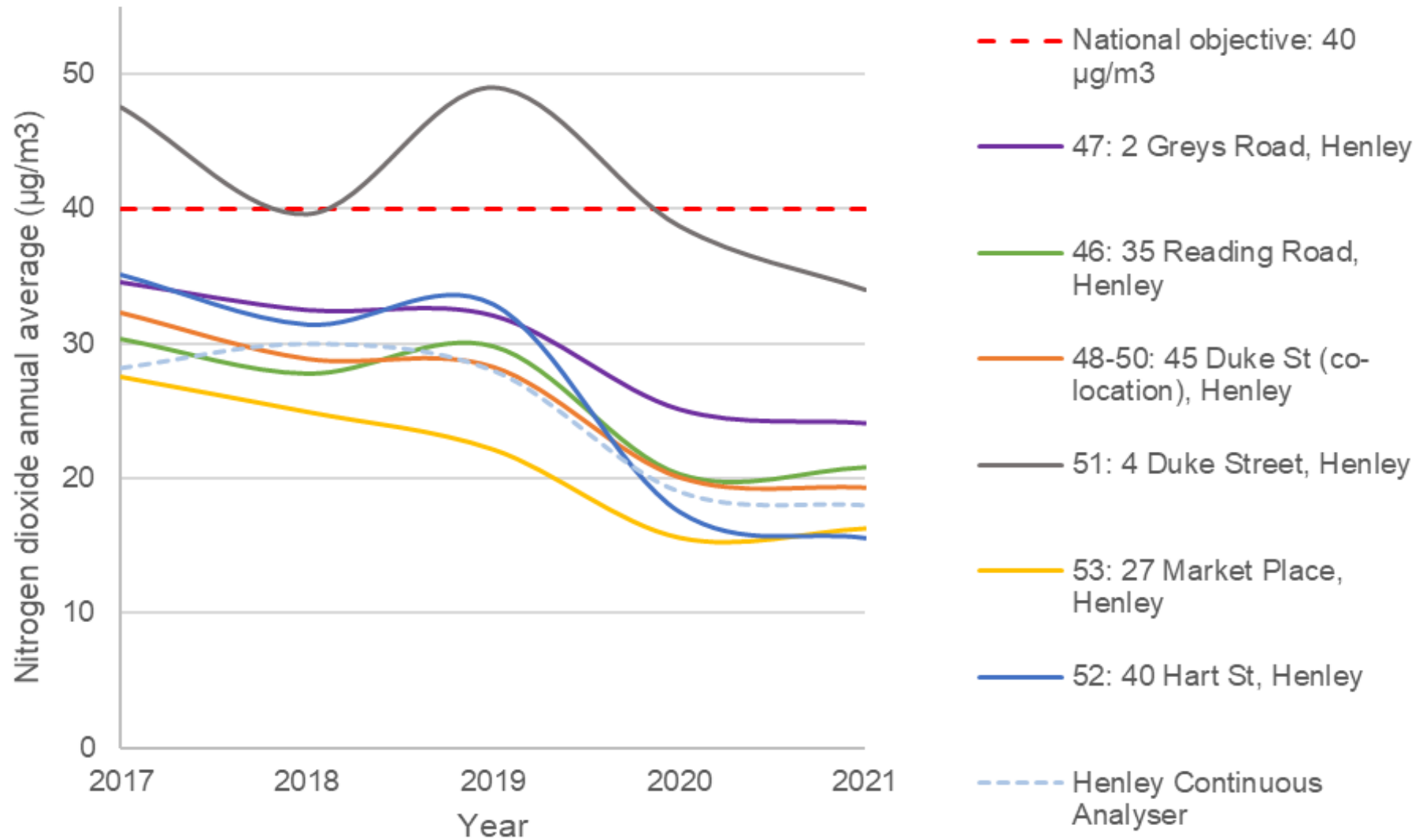
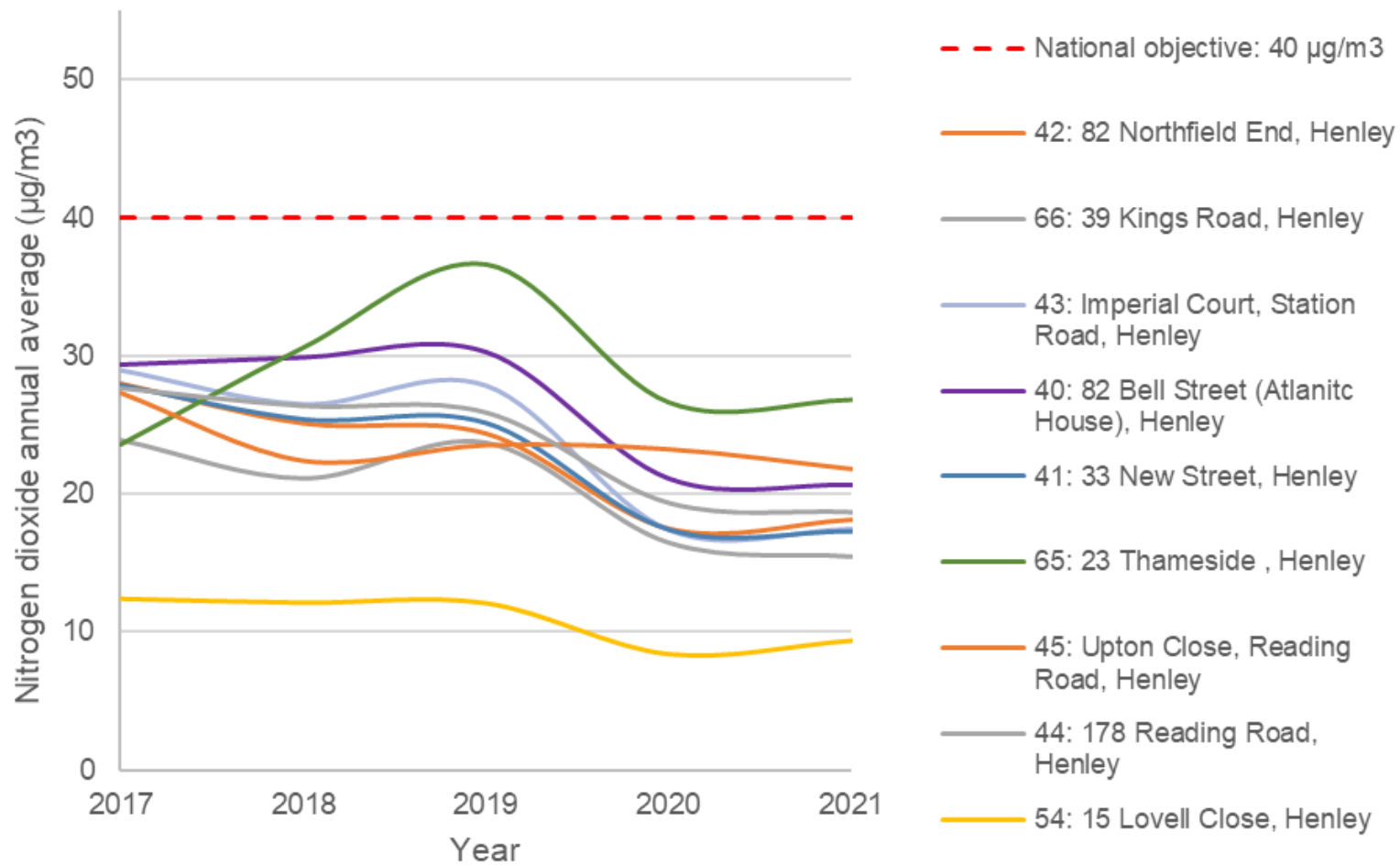


Figure A. 3 Trends in Annual Mean NO<sub>2</sub> Concentrations in Henley AQMA

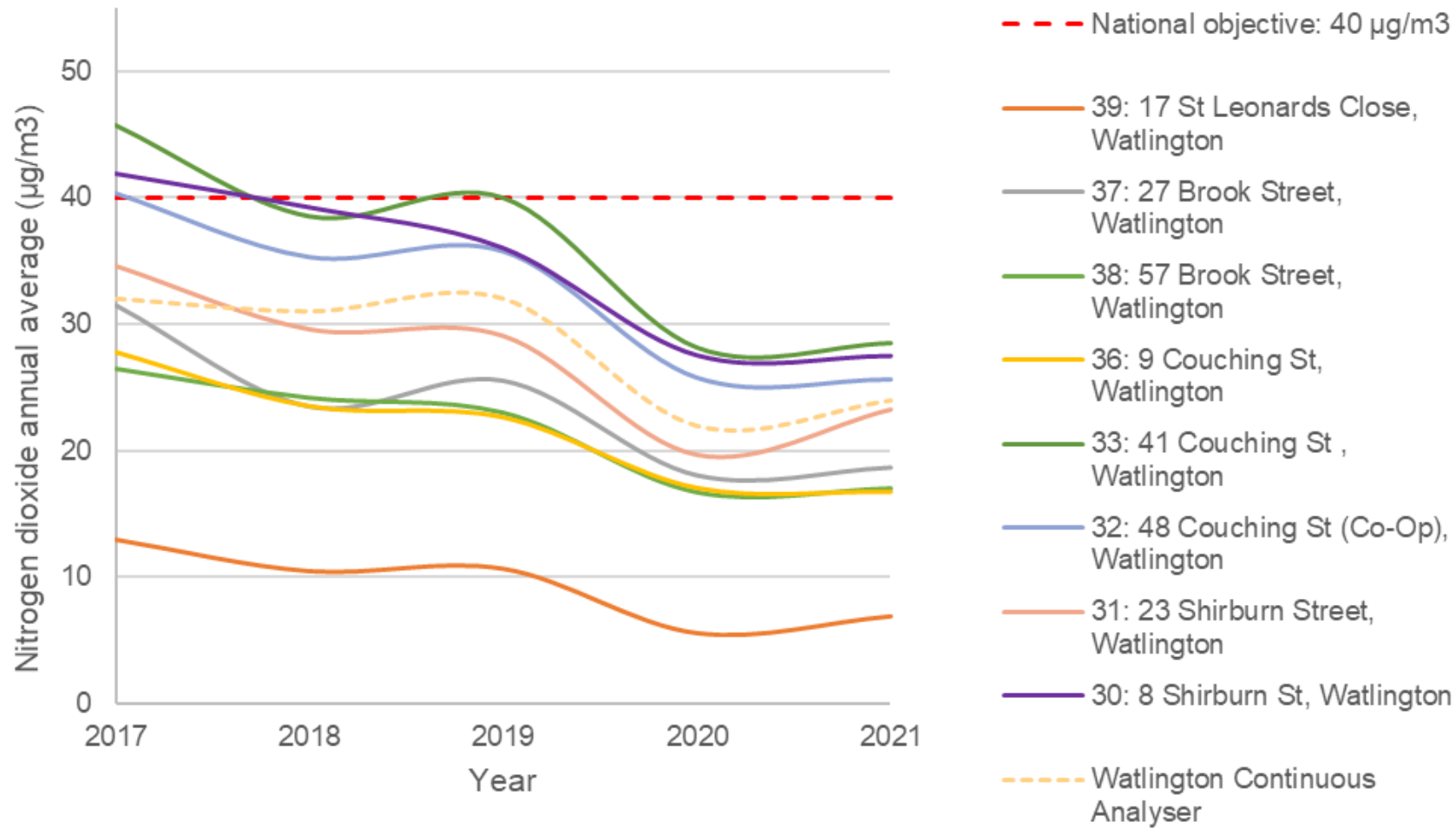




**Figure A. 4 Trends in Annual Mean NO<sub>2</sub> Concentrations in Henley (outside AQMA)**



**Figure A. 5 Trends in Annual Mean NO<sub>2</sub> Concentrations in Watlington**



**Figure A. 6 Trends in Annual Mean NO<sub>2</sub> Concentrations in Adwell, Little Milton, Stadhampton, Benson**

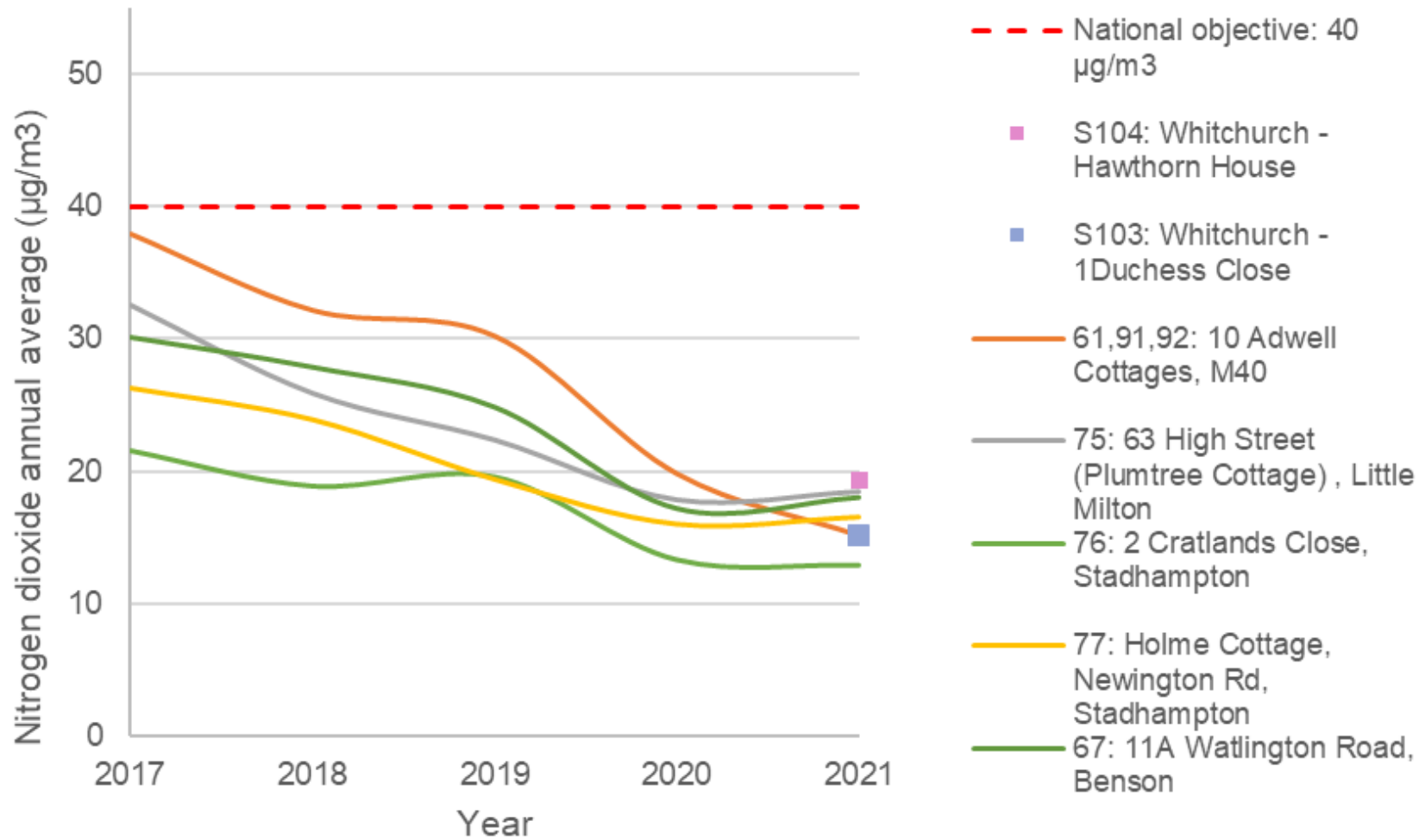
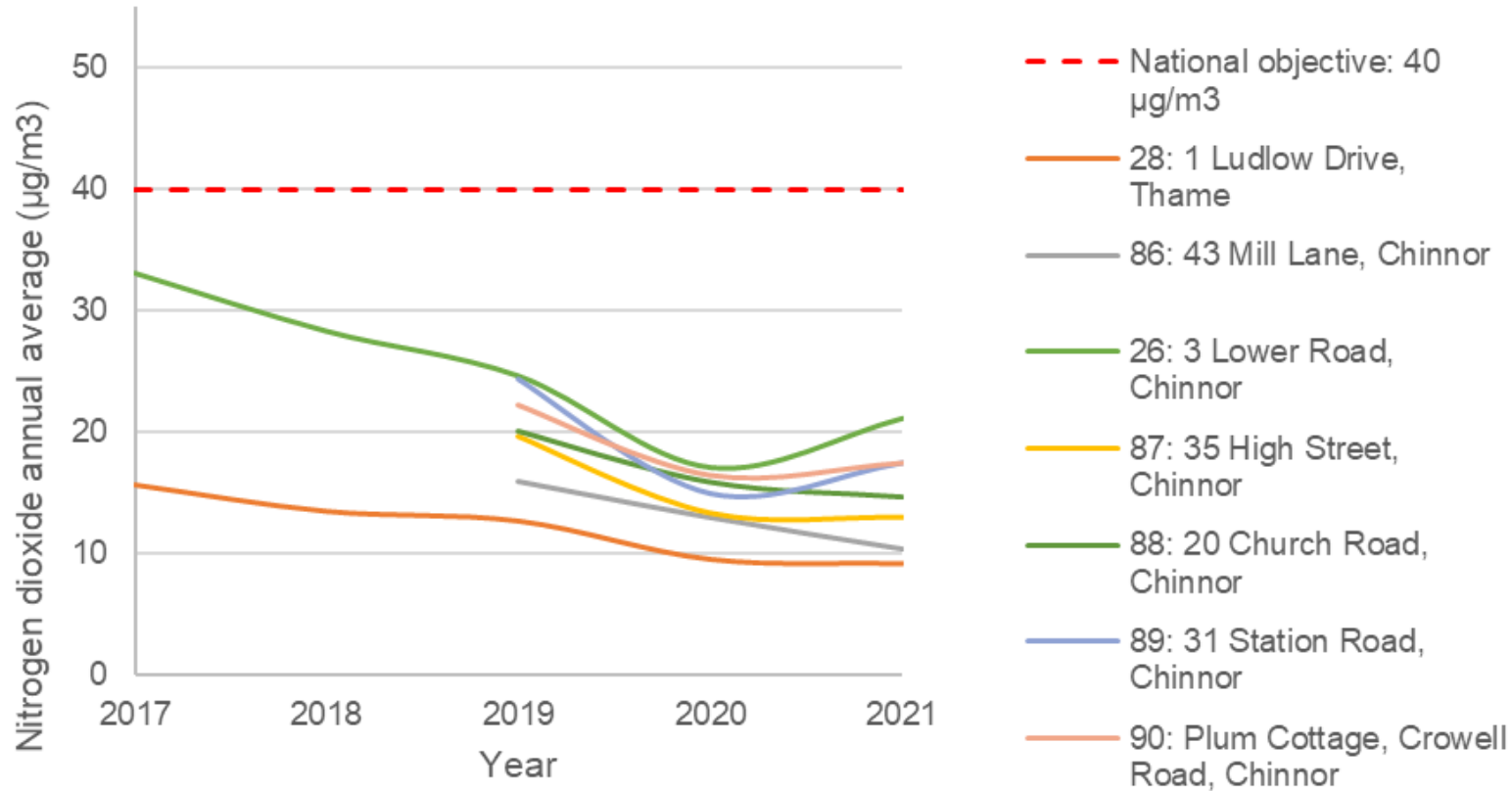
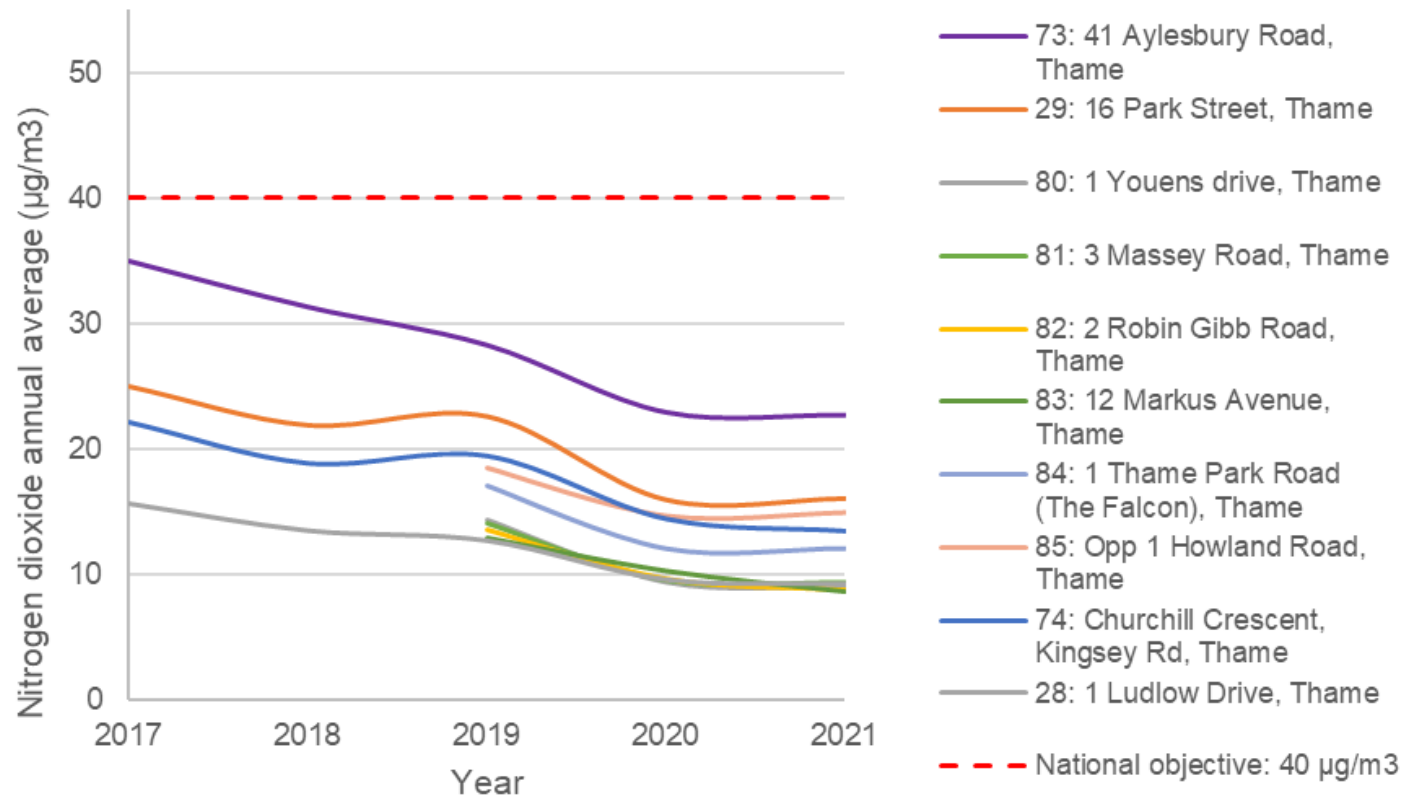


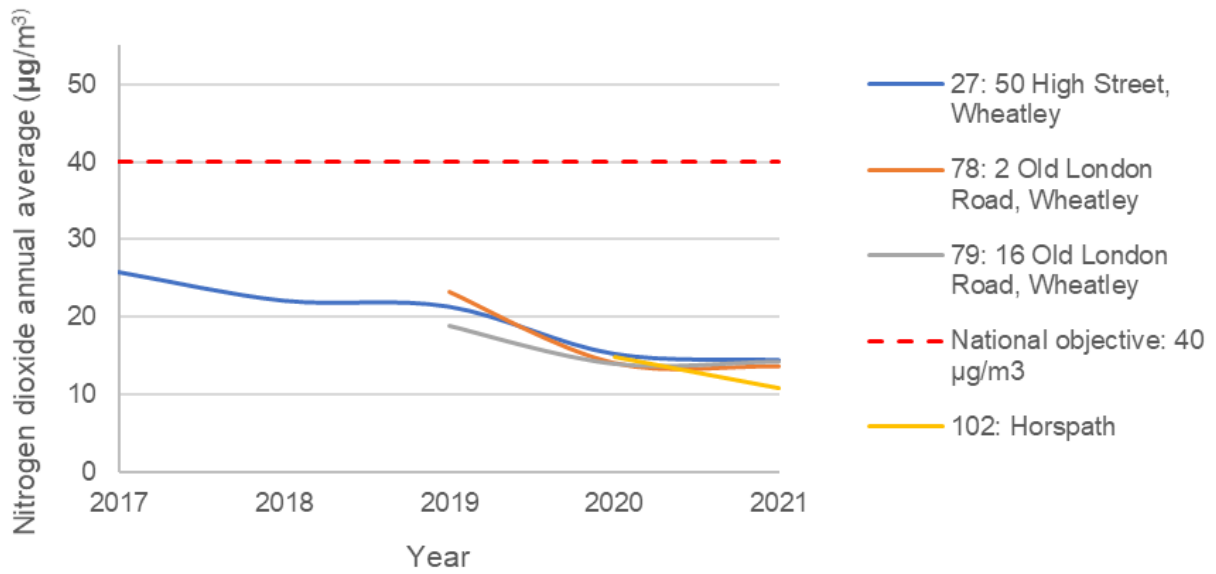
Figure A. 7 Trends in Annual Mean NO<sub>2</sub> Concentrations in Chinnor



**Figure A. 8 Trends in Annual Mean NO<sub>2</sub> Concentrations in Thame**



**Figure A. 9 Trends in Annual Mean NO<sub>2</sub> Concentrations in Wheatley and Horspath**



**Table A. 5 1-Hour Mean NO<sub>2</sub> Monitoring Results, Number of 1-Hour Means > 200µg/m<sup>3</sup>**

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) <sup>(1)</sup>	Valid Data Capture 2021 (%) <sup>(2)</sup>	2017	2018	2019	2020	2021
Henley	476116	182531	Roadside	96.78	96.78	0	0	0	0	0
Wallingford	460800	189500	Roadside	99.08	99.08	0	1	0	0	1
Watlington	468973	194487	Kerbside	99.6	99.6	0	0	0	0	0

**Notes:**

Results are presented as the number of 1-hour periods where concentrations greater than 200µg/m<sup>3</sup> have been recorded.

Exceedances of the NO<sub>2</sub> 1-hour mean objective (200µg/m<sup>3</sup> not to be exceeded more than 18 times/year) are shown in **bold**.

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

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

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

## Appendix B: Full Monthly Diffusion Tube Results for 2021

Table B. 1 NO<sub>2</sub> 2021 Diffusion Tube Results (µg/m<sup>3</sup>)

DT ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Easting)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Annualised and Bias Adjusted (0.79)	Annual Mean: Distance Corrected to Nearest Exposure	Comments
S27: 50 High Street, Wheatley	459532	205740	25.0		18.4	17.6	14.5	21.8	13.9	16.8	14.7	20.2	21.2	15.4	18.1	14.3		
S78: 2 Old London Road, Wheatley	460228	205720	18.8	20.6	17.1	16.3	13.5	12.9	14.2	12.0	18.2	19.2	29.2	13.5	17.1	13.5		
S79: 16 Old London Road, Wheatley	460504	205642	18.9	19.4		16.2	13.7	13.9		15.0	16.8	18.6	30.0		18.1	14.3		
S73: 41 Aylesbury Road, Thame	470605	206554	28.5	30.6	27.7	24.0	27.4	22.4	21.5	21.8	32.0	34.3	40.7	33.5	28.7	22.7		
S29: 16 Park Street, Thame	471010	205598	22.6	26.1	21.0	22.8	17.2	15.3	20.2	11.0	17.3	20.5	28.1	20.9	20.3	16.0		
S80: 1 Youens drive, Thame	471103	205107	15.8	13.8	12.3	9.5	9.9	7.6	9.6	9.0	10.8	11.2	13.0	13.5	11.3	9.0		
S81: 3 Massey Road, Thame	471155	205016	14.2	14.2	14.8	11.0	9.6	8.2	9.1	9.2	10.8	11.3	16.4	12.5	11.8	9.3		



S82: 2 Robin Gibb Road, Thame	471078	204851	14.0	13.2	11.2	10.4	11.1	6.9	8.9	8.1	9.8	11.9	16.0	11.4	11.1	8.8		
S83: 12 Markus Avenue, Thame	470964	204914	14.3	14.9	9.5	10.6	8.2	6.7	8.6	8.0	9.4	11.5	17.1	11.5	10.9	8.6		
S84: 1 Thame Park Road (The Falcon), Thame	471212	205340	18.9	17.7	14.9	15.1	2.2	9.9	12.0	18.0	19.6	16.1	22.1	16.2	15.2	12.0		
S85: Opp 1 Howland Road, Thame	471918	204934	26.8	20.1	22.8	17.4	13.6	12.8	16.2	14.3	14.5	18.1	32.7	17.1	18.9	14.9		
S74: Churchill Crescent, Kingsey Rd, Thame	471695	205806	22.9	20.7	16.3	17.5	15.0	10.8	11.7	12.6	16.7	19.4	21.7	18.3	17.0	13.4		
S28: 1 Ludlow Drive, Thame	471283	205977	15.4	18.5	12.8	12.1	7.9	6.0	7.1	7.7	10.5	11.5	17.2	13.2	11.7	9.2		
S86: 43 Mill Lane, Chinnor	474930	201039	15.2	15.0		15.1	12.5	9.1	11.9	11.1	15.4	11.7	16.2	11.8	13.2	10.4		
S26: 3 Lower Road, Chinnor	475250	201230	26.7	28.3	24.0	29.5	23.5	21.4	25.1	22.6	28.1	28.7	29.3	34.0	26.8	21.2		
S87: 35 High Street, Chinnor	475703	201120	17.2	19.9	15.5	16.7	12.6	13.1	14.5	13.0	19.0	18.7	21.9	15.3	16.5	13.0		
S88: 20 Church Road, Chinnor	475720	200930	19.2	19.3	18.9	19.8	18.4	14.1	17.4	15.6	17.8	21.0	24.0	18.2	18.6	14.7		

S89: 31 Station Road, Chinnor	475415	200942	20.5	23.5	20.8	23.3	20.0	16.6	19.0	19.5	21.3	24.0	37.6	20.7	22.2	17.6		
S90: Plum Cottage, Crowell Road, Chinnor	475001	200196	25.2	24.4	22.3	25.1	20.7	18.9	20.8	20.6	11.1	24.9	30.5	21.0	22.1	17.5		
S61: 10 Adwell Cottages, Tetsworth	470207	200190	23.0	27.6	18.2	16.5	11.2	16.5	17.9	13.7	18.6	26.8	18.5	22.7	19.3	15.2		
S103: Whitchurch - 1Duchess Close	463527	177174		28.3	17.6	19.7	13.6	15.0	16.0	13.4	17.9	29.1	18.5	22.3	19.2	15.2		
S104: Whitchurch - Hawthorn House	463555	177099		21.2	16.6	19.9	22.5	26.7	22.6	22.8	33.8	29.9	28.2		24.4	19.3		
S75: 63 High Street (Plumtree Cottage) , Little Milton	461901	200989	21.4	24.5	18.5	22.6	33.6	17.8	20.2	22.0	24.3	24.6	27.9	22.4	23.3	18.4		
S76: 2 Cratlands Close, Stadhampton	460279	198618	19.5	18.8	15.5	13.2	13.5	10.8	13.4	14.8	18.1	19.5	21.1	17.7	16.3	12.9		
S77: Holme Cottage, Newington Rd, Stadhampton	460163	198398	15.3	22.6	19.4	26.2	19.7	19.0	24.0	20.1	19.0	20.2	25.2	20.1	20.9	16.5		

S39: 17 St Leonards Close, Watlington	468479	194721	12.5	11.5	8.6	8.2	5.5	4.8	6.4	5.7	7.3	8.1	17.4		8.7	6.9		
S37: 27 Brook Street, Watlington	468756	194360	23.6	26.6	23.8	26.5	22.4	18.8	21.9	18.1	23.0	24.1	31.4	23.5	23.6	18.7		
S38: 57 Brook Street, Watlington	468856	194293	23.3	22.7	20.3	26.8	21.5	17.7	20.7	18.7	21.5	20.3	26.7	18.5	21.6	17.0		
S36: 9 Couching St, Watlington	468852	194343	20.5	23.7	21.7	23.7	19.1	16.0	18.7	18.5		21.3	27.8	21.8	21.2	16.7		
S33: 41 Couching St, Watlington	468951	194457	35.1	35.0	34.4	41.6	39.1	33.8	39.4	33.3	38.1	36.9	30.3	34.9	36.0	28.5		
S32: 48 Couching St (Co-Op), Watlington	468962	194458	31.3	33.4	28.6	37.8	30.5	28.4	32.9	29.9	33.3	33.4	36.9	32.2	32.4	25.6		
S31: 23 Shirburn Street, Watlington	469061	194590	28.9	32.5	28.3		26.7	26.5	24.2	24.3	27.8	32.0	44.7	27.1	29.4	23.2		
S30: 8 Shirburn St, Watlington	469017	194514	33.0	35.9	30.0	38.5	19.8	27.9	31.8	30.1	51.2	36.8	47.9		34.8	27.5		
S67: 11A Watlington Road, Benson	461724	191785	25.0	28.9	21.7	26.1	19.5	20.8	23.7	21.1	22.9	25.5		15.7	22.8	18.0		

S68: 3A The Street (New house), Wallingford	461298	189367	12.6	24.6	18.3	18.6	10.2	12.7	18.0	12.9	21.0	18.8	22.2		17.3	13.6		
S12: 2 Station Road, Wallingford	460389	189498	25.8	34.7	26.3	23.7	24.5	18.6	22.5	17.2	31.9	27.5	31.3	26.8	25.9	20.5		
S13: 68 High Street, Wallingford	460640	189483	18.5	33.4	25.2	25.1	23.8		28.2	15.4	30.8	25.5	38.8	34.9	27.2	21.5		
S15: 33 Castle Street, Wallingford	460736	189567	19.9	40.2	25.4		28.2	24.0	27.0	22.9	34.9	27.1	32.4	31.0	28.5	22.5		
S21: George Hotel, High St (co-location), Wallingford	460799	189500	29.9	31.1	39.2	41.5	33.4	32.7	41.4	31.1	47.4	35.7	47.6	33.1	37.0	29.2		
S23: 102 High St (The Gate House), Wallingford	460938	189496	23.2	26.8	31.8	31.2	26.0	23.2	34.2	25.2	35.7		47.1	28.4	30.3	23.9		
S16: 52 St Mary's Street, Wallingford	460713	189279	32.9	25.4	28.5	24.1	19.4	22.1	23.3	24.0	29.3	27.2	33.5	28.4	26.5	21.0		
S18: 10 St Martins Street, Wallingford	460684	189204	25.8	21.6	25.8	22.7	13.7	16.5	19.0	19.9	24.0	21.7	27.9	21.3	21.7	17.1		

S63: 19 St Johns Road, Hithercroft, Wallingford	460152	189130	18.1	17.6	21.4	23.0	4.7	10.1	12.6	10.4	17.9	15.5	23.1	17.9	16.0	12.7		
S17: 57 Brookmead Drive, Wallingford	460282	188807	16.2	13.7	14.0	12.0	8.2	8.6	7.5	7.1	11.8	10.5	17.1	12.5	11.6	9.2		
S69: Outside Bartlett Close, Reading Road, Wallingford	460470	188224	19.1	17.9	18.7	17.9	14.1	11.9	11.6	13.6	17.4	17.6	22.4	18.1	16.7	13.2		
S93: The Lodge, Wallingford Rd, Wallingford	460110	187862	17.2	16.2	18.2	16.4	12.1	12.2	11.3	8.6	13.3	12.0	17.0	12.2	13.9	11.0		
S94: Willow Cottage, 68 Wallingford Rd, Wallingford	459805	187574	24.2	18.5	14.8	19.5	15.9	13.6	15.8	12.4	19.5	17.3	26.5	15.8	17.8	14.1		
S70: Newham Manor Farm, A4074, Wallingford	461916	188424	31.3	28.6	31.4	26.7	25.3	22.9	25.4	26.4	33.8	30.0	37.0	28.0	28.9	22.8		
S42: 82 Northfield End, Henley	475869	183217	29.6	28.4	24.4	19.1	19.2	15.4	19.1	16.5	27.6	27.6	24.9	24.1	23.0	18.2		

S66: 39 Kings Road, Henley	475878	182760	24.4	21.8	19.5	17.8			13.6	12.8	21.2	18.0	22.1	23.9	19.5	15.4		
S47: 2 Greys Road, Henley	476103	182506	29.1	36.3	32.2		27.4	26.2	26.6	23.6	34.5	31.4	33.5	34.3	30.5	24.1		
S46: 35 Reading Road, Henley	476174	182396	28.5	31.1	26.9	30.4	23.6	19.9		19.9	29.8	21.5	29.3	29.0	26.4	20.8		
S43: Imperial Court, Station Road, Henley	476286	182290	24.7	22.8	24.4	20.7	20.0	17.6	18.9	16.0	24.4	23.1	28.1	24.0	22.1	17.4		
S50: 45 Duke St (co-location), Henley	476115	182532	25.2	27.6	24.9	27.1	21.5	16.7	25.3	20.3	26.5	22.9	28.8	25.6	24.4	19.3		
S51: 4 Duke Street, Henley	476071	182612	56.3	44.5	50.6	36.9	40.7	35.3	35.9	33.3	52.4	43.8	46.3	40.0	43.0	34.0		
S53: 27 Market Place, Henley	475997	182614	25.3	23.3	20.2	18.2	19.7	14.8	17.1	15.1	23.2	20.1	25.0	25.5	20.6	16.3		
S40: 82 Bell Street (Atlantic House), Henley	476080	182951	27.2	34.3	25.1	26.3	25.0	19.2	20.4	20.9	30.7		28.3	29.8	26.1	20.6		
S41: 33 New Street, Henley	476209	182831	30.6	24.8	17.0	24.2	20.0		20.4	18.0	19.1	14.4	28.0	24.0	21.9	17.3		
S65: 23 Thameside, Henley	476308	182760	39.5	31.1	34.9	29.6	33.5	27.4	27.2	31.0	45.4		38.3	35.5	33.9	26.8		

S45: Upton Close, Reading Road, Henley	476288	182078	30.5	27.4	22.1	27.3	29.1	22.5	22.1		32.2	27.4	33.8	29.0	27.6	21.8		
S52: 40 Hart St, Henley	476223	182652	23.1	24.7	22.3	14.8		13.2	14.6	12.5	22.9	19.9	26.2	22.8	19.7	15.6		
S44: 178 Reading Road, Henley	476547	181735	30.1	25.6	26.1	25.8	20.6	15.7	18.3	16.2	26.0	25.9	30.1	22.6	23.6	18.6		
S54: 15 Lovell Close, Henley	475104	181557	10.9		14.5		8.2	5.0	8.2	6.3	11.0			26.4	11.3	9.3		
S5: 8 Lune Close, Didcot	453499	190384	17.0	16.7	16.3	12.4	10.9	7.7	10.5	8.9	14.0	16.2	19.4	15.9	13.8	10.9		
S96: Marsh Play Area, Didcot	453357	190030	25.0	25.1	25.7	29.3	22.0	20.4	25.2	19.7	29.8	19.2	31.0	21.9	24.5	19.4		
S4: 55 Broadway, Didcot	453099	190031	29.7	32.3	25.4	30.2	26.2	20.9	27.5	19.5	29.6	36.1	33.5	26.6	28.1	22.2		
S7: 77 The Broadway, Didcot	453023	189999	25.5	26.1	17.9	21.8	24.1	18.0	22.3	17.8	28.1	28.6	30.4	26.8	24.0	18.9		
S11: 110 The Broadway, Didcot	452865	189979	30.7	23.9	23.5	29.7	20.9	18.8	25.0	19.7	23.3	16.1	30.1	21.5	23.6	18.7		
S95: 18 Mereland Road, Didcot	452753	189729	16.7	18.1		14.8	9.7	8.4	11.3	9.1	13.5	14.1	20.5	13.4	13.6	10.8		
S97: 4 Cronshaw Close, Didcot	452358	190521	29.4	26.7		25.8	19.6	15.6	19.9	15.4	17.7	24.0	23.0	19.8	21.5	17.0		

S71: 8 Great Western Drive, Station road, Didcot	452084	190694	27.7	26.2	20.2	25.2	24.2	17.6	24.0	17.7	27.9	29.1	37.7	22.1	25.0	19.7		
S1: 20 Wantage Road, Didcot	451780	189920	27.0	29.2	26.9	11.6	23.6	14.2	19.8	18.2	22.4	18.3	27.3	18.3	21.4	16.9		
S2: 100 Park Road, Didcot	451643	189369	17.0	19.4	17.3	17.0	13.9	10.6	13.5	11.6			24.2	26.0	17.1	13.5		
S98: 1 Blackthorn Road, Didcot	450870	190495	18.9	22.3	22.8	23.2	17.1	13.7	17.5	16.1	17.1	20.2	32.2	17.8	19.9	15.7		
S72: 6 Mendip Heights, Station Road, Didcot	451424	190943	16.0	21.7	17.6	18.2	12.8	12.2	15.1	13.9	13.3	13.1	19.3	14.0	15.6	12.3		
S100: Bus stop, Abingdon Road, Clifton Hampden	454637	195614	20.2	20.5	17.0	20.3	15.9	13.5	16.9	18.7	17.3	19.5	21.1	19.1	18.3	14.5		
S6: Magnolia Cottage, Near Post Office, Clifton Hampden	454710	195562	21.7	20.0	16.6	24.5	21.9	18.0	19.7	22.6	17.6	24.6	31.3	19.5	21.5	17.0		
S101: 52 Oxford Road, Clifton Hampden	454760	195794	25.7	17.2	15.1	16.7	13.4	13.2	12.4	14.5	16.8	24.6	26.4	17.8	17.8	14.1		



S102: The Green bus stop, Horspath	457228	204708	24.0	12.9	15.1	13.7	10.5	9.1	8.2	12.0	12.0	14.4	17.4	15.3	13.7	10.8		
------------------------------------	--------	--------	------	------	------	------	------	-----	-----	------	------	------	------	------	------	------	--	--

- All erroneous data has been removed from the NO<sub>2</sub> diffusion tube dataset presented in Table B.1.
- Annualisation has been conducted where data capture is <75% and >25% in line with LAQM.TG16.
- Local bias adjustment factor used (confirm by selecting in box).
- National bias adjustment factor used.
- Where applicable, data has been distance corrected for relevant exposure in the final column.
- South Oxfordshire District Council confirm that all 2021 diffusion tube data has been uploaded to the Diffusion Tube Data Entry System.

Exceedances of the NO<sub>2</sub> annual mean objective of 40µg/m<sup>3</sup> are shown in **bold**.

NO<sub>2</sub> annual means exceeding 60µg/m<sup>3</sup>, indicating a potential exceedance of the NO<sub>2</sub> 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 South Oxfordshire District Council During 2021

South Oxfordshire District Council has not identified any new sources relating to air quality within the reporting year of 2021.

### Additional Air Quality Works Undertaken by South Oxfordshire District Council During 2021.

South Oxfordshire District Council has not completed any additional works within the reporting year of 2021.

### QA/QC of Diffusion Tube Monitoring

The diffusion tubes used by SODC are provided by Socotec Didcot. Please see the information forwarded by the supplier below.

#### Diffusion Tube Performance Summary 2021:

- Tube Type: 20% TEA : 80% Water
- Uncertainty: “Diffusion Tubes for Ambient NO<sub>2</sub> Monitoring: Practical Guidance” categorises diffusion tubes as an indicative method, and as such the uncertainty is defined as  $\pm 25\%$ .
- During in field intercomparisons, SOCOTEC’s diffusion tubes perform at  $\pm 10\%$  uncertainty.
- Quality Control: A quality control (QC) sample of known concentration is run with the samples. The data generated is then assessed using a Shewhart control chart to determine the process is under statistical control.
- Analytical Repeatability: In 2021 ~8500 QC samples were analysed, achieving a relative standard deviation of 0.93%
- Confidence Intervals:  $2\sigma \pm 1.86\%$ ;  $3\sigma \pm 3.72\%$

- Limit of Detection: The analytical limit of detection is 0.03µg NO<sub>2</sub>. Over a 4-week exposure this would equate to 0.6µg/m<sup>3</sup>, or 0.3ppb
- Quality Assurance: The manufacture and analysis of NO<sub>2</sub> diffusion tubes is covered by our UKAS accreditation.

The laboratory has taken part in the AIR (previously WASP) proficiency scheme since its inception. To achieve the highest ranking of “Satisfactory” a laboratory must achieve a z-score of <2. For 2020, SOCOTEC had an average z-score of 0.60

Bought in ISO Guide 34 and ISO/IEC 17025 certified standards are used to prepare calibration and QC standards.

2% of tubes are checked for blankness during manufacture, to ensure there is no contamination introduced during the manufacturing process.

The method meets the requirements laid out in DEFRA’s “Diffusion Tubes for Ambient NO<sub>2</sub> Monitoring: A Practical Guidance.”

### Diffusion Tube Annualisation

The results from non-automatic site S54 (15 Lovell Close, Henley) required annualisation since its data capture less than 75% but greater than 33%.

Details of the calculation method undertaken (using the DT Data Processing Tool) are provided in Table C. 2 below.

### Diffusion Tube Bias Adjustment Factors

The diffusion tube data presented within the 2021 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.TG16 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<sub>x</sub>/NO<sub>2</sub> continuous analysers. Alternatively, the national database of diffusion tube co-location surveys provides bias factors for the relevant laboratory and preparation method.

South Oxfordshire District Council have applied a local bias adjustment factor of 0.79 to the 2021 monitoring data. A summary of bias adjustment factors used by South

Oxfordshire District Council over the past five years is presented in **Error! Reference source not found.**

There are two colocations in the district, located in Wallingford and Henley. By means of the DT Data Processing Tool, the LBAF (Local Bias Adjustment Factor) of 0.79 was derived from the results obtained at both of these sites.

The National BAF for Didcot Socotec’s 20% TEA tubes is 0.76. This factor is smaller than the local BAFs, and therefore choosing the LBAF is the more conservative way of adjusting the raw figures.

**Table C. 1 Bias Adjustment Factor**

Year	Local or National	If National, Version of National Spreadsheet	Adjustment Factor
2021	Local		0.79
2020	Local		0.88
2019	Local		0.86
2018	Local		1.08 and 0.79 (Diffusion tube provider changed mid-year)
2017	Local		0.98

### NO<sub>2</sub> Fall-off with Distance from the Road

No diffusion tube NO<sub>2</sub> monitoring locations within South Oxfordshire required distance correction during 2021.

### QA/QC of Automatic Monitoring

Ricardo Energy & Environment currently provide independent UKAS accredited quality control audits (biannual) and data management services to the three automatic monitoring stations in the district. Their data management process includes:

- Scaling data based on routine instrument calibrations. These calibrations are carried out by the Local Site Operator (Air Quality Officer at SODC) on a monthly/fortnightly basis
- Instrument and site infrastructure service and maintenance records obtained from the biannual servicing visits
- Local meteorological data where possible
- Results of quality control audits
- Comparisons with other nearby site concentrations to help ensure data integrity

Figures C1-3 show the annual data recorded at the council's continuous monitoring sites in 2021. Further historical data can be accessed on the [Oxfordshire AQ Website](#) or the [AQE website](#).

**Figure C. 1 Wallingford Continuous Analyser - Annual Graph**

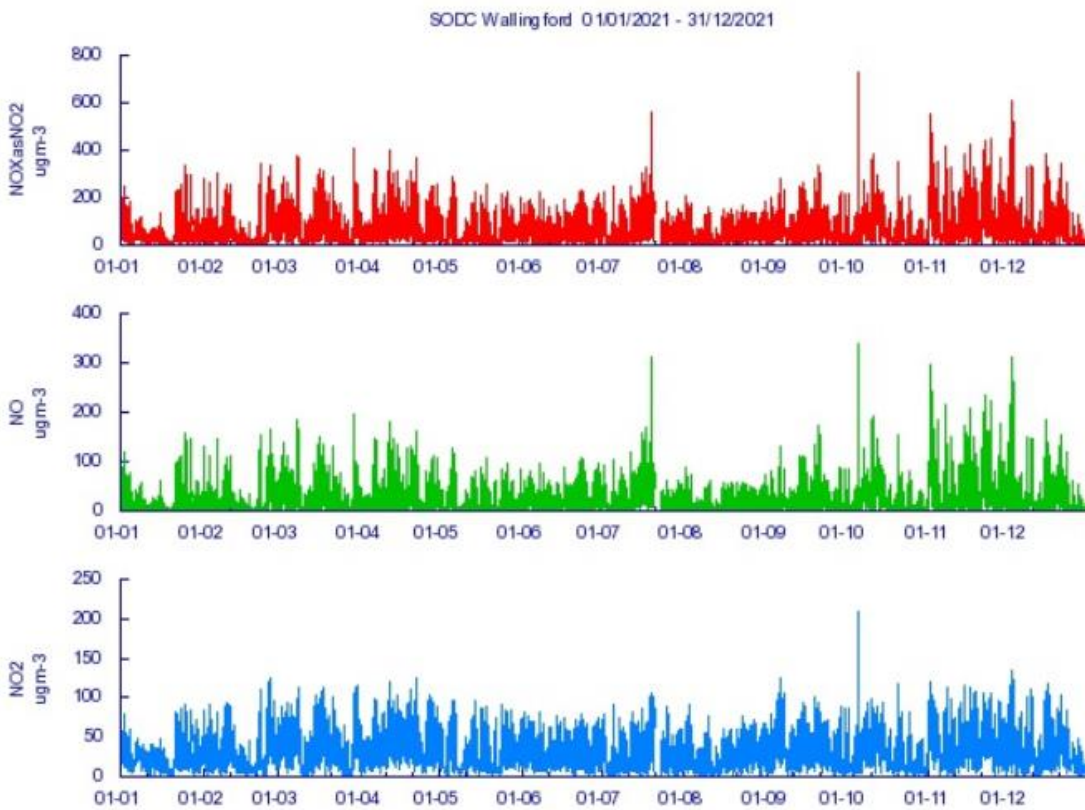
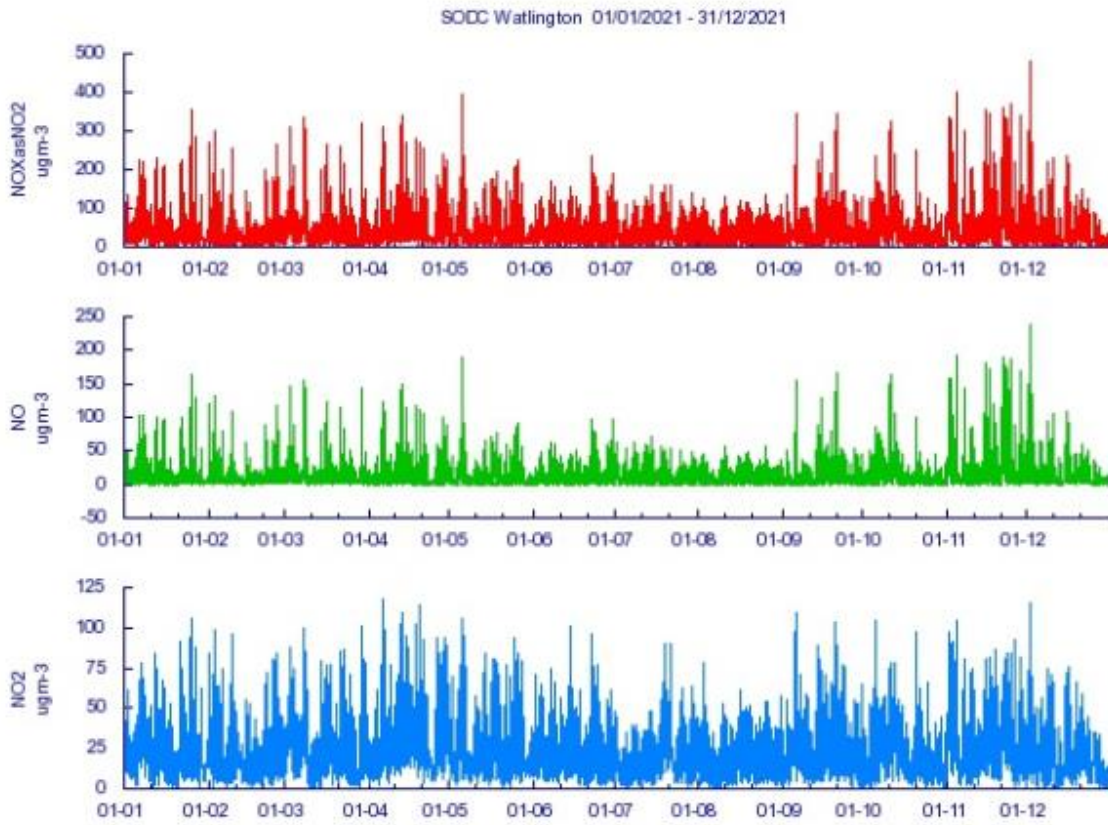
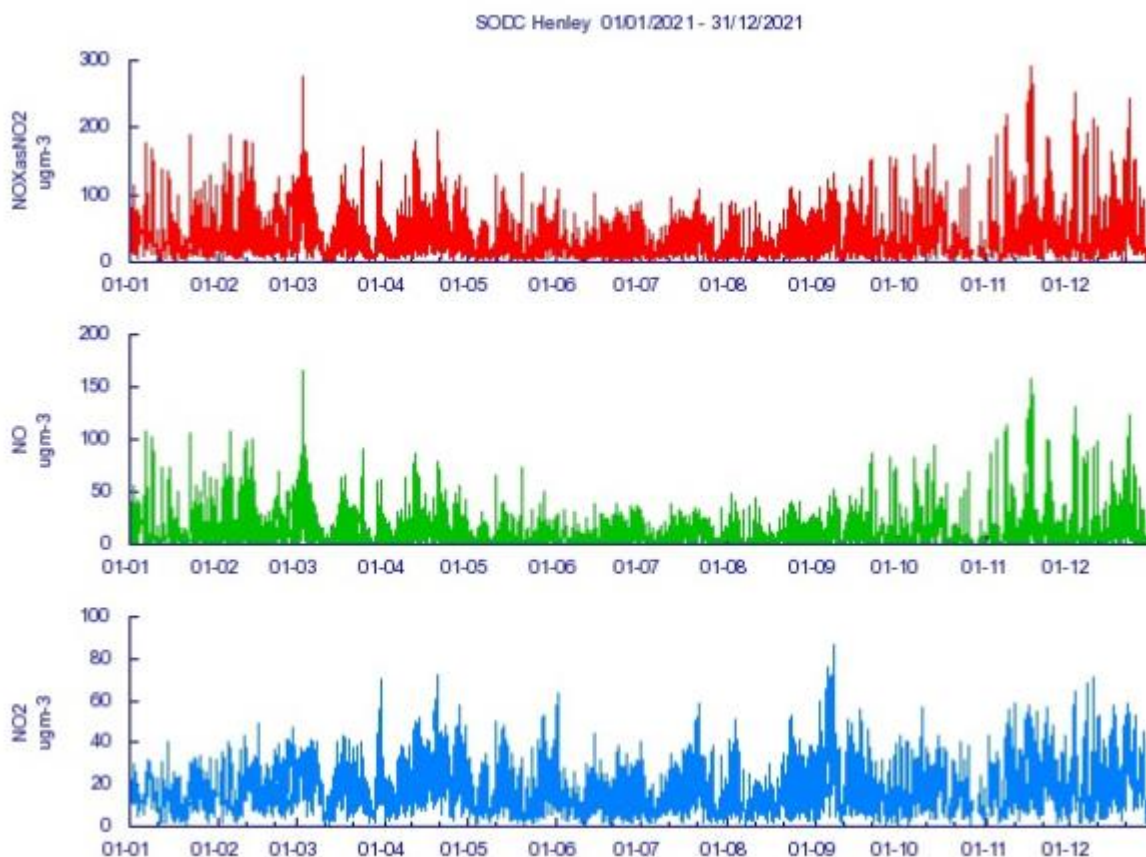


Figure C. 2 Watlington Continuous Analyser - Annual Graph



**Figure C.3 Henley Continuous Analyser - Annual Graph**



**Automatic Monitoring Annualisation**

All automatic monitoring locations within South Oxfordshire recorded data capture of greater than 75% therefore it was not required to annualise any monitoring data. In addition, any sites with a data capture below 25% do not require annualisation.

**NO<sub>2</sub> Fall-off with Distance from the Road**

No automatic NO<sub>2</sub> monitoring locations within South Oxfordshire required distance correction during 2021.

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

Diffusion Tube ID	Annualisation Factor Henley	Annualisation Factor Wallingford	Annualisation Factor Watlington	Average Annualisation Factor	Raw Data Simple Annual Mean ( $\mu\text{g}/\text{m}^3$ )	Annualised Data Simple Annual Mean ( $\mu\text{g}/\text{m}^3$ )
S54	1.0378	1.0548	1.0429	1.0451	11.3	11.8
<b>NO<sub>2</sub> Hourly Concentrations (<math>\mu\text{g}/\text{m}^3</math>)</b>						
	<b>Sufficient (&gt;85%) annual data capture</b>	<b>Sufficient (&gt;85%) annual data capture</b>	<b>Sufficient (&gt;85%) annual data capture</b>			



**Table C.3 Local Bias Adjustment Calculation**

Local Bias Adjustment Outputs	STEP 3a Local Bias Adjustment Input 1	STEP 3b Local Bias Adjustment Input 2
Periods used to calculate bias	10	12
Bias Adjustment Factor A	0.72 (0.66 - 0.79)	0.88 (0.82 - 0.95)
Diffusion Tube Bias B	40% (27% - 52%)	13% (5% - 21%)
Diffusion Tube Mean ( $\mu\text{g}/\text{m}^3$ )	24.7	37.0
Mean CV (Precision)	5.2%	3.2%
Automatic Mean ( $\mu\text{g}/\text{m}^3$ )	17.7	32.7
Data Capture	95%	98%
Adjusted Tube Mean ( $\mu\text{g}/\text{m}^3$ )	18 (16 - 20)	33 (30 - 35)
Overall Diffusion Tube Precision	<b>Good Overall Precision</b>	<b>Good Overall Precision</b>
Overall Continuous Monitor Data Capture	<b>Good Overall Data Capture</b>	<b>Good Overall Data Capture</b>
Combined Local Bias Adjustment Factor	<b>0.79</b>	

**Notes:**

A single local bias adjustment factor has been used to bias adjust the 2021 diffusion tube results.

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

Figure D. 1 Map of Non-Automatic Monitoring Sites in Adwell and Benson

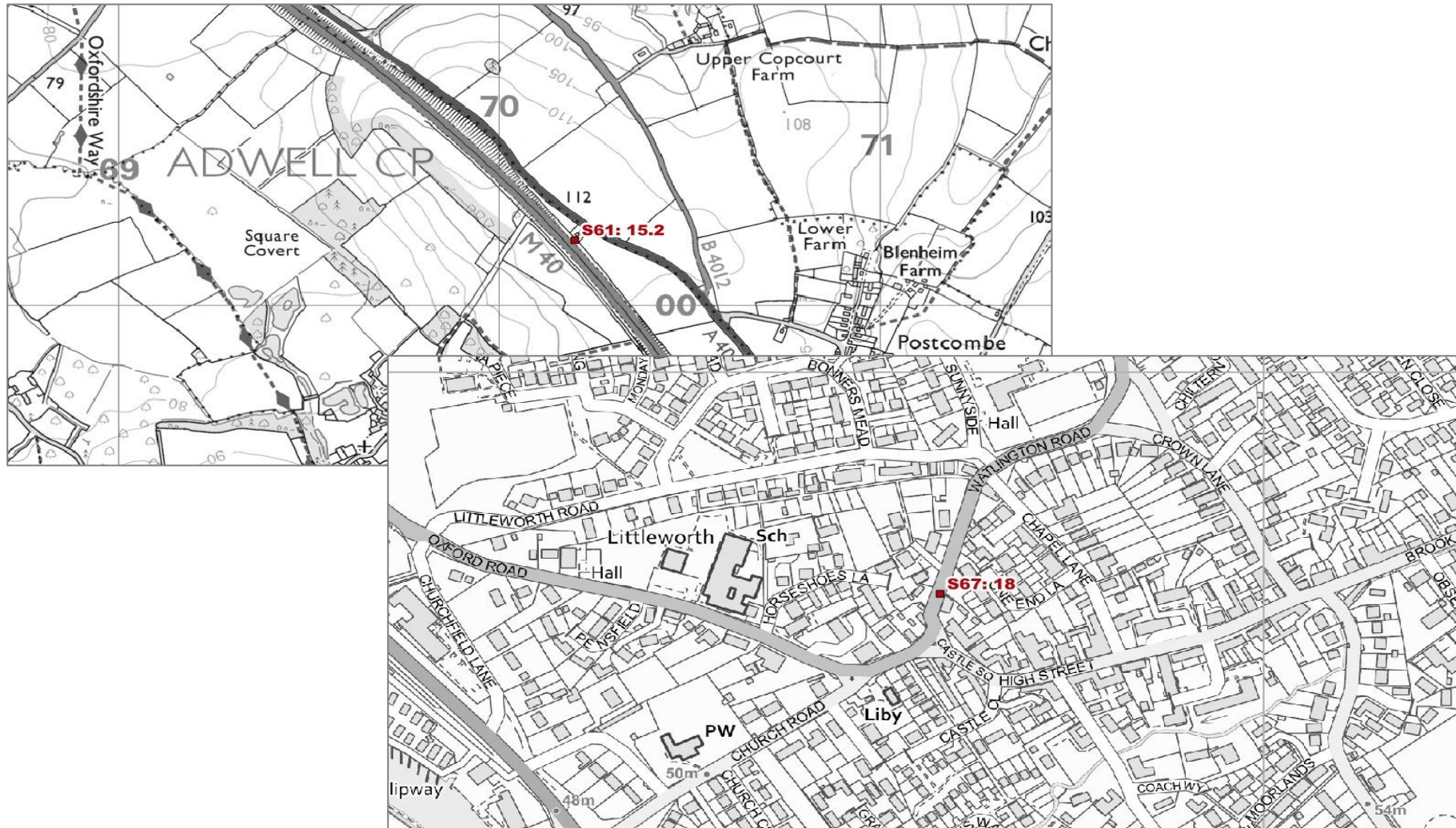


Figure D. 2 Map of Non-Automatic Monitoring Sites in Horspath and Wheatley

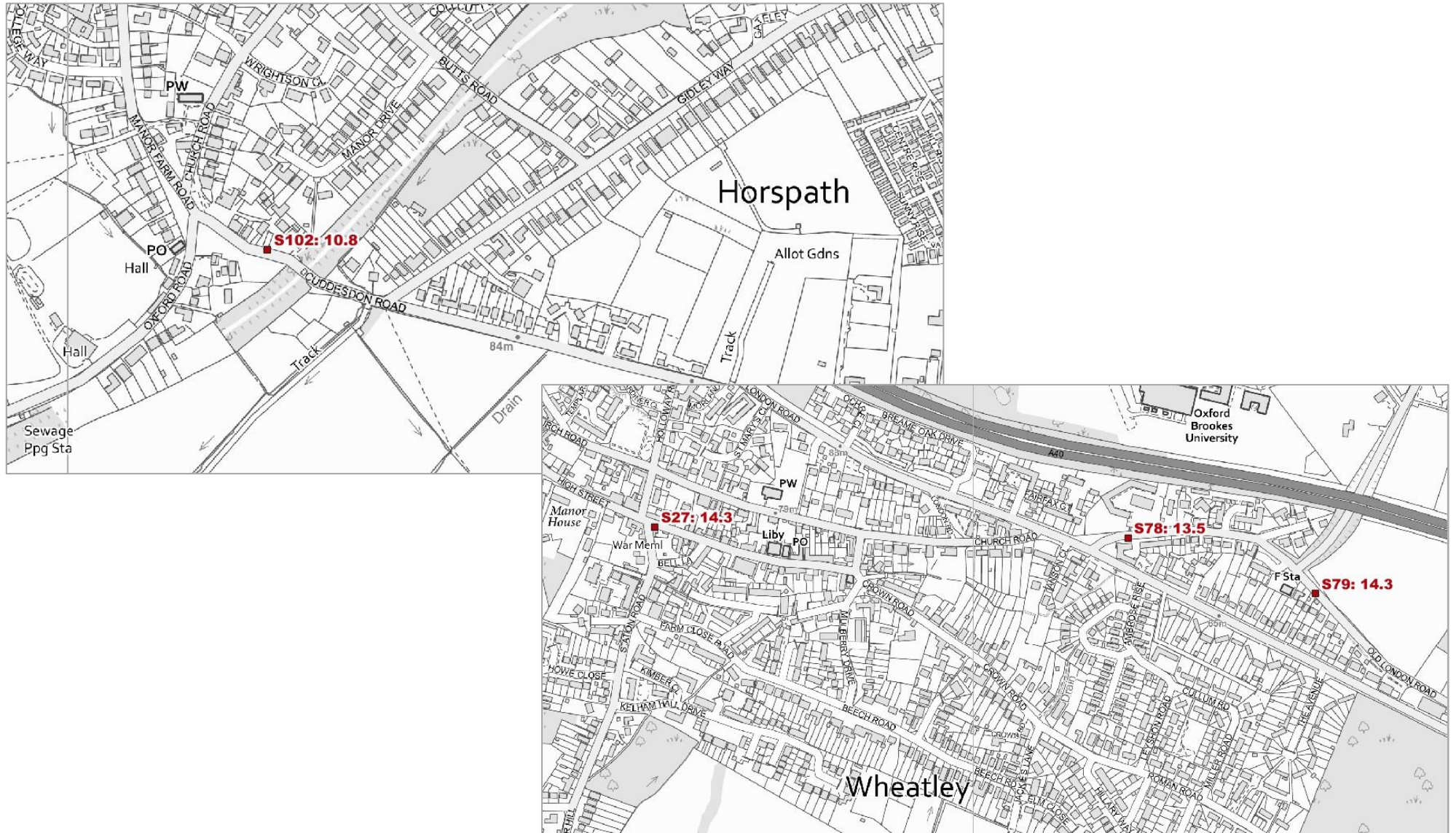


Figure D. 3 Map of Non-Automatic Monitoring Sites in Little Milton and Clifton Hampden



Figure D. 4 Map of Non-Automatic Monitoring Sites in Whitchurch on Thames and Stadhampton



Figure D. 5 Map of Non-Automatic Monitoring Sites in Chinnor



Figure D. 6 Map of Non-Automatic Monitoring Sites in Thame

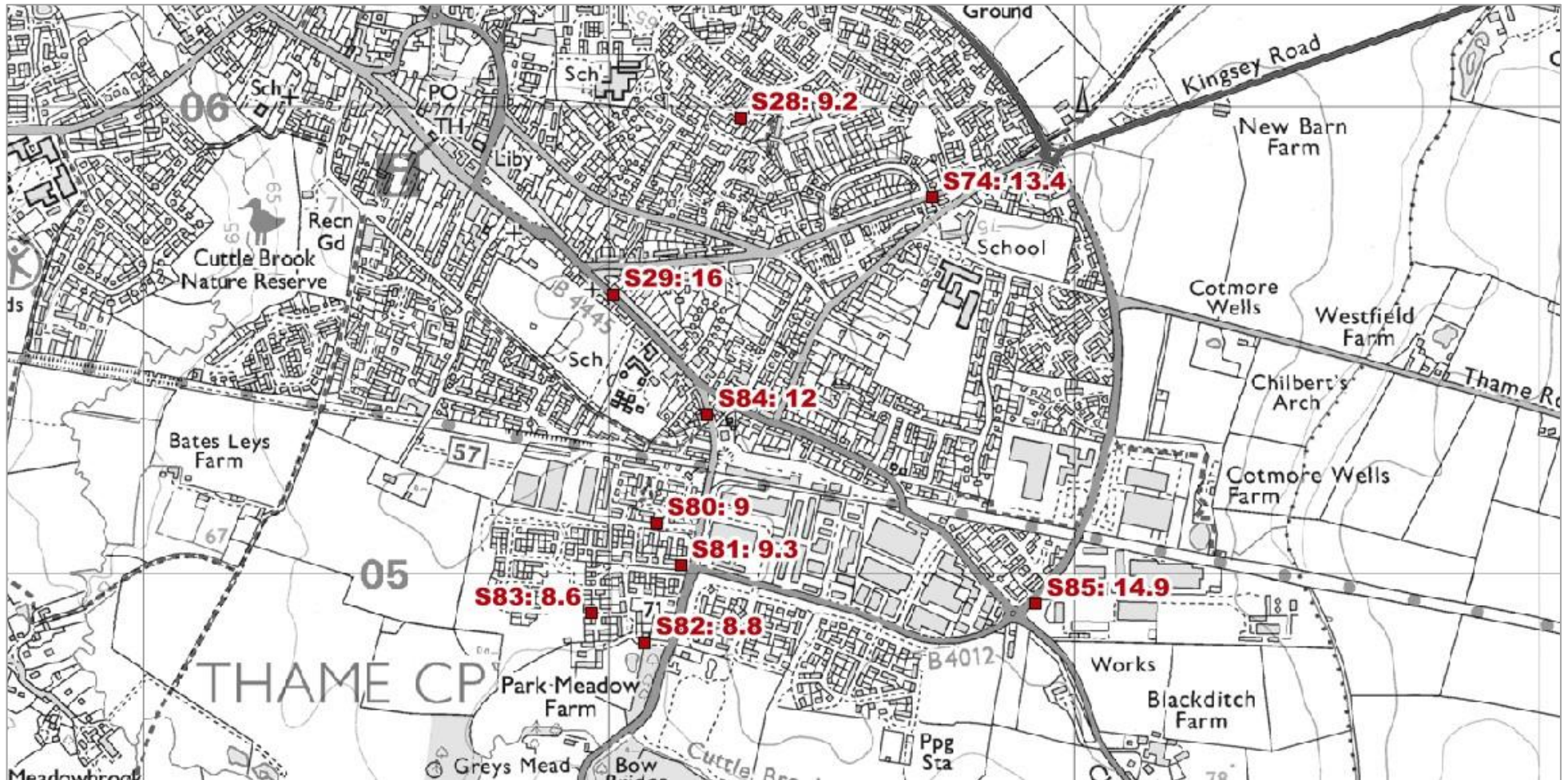


Figure D. 7 Map of AQMA and Monitoring Sites in Watlington





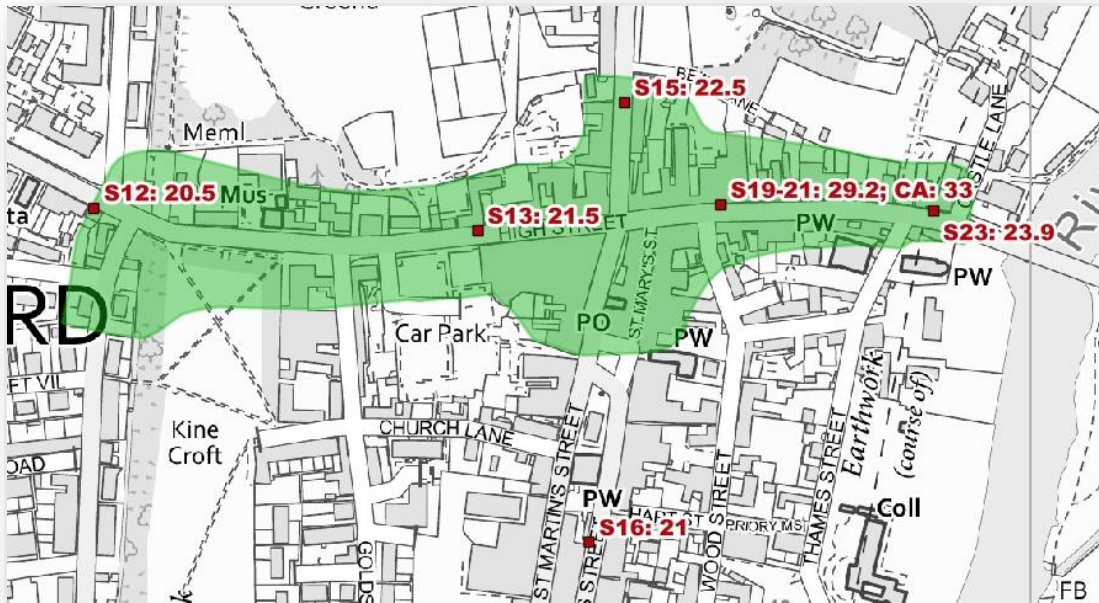
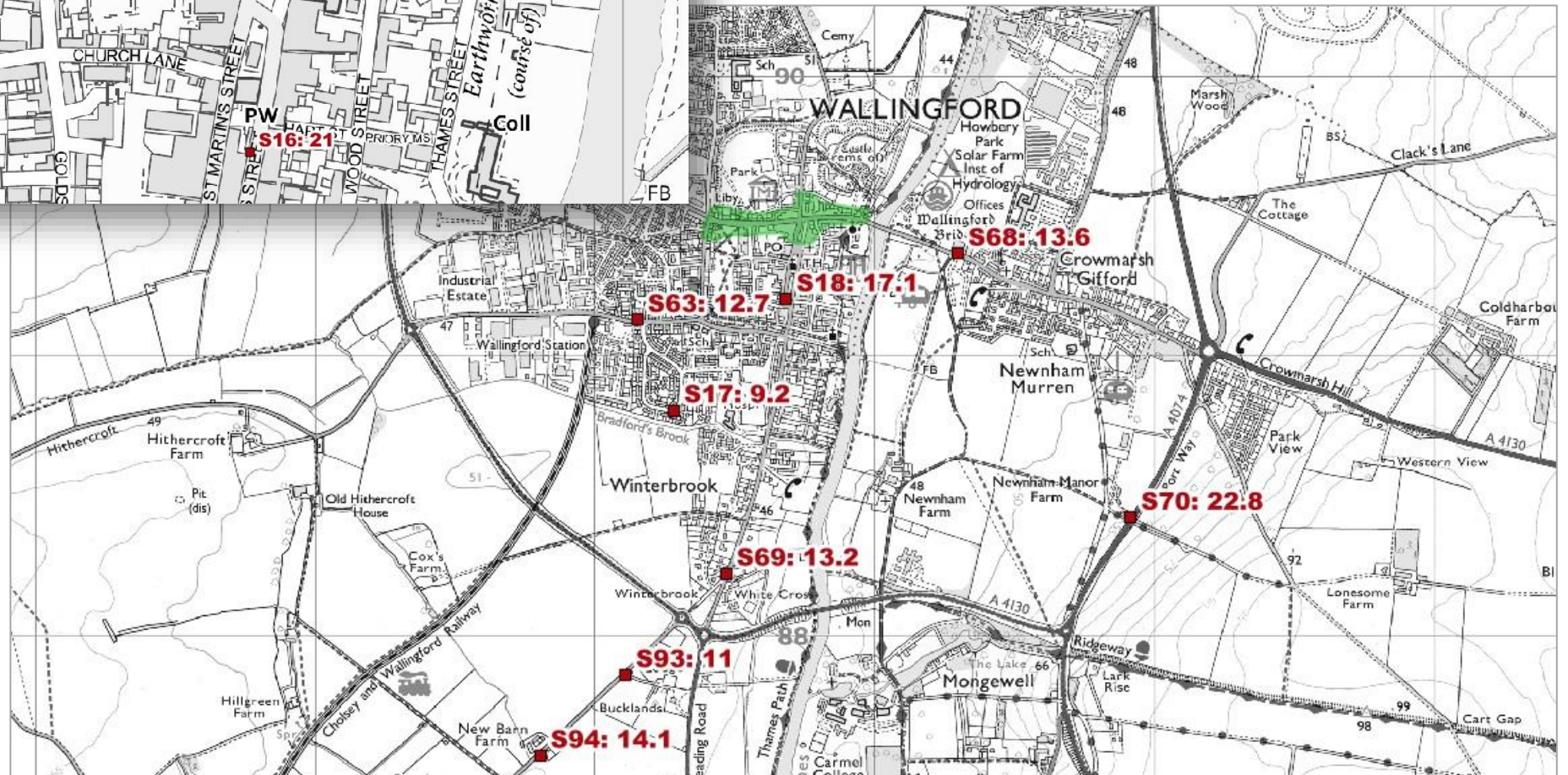


Figure D. 8 Map of AQMA and Monitoring Sites in Wallingford



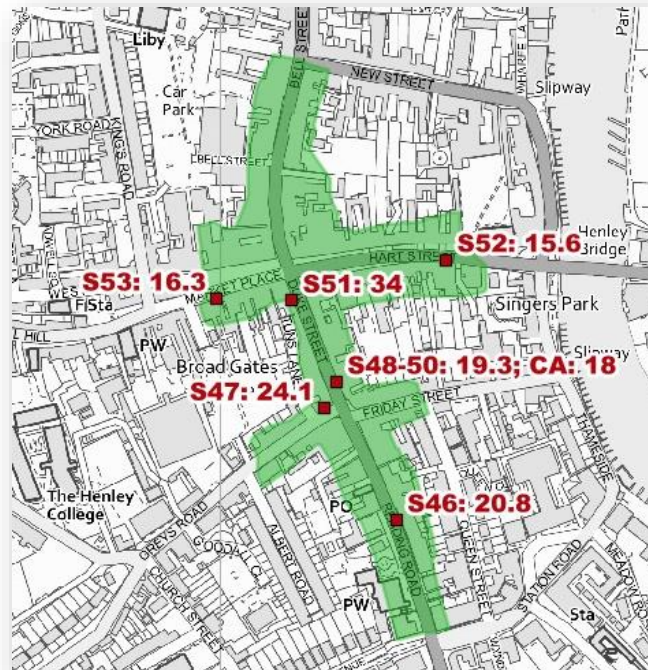
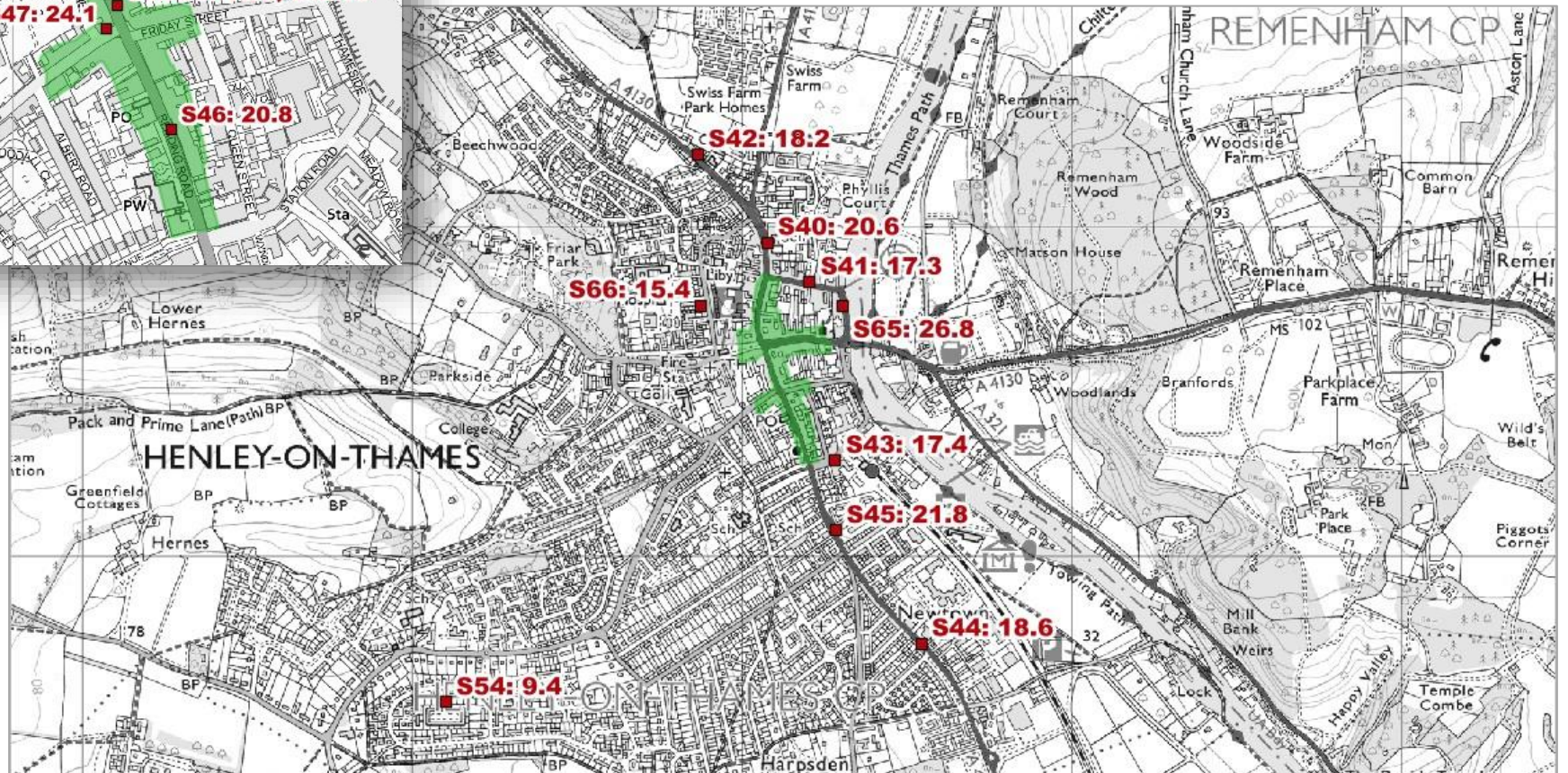


Figure D. 9 Map of AQMA and Monitoring Sites in Henley on Thames



## Appendix E: Summary of Air Quality Objectives in England

**Table E. 1 Table E.1 – Air Quality Objectives in England**

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

## 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 <sub>2</sub>	Nitrogen Dioxide
NO <sub>x</sub>	Nitrogen Oxides
PM <sub>10</sub>	Airborne particulate matter with an aerodynamic diameter of 10µm or less
PM <sub>2.5</sub>	Airborne particulate matter with an aerodynamic diameter of 2.5µm or less
QA/QC	Quality Assurance and Quality Control
SO <sub>2</sub>	Sulphur Dioxide

## References

- Local Air Quality Management Technical Guidance LAQM.TG16. April 2021. 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.PG16. May 2016. Published by Defra in partnership with the Scottish Government, Welsh Assembly Government and Department of the Environment Northern Ireland.