



# St Albans

## City & District Council



## 2024 Air Quality Annual Status Report (ASR)

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

Report for: St Albans City and District Council

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07/06/2024



**St Albans**  
**City & District Council**

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In fulfilment of Part IV of the Environment Act 1995  
Local Air Quality Management, as amended by the  
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Date: June 2024

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## Executive Summary: Air Quality in Our Area

### Air Quality in St Albans

Breathing in polluted air affects our health and costs the NHS and our society billions of pounds each year. Air pollution is recognised as a contributing factor in the onset of heart disease and cancer and can cause a range of health impacts, including effects on lung function, exacerbation of asthma, increases in hospital admissions and mortality. In the UK, it is estimated that the reduction in healthy life expectancy caused by air pollution is equivalent to 29,000 to 43,000 deaths a year<sup>1</sup>.

Air pollution particularly affects the most vulnerable in society, children, the elderly, and those with existing heart and lung conditions. Additionally, people living in less affluent areas are most exposed to dangerous levels of air pollution<sup>2</sup>.

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

**Table ES 1 - Description of Key Pollutants**

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

<sup>1</sup> UK Health Security Agency. Chemical Hazards and Poisons Report, Issue 28, 2022.

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

St Albans City and District Council is located in Hertfordshire, east of Hemel Hempstead and 20 miles from northwest London. St Albans is mainly a rural area, but has 3 urban towns: St Albans, Harpenden, and Wheathampstead.

The main source of air pollution in the district is from road transport. The resultant main pollutant of concern is Nitrogen Dioxide (NO<sub>2</sub>). A number of main A roads (A4147, A5183 and A1081) pass through St Albans City and District Council. The M25 runs east to west through the southern area of the District. The M1 runs north to south through the western area of the District and the A414 (North Orbital Road) provides a link between the M25 and M1.

During 2023, 2 out of 50 passive monitoring locations recorded an increase in annual mean NO<sub>2</sub> concentrations from 2022. There were no reported exceedances of the annual mean NO<sub>2</sub> UK AQS (Air Quality Strategy) objective of 40µg/m<sup>3</sup>. One monitoring site reported concentrations within 10% of the NO<sub>2</sub> UK AQS objective; Site SA160. This site is not directly at a location of relevant exposure, and once fall-off with distance calculations were applied out to predict concentrations at the nearest relevant receptor, the estimated concentrations was 32.5µg/m<sup>3</sup> at the nearest receptor.

Air Quality Management Areas (AQMA) can be declared when there is an exceedance, or likely exceedance, of an air quality objective. St Albans City and District Council currently have one declared AQMA (AQMA No.1) within the Council boundaries. This AQMA covers the area comprising of odd numbered residences and buildings 1-7 London Road, 1-11c Holywell Hill and even numbered residences along London Road. The AQMA was declared in 2004 due to exceedances of the NO<sub>2</sub> annual mean AQS objective (40µg/m<sup>3</sup>) and the PM<sub>10</sub> 24-hour concentration objective (50 µg/m<sup>3</sup> not to be exceeded more than 35 times/ year). Further details of this AQMA may be found on the [UK Air website](#).

An Air Quality Action Plan (AQAP) was completed in 2003<sup>3</sup> and progress on existing measures was last updated in the 2023 ASR. An AQAP is a mandatory requirement for any local authorities who report exceedances of one or more of the UK AQS objectives and should describe the manner in which the local authority in collaboration with partners will work toward bettering air quality in the area. Following the development of a new AQAP, the new set of actions is included in this report, as shown in Table 0.2. The AQAP

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<sup>3</sup> St Albans AQAP, December 2003: <https://aqma.defra.gov.uk/action-plans/StADC%20AQAP%202003.pdf>

is intended to be a set of actions aimed at improving air quality within active AQMAs and by extension, the District as a whole. The new AQAP comprises a set of action areas, these are:

- Environmental Measures
- Transport Measures
- Health, Education and Awareness measures

## Actions to Improve Air Quality

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

The Environmental Improvement Plan<sup>4</sup> sets out actions that will drive continued improvements to air quality and to meet the new national interim and long-term targets for fine particulate matter (PM<sub>2.5</sub>), the pollutant of most harmful to human health. The Air Quality Strategy<sup>5</sup> provides more information on local authorities' responsibilities to work towards these new targets and reduce fine particulate matter in their areas.

The Road to Zero<sup>6</sup> details the Government's approach to reduce exhaust emissions from road transport through a number of mechanisms, in balance with the needs of the local community. This is extremely important given that cars are the most popular mode of personal travel and the majority of Air Quality Management Areas (AQMAs) are designated due to elevated concentrations heavily influenced by transport emissions.

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<sup>4</sup> Defra. Environmental Improvement Plan 2023, January 2023

<sup>5</sup> Defra. Air Quality Strategy – Framework for Local Authority Delivery, August 2023

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

## Conclusions and Priorities

In the monitoring period of 2023, there were no exceedances of any of the relevant NO<sub>2</sub> UK AQS objectives. As such, compliance with the objectives has been maintained in the St Albans City and District Council. St Albans City and District Council will continue to focus on the reduction of NO<sub>2</sub> concentrations through the creation of a new AQAP. The Council's priorities for the next reporting year are:

- Publish the new AQAP
- Continue working with neighbouring local authorities to improve air quality
- Continue to monitor NO<sub>2</sub> and review the network regularly to ensure efficiency of monitoring.

## Local Engagement and How to get Involved

At an individual level there are a number of ways the public are able to get involved and help improve air quality on a local level. The main source of air pollution within St Albans District is vehicle emissions and changing the method of transport used can help reduce the amount of pollutant emissions released from vehicle sources. This can be from both the reduction in the number of vehicles being used and through the type of vehicles being used.

Changes in transport use such as the following help in reducing emissions of NO<sub>2</sub>, PM<sub>10</sub> and PM<sub>2.5</sub> from vehicle sources:

- Use public transport where available – This reduces the number of private vehicles in operation reducing pollutant concentration through the number of vehicles and reducing congestion;
- Walk or cycle if your journey allows it – Choosing to walk or cycle for your journey reduces the number of vehicles on the road. There is the added benefit of keeping fit and healthy. In addition, many of the cycle routes are off-road meaning you are not in close proximity to emissions from road traffic sources;
- Reduce time of idling vehicles – If using a car for a journey avoid idling. When it is apparent there will be no movement required then switch the engine off to reduce the amount of pollutant emissions released;
- Car/lift sharing – Where a number of individuals are making similar journeys, such as travelling to work or to school, car sharing reduces the number of vehicles on the



road and therefore the amount of emissions being released. This can be promoted via travel plans through the workplace and within schools; and

- Alternative fuel / more efficient vehicles – Choosing a vehicle that meets the specific needs of the owner, fully electric, hybrid fuel and more fuel efficient cars are available, and all have different levels of benefits by reducing the amount of emissions being released.

The St Albans Greener Together initiative, formed by the Council and the University of Hertfordshire aims to provide a platform where local experts may provide advice on initiatives suggested by individuals, businesses or community groups. It is also a platform to seek support for these ideas, and the opportunity may be afforded to apply for funding to implement suggested actions. As part of the network, members can share ideas and experiences and help other members creating a motivated, interconnected District with a united focus on addressing sustainability issues and enacting meaningful local change. Find out more and join today on the [St Albans Greener Together website](#).

Real time and historical air quality data for Hertfordshire and Bedfordshire is presented at [www.airqualityhertsbeds.co.uk](http://www.airqualityhertsbeds.co.uk), an index related legend is provided so users can follow the current air quality. There are also a number of links providing further information, including the legislation of air quality within the UK, diffusion tube data, previous LAQM reports and graphical representations of data across the region. Up to date diffusion tube data and news relating to air quality within the District can be found on the St Albans City and District website at <https://www.stalbans.gov.uk/environmental-services>.

## Local Responsibilities and Commitment

This ASR was prepared by Ricardo on behalf of St Albans City and District Council with the support and agreement of the following officers and departments:

- Tara Murphy (Specialist Officer Environmental Compliance)
- Emma Turner - Strategy & Programme Manager (Highways Strategy & Implementation)
- Matthew Clark - Programme Manager – Air Quality | Sustainable Growth/Public Health Service

- Anne Hardy – Road Safety & Sustainable Travel Manager (Road Safety & Active Travel)
- Vale Male – Principal Rail Officer (Strategic Transport and Rail)
- Further AQAP updates provided by St Albans DC Officers from Regulatory Services (Environmental Compliance, Parking, Licencing)
- Trees & Woodlands, Planning, & Infrastructure
- Hertfordshire County Council

This ASR has been approved by:

- Robin Ray – Assistant Director Regulatory & Compliance, Community & Place Delivery

This ASR has not been signed off by a Director of Public Health.

If you have any comments on this ASR please send them to Tara Murphy at:

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# 1 Local Air Quality Management

This report provides an overview of air quality in St Albans City and District Council during 2023. It fulfils the requirements of Local Air Quality Management (LAQM) as set out in Part IV of the Environment Act (1995), as amended by the Environment Act (2021), and the relevant Policy and Technical Guidance documents.

The LAQM process places an obligation on all local authorities to regularly review and assess air quality in their areas, and to determine whether or not the air quality objectives are likely to be achieved. Where an exceedance is considered likely the local authority must declare an Air Quality Management Area (AQMA) and prepare an Air Quality Action Plan (AQAP) setting out the measures it intends to put in place in order to achieve and maintain the objectives and the dates by which each measure will be carried out. This Annual Status Report (ASR) is an annual requirement showing the strategies employed by St Albans City and 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 Table E.1.

## 2 Actions to Improve Air Quality

### 2.1 Air Quality Management Areas

Air Quality Management Areas (AQMAs) are declared when there is an exceedance or likely exceedance of an air quality objective. After declaration, the authority should prepare an Air Quality Action Plan (AQAP) within 18 months. The AQAP should specify how air quality targets will be achieved and maintained, and provide dates by which measures will be carried out.

**A summary of AQMAs declared by St Albans City and District Council can be found in Table 0.1. The table presents a description of the AQMA that is currently designated within St Albans City and District Council.**



Appendix D: Map(s) of Monitoring Locations and AQMAs provides a map of the AQMA and also maps of the air quality monitoring locations in relation to the AQMA. The air quality objectives pertinent to the current AQMA designation are as follows:

- NO<sub>2</sub> annual mean
- PM<sub>10</sub> 24-hour mean

Table 0.1 – Declared Air Quality Management Areas

AQMA Name	Date of Declaration	Pollutants and Air Quality Objectives	One Line Description	Is air quality in the AQMA influenced by roads controlled by Highways England?	Level of Exceedance: Declaration	Level of Exceedance: Current Year	Number of Years Compliant with Air Quality Objective	Name and Date of AQAP Publication	Web Link to AQAP
St Albans AQMA No. 1	Declared 02/11/2004, Amended 08/07/2009	NO <sub>2</sub> Annual Mean	The area comprising of odd numbers 1-7 London Road, 1-11c Holywell Hill and even numbers London Road, St Albans.	NO	61 µg/m <sup>3</sup>	No exceedance	4	Air Quality Action Plan for St Albans City and District Council December 2003	<a href="#">Air quality action plan - December 2003 (defra.gov.uk)</a>
St Albans AQMA No. 1	Declared 02/11/2004, Amended 08/07/2009	PM <sub>10</sub> 24 hour mean	The area comprising of odd numbers 1-7 London Road, 1-11c Holywell Hill and even numbers London Road, St Albans.	NO	-	-	-		

Note: Continuous PM<sub>10</sub> monitoring is not carried out in St Albans

- St Albans City and District Council confirm the information on UK-Air regarding their AQMA(s) is up to date
- St Albans City and District Council confirm that all current AQAPs have been submitted to Defra

## 2.2 Progress and Impact of Measures to address Air Quality in St Albans City and District Council

### 2.2.1 Defra's Appraisal of the 2023 ASR

Defra's appraisal of last year's ASR concluded that *"The report is well structured, detailed, and provides the information specified in the Guidance"*.

The appraiser's comments said:

*"On the basis of the evidence provided by the local authority the conclusions reached are **accepted** for all sources and pollutants. Following the completion of this report, SACDC should submit an Annual Status Report in 2023."*

The following comments were provided in the 2023 ASR appraisal to inform the writing of future reports. The following constructive comments have been addressed in the writing of the 2024 ASR:

- *"SACDC have presented NO<sub>2</sub> trends for monitoring locations both inside the AQMAs and outside of the AQMAs. This is extremely useful as it allows the reader to easily understand trends relating to NO<sub>2</sub> within the borough. This approach to data/trend presentation is encouraged for future reports."*
- *"Table 2.1 is missing the column of "Number of years compliant with air quality objective". This information should be included."*
- *"While the ASR includes the comments from the previous ASR, it is not included how the Council have addressed these this year. This should be included in future reports to highlight improvement."*
- *"In chapter 2.2 the following prescription text is missing:*
  - *<Local Authority Name> anticipates that the measures stated above and in Table 0.2 will achieve compliance in <AQMA Name(s)>.*
  - *Whilst the measures stated above and in Table 2.2 will help to contribute towards compliance, <Local Authority Name> anticipates that further additional measures not yet prescribed will be required in subsequent years to achieve compliance and enable the revocation of <AQMA Name(s)>.*

*On of these paragraphs should be included in future reports. Considering that AQMA No. 1 has been compliant for four years<sup>7</sup>, the first paragraph would be the most appropriate.”*

- *“In chapter “QA/QC of diffusion tube monitoring” reference to LAQM.TG16 was made. However, LAQM.TG22 has replaced LAQM.TG16. In other parts of the ASR, the correct technical guidance is referenced. Please ensure consistency in future reports.”*
- *“In the chapter “Diffusion tube bias adjustment” the justification of using the national bias adjustment factor is not given. In future reports this should be included with one sentence i.e. as no co-location with a continuous monitor is present within the LA, it is not possible to calculate a local bias adjustment factor.”*

## 2.2.2 Progress of measures

The Council has taken forward a number of direct measures during the current reporting year of 2023 in pursuit of improving local air quality. Details of all measures completed, in progress or planned are set out in Table 0.2. 32 measures are included within Table 0.2, with the type of measure and the progress St Albans City and District Council have made during the reporting year of 2023 presented. Where there have been, or continue to be, barriers restricting the implementation of the measure, these are also presented within Table 0.2.

More detail on these measures can be found in the new Air Quality Action Plan, due to be published in 2024.

St Albans City and District Council expects the following measures to be completed over the course of the next reporting year, or in 2025:

- Investigate development of a domestic solid fuel policy
- Air Quality planning guidance for construction sites and operational development
- Bus routes through the AQMA are only electric
- Investigation of “last-mile” delivery hub

St Albans City and District Council anticipates that the measures stated above and in Table 2.2 will achieve compliance in AQMA No. 1.

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<sup>7</sup> Note that at the time this appraisal was returned (July 2023), AQMA No.1 had been compliant for 3 years, the correct value of 4 years has been included for this year’s ASR in Table 2.1

This is a selection of measures expected to be completed in 2024/25, for a full list see Table 2.2.

St Albans City and District Council worked to implement these measures in partnership with the following stakeholders during 2023:

- Hertfordshire County Council
- Local Bus operators

The principal challenge and barrier to implementation that St Albans City and District Council anticipates facing is in funding the implementation of actions in Table 2.2.

**Table 0.2 – Progress on Measures to Improve Air Quality**

Measure No.	Measure Title	Category	Classification	Year Measure Introduced in AQAP	Estimated / Actual Completion Date	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Barriers to Implementation
TM2	Investigate introduction of additional electric charging at council car parks and on-street parking locations within the district	Promoting Low Emission Transport	Procuring alternative Refuelling infrastructure to promote Low Emission Vehicles, EV recharging, Gas fuel recharging	2020	Ongoing	SACDC	SACDC	No	Not Funded	£50k - 100k	Planning	It is not possible to specifically quantify the impact of small-scale projects that the Council are working on with partners. However individual & cumulative AQ measures which reduce emissions are beneficial to improving pollutant levels in the AQMA and the District generally.	Usage figures	Installation of EV Charge Points in Hart Road (4), Cotlandswick Leisure Centre (2) Keyfield terrace (4), London Road (8), Bowers Way (2), Charter Close (2) is complete. SACDC has also installed or is planning to install more charging sites at Jenny Lane, Noke Shot, Cottonmill Community and Cycle Centre, and Civic Centre Opportunities Site (CCOS) South	Hertfordshire County Council will be supporting districts with resources and funding to increase EV charge points in both car parks and on-street parking.
EM7	Air quality planning guidance for construction sites and operational developments	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	2024/2025	2024/2025	SACDC & HCC Air Quality / Planning Team	Staff costs	No	Funded	-	To be confirmed	Lower NOx & PM emissions from construction sites and developments	Publication of the policy & enforcement of the policy	-	St Albans City and District Council planning buy in/funding for SPG document creation. This could also be promoted through channels such as the Hertfordshire County Council Sustainability Partnership to extend consistent policy for the County
EM3	Consider implementation of smoke control areas	Policy Guidance and Development Control	Other policy	2024/2025	2024/2025	SACDC Air Quality Team	Staff costs	No	Funded	-	To be confirmed	Lower PM emissions. Domestic combustion including wood burning contributes 29% of total PM <sub>10</sub> emissions and 44% of total PM <sub>2.5</sub> emissions in the district.	Implementation of smoke control area(s)	Planning stage	This process will be explored more widely with air quality officers in the county
EM1	Climate Change Carbon Emission Reduction - Hertfordshire Climate Change and Sustainability Partnership (HCCSP)	Policy Guidance and Development Control	Regional Groups Co-ordinating programmes to develop Area wide Strategies to reduce emissions and improve air quality	2024/2025	Ongoing	St Albans City and District Council (SACDC) & Hertfordshire County Council (HCC) departments	Staff costs	No	Funded	-	Active	It is not possible to specifically quantify the impact of small-scale projects that the Council are working on with partners. However individual & cumulative AQ measures which reduce emissions are beneficial to improving pollutant levels in the AQMA and the District generally.	Regular attendance of regular HCCSP meetings	Attending regular meetings	HCC suggest that St Albans City and District Council could promote the Sustainability Partnership work within the scope of this measure to achieve a consistent policy for development across the county and with wider regional partners. The Hertfordshire Growth Board ( <a href="https://www.hertfordshiregrowthboard.com/documents/visi-on-and-missions/#sec-8">https://www.hertfordshiregrowthboard.com/documents/visi-on-and-missions/#sec-8</a> ) has a strategic goal in the Transport for Herts Mission to: Improve air quality by reducing transport-related emissions. With an action to: Monitor air quality across the county to inform plans and programmes of work.
EM2	Links with Air quality and public health - Hertfordshire County Council	Policy Guidance and Development Control	Regional Groups Co-ordinating programmes to develop Area wide Strategies to reduce emissions and improve air quality	2024/2025	Ongoing	SACDC & HCC departments	Staff costs	No	Funded	-	Active	It is not possible to specifically quantify the impact of small-scale projects that the Council are working on with partners. However individual & cumulative AQ measures which reduce emissions are beneficial to improving pollutant levels in the AQMA and the District generally.	Regular attendance of meetings between SACDC and HCC	Attending regular meetings	Ensure SACDC utilises the HCC air quality programme manager. The employment of an air quality manager at the county level has allowed communication with multiple departments, links with highways, public health, schools. It permits a very broad range of facilities to promote and improve air quality awareness
EM4	Investigate development of a domestic solid fuel policy	Policy Guidance and Development Control	Other policy	2024/2025	2024/2025	SACDC Air Quality Team	Staff costs	No	Funded	-	To be confirmed	Lower PM emissions. Domestic combustion including wood burning contributes 29% of total PM <sub>10</sub> emissions and 44% of total PM <sub>2.5</sub> emissions in the district.	Publication of the policy & enforcement of the policy	-	Local plan policy, supplementary planning documents, and guidance may be considered here.

Measure No.	Measure Title	Category	Classification	Year Measure Introduced in AQAP	Estimated / Actual Completion Date	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Barriers to Implementation
EM5	Control of Bonfires and use of other unauthorised Fuels	Policy Guidance and Development Control	Other policy	2024/2025	2024/2025	SACDC Air Quality Team	Staff costs	No	Funded	-	To be confirmed	Lower PM emissions. Domestic combustion including wood burning contributes 29% of total PM10 emissions and 44% of total PM2.5 emissions in the district.	Publication of the policy, enforcement of the policy & reduction in nuisance reports	-	
EM6	SACDC will investigate complaints about nuisance (domestic and industrial emissions)	Public Information	Via other mechanisms	-	Ongoing	SACDC Air Quality Team / Environmental Health Officers	Staff costs	No	Funded	£10k - 50k	Active	It is not possible to specifically quantify the impact of small-scale projects that the Council are working on with partners. However individual & cumulative AQ measures which reduce emissions are beneficial to improving pollutant levels in the AQMA and the District generally.	Time taken to resolve complaints	Complaints are investigated as and when received	
EM8	Continue to monitor air quality within the district and as necessary review the suitability of monitoring locations	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	2018	Ongoing	SACDC Air Quality Team	Staff costs	No	Funded	-	Active	It is not possible to specifically quantify the impact of small-scale projects that the Council are working on with partners. However individual & cumulative AQ measures which reduce emissions are beneficial to improving pollutant levels in the AQMA and the District generally.	Data capture	Details of diffusion tube monitoring is recorded on <a href="https://www.stalbans.gov.uk/environmental-services">https://www.stalbans.gov.uk/environmental-services</a>	
EM9	Continue the Trees Against Pollution project and explore green wall/hedging opportunities	Transport Planning and Infrastructure	Other	2018	Ongoing	SACDC Trees & Woodlands / Planning Team	Staff costs	No	Not Funded	-	Active	It is not possible to specifically quantify the impact of small-scale projects that the Council are working on with partners. However individual & cumulative AQ measures which reduce emissions are beneficial to improving pollutant levels in the AQMA and the District generally.	Number of trees planted	Over 10,000 trees given away to residents as part of the HCC tree giveaway initiative in partnership with and part funded by SACDC.	
EM10	All new street infrastructure should take a Healthy Streets approach	Transport Planning and Infrastructure	Other	2024/2025	2024/2025	SACDC/HCC	Staff costs	No	Funded	-	To be confirmed	-	All new streets perform well against the ten healthy street indicators	HCC support this and have already taken measures to introduce Healthy Streets assessments and concepts into early scheme design.	It is suggested that building in the need for all future development to promote a healthy streets approach through new infrastructure will be a requirement, with consideration of a standard minimum street score, and for the development to contribute to the existing environment and meet the needs for future site users by uplifting existing surrounding and connected streets where this is necessary. This should be done during the early design stages to provide direction and evidence for design decisions.
TM1	Electric fleet council vehicles	Alternative use from diesel and petrol vehicles	Emission reduction	2024/2025	2024/2025	SACDC Sustainability	To be determined	No	-	£10k - 50k	To be confirmed	Reduce NOx and PM emissions	Number of electric vehicles in council fleet	Staff bike pool, Parking team: All Electric, 4 cars, 6 bikes, Veolia Refuse/Recycling contractor fleet upgrade conversations with Veolia and JOC. Upgrade of the ground's maintenance vehicles has been completed (38 new vehicles). Veolia are currently trialling electric street cleaning vehicles.	All Council fleet will be replaced with ultra-low emission vehicles at end of life or by 2028, starting with Markets vehicles, this will include service vehicles such as parking enforcement (as per St Albans sustainability and climate crisis strategy)

Measure No.	Measure Title	Category	Classification	Year Measure Introduced in AQAP	Estimated / Actual Completion Date	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Barriers to Implementation
TM3	Improve taxi fleet emissions	Promoting Low Emission Transport	Taxi Licensing conditions	2020	Ongoing	SACDC	SACDC	No	Not Funded	<£10k	Active	It is not possible to specifically quantify the impact of small-scale projects that the Council are working on with partners. However individual & cumulative AQ measures which reduce emissions are beneficial to improving pollutant levels in the AQMA and the District generally.	Certificate of compliance data	Emissions controlled through Certificate of Compliance at garage check. – From 01/04/2022 vehicle licences will not be renewed in respect of any licensed vehicle that does not meet or exceed Euro 5 emissions standards. From 01/04/2025 vehicle licences will not be renewed in respect of any licensed vehicle that does not meet or exceed Euro 6 emissions standards.	
TM4	Bus fleet / lower pollutant emissions	Promoting Low Emission Transport	Other	2019	-	SACDC, HCC & bus operators	HCC & bus operators	No	Not Funded	£100k - £500k	To be confirmed	It is not possible to specifically quantify the impact of small-scale projects that the Council are working on with partners. However individual & cumulative AQ measures which reduce emissions are beneficial to improving pollutant levels in the AQMA and the District generally.	Number of link improvements	Feasibility design and consideration is continuing with support from HCC's appointed consultants. With the award of £29m of Bus Service Improvement Plan (BSIP funding) funding for the next 3 years means St Albans is one of the key towns that HCC will be focusing on in terms of bus services, infrastructure, ticketing and fares and bus priority.	The Pandemic has delayed investment by bus operators, therefore a target of reducing emissions through the introduction of buses to meet Euro VI standard has slipped. In addition to enforcing minimum fleet standards were agreed by Enhanced Partnership Scheme Variation Agreement in response to investment in bus priority facilities, the Intalink Enhanced Partnership will also adopt aspirational targets to improve the emissions standards of the fleet used across Hertfordshire. Air quality improvements will be driven by operator fleet replacement programmes.
TM5	Bus routes through AQMA are only electric	Promoting Low Emission Transport	Other	2024/2025	2024/2025	SACDC, HCC & bus operators	HCC & bus operators	No	-	<£10k	To be confirmed	Reduce NOx and PM emissions	Number of bus routes through AQMA which are electric	This measure is dependent on operator acceptability. ZEBRA grant funding to promote 27 electric buses in the county has been secured. It is expected they will be delivered from mid-2024 to 2026. Operators to be pushed to use the Euro 6 and better on routes that pass through the AQMA.	
TM6	Consider requiring developers to install electric charging points in new developments under S106 agreements	Promoting Low Emission Transport	Procuring alternative Refuelling infrastructure to promote Low Emission Vehicles, EV recharging, Gas fuel recharging	2019	2023	SACDC	SACDC	No	Not Funded	-	Planning	It is not possible to specifically quantify the impact of small-scale projects that the Council are working on with partners. However individual & cumulative AQ measures which reduce emissions are beneficial to improving pollutant levels both in the AQMA and the District generally.	Number of charging points installed	10 Electric Vehicle Charge Points have been installed in the new Harpenden Sports and Leisure Centre. Implementation of low emission development policies within the local plan to encourage new public transport solutions and electric charging points	To include in proposed SPD as measure where appropriate
TM7	Freight and Delivery hub - Investigate introduction of last mile, low emission delivery through use of active transport e.g., cargo bikes. An appropriate freight hub would be required	Promoting Low Emission Transport	Procuring alternative Refuelling infrastructure to promote Low Emission Vehicles, EV recharging, Gas fuel recharging	2024/2025	2024/2025	SACDC & HCC Infrastructure / Planning Team	To be determined	Potentially	-	£100k - £500k	To be confirmed	Reduce NOx and PM emissions	Number of goods vehicles & number of cargo bikes utilised	-	Consolidation centre to be identified for freight management & other potential bike depot sites throughout District. This measure will be supported by Hertfordshire County Council, should the consolidation centres identified be within their lands. HCC support consideration of this aspect in general although do not hold levers to implement unless it were HCC land which were found to be a suitable location for consolidation hub.



Measure No.	Measure Title	Category	Classification	Year Measure Introduced in AQAP	Estimated / Actual Completion Date	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Barriers to Implementation
TM8	Deliver the top priority schemes identified within the Local Cycling and Walking Infrastructure Plan, including the provision of improved walking routes and protective infrastructure for people cycling.	Promoting Travel Alternatives	Promotion of cycling	2024/2025	-	SACDC & HCC	SACDC & HCC	No	Not Funded	-	Active	It is not possible to specifically quantify the impact of small-scale projects that the Council are working on with partners. However individual & cumulative AQ measures which reduce emissions are beneficial to improving pollutant levels both in the AQMA and the District generally.	Usage figures	The Local Cycling and Walking Infrastructure Plan (LCWIP) is now completed and has been updated (November 2023). The action is now to deliver the top priority schemes identified.	
TM9	Cargo bike hubs located throughout the city to decrease need for car for local trips	Promoting Travel Alternatives	Promotion of cycling	2024/2025	2024/2025	SACDC	To be determined	Potentially	-	£10k - 50k	To be confirmed	Reduce NOx and PM emissions	Usage figures	Suitable sites to be identified. In particular, for this AQMA, this may mean looking at delivery of the London Road route.	
TM10	Consider an increase in car parking charges with the view to making bus travel a more attractive alternative	Promoting Travel Alternatives	Other	2019	-	SACDC	SACDC	No	Not Funded	-	Planning	It is not possible to specifically quantify the impact of small-scale projects that the Council are working on with partners. However individual & cumulative AQ measures which reduce emissions are beneficial to improving pollutant levels both in the AQMA and the District generally.	Car park volume figures	From April 2022 and again in 2023, permit prices changed to include emissions-based charging to encourage cleaner car ownership. All other vehicle type permits and other charges relating to on street parking, were increased or amended to encourage more sustainable transport where possible.	Emission based resident permits now in place. Higher prices charged for 2nd or 3rd vehicles to deter ownership. Annual review of fees and charges introduced. Additional work being carried out in 24/25 to potential remove cash as payment type reducing the need for cash collections, reducing the need for collection vehicles.
TM11	Pilot the Station Travel Plan	Promoting Travel Alternatives	Other	2010	-	SACDC & HCC	HCC	No	Not Funded	-	Planning	It is not possible to specifically quantify the impact of small-scale projects that the Council are working on with partners. However individual & cumulative AQ measures which reduce emissions are beneficial to improving pollutant levels both AQMA's and the District generally.	Usage figures	The LCWIP has been adopted by both councils and three of the top priority routes are being progressed into early design stages.	St Albans City Station: GTR have not moved forward with the proposed pilot to promote active and sustainable travel to stations. All rail companies are under considerable financial pressure so funding for this kind project is scarce. Work has been done over the past year to improve the security of cycle storage at the station to encourage more cycling to the station.
TM12	Community Rail Partnership (CRP) The Abbey Line	Promoting Travel Alternatives	Promote use of rail and inland waterways	2010	-	SACDC & HCC	SACDC & HCC	No	Not Funded	-	Planning	It is not possible to specifically quantify the impact of small-scale projects that the Council are working on with partners. However individual & cumulative AQ measures which reduce emissions are beneficial to improving pollutant levels both AQMA's and the District generally.	Usage figures	SACDC and HCC need to continue to apply pressure on LNR to ensure they provide a reliable service at times not affected by industrial action. A new timetable was introduced in December 2022 and slightly altered in May 2023. The service now runs hourly off peak rather than every 45 minutes formally. This has allowed the introduction of a later service.	
TM13	To increase bus patronage and encourage modal shift from the car to public transport	Transport Planning and Infrastructure	Bus route improvements	2018	2023	SACDC & HCC	SACDC & HCC	No	Not Funded	<£10k	Active	It is not possible to specifically quantify the impact of small-scale projects that the Council are working on with partners. However individual & cumulative AQ measures which reduce emissions are beneficial to improving pollutant levels both AQMA's and the District generally.	Service numbers	Bus Services operated on a commercial basis. Over the last year the main issue with public transport has been driver shortages. The Government backed £2 Single Fare Scheme is to remain in place until 31st December 2024.	

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TM14	Car clubs for new developments	Alternatives to private vehicle use	Car & lift sharing schemes	2024/2025	2024/2025	SACDC & HCC Air Quality / Planning Team	To be determined	Potentially	-	<£10k	To be confirmed	Reduce NOx and PM emissions	Reduction of car journeys resulting from car club	Car club launched to the public in January of 2022, promoted in Community News, Sustainability News and leaflets. Usage is currently low. Council and Enterprise working on more local promotion including exploring car parks, bus stop posters, banner sites, and leisure centres.	
TM15	Signal optimisation	Traffic Management	UTC, Congestion management, traffic reduction	2024/2025	2024/2025	HCC	To be determined	No	Not Funded	£100k - £500k	To be confirmed	Reduce NOx and PM emissions by reducing stop-starting of vehicles	Number of vehicles coming to a stop reduced	-	HCC suggests that the junction be optimised for the current road layout. It is suggested the junction is already optimised for the current road layout.
TM16	20mph zones - Review the effects of 20mph zones on air quality	Promoting Low Emission Transport	Emission reduction	2024/2025	2024/2025	SACDC & HCC	To be determined	Potentially	Not Funded	<£10k	To be confirmed	Reduce NOx and PM emissions within specific areas where 20 mph zones are located	Number of vehicles speeding reduced	Many areas in St Albans have already been assessed and have started implementation.	
TM17	Consider closure of High Street	Promoting Low Emission Transport	Emission reduction	2024/2025	Ongoing	SACDC & HCC	SACDC & HCC	No	Not Funded	<£10k	To be confirmed	Reduce NOx and PM emissions within specific areas located within and around the AQMA	Air quality monitoring data	St Albans High Street Recovery Air Quality Report: There is no evidence that the High Street trials have had a negative impact on air quality, including on potential displacement routes along Folly Lane and Catherine Street. There is some evidence that the road closures may have improved air quality at the Peahen Junction and for the St Albans AQMA, as well as other key sites in the centre of St Albans.	
HEA1	Campaign to raise awareness of air quality and the impact on air quality, of idling engines (when parked)	Public Information	Via the Internet	2017	2023	SACDC	Staff costs	No	Not Funded	-	Planning	It is not possible to specifically quantify the impact of small-scale projects that the Council are working on with partners. However individual & cumulative AQ measures which reduce emissions are beneficial to improving pollutant levels in the AQMA and the District generally.	Media coverage	HCC have resources to promote schools taking anti-idling action. Local support from St Albans City and District Council officers in engaging schools to take up these measures would be supported. HCC have an Anti-Idling Campaign that Modeshift registered schools can participate in.	
HEA2	Air Alert Scheme	Public Information	Via the Internet	2020	Ongoing	SACDC/HCC	-	No	Funded	< £10k	Completed	It is not possible to specifically quantify the impact of small-scale projects that the Council are working on with partners. However individual & cumulative AQ measures which reduce emissions are beneficial to improving pollutant levels in the AQMA and the District generally.	% of population sign-up	The air alert scheme has been reviewed, in terms of membership sign up. Approximately 20% increase in signups in the last 12 months. Since promotion started in 2022 there have been 47 new sign ups. This represents a doubling from pre intervention numbers in St Albans.	
HEA3	Engage with schools to raise awareness of air pollution	Public Information	Other	2024/2025	-	SACDC	Staff costs	No	Funded	< £10k	To be confirmed	It is not possible to specifically quantify the impact of small-scale projects that the Council are working on with partners. However individual & cumulative AQ measures which reduce emissions are beneficial to improving pollutant levels in the AQMA and the District generally.	Number of schools utilising air pollution teaching toolkit	HCC Safer and Active travel team promote the Modeshift STARS scheme with schools. There are 24 schools registered for a Modeshift STARS travel plan in St Albans.	

Measure No.	Measure Title	Category	Classification	Year Measure Introduced in AQAP	Estimated / Actual Completion Date	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Barriers to Implementation
HEA5	Promotion of Clean Air Day / Clean Air Night	Public Information, Promoting Travel Alternatives, Vehicle Fleet Efficiency, Traffic Management, Alternatives to private vehicle use	Via other mechanisms, Intensive active travel campaign & infrastructure, Promotion of cycling, Promotion of walking, School Travel Plans, Driver training and ECO driving aids, Fleet efficiency and recognition schemes, Anti-idling enforcement, Car & lift sharing schemes	Ongoing	Ongoing	SACDC	Staff costs	No	Funded	-	Active	It is not possible to specifically quantify the impact of small-scale projects that the Council are working on with partners. However individual & cumulative AQ measures which reduce emissions are beneficial to improving pollutant levels in the AQMA and the District generally.	Uptake in community action and air quality awareness . Possibility of using surveys to measure awareness and knowledge base	Clean air campaign to cover a wide variety of themes	
HEA8	Support households by providing information and access to funding for the installation of energy efficiency, heat decarbonisation and renewable energy sources	Public Information	Via the internet or physical advertisements	2024/2025	-	SACDC	Staff costs	No	Funded	<£10k	To be confirmed	It is not possible to specifically quantify the impact of small-scale projects that the Council are working on with partners. However individual & cumulative AQ measures which reduce emissions are beneficial to improving pollutant levels in the AQMA and the	Reduction in emissions from poor energy efficiency standards and high-impact heating		This highlights the efforts of local housing teams in providing retrofit. There is future potential to link this to work around healthier, more sustainable homes. There is a concerted effort at HCC to promote a model in this space with focus on both Carbon and wider benefits

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

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

St Albans City & District Council does not currently undertake any monitoring of PM<sub>10</sub> or PM<sub>2.5</sub>. St Albans City and District Council are working to reduce emissions of air pollutants across the District, many of the measures used to reduce emissions of NO<sub>2</sub> and PM<sub>10</sub> also impact the emissions of PM<sub>2.5</sub> due to the pollutants originating from the same sources. The primary source of local air pollution within St Albans contributing to NO<sub>2</sub> and particulate matter pollution is vehicular emissions. Current AQAP measures within Table 2.2 aim to reduce on road vehicle percentage and promote travel alternatives, therefore contributing to reducing particulate emissions. St Albans City & District Council is taking 17 measures forward to address pollutants originating from vehicle emissions, and therefore address PM<sub>2.5</sub>. See actions with the prefix “TM” in Table 2.2 for details.

The Department of Health’s Public Health Outcomes Framework has a number of public health indicators that are used to focus public health action, identify areas of health inequality and concern, and monitor the differences in health impacts across regions in the UK. This framework includes an indicator “D01- Fraction of Mortality Attributable to Particulate Air Pollution” which is calculated using background annual average PM<sub>2.5</sub> concentrations, modelled at a 1km<sup>2</sup> resolution based on measured concentrations from the Automatic Urban and Rural Network (AURN). St Albans has a 7% fraction of mortality calculated for 2022, which is above both the average for England overall (5.8%), and the Southwest Region (4.6%). The 2022 data is used as the 2023 dataset has not been made available at the time of writing.

The current Defra 2023 background maps for St Albans City & District Council (2018 based) show that all background concentrations of PM<sub>2.5</sub> are far below the recommended

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<sup>8</sup> Defra. Air Quality Strategy – Framework for Local Authority Delivery, August 2023

annual mean AQS objective for PM<sub>2.5</sub> of 20 µg/m<sup>3</sup>. The highest concentration is predicted to be 10.75 µg/m<sup>3</sup> within the 1km x 1km grid square with the centroid grid reference of 509500, 208500. This is an area located on Hogg End Lane, situated next to the M1 (A414). This highest value is also compliant with the interim PM<sub>2.5</sub> target of 12 µg/m<sup>3</sup> and the large majority of St Albans City and District Council is compliant with the 2040 target of 10 µg/m<sup>3</sup>. It is expected that all of the City and District will be compliant with the 2040 target following the successful implementation of the Transport measures in Table 2.2

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

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

### 3.1 Summary of Monitoring Undertaken

#### 3.1.1 Automatic Monitoring Sites

There was no automatic monitoring undertaken by St Albans City and District Council in 2023

#### 3.1.2 Non-Automatic Monitoring Sites

St Albans City and District Council undertook non-automatic monitoring at 50 sites during 2023. Table A.1 in Appendix A presents the details of the non-automatic sites.

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

### 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>)

Table A.2 in Appendix A compares 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 2023 dataset of monthly mean values is provided in Appendix B. Note that the concentration data presented in Table B.1 includes distance corrected values, only where relevant.

## Appendix A: Monitoring Results

**Table A.1– Details of Non-Automatic Monitoring Sites**

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) <sup>(1)</sup>	Distance to kerb of nearest road (m) <sup>(2)</sup>	Tube Co-located with a Continuous Analyser?	Tube Height (m)
SA101	Museum Hatfield Road	Roadside	515105	207476	NO <sub>2</sub>	N	9.3	1.6	No	2.7
SA107	Redbourn JMI Long Cutt Redbourn	Urban Background	510138	212525	NO <sub>2</sub>	N	11.3	2.2	No	2.6
SA109	High Street Harpenden	Kerbside	513427	214308	NO <sub>2</sub>	N	6.3	0.1	No	2.6
SA110	Crabtree JMI Crabtree Lane Harpenden	Kerbside	514438	214353	NO <sub>2</sub>	N	7.5	1.5	No	2.6
SA112	High Street Wheathampstead	Kerbside	517727	214041	NO <sub>2</sub>	N	16.3	1.7	No	2.6
SA114	Fleetville 1 Royal Road	Urban Background	516549	207391	NO <sub>2</sub>	N	51.3	12.5	No	2.5
SA117	Five Acres London Colney Roundabout	Kerbside	517712	204782	NO <sub>2</sub>	N	11.9	1.4	No	2.4
SA120	Sleapcross Gardens Smallford	Kerbside	520053	206618	NO <sub>2</sub>	N	15.6	1.7	No	2.3
SA121	Mount Drive Park Street	Kerbside	514654	204546	NO <sub>2</sub>	N	37.5	1.4	No	2.5



Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) <sup>(1)</sup>	Distance to kerb of nearest road (m) <sup>(2)</sup>	Tube Co-located with a Continuous Analyser?	Tube Height (m)
SA123	Radlett Road Park Street	Kerbside	515311	202730	NO <sub>2</sub>	N	4.4	0.3	No	2.4
SA124	Smug Oak Lane Bricket Wood	Kerbside	515383	202528	NO <sub>2</sub>	N	4.5	1.3	No	2.5
SA125	Lye Lane Bricket Wood	Kerbside	513308	202655	NO <sub>2</sub>	N	15.6	0.4	No	2.4
SA127	Oakwood Road Bricket Wood	Kerbside	512570	202716	NO <sub>2</sub>	N	4.4	1.4	No	2.4
SA128	Waterdale Old Watford Road Bricket Wood A405	Urban Background	512004	202105	NO <sub>2</sub>	N	1.0	25.0	No	2.4
SA133	Belmont Hill	Kerbside	514606	206801	NO <sub>2</sub>	N	13.8	2.5	No	2.4
SA134	Albert Street	Kerbside	514648	206919	NO <sub>2</sub>	N	5.0	2.2	No	2.6
SA135	Watsons Walk	Kerbside	515060	206866	NO <sub>2</sub>	N	3.8	1.2	No	2.5
SA136	St Peters Street	Kerbside	514883	207422	NO <sub>2</sub>	N	34.3	1.1	No	2.3
SA137	High Street	Kerbside	514684	207105	NO <sub>2</sub>	N	4.3	1.6	No	2.5
SA138	Peahen PH Holywell Hill	Kerbside	514701	207082	NO <sub>2</sub>	Y - AQMA No. 1	15.6	2.6	No	2.6
SA140	Lattimore Road North	Kerbside	515185	207070	NO <sub>2</sub>	N	6.3	2.5	No	2.5

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) <sup>(1)</sup>	Distance to kerb of nearest road (m) <sup>(2)</sup>	Tube Co-located with a Continuous Analyser?	Tube Height (m)
SA141	Town Hall	Urban Background	514722	207226	NO <sub>2</sub>	N	1.9	1.5	No	2.6
SA142	Beech Tree Cottage (AL3 6AR)	Roadside	510754	206091	NO <sub>2</sub>	N	20.2	0.0	No	2.3
SA143	London Road West	Kerbside	514752	207094	NO <sub>2</sub>	Y - AQMA No. 1	0.6	2.8	No	2.6
SA144	Forester House 1 St Peters Street	Kerbside	514833	207347	NO <sub>2</sub>	N	9.3	1.2	No	2.6
SA145	Moor Mill Lane Colney Street	Roadside	515257	202638	NO <sub>2</sub>	N	12.5	1.6	No	2.3
SA146	Forester House 2 St Peters Street	Urban Background	514856	207353	NO <sub>2</sub>	N	5.6	21.9	No	2.6
SA147	Shops St Peters Street	Urban Background	514818	207357	NO <sub>2</sub>	N	47.5	15.6	No	2.5
SA148	Chequer Street	Kerbside	514705	207119	NO <sub>2</sub>	N	3.1	0.7	No	2.4
SA149	London Road East	Roadside	515067	206946	NO <sub>2</sub>	N	5.6	2.5	No	2.6
SA150	Hatfield/Royal Road	Kerbside	516590	207276	NO <sub>2</sub>	N	7.5	1.8	No	2.3
SA151	Thamesdale London Colney	Roadside	518782	203507	NO <sub>2</sub>	N	4.4	1.5	No	2.3
SA152	Shenley Lane/ Kings Road London Colney	Roadside	517091	204114	NO <sub>2</sub>	N	6.9	2.4	No	2.4

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)
SA153	Watling Street Park Street	Kerbside	515275	202794	NO <sub>2</sub>	N	12.0	1.4	No	2.4
SA154	Mount Pleasant Lane Bricket Wood	Roadside	512776	202050	NO <sub>2</sub>	N	21.9	2.0	No	2.5
SA155	Westminster Court	Kerbside	514346	206329	NO <sub>2</sub>	N	27.5	1.8	No	2.4
SA156	Folly Lane East	Roadside	514602	207674	NO <sub>2</sub>	N	2.5	1.6	No	2.4
SA157	Catherine Street	Kerbside	514840	207613	NO <sub>2</sub>	N	1.3	0.5	No	2.4
SA158	High Street Redbourn	Roadside	510818	212167	NO <sub>2</sub>	N	2.5	1.7	No	2.6
SA159	Marford Road Wheathampstead	Roadside	517727	213901	NO <sub>2</sub>	N	2.5	2.0	No	2.6
SA160	Holywell Hill	Roadside	514682	207060	NO <sub>2</sub>	Y - AQMA No. 1	2.5	2.5	No	2.4
SA161	London Road Centre	Kerbside	514787	207069	NO <sub>2</sub>	Y - AQMA No. 1	1.9	0.5	No	2.5
SA162	Verulam Road	Roadside	514596	207338	NO <sub>2</sub>	N	1.8	0.3	No	2.5
SA163	Holywell Hill (Albert Street)	Roadside	514646	206942	NO <sub>2</sub>	Y - AQMA No. 1	1.1	2.4	No	2.5
SA164	Marlborough Road	Roadside	515024	207071	NO <sub>2</sub>	N	2.1	2.3	No	2.5
SA165	London Road (Black Cut)	Roadside	515316	207719	NO <sub>2</sub>	N	2.1	33.2	No	2.5

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) <sup>(1)</sup>	Distance to kerb of nearest road (m) <sup>(2)</sup>	Tube Co-located with a Continuous Analyser?	Tube Height (m)
SA166	Lattimore Road South	Roadside	515144	206984	NO <sub>2</sub>	Y - AQMA No. 1	2.2	4.8	No	2.5
SA167	Clarence Road	Roadside	515990	207769	NO <sub>2</sub>	N	0.7	8.3	No	2.5
SA168	Hatfield Road (Co-op Funeral Services)	Roadside	516144	207318	NO <sub>2</sub>	N	0.5	16.6	No	2.5
SA169	Beaumont Avenue	Roadside	516887	207702	NO <sub>2</sub>	N	1.7	5.8	No	2.5

**Notes:**

(1) 0m if the monitoring site is at a location of exposure (e.g. installed on the façade of a residential property).

(2) N/A if not applicable.

**Table A.2– Annual Mean NO<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 2023 (%) <sup>(2)</sup>	2019	2020	2021	2022	2023
SA101	515105	207476	Roadside	100.0	100.0	29.1	19.3	21.3	21.1	19.9
SA107	510138	212525	Urban Background	100.0	100.0	20.9	14.7	14.6	15.8	13.5
SA109	513427	214308	Kerbside	80.8	80.8	26.9	15.9	18.0	19.3	17.9
SA110	514438	214353	Kerbside	100.0	100.0	21.2	12.3	12.9	13.0	11.5
SA112	517727	214041	Kerbside	100.0	100.0	26.1	19.6	20.6	19.7	17.9
SA114	516549	207391	Urban Background	100.0	100.0	27.2	20.7	23.1	22.5	19.1
SA117	517712	204782	Kerbside	100.0	100.0	26.3	17.0	17.6	17.2	16.8
SA120	520053	206618	Kerbside	92.3	92.3	29.8	20.2	20.7	20.3	18.5
SA121	514654	204546	Kerbside	100.0	100.0	31.4	24.2	24.2	23.1	21.3
SA123	515311	202730	Kerbside	100.0	100.0	32.4	22.7	23.2	22.5	21.4
SA124	515383	202528	Kerbside	90.4	90.4	32.3	22.6	23.6	22.1	20.7
SA125	513308	202655	Kerbside	100.0	100.0	24.5	18.0	19.2	19.3	16.3
SA127	512570	202716	Kerbside	75.0	75.0	27.1	17.9	18.5	18.7	16.2

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 2023 (%) <sup>(2)</sup>	2019	2020	2021	2022	2023
SA128	512004	202105	Urban Background	100.0	100.0	34.4	23.8	24.0	23.8	20.6
SA133	514606	206801	Kerbside	100.0	100.0	33.4	21.5	25.2	25.1	22.4
SA134	514648	206919	Kerbside	100.0	100.0	36.4	20.9	23.0	23.9	21.3
SA135	515060	206866	Kerbside	100.0	100.0	32.8	20.1	23.0	22.5	21.0
SA136	514883	207422	Kerbside	90.4	90.4	<b>45.6</b>	25.3	38.6	34.2	32.4
SA137	514684	207105	Kerbside	65.4	65.4	<b>41.8</b>	25.7	24.8	31.4	27.1
SA138	514701	207082	Kerbside	100.0	100.0	<b>43.6</b>	27.5	29.5	31.6	28.1
SA140	515185	207070	Kerbside	100.0	100.0	26.3	17.3	18.3	18.1	16.4
SA141	514722	207226	Urban Background	82.7	82.7		15.2	16.1	17.0	14.5
SA142	510754	206091	Roadside	100.0	100.0	30.4	19.6	20.6	20.8	18.8
SA143	514752	207094	Kerbside	92.3	92.3	<b>40.8</b>	25.6	26.2	28.2	24.4
SA144	514833	207347	Kerbside	84.9	84.6	38.2	28.7	30.4	29.0	28.5
SA145	515257	202638	Roadside	100.0	100.0	32.3	22.3	21.2	21.8	19.8
SA146	514856	207353	Urban Background	65.4	65.4	29.6	19.0	21.6	21.7	20.2

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 2023 (%) <sup>(2)</sup>	2019	2020	2021	2022	2023
SA147	514818	207357	Urban Background	100.0	100.0	39.7	24.4	25.7	24.5	23.7
SA148	514705	207119	Kerbside	100.0	100.0	<b>49.0</b>	35.8	38.4	35.6	34.4
SA149	515067	206946	Roadside	100.0	100.0	30.0	20.2	21.6	23.5	19.9
SA150	516590	207276	Kerbside	100.0	100.0	31.5	21.9	20.5	20.7	20.1
SA151	518782	203507	Roadside	100.0	100.0	34.2	24.5	27.0	21.9	24.1
SA152	517091	204114	Roadside	92.3	92.3	27.0	20.1	19.7	20.4	18.4
SA153	515275	202794	Kerbside	84.6	84.6	27.0	18.0	18.5	18.7	17.6
SA154	512776	202050	Roadside	76.9	76.9	26.8	18.7	18.9	16.0	17.2
SA155	514346	206329	Kerbside	100.0	100.0	29.4	20.2	21.4	21.7	20.4
SA156	514602	207674	Roadside	100.0	100.0	35.9	24.9	26.9	26.4	23.4
SA157	514840	207613	Kerbside	100.0	100.0	<b>40.8</b>	29.1	32.1	29.1	27.9
SA158	510818	212167	Roadside	100.0	100.0	20.5	15.8	15.6	17.8	15.0
SA159	517727	213901	Roadside	100.0	100.0	28.8	19.4	21.1	20.2	18.8
SA160	514682	207060	Roadside	100.0	100.0	<b>54.7</b>	36.7	39.2	39.4	36.3

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 2023 (%) <sup>(2)</sup>	2019	2020	2021	2022	2023
SA161	514787	207069	Kerbside	100.0	100.0	38.7	23.9	23.1	27.9	23.2
SA162	514596	207338	Roadside	100.0	100.0				22.3	18.8
SA163	514646	206942	Roadside	100.0	100.0				36.1	32.8
SA164	515024	207071	Roadside	100.0	100.0				22.5	17.5
SA165	515316	207719	Roadside	100.0	100.0				25.1	23.3
SA166	515144	206984	Roadside	100.0	100.0				20.9	16.9
SA167	515990	207769	Roadside	100.0	100.0				20.4	18.2
SA168	516144	207318	Roadside	100.0	100.0				21.4	20.5
SA169	516887	207702	Roadside	59.6	59.6				13.1	12.4

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

Diffusion tube data has been bias adjusted

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

**Notes:**

The annual mean concentrations are presented as  $\mu\text{g}/\text{m}^3$ .

Exceedances of the NO<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.TG22 if valid data capture for the full calendar year is less than 75%. See Appendix C for details.

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

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

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

Figure A.1– Trends in Annual Mean NO<sub>2</sub> Concentrations, AQMA No.1

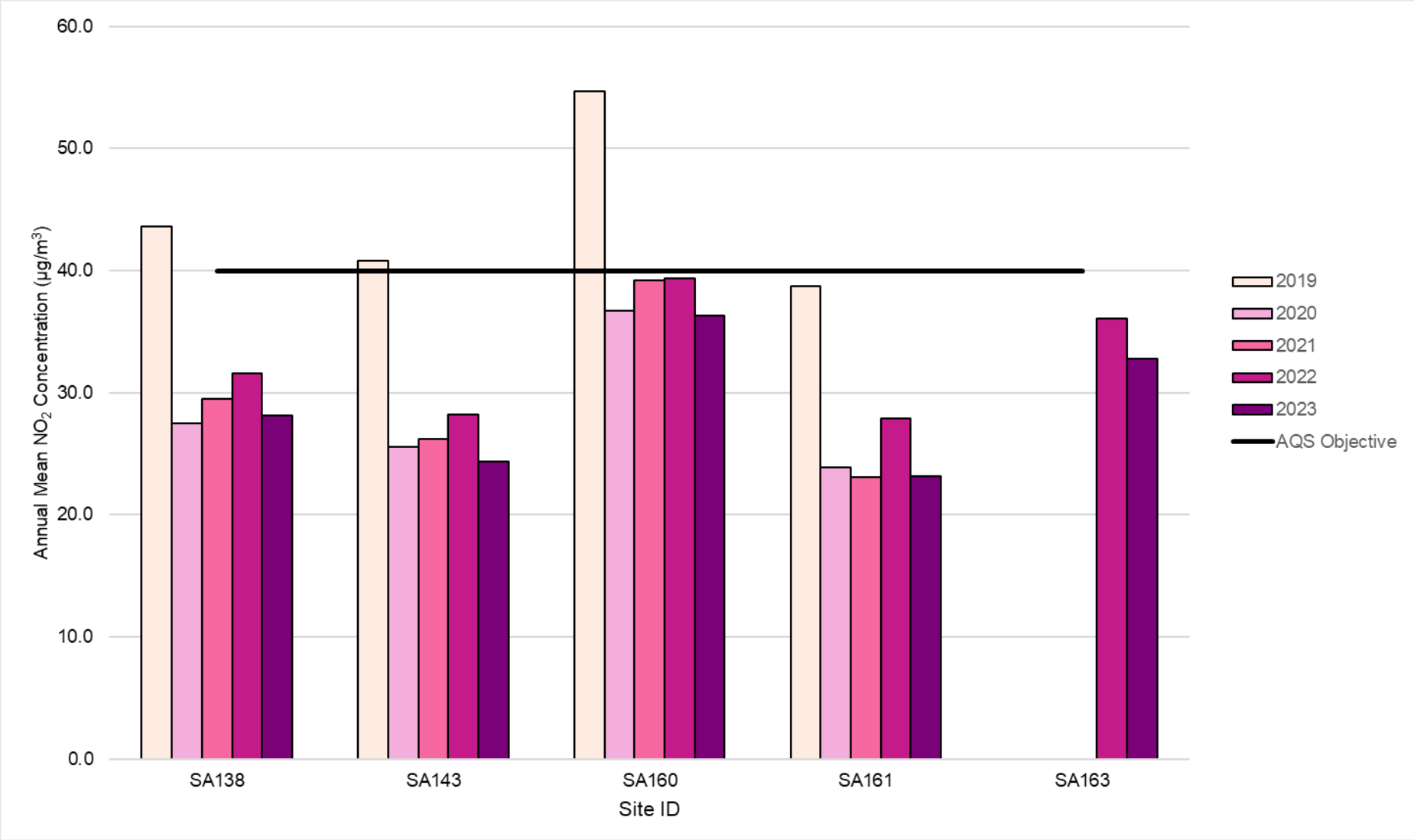


Figure A.2– Trends in Annual Mean NO<sub>2</sub> Concentrations, St Albans Centre (excluding AQMA No. 1)

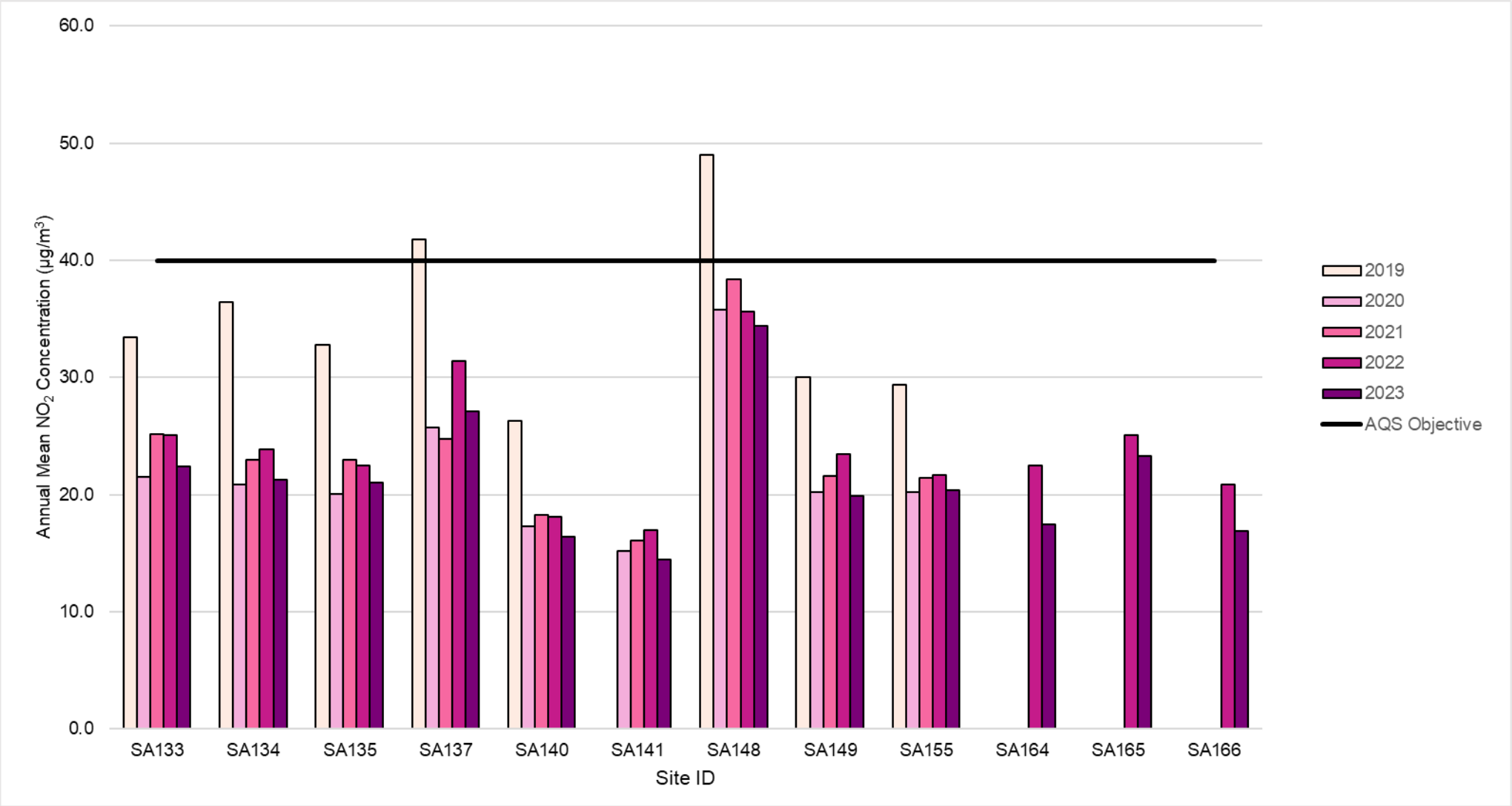


Figure A.3 - Trends in Annual Mean NO<sub>2</sub> Concentrations, Potters Crouch

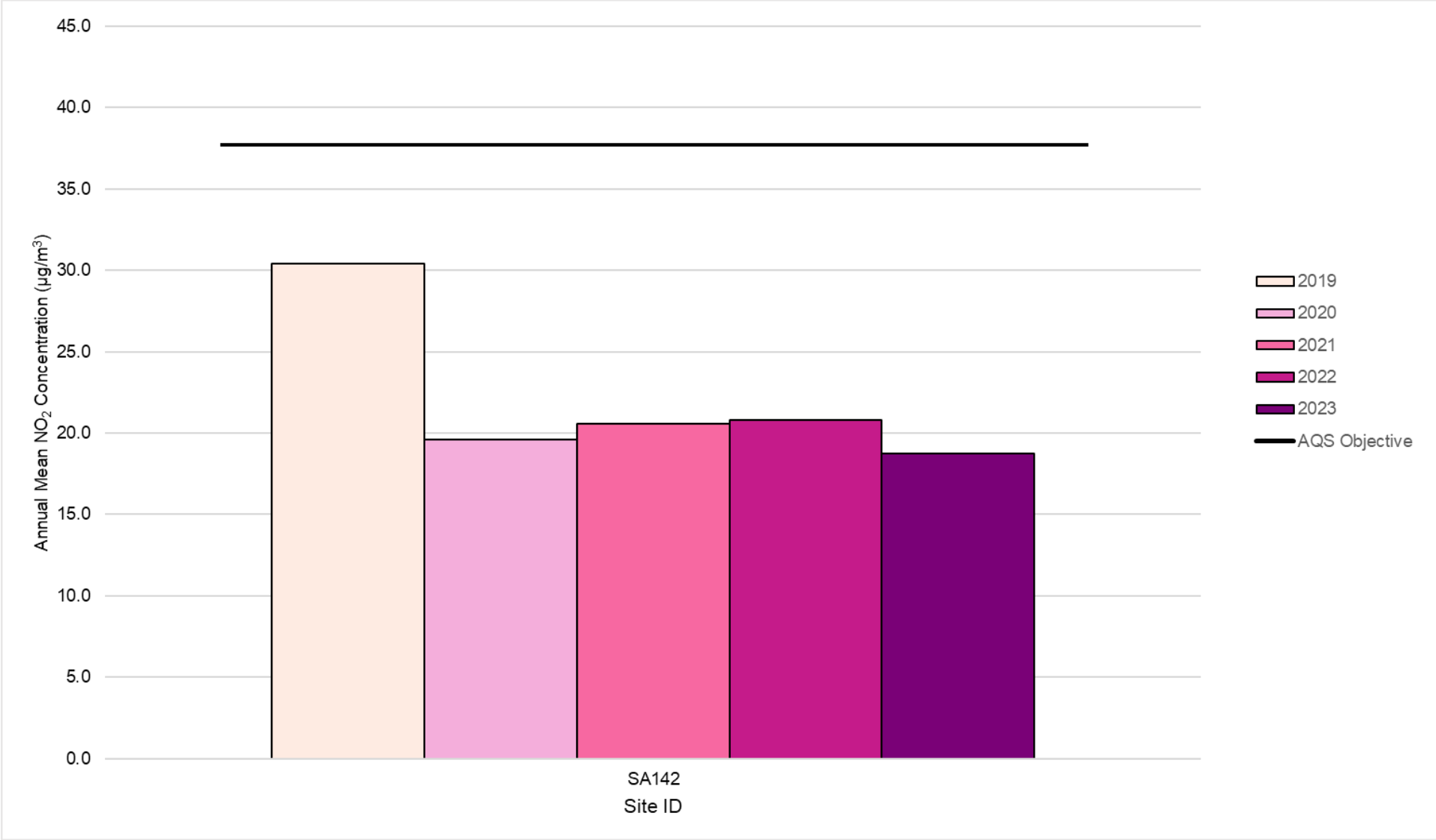


Figure A.4 Trends in Annual Mean NO<sub>2</sub> Concentrations, Frogmore

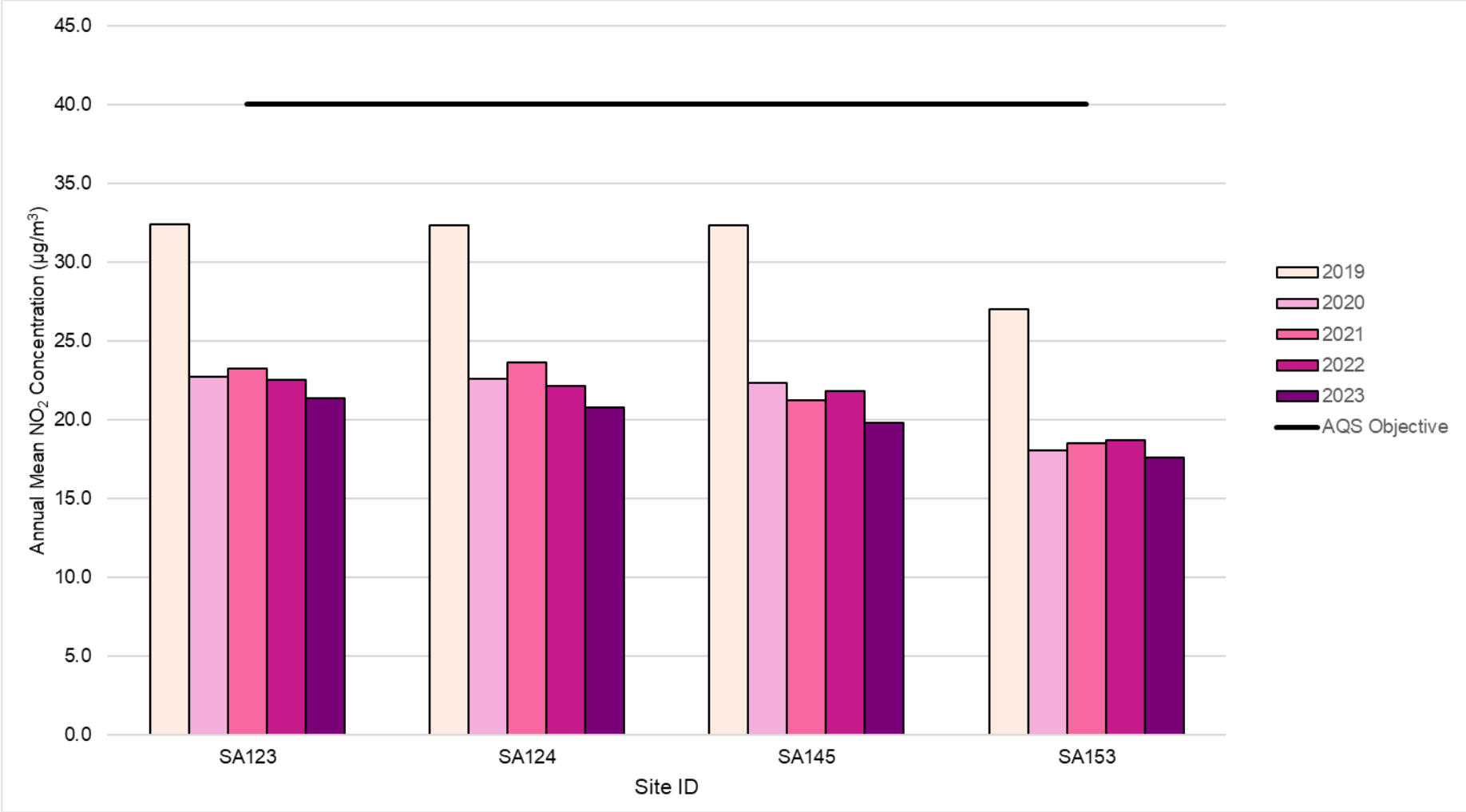


Figure A.5 Trends in Annual Mean NO<sub>2</sub> Concentrations, Napsbury

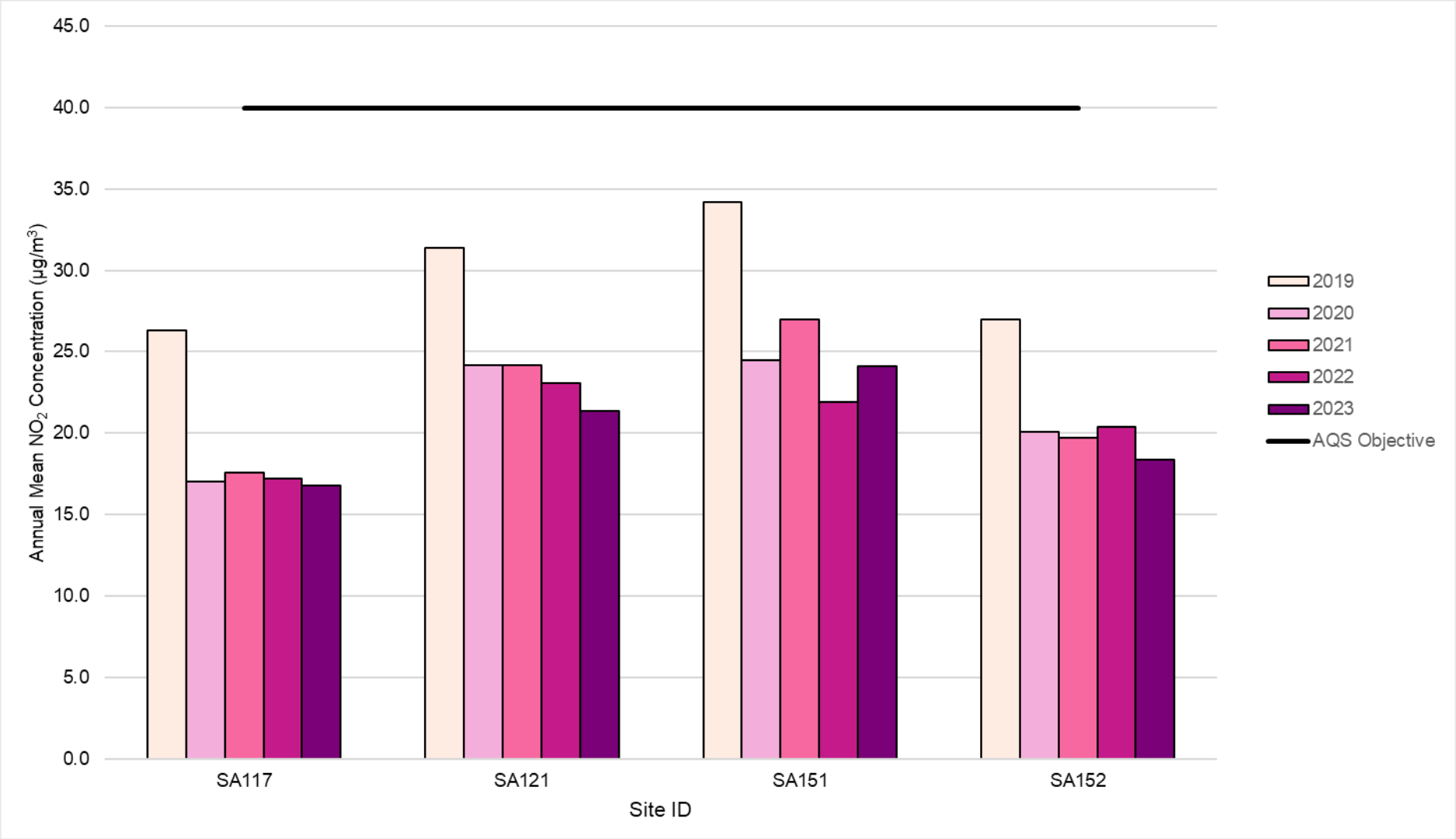


Figure A.6 Trends in Annual Mean NO<sub>2</sub> Concentrations, St Albans East

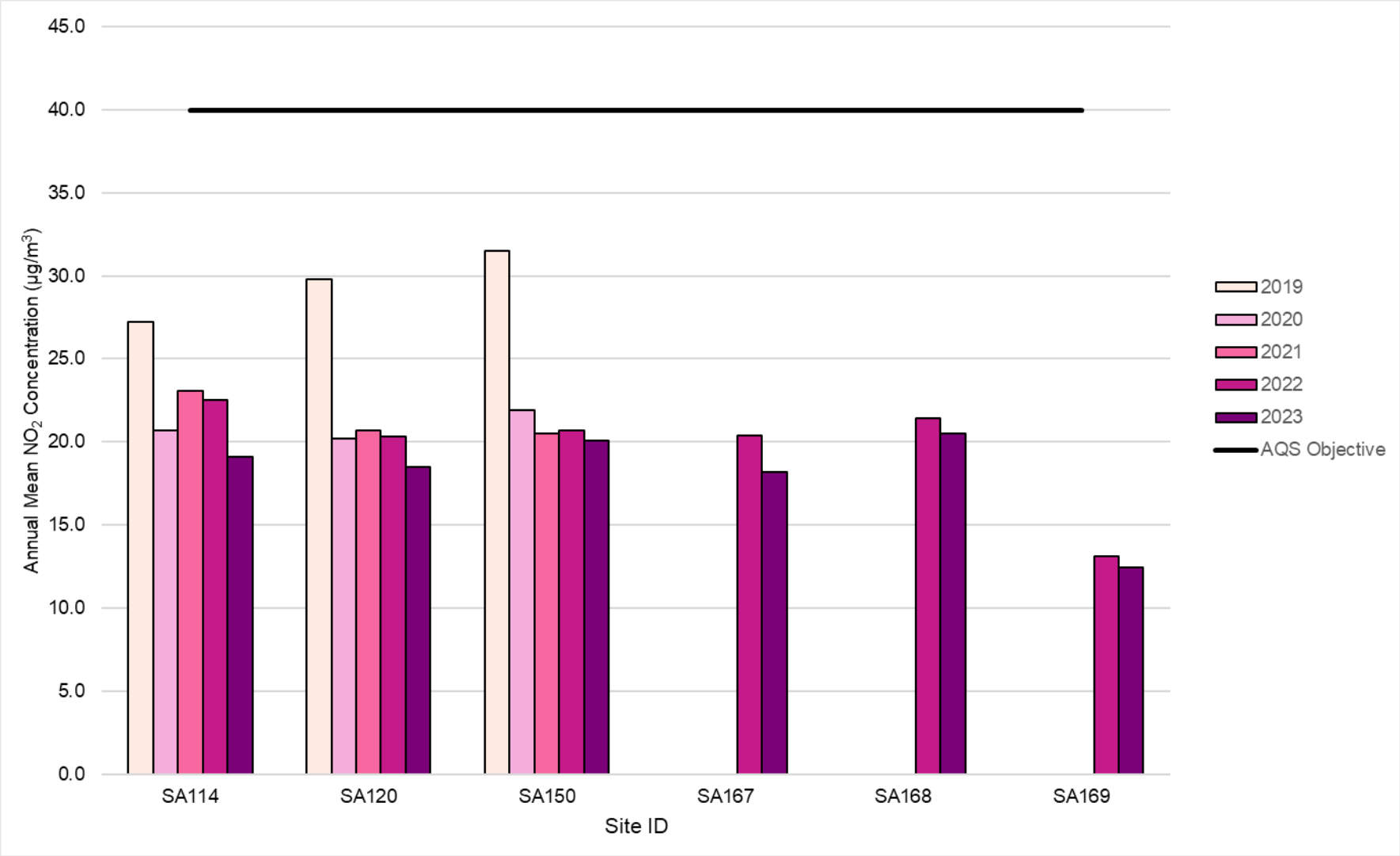


Figure A.7 Trends in Annual Mean NO<sub>2</sub> Concentrations, St Albans North

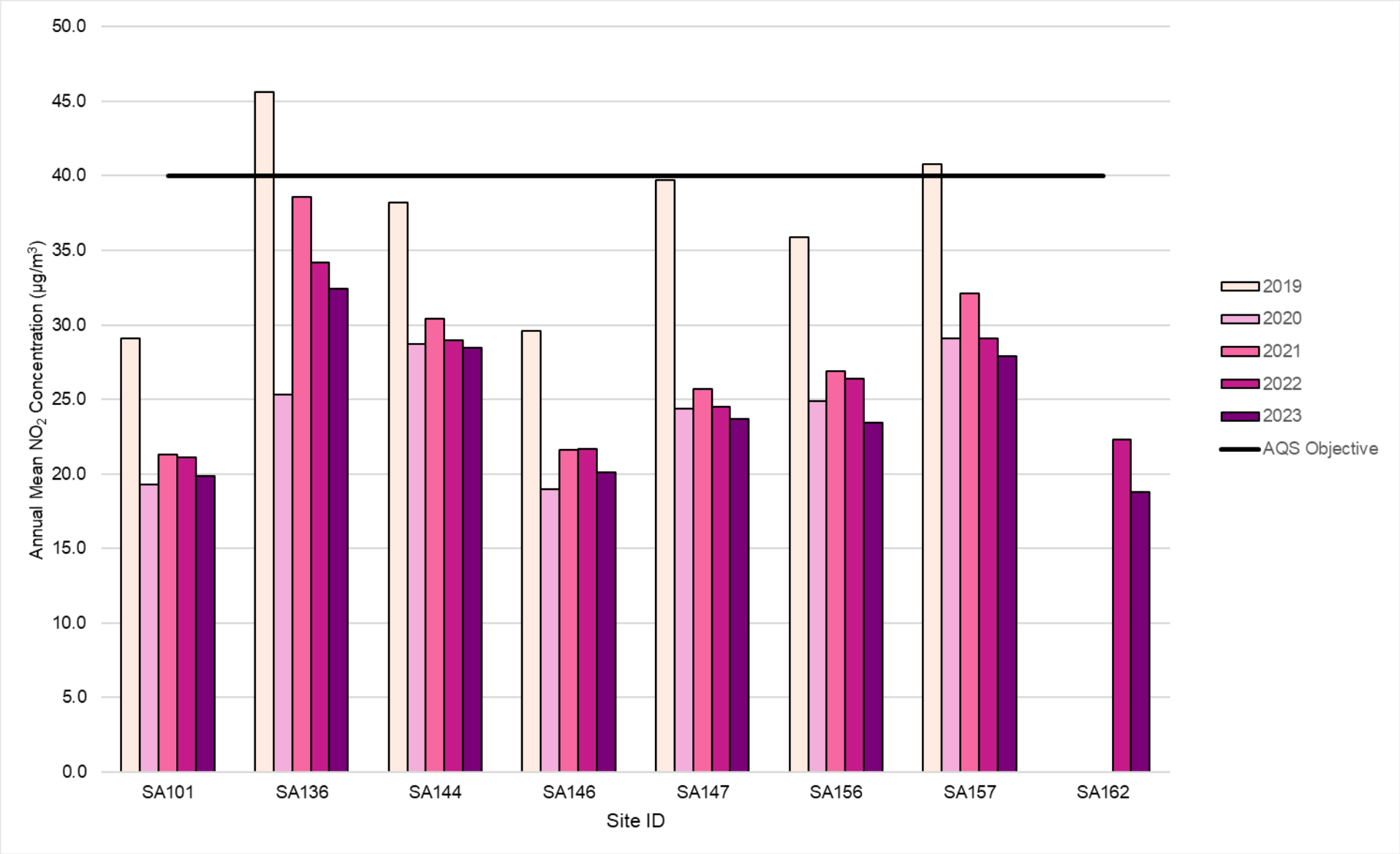




Figure A.8 Trends in Annual Mean NO<sub>2</sub> Concentrations, Harpenden

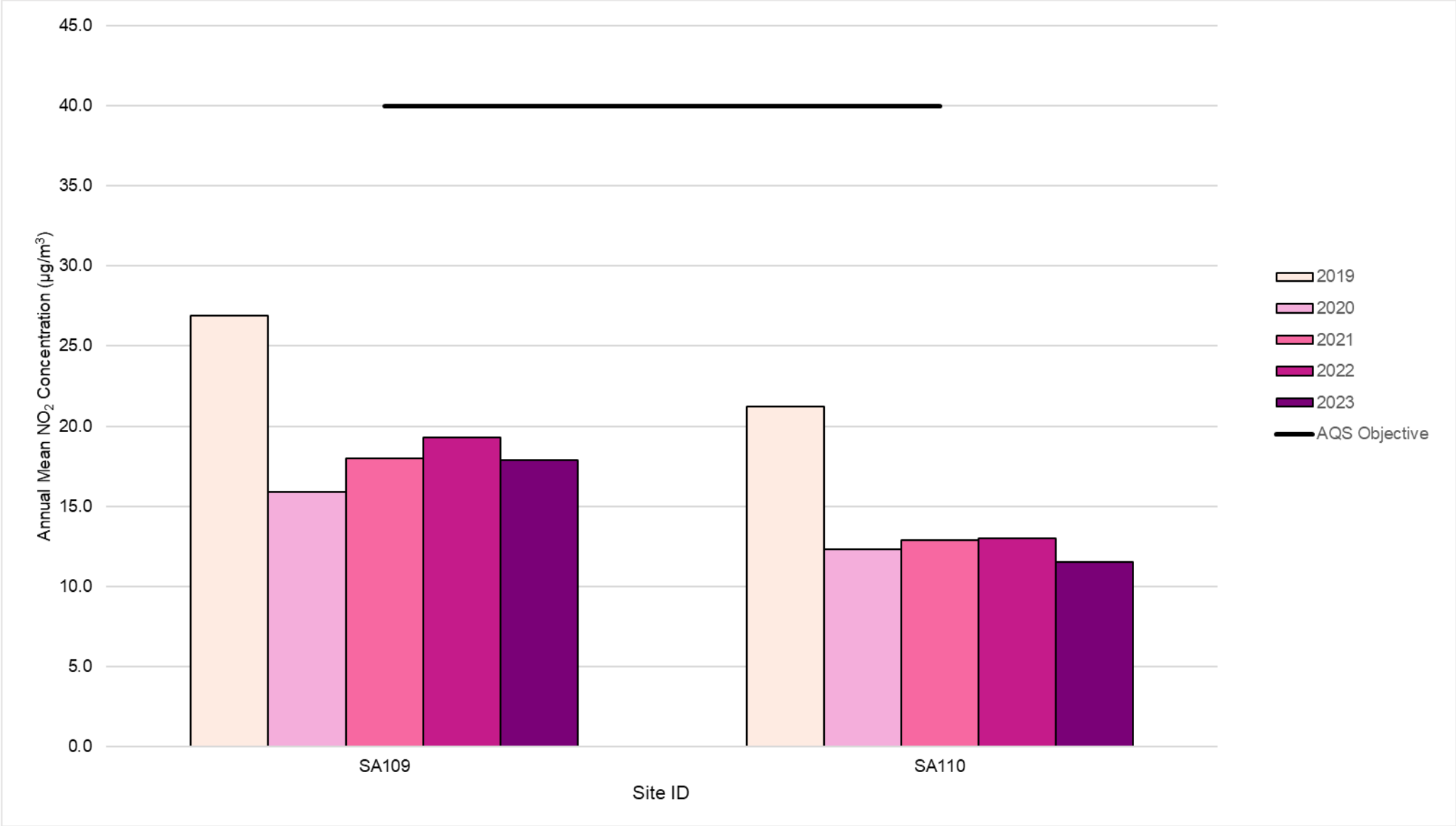


Figure A.9 Trends in Annual Mean NO<sub>2</sub> Concentrations, Redbourn

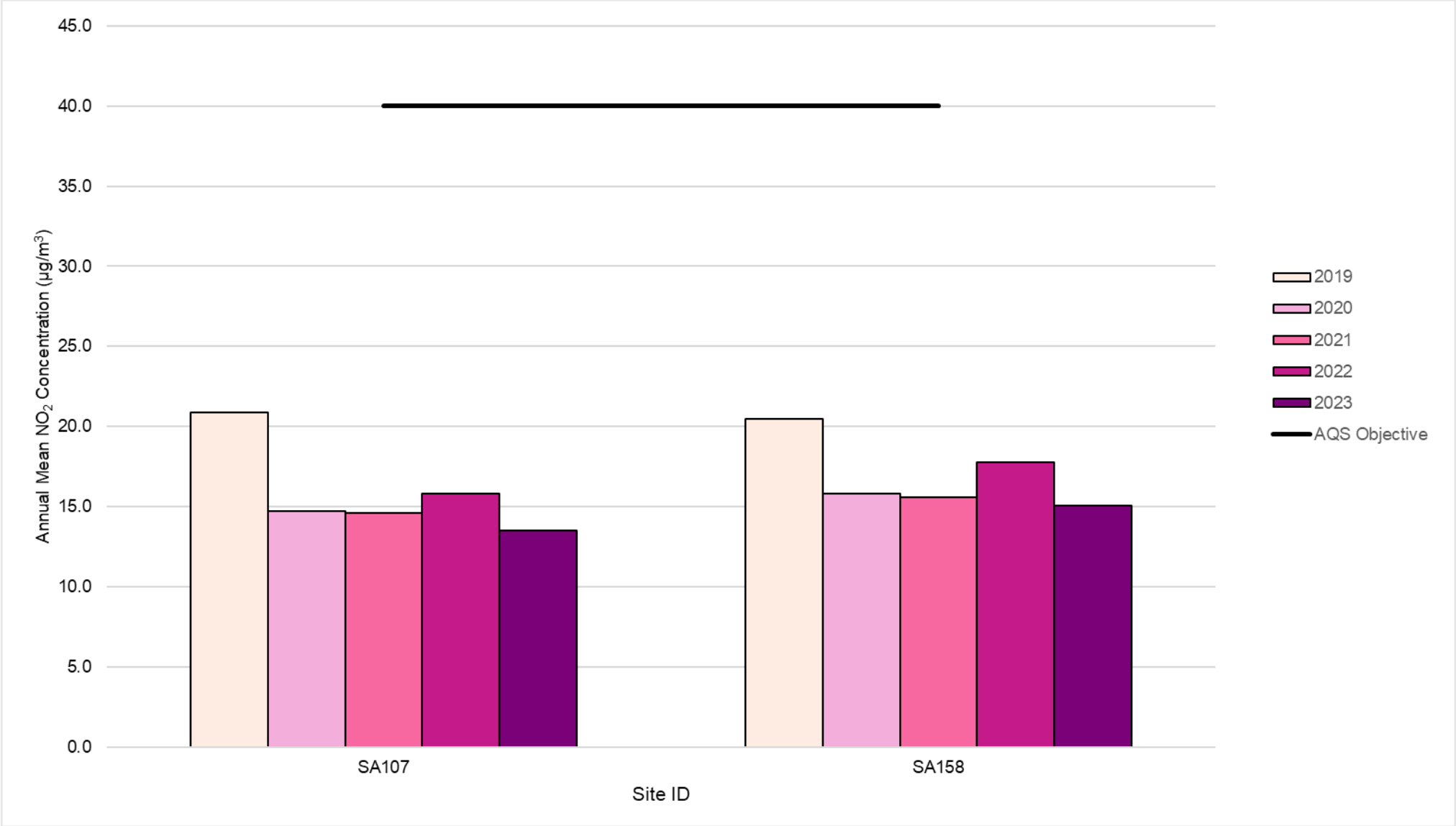


Figure A.10 Trends in Annual Mean NO<sub>2</sub> Concentrations, Wheathampstead

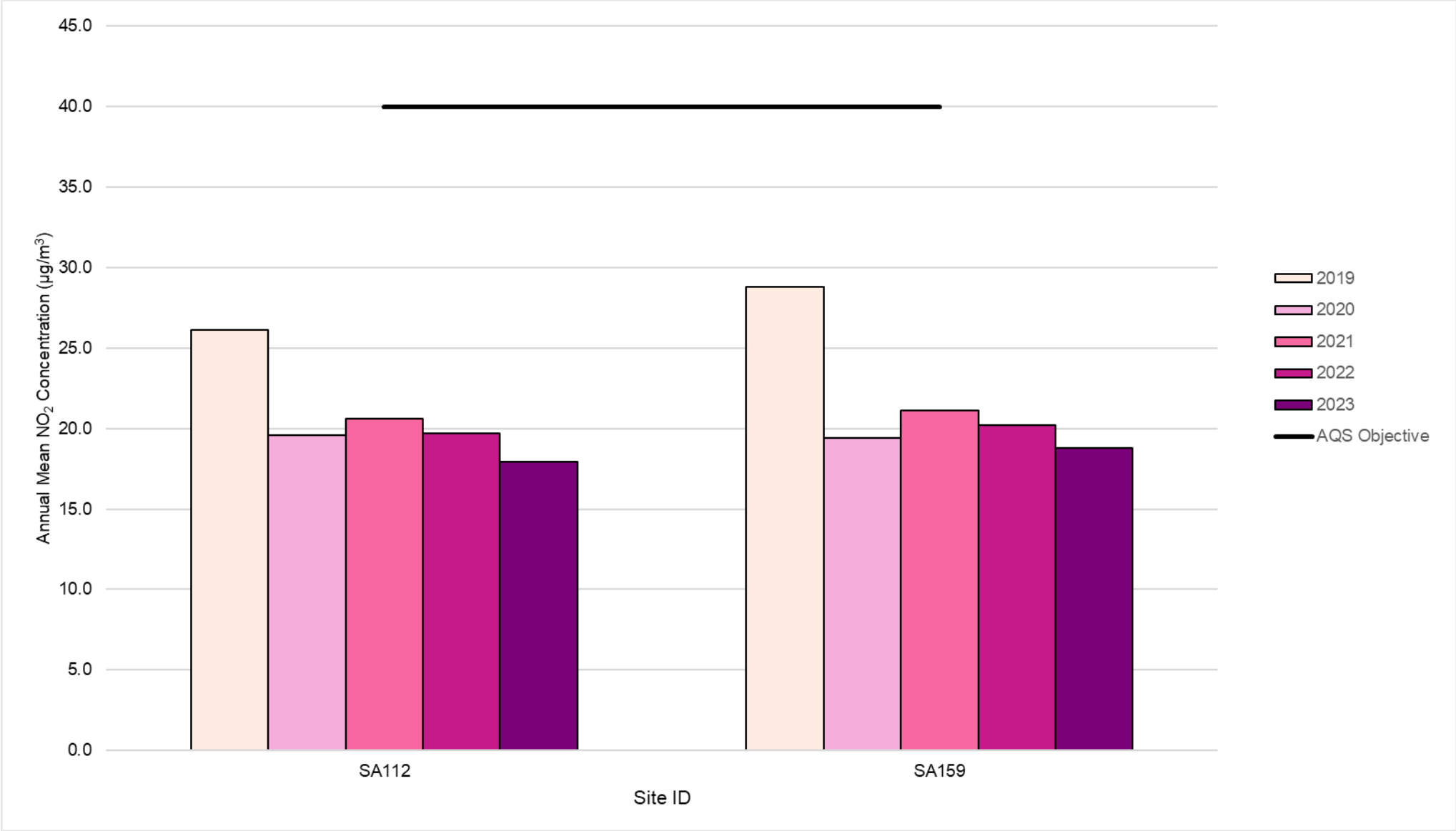
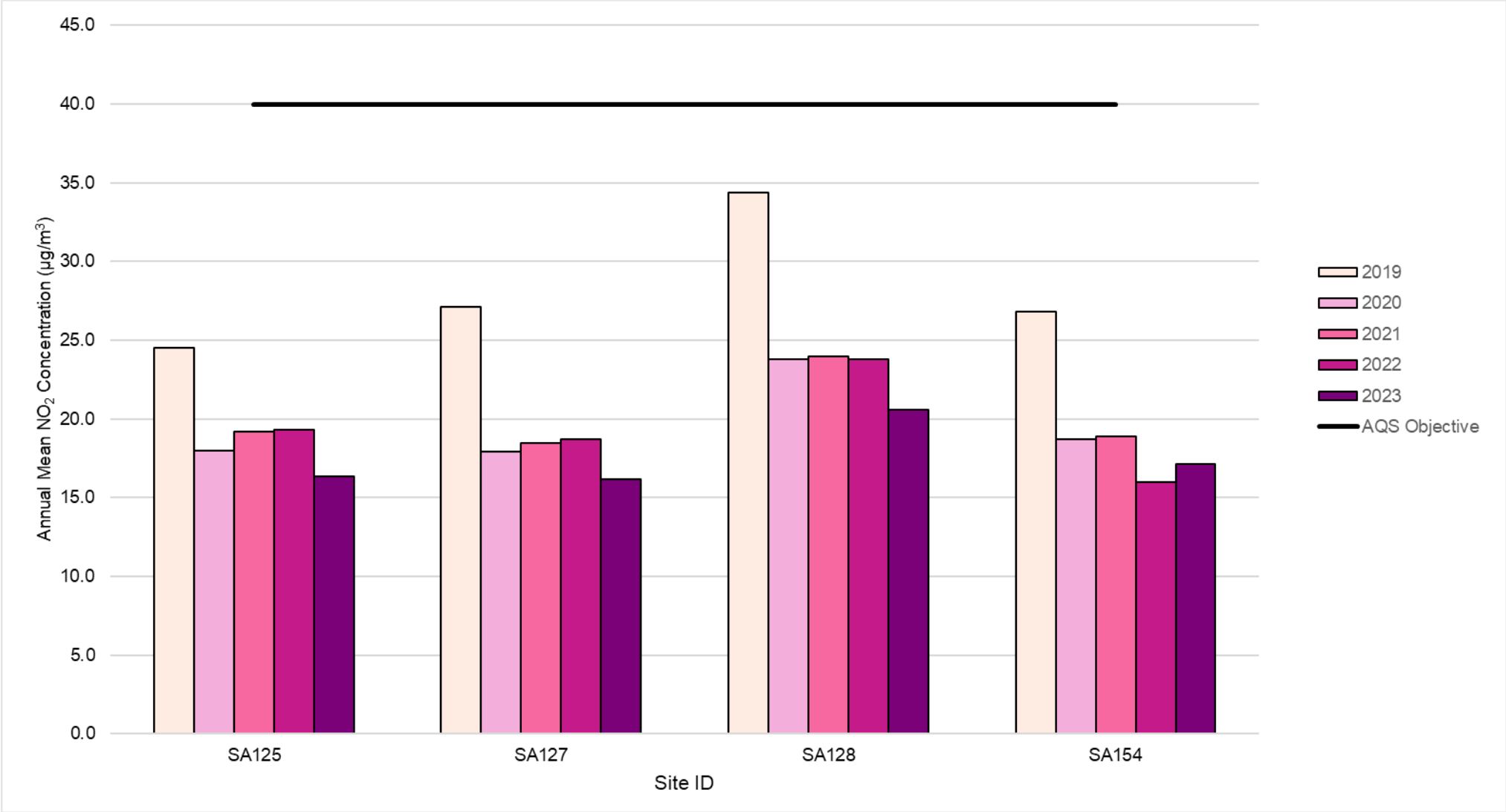


Figure A.11 Trends in Annual Mean NO<sub>2</sub> Concentrations, Bricket Wood



## Appendix B: Full Monthly Diffusion Tube Results for 2023

Table B.1– NO2 2023 Diffusion Tube Results (µg/m3)

DT ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Annualised and Bias Adjusted <(0.81)>	Annual Mean: Distance Corrected to Nearest Exposure	Comment
SA101	515105	207476	28.8	32.6	24.0	23.3	24.4	21.4	17.3	19.8	27.7	27.7	26.5	20.7	24.5	19.9	-	
SA107	510138	212525	22.9	23.4	18.0	14.5	10.8	10.9	12.6	11.2	17.3	19.7	20.4	18.8	16.7	13.5	-	
SA109	513427	214308	29.2	28.2		22.8	19.1		14.2	15.7	25.0	24.4	23.9	18.2	22.0	17.9	-	
SA110	514438	214353	21.3	21.6	14.6	11.9	9.5	9.6	8.9	9.8	14.5	17.2	17.8	14.2	14.2	11.5	-	
SA112	517727	214041	26.7	28.4	24.1	21.2	20.1	21.0	17.1	16.7	25.1	24.9	22.7	17.9	22.2	17.9	-	
SA114	516549	207391	29.4	31.6	25.9	23.0	20.5	23.0	22.6	15.0	19.2	20.4	26.4	25.8	23.6	19.1	-	
SA117	517712	204782	27.4	27.7	29.6	28.2	16.1	14.0	12.5	15.1	22.1	18.2	22.0	15.9	20.7	16.8	-	
SA120	520053	206618	27.8	27.5	22.6	21.3	16.4	17.3		18.8	28.0	26.5	25.9	18.9	22.8	18.5	-	
SA121	514654	204546	29.0	31.0	26.5	24.2	23.8	24.6	22.6	21.5	32.6	30.9	28.2	21.3	26.4	21.3	-	
SA123	515311	202730	32.6	31.6	26.9	23.2	20.6	19.8	21.2	29.7	29.6	29.5	28.2	23.6	26.4	21.4	-	
SA124	515383	202528	30.4	32.1	25.9	26.3	23.7		19.6	21.1	30.5	27.7	25.1	19.2	25.6	20.7	-	
SA125	513308	202655	25.6	25.5	21.1	22.1	21.1	20.0	11.2	16.4	22.2	21.0	22.1	13.8	20.2	16.3	-	
SA127	512570	202716	27.6	27.3	20.4	19.0	17.1	16.1	13.5				22.4	16.4	20.0	16.2	-	
SA128	512004	202105	34.6	32.3	26.6	24.8	21.5	20.3	20.4	20.7	29.6	28.0	25.1	21.0	25.4	20.6	-	
SA133	514606	206801	33.1	35.2	29.8	29.4	30.0	28.4	19.7	19.8	31.3	29.8	26.0	20.0	27.7	22.4	-	
SA134	514648	206919	31.3	30.7	26.9	27.1	24.1	23.9	19.3	21.3	33.5	29.6	25.8	22.2	26.3	21.3	-	
SA135	515060	206866	33.1	32.9	25.4	23.3	21.3	21.5	19.1	20.9	30.5	29.6	27.9	25.6	25.9	21.0	-	
SA136	514883	207422	38.7	43.4	41.5	42.9	49.8		29.3	35.4	50.1	44.3	36.4	28.5	40.0	32.4	-	

DT ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Annualised and Bias Adjusted <(0.81)>	Annual Mean: Distance Corrected to Nearest Exposure	Comment
SA137	514684	207105	38.1	39.5	35.3	31.8	25.5	27.0	28.6					31.4	32.1	27.1	-	
SA138	514701	207082	35.8	41.0	36.9	38.2	35.5	35.3	25.3	29.0	44.8	38.3	31.3	25.3	34.7	28.1	-	
SA140	515185	207070	24.9	26.3	21.1	19.3	17.5	15.0	12.6	15.3	21.9	25.7	24.2	18.9	20.2	16.4	-	
SA141	514722	207226		24.8		19.1	16.4	15.4	10.8	13.8	20.5	22.0	20.9	15.5	17.9	14.5	-	
SA142	510754	206091	29.3	29.0	24.9	19.9	15.7	16.7	21.3	19.7	25.8	25.4	26.5	23.6	23.2	18.8	-	
SA143	514752	207094		39.1	31.8	30.3	29.3	25.9	22.9	25.8	34.0	34.0	33.8	24.4	30.1	24.4	-	
SA144	514833	207347			37.3	32.5	30.6	32.1	38.0	30.4	42.9	40.5	35.1	32.2	35.2	28.5	-	
SA145	515257	202638	32.0	31.9	25.7	21.4	15.2	15.2	22.9	19.0	27.6	28.7	27.9	25.9	24.4	19.8	-	
SA146	514856	207353	30.0	32.5					21.3	20.2	28.2	29.1	30.0	25.0	27.0	20.1	-	
SA147	514818	207357	32.8	34.5	30.1	28.4	28.3	26.1	23.1	25.3	32.9	32.5	30.9	26.1	29.3	23.7	-	
SA148	514705	207119	47.7	50.0	44.6	38.6	40.3	39.1	35.7	35.2	53.4	47.3	42.5	35.1	42.5	34.4	-	
SA149	515067	206946	30.0	28.7	23.4	24.0	21.6	21.5	16.7	19.1	28.1	31.2	28.4	22.2	24.6	19.9	-	
SA150	516590	207276	36.9	38.0	27.6	19.6	12.2	11.4	15.2	20.8	32.4	31.2	29.0	22.9	24.8	20.1	-	
SA151	518782	203507	35.4	38.2	29.4	29.1	23.1	24.0	25.7	24.6	36.7	33.4	31.0	26.7	29.8	24.1	-	
SA152	517091	204114	29.4	31.0	22.0	19.4	15.7	16.5		17.1	26.3	25.8	26.4	19.9	22.7	18.4	-	
SA153	515275	202794	27.3	28.0	21.9			15.8	16.7	15.3	24.3	25.2	24.2	18.8	21.7	17.6	-	
SA154	512776	202050	27.5	27.9	19.3			12.8		15.4	23.6	22.4	23.8	18.1	21.2	17.2	-	
SA155	514346	206329	28.7	30.1	26.6	24.6	20.3	21.2	21.5	21.2	31.5	27.7	24.4	24.2	25.2	20.4	-	
SA156	514602	207674	35.9	35.0	30.0	30.5	29.9	28.0	18.4	22.4	33.0	30.7	32.3	20.8	28.9	23.4	-	
SA157	514840	207613	43.9	41.8	35.3	34.9	33.2	29.4	22.0	26.2	40.0	38.9	38.8	29.0	34.5	27.9	-	
SA158	510818	212167	24.2	23.6	18.0	16.3	12.7	12.6	13.4	13.2	20.2	30.0	20.5	18.3	18.6	15.0	-	

DT ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Annualised and Bias Adjusted <(0.81)>	Annual Mean: Distance Corrected to Nearest Exposure	Comment
SA159	517727	213901	30.0	29.5	23.8	20.9	19.4	18.5	22.2	17.5	27.8	24.1	25.0	19.2	23.2	18.8	-	
SA160	514682	207060	48.3	56.9	46.6	43.4	43.5	41.8	41.2	35.3	51.5	49.2	43.3	37.4	44.9	36.3	32.5	
SA161	514787	207069	32.2	37.4	29.3	26.1	21.0	21.3	23.8	22.9	35.6	35.1	32.2	26.2	28.6	23.2	-	
SA162	514596	207338	28.6	30.1	24.9	22.8	18.4	19.1	15.3	17.1	27.1	27.5	26.9	20.9	23.2	18.8	-	
SA163	514646	206942	49.8	46.8	43.5	37.6	34.0	35.0	37.2	33.2	45.9	42.6	43.5	36.9	40.5	32.8	-	
SA164	515024	207071	28.4	28.5	22.8	19.5	15.9	14.0	14.1	16.1	24.1	27.5	26.9	20.7	21.6	17.5	-	
SA165	515316	207719	33.5	36.0	29.1	26.8	27.4	25.4	23.4	23.1	34.0	31.6	29.6	24.9	28.7	23.3	-	
SA166	515144	206984	27.8	27.8	22.6	19.4	16.3	14.7	12.5	15.1	23.4	25.7	24.9	20.0	20.9	16.9	-	
SA167	515990	207769	30.9	31.2	24.3	20.3	19.9	16.8	15.2	14.2	25.4	25.6	26.7	18.8	22.4	18.2	-	
SA168	516144	207318	32.1	32.9	26.1	23.8	19.4	18.8	20.1	19.2	30.4	29.8	29.0	22.8	25.4	20.5	-	
SA169	516887	207702	24.1	24.4	17.6		10.1	8.0	8.0				18.6		15.8	12.4	-	

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

National bias adjustment factor used

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

St Albans City and District Council confirm that all 2023 diffusion tube data has been uploaded to the Diffusion Tube Data Entry System

**Notes:**

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 St Albans City and District Council During 2023

No new sources have been identified in 2023

### Additional Air Quality Works Undertaken by St Albans City and District Council During 2023

St Albans City and District Council has not completed any additional works in 2023

### QA/QC of Diffusion Tube Monitoring

The diffusion tubes used by St Albans City and District Council were supplied and analysed by Gradko Environmental Ltd, using a 20% TEA / Water solution. Gradko participate in the AIR NO<sub>2</sub> Proficiency Testing Scheme and their performance is publicly available on the Defra website.

In rounds AR037, 39, 40, 43, 45, 46, 49 and 50 (May 2020 to June 2022) Gradko achieved a satisfactory result of 75% or above. This dropped to 25% in round AR042 (Jan-Feb 2021) but an investigation was carried out and a repeat set of samples tested (Mar-21) to confirm results. It was concluded that there was no risk associated with results reported to customers. Gradko's precision score for 2022 was Good = 33 Bad = 0.

Monitoring in 2023 was completed in adherence with the [2023 Diffusion Tube Monitoring Calendar](#), whereby most changeovers were completed within  $\pm 2$  days of the specified date.

### Diffusion Tube Annualisation

For sites with data capture below 75%, the [LAQM.TG\(22\)](#) states that the sites should be annualised. In 2023, sites with data capture lower than 75% were:

- SA137 (High Street)
- SA146 (Forrester House)
- SA169 (Beaumont Avenue)



The following continuous urban background monitors were used for annualisation, all having data capture higher than 85%, as required by the LAQM.TG(22):

- Boreham Wood Meadow Park
- London Haringey Priory Park South
- Oxford St Ebbes
- London Hillingdon

A summary of this annualisation is provided in Table C.1

**Table C.1– Annualisation Summary (concentrations presented in  $\mu\text{g}/\text{m}^3$ )**

Site ID	Annualisation Factor Boreham Wood Meadow Park	Annualisation Factor London Haringey Priory Park South	Annualisation Factor Oxford St Ebbes	Annualisation Factor London Hillingdon	Average Annualisation Factor	Raw Data Annual Mean	Annualised Annual Mean
SA137	1.0302	1.0152	1.0656	1.0511	1.0405	32.1	33.4
SA146	0.9190	0.9371	0.8958	0.9235	0.9188	27.0	24.8
SA169	0.9563	0.9511	0.9460	1.0267	0.9700	15.8	15.3

### Diffusion Tube Bias Adjustment Factors

The diffusion tube data presented within the 2024 ASR have been corrected for bias using an adjustment factor. Bias represents the overall tendency of the diffusion tubes to under or over-read relative to the reference chemiluminescence analyser. LAQM.TG22 provides guidance with regard to the application of a bias adjustment factor to correct diffusion tube monitoring. Triplicate co-location studies can be used to determine a local bias factor based on the comparison of diffusion tube results with data taken from  $\text{NO}_x/\text{NO}_2$  continuous analysers. Alternatively, the national database of diffusion tube co-location surveys provides bias factors for the relevant laboratory and preparation method.

St Albans City and District Council do not carry out continuous monitoring, therefore there are no co-located sites to carry out local bias adjustment. St Albans City and District Council have therefore applied a national bias adjustment factor of 0.81 to the 2023 monitoring data. A summary of bias adjustment factors used by St Albans City and District Council over the past five years is presented in Table C.2.

**Table C.2– Bias Adjustment Factor**

Monitoring Year	Local or National	If National, Version of National Spreadsheet	Adjustment Factor
2023	National	04/24	0.81
2022	National	03/23	0.83
2021	National	05/21	0.84
2020	National	09/20	0.81
2019	National	06/19	0.93

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

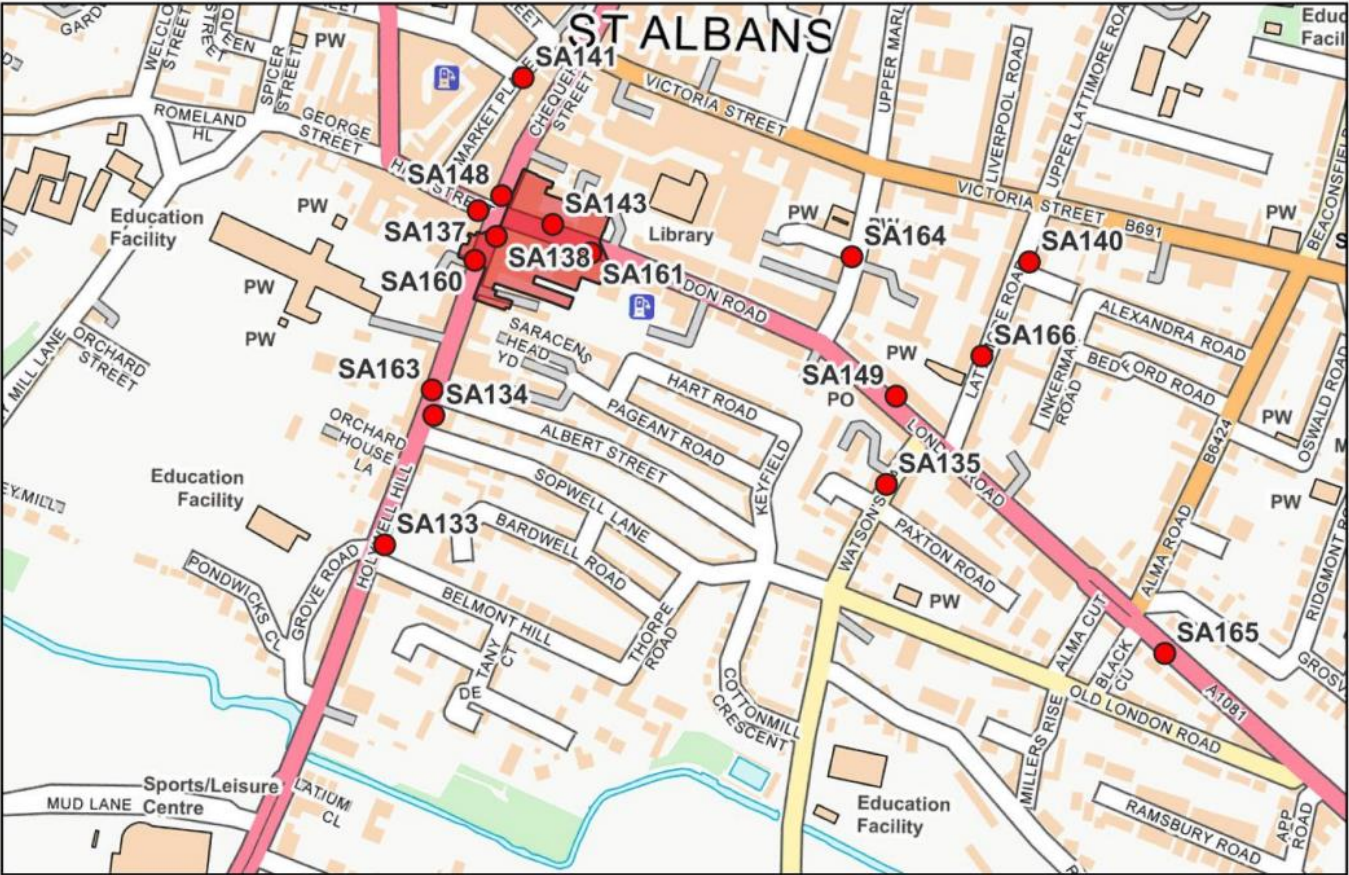
Wherever possible, monitoring locations are representative of exposure. However, where this is not possible, the NO<sub>2</sub> concentration at the nearest location relevant for exposure has been estimated using the Diffusion Tube Data Processing Tool/NO<sub>2</sub> fall-off with distance calculator available on the LAQM Support website. Where appropriate, non-automatic annual mean NO<sub>2</sub> concentrations corrected for distance are presented in Table C.3.

**Table C.3– Non-Automatic NO<sub>2</sub> Fall off With Distance Calculations (concentrations presented in µg/m<sup>3</sup>)**

Site ID	Distance (m): Monitoring Site to Kerb	Distance (m): Receptor to Kerb	Monitored Concentration (Annualised and Bias Adjusted)	Background Concentration	Concentration Predicted at Receptor	Comments
SA160	2.5	5.0	36.3	14.2	32.5	

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

Figure D.1– Map of Non-Automatic Monitoring Site, AQMA 1 and St Albans Centre



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**Legend**

- Diffusion Tube Location
- AQMA Boundary

Figure D.2 – Map of Non-Automatic Monitoring Site, Potters Crouch

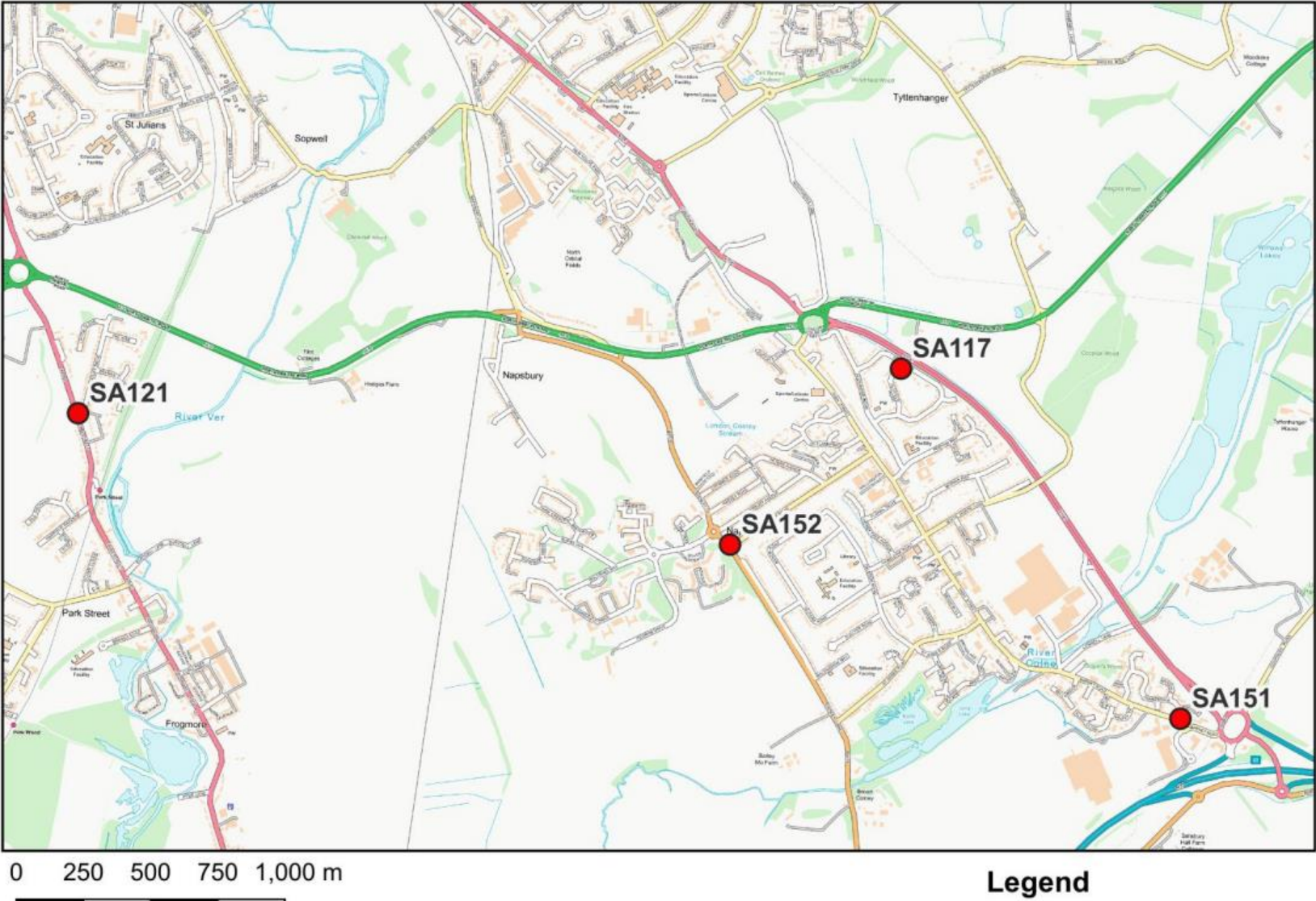


Figure D.3– Map of Non-Automatic Monitoring Site, Frogmore



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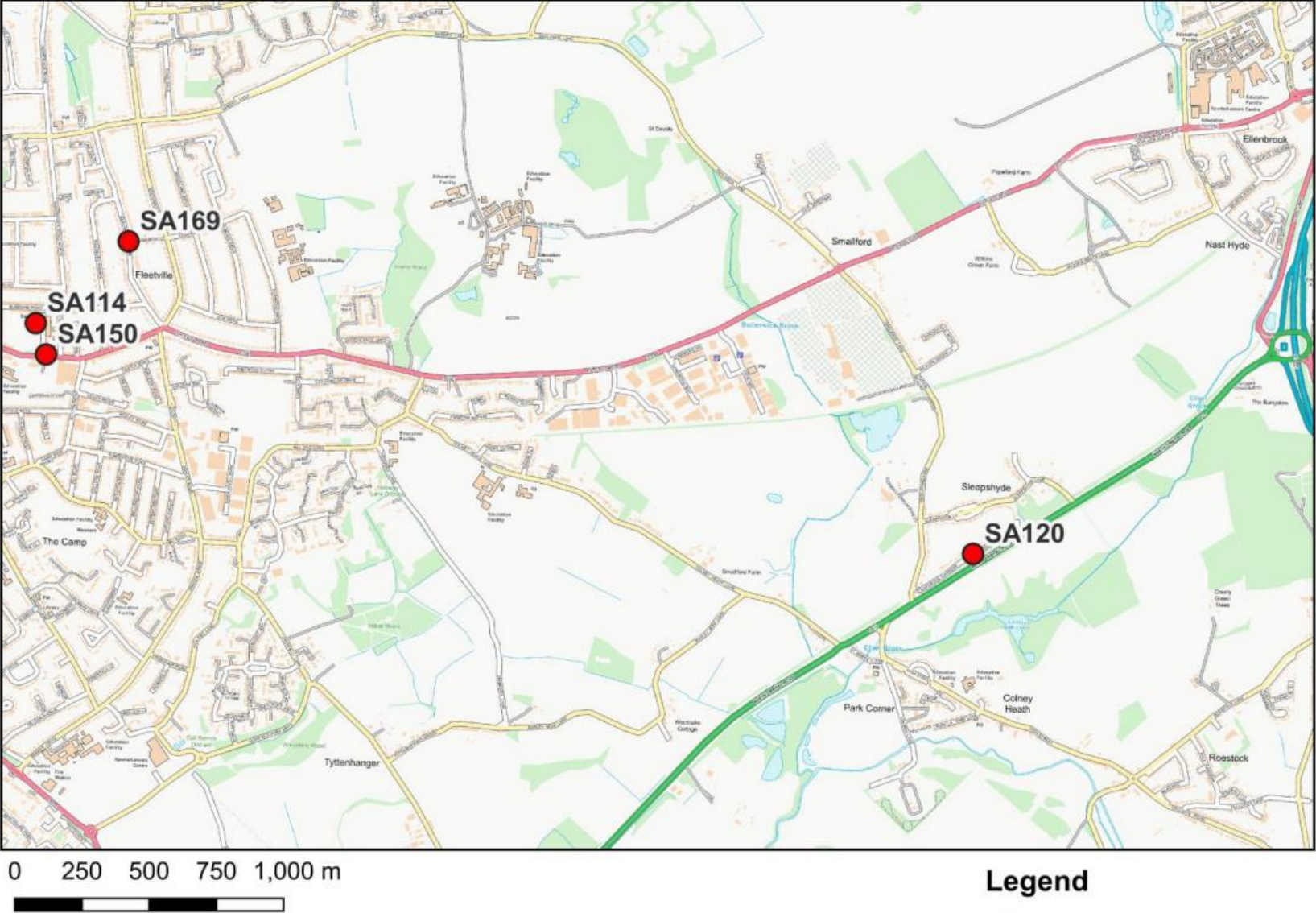
Figure D.4– Map of Non-Automatic Monitoring Site, Napsbury



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**Legend**  
● Diffusion Tube Location

Figure D.5– Map of Non-Automatic Monitoring Site, St Albans East



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Figure D.6– Map of Non-Automatic Monitoring Site, St Albans North



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Figure D.7– Map of Non-Automatic Monitoring Site, Harpenden

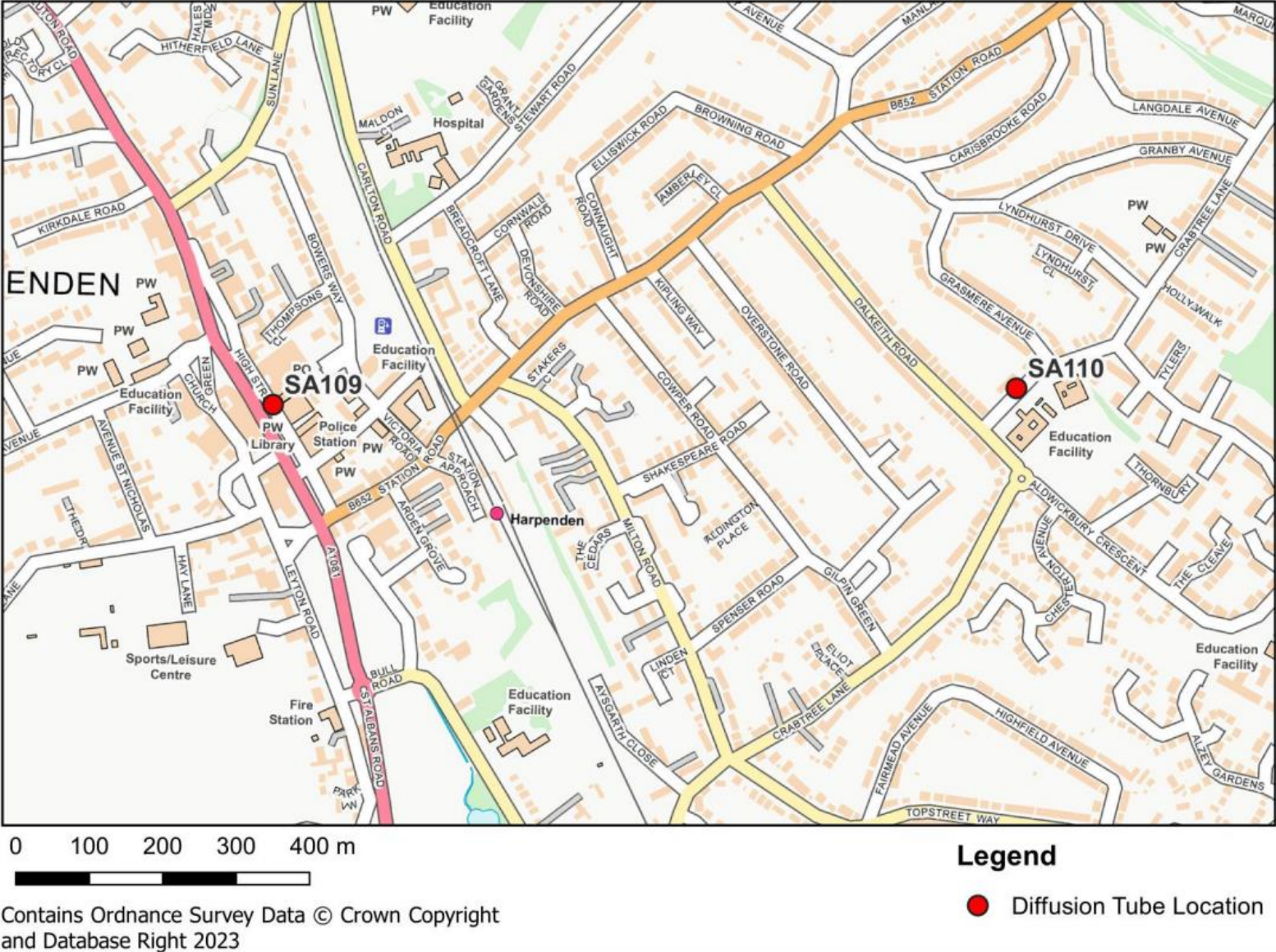


Figure D.8– Map of Non-Automatic Monitoring Site, St Albans North



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Figure D.9– Map of Non-Automatic Monitoring Site, Wheathampstead



Figure D.10– Map of Non-Automatic Monitoring Site, Bricket Wood



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

**Table E.1– Air Quality Objectives in England<sup>9</sup>**

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

<sup>9</sup> The units are in microgrammes of pollutant per cubic metre of air (µg/m<sup>3</sup>).

## 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
SACDC	St Albans City and District Council
HCC	Hertfordshire County Council
HCCSP	Hertfordshire County Council Sustainability Partnership
BSIP	Bus Service Improvement Plan
LCWIP	Local Cycling and Walking Infrastructure Plan

## References

- Local Air Quality Management Technical Guidance LAQM.TG22. August 2022. Published by Defra in partnership with the Scottish Government, Welsh Assembly Government and Department of the Environment Northern Ireland.
- Local Air Quality Management Policy Guidance LAQM.PG22. August 2022. Published by Defra in partnership with the Scottish Government, Welsh Assembly Government and Department of the Environment Northern Ireland.
- Chemical hazards and poisons report: Issue 28. June 2022. Published by UK Health Security Agency
- Air Quality Strategy – Framework for Local Authority Delivery. August 2023. Published by Defra.