2024 Air Quality Annual Status Report (ASR)

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

Date: June, 2024

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Shropshire Council

Annual Progress Report 2024

Bureau Veritas

June 2024

Move Forward with Confidence

Document Control Sheet

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Executive Summary: Air Quality in Our Area

Air Quality in Shropshire

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[1].

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[2].

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

Table ES 1 - Description of Key Pollutants

Pollutant	Description
Nitrogen Dioxide (NO_2)	Nitrogen dioxide is a gas which is generally emitted from high-temperature combustion processes such as road transport or energy generation.
Sulphur Dioxide (SO_2)	Sulphur dioxide (SO_2) is a corrosive gas which is predominantly produced from the combustion of coal or crude oil.
Particulate Matter (PM_{10} and $PM_{2.5}$)	Particulate matter is everything in the air that is not a gas. Particles can come from natural sources such as pollen, as well as human made sources such as smoke from fires, emissions from industry and dust from tyres and brakes. PM_{10} refers to particles under 10 micrometres. Fine particulate matter or $PM_{2.5}$ are particles under 2.5 micrometres.

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

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

The Shropshire Council Unitary Authority area is predominantly rural, consisting of both pastoral and arable agriculture, alongside pockets of industry surrounding larger county towns. There are localised areas of poor air quality at key highway junctions including several significant heavy goods vehicle (HGV) transport routes, on the north/south A49 route, the cross-county M54 and A5 route to/from North Wales and Merseyside, and the A41 route to/from Chester and Birmingham. There are also several large quarries and other industrial sites that are permitted for emissions to air.

Currently Shropshire Council has two Air Quality Management Areas (AQMAs) declared; Bridgnorth AQMA and Shrewsbury No. 3 AQMA. Both AQMAs were declared for exceedances of the annual mean air quality objective of 40µg/m^3 for NO_2. Bridgnorth AQMA was declared in 2005 and the Shrewsbury No.3 AQMA declared in 2003 and amended in 2006.

Whilst the overall five-year trends within both Shrewsbury and Bridgnorth AQMA's indicate an overall reduction in levels, there were two sites still exceeding 40µg/m^3 in 2023 and four monitoring locations within 10% of the NO_2 annual mean Air Quality Standard (AQS) objective. The highest annual mean concentration within the Bridgnorth AQMA was 44.5µg/m^3 at monitoring location 83 – Pound Street. Concentrations of NO_2 have decreased over the last three years. However, the exceedance of the air quality objective currently remains at this position. This was the only exceedance within the Bridgnorth AQMA during 2023. It should be noted that a further monitoring location within the Bridgnorth AQMA, 71 – Pound Street, recorded a concentration within 10% of the 40µg/m^3 air quality objective, following distance correction. This could similarly represent a location of continued exceedance. There were no exceedances of the AQS objective for NO_2 in the wider Bridgnorth area.

The highest concentration of NO_2 within the Shrewsbury AQMA was 39.7µg/m^3. This was recorded at monitoring position 438, located on the façade of the Station on Castle Foregate. The site of diffusion tube 438 is not considered a representative location of relevant exposure. As such, the concentration at the nearest receptor for this location was estimated using the distance correction via the Defra Diffusion Tube Data Processing Tool (DTDPT). Following distance correction, the predicted concentration at the sensitive receptor was 39.2µg/m^3 which was still within 10% of the AQS objective and could therefore represent an area of continued exceedance within AQMA.

An exceedance of the annual NO_2 air quality objective was monitored outside the AQMA designations at 233 – Tern Hill, Market Drayton. This location has exceeded the annual mean objective for the last five years, however the diffusion tube is situated at a road traffic junction and is not representative of relevant exposure. The concentration at the location of nearest exposure was 32.6µg/m^3 in 2023 and therefore not exceeding the air quality objective.

During 2023 Shropshire Council drafted new Air Quality Action Plans (AQAP) for both the Bridgnorth and Shrewsbury AQMAs.

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[3] sets out actions that will drive continued improvements to air quality and to meet the new national interim and long-term targets for fine particulate matter ($PM_{2.5}$), the pollutant of most harmful to human health. The Air Quality Strategy[4] 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[5] 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.

Shropshire Council continues to consider air pollution throughout a number of services and departments with air quality measures found in many of Shropshire's policies. Work has commenced in 2024 on the gyratory system within Shrewsbury town centre to improve

[3] Defra. Environmental Improvement Plan 2023, January 2023

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

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

the flow of traffic. The project is funded by the levelling up fund and will simplify the road layouts and create a one-way gyratory system at Castle Foregate which is expected to reduce congestion through the town centre. The gyratory system will include A5191 Castle Foregate, A5191 Castle Gates, A528 Cross Street, A528 Chester Road and A458 Smithfield Road, which are all located within the AQMA.

The proposals include moving Castle Foregate to a single lane road with the second lane changed to a cycle lane. This is expected to encourage more cyclists' movements within Shrewsbury. Chester Street, which was previously a one-way road going north, has now been proposed to be a two-way road. This will alleviate the amount of traffic travelling on Castle Foregate from the two main roads travelling into Shrewsbury, the A528 and A5191, to just the A5191.

Ongoing attention is being paid to the potential Shrewsbury North West Relief Road (NWRR). Detailed design and assessment was undertaken during the planning application (reference: 21/00924/EIA) which was reviewed at planning committee on 24th February 2024 and was granted approval. An air quality impact assessment was produced and audited in respect of human health impacts. Reporting concluded that the NWRR is anticipated to improve air quality in the hotspot pollution area in Shrewsbury town centre within the river loop, while creating some increases in areas with which are currently below the national objective levels. This balance is considered to be positive in respect of the LAQM regime and will be subject to further assessment within the AQAP review process and possible future monitoring.

Shropshire Council commissioned Bureau Veritas to undertake AQAP reviews for both Shrewsbury and Bridgnorth AQMA's in 2023/2024. The draft AQAPs have been submitted on 29th February 2024 and appraised by Defra and will shortly be going to consultation, which was delayed due to the general election, prior to formal adoption by the Council.

Shropshire Council published the new Local Cycling Walking and Infrastructure Plans (LCWIP) for the county in 2023.

Conclusions and Priorities

Monitoring data in Shropshire shows a continuing decreasing trend in concentrations of NO_2 in 2023. There were two monitoring locations which exceeded the AQS objective for NO_2, one within the Bridgnorth AQMA and one in Tern Hill. There were four monitoring locations where the annual mean NO_2 concentration was within 10% of the

AQS objective. However when exposure is considered at Tern Hill, there is no exceedance of the AQS objective.

Shropshire Council are in the process of updating the AQAPs for each of the Bridgnorth and Shrewsbury AQMAs.

Local Engagement and How to get Involved

To reduce air pollution and contribute to clean air everyone living, working and visiting the area can contribute. Every individual and business can promote clean air and help make a difference by considering the following actions:

Shropshire Council are promoting the following messages to the residents on ways they can reduce their personal emissions and help improve air quality in Shropshire.

Avoid driving into congested areas: It is good for your health and your wealth

By planning your journey to avoid congested areas you can make a positive difference. Parking on the edge of town is often cheaper than parking in town centres saving you money. Walking into town from edge of town carparks keeps you active and is good for your family's health. By not driving into congested, polluted areas you reduce your family's exposure to harmful air pollutants and stop your own vehicle emissions contributing to the problem. An alternative to walking and cycling is to use a Park and Ride or a bus service to get you the final mile.

- To help plan your journey find Shropshire Council car parks:
    - https://www.shropshire.gov.uk/parking/find-my-nearest-car-park/
- For Park and Ride information in Shropshire:
    - https://www.shropshire.gov.uk/public-transport/park-and-ride/

Consider your commute

If you regularly drive to work you may be able to save money by adopting the steps above. Although, you could also reduce the amount of money you spend on fuel and parking by:

- Using the Park and Ride service;
- Cycling or walking to work. Cycling or walking into work once a week could reduce your emissions by 20%; and,

- Car share. Care sharing can be a very effective way of reducing the number of vehicles on the road as well as saving money. The further the journey the more you stand to save. The more you share, the more you save.

Doing the school run - not the school sit

Travelling to and from school at peak times contributes to congestion on our roads at a time of day when there are already an increased number of vehicles. Where a school is within walking or cycling distance, we would encourage this option to be utilised where possible. The benefits can include reduced fuel costs, improved fitness and health through regular exercise for the family, as well as the benefits to to air quality in Shropshire.

Consider your fuel

With prices of electric vehicles continuing to fall in line with vehicles powered by other fuels and ranges ever increasing. Electric powered vehicles could be the way for you and your family or business to make a difference and reduce air pollution and individual carbon footprint. Shropshire Council have partnered with Connected Kerb[6] to increase the number of Electric Vehicle (EV) charging stations in the area with 127 installed already.

Local Responsibilities and Commitment

This ASR was prepared by the Bureau Veritas for the Public Protection Department of Shropshire Council with the support and agreement of the following officers and departments:

- Joanne Chanter, Public Protection Officer; and,
- Kieran Smith, Environmental Services Manager.

This ASR has been approved by:

Rachel Robinson, Executive Director of Health, Wellbeing & Prevention

[6] https://newsroom.shropshire.gov.uk/2024/04/smart-charging-to-offer-big-savings-to-shropshires-electric-vehicle-drivers/

If you have any comments on this ASR please send them to Joanne Chanter at:

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1 Local Air Quality Management

This report provides an overview of air quality in Shropshire 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 AQMA and prepare an 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 ASR is an annual requirement showing the strategies employed by Shropshire 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

AQMAs are declared when there is an exceedance or likely exceedance of an air quality objective. After declaration, the authority should prepare an 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 Shropshire Council can be found in Table 2.1. The table presents a description of the two AQMAs that are currently designated within Shropshire. Appendix D: Map(s) of Monitoring Locations and AQMAs provides maps of AQMAs and also the air quality monitoring locations in relation to the AQMAs. The air quality objectives pertinent to the current AQMA designations are as follows:

- NO_2 annual mean.

Table 2.1 – Declared Air Quality Management Areas

AQMA Name	Date of Declaration	Pollutants and Air Quality Objectives	One Line Description	Is air quality in the AQMA influenced by roads controlled by Highways England?	Level of Exceedance: Declaration	Level of Exceedance: Current Year	Number of Years Compliant with Air Quality Objective	Name and Date of AQAP Publication	Web Link to AQAP
Shrewsbury No.3 AQMA	Declared 01/05/2003, Amended 01/03/2006	NO_2 Annual Mean	The area comprising Frankwell, part of Bridge Street and Smithfield Road Castle Gates and adjacent land, extending to encompass most of the Town Centre including High Street, Wyle Cop, English Bridge and Coleham Head gyratory	No	86µg/m^3	39.7µg/m^3	Not Compliant	Shrewsbury Air Quality Action Plan: 2008 Shrewsbury Air Quality Action Plan 2024. Currently in draft, submitted to Defra February 2024	Shrewsbury AQAP 2008
Bridgnorth Pound Street AQMA	Declared1/4/2005	NO_2 Annual Mean	An area encompassing Pound Street and the junction of Whitburn Street and Salop	No	54.1µg/m3 (in 2010)	44.5µg/m3	Not Compliant	Bridgnorth Air Quality Action Plan: 2008 Bridgnorth Air Quality Action Plan 2024 drafted	Bridgenorth AQAP 2008

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
			Street.					submitted to Defra February 2024	

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

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

2.2 Progress and Impact of Measures to address Air Quality in Shropshire

Defra's appraisal of last year's ASR concluded the report was well structured and detailed and praised the updated maps, completion of measures with the AQAP and satisfies the criteria of the report.

Shropshire 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 2.2. Ten measures are included within Table 2.2, with the type of measure and the progress Shropshire 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 2.2.

More detail on these measures can be found in the draft 2024 Action Plans for Bridgnorth and Shrewsbury respectively. Consultation on the two draft 2024 Action Plans will be undertaken in July 2024, following the general election.

Shropshire Council expects the following measure to be completed over the course of the next reporting year:

- Implementation of new parking charges within Shrewsbury town centre.
- The Gyratory scheme is now under construction and anticipated to be completed in 2025

Shropshire Council's priorities for the coming year are finalising the draft AQAPs for Shrewsbury and Bridgnorth and the continued implementation of the LCWIP measures in both Shrewsbury and Bridgnorth.

Shropshire Council Environmental Protection team worked to implement these measures in partnership with the following stakeholders within Shrewsbury Council during 2023:

- Highways department;
- Climate Change department;
- Passenger Transport department; and,
- Communication department.

The principal challenges and barriers to implementation that Shropshire Council anticipates facing are the funding for several measures and the construction process and

cost of the NWRR. Additionally identifying the extent of costs and funding for each measure has been difficult in the current economic climate.

Whilst the measures stated above and in Table 2.2 will help to contribute towards compliance, Shropshire Council anticipates that these measures will achieve compliance and enable the revocation of the AQMAs in Shrewsbury and Bridgnorth by 2027.

Table 2.2 – Progress on Measures to Improve Air Quality

Measure No.	Measure Title	Category	Classification	Year Measure Introduced in AQAP	Estimated / Actual Completion Date	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Barriers to Implementation
1	Castle Foregate Gyratory	Traffic Management	Strategic Highways Improvements	2024	2025	Shropshire Council, WSP, Highways	Levelling Up Fund 2	No	Fully Funded	> £10m.	Planning	15.2µg/m^3 NO_2 Concentration reduction at worst case monitoring location	Review of monitoring location results after measure is implemented	Work commenced on the gyratory in 2024 and completion is expected in June 2025.	None Identified - funding confirmed, planning permission not required for Highways development.
2	Northwest Relief Road (NWRR)	Traffic Management	Strategic Highways Improvements	2024	2027	Shropshire Council, WSP, Highways	Government Capital Grant, Marches LEP, SC Match Funding	No	Partially Funded	> £10m.	Planning	4.95 µg/m^3 NO_2 Concentration reduction at worst case receptor location	Review of monitoring location results after measure is implemented	Planning permission for the development of the North West Relief Road was granted in February 2024.	Potential barrier with funding and finalisation. Awaiting confirmation of overall funding from Central Government
5	LCWIP	Promoting Travel Alternatives	Promotion of Walking and Cycling	2024	N/A	Shropshire Council	Shropshire Council, Active Travel England, DfT	No	Different interventions funded independently.	£50k - £100k/	Planning	<0.5 µg/m^3 Concentration reduction at worst case receptor location	Review of private vehicle movements on Castle Foregate and uptake of cyclists. Review of monitoring data too.	LCWIP Plan has been adopted in 2023, with some of the key cycling paths proposed as part of the Castle Foregate Gyratory	Subject to funding availability, Highway capacity.
3	Increased Parking Charge	Alternatives to Private Vehicle Use	Other	2024	2024	Shropshire Council	Shropshire Council	No	N/A	<£10k	Planning	<0.5 µg/m^3 Concentration reduction at worst case receptor location	Review of monitoring data and use of E-bikes, scooters and pedestrians compared to private vehicle movements	Subject to Full Council approval – February 2024	Subject to Full Council approval – February 2024.
4	Park and Ride	Alternatives to Private Vehicle Use	Bus based Park and Ride	TBC	TBC	Shropshire Council	TBC	No	TBC	£1 million - £10 million	Planning	0.5-1µg/m³ µg/m^3 Concentration reduction at worst case receptor location	Review of the number of private vehicles movements changes and uptake of bus movements on new park and ride		
6	Smithfield Re-development	Promoting Travel Alternatives	Promotion of Walking and Cycling	2028	N/A	Shropshire Council	TBC	No	TBC	> £10m.	Planning	To be measured through monitoring	Review of monitoring concentrations along Smithfield Road following roadworks and increases pedestrianisation	Initial plans out for consultation	Planning permission.
7	Anti-Idling Signage outside of Station	Traffic Management	Anti-Idling Enforcement	2025	2025	Shropshire Council	Shropshire Council	No	TBC	<£10k	Planning	<0.5 µg/m^3 Concentration reduction at worst case receptor location	Review of compliance with vehicles anti-idling.	Discussions held with stakeholders	Subject to Full Council approval

Measure No.	Measure Title	Category	Classification	Year Measure Introduced in AQAP	Estimated / Actual Completion Date	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Barriers to Implementation
8	School Travel Plans	Promoting Travel Alternatives	School Travel Plans	2024	2025	Shropshire Council	Active Travel England, DfT, Shropshire Council	No	Funded	£10k - £50k/	Planning	<0.5 µg/m^3 reduction in the AQMA	Review of the adoption of School Travel plan and the associated reductions of traffic within the AQMA. Surveys to understand how students currently travel to school and the methods and routes they take.	Costs and finalised dates to be confirmed following further discussions with Oldbury Wells School and Sixth Form and Castlefield Primary School	
9	LCWIP – Cycle and Walking path on Whitburn Street	Transport Planning and Infrastructure	Cycle Network	TBC	TBC	Shropshire Council, Highways	Active Travel England, DfT, Shropshire Council	No	Partially Funded	£50k - £100k/	Planning	<0.5 µg/m^3 reduction in the AQMA	Uptake of cycling and walking to High Street as well as a review of the traffic flows within the AQMA after adoption.	Initial planning states, one of the routes within the LCWIP that is highly prioritise is the cycle path on Whitburn Street	
10	ANPR along Pound Street	Traffic Management	Strategic Highways Improvements	TBC	TBC	Shropshire Council, Highways	TBC	No	TBC	TBC	Planning	<0.5 µg/m^3 reduction in the AQMA	Review of the traffic flows during peak times and the subsequent monitoring results within the AQMA.	Ongoing discussion with the UK Share Prosperity Fund and considered within Public Realm work for Bridgnorth	Would require a Traffic Regulation Order. Further funding opportunities with S106 or Community Infrastructure Levy

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

As detailed in Policy Guidance LAQM.PG22 (Chapter 8) and the Air Quality Strategy[7], local authorities are expected to work towards reducing emissions and/or concentrations of fine particulate matter ($PM_{2.5}$)). There is clear evidence that $PM_{2.5}$ (particulate matter smaller 2.5 micrometres) has a significant impact on human health, including premature mortality, allergic reactions, and cardiovascular diseases.

The Public Health Outcomes Framework data tool[8] compiled by Public Heath England (PHE) quantifies the mortality burden of $PM_{2.5}$ within England on a county and local authority scale. The latest Public Health Outcomes Framework Indicator number D01 - Fraction of mortality attributable to particulate air pollution (New Method) for Shropshire was noted to be 4.4% in 2022, down from 5.8% in 2019 but slightly increased from 4.3% in 2020/2021. This is the mortality lowest percentage in the West Midlands Area and below the average for England at 5.5% attributable to air pollution.

Measures within the draft AQAP for Shrewsbury and Bridgnorth include measures to improve air quality which are relevant to $PM_{2.5}$. The measures to increase sustainable travel methods such as the LCWIP for each area of the county and Park and Rides. The measures for the AQAP are focussed on NO_2 as this is the pollutant for which the AQMA designations are declared, but many of the measures are not only specific to reducing NO_2.

In addition, the expansion of the Automatic Urban and Rual Network (AURN) $PM_{2.5}$ network of monitoring will include a $PM_{2.5}$ monitoring station in Shrewsbury Underdale in future years which will monitor background $PM_{2.5}$ in the area. The Defra background maps[9] show concentrations of $PM_{2.5}$ in Shrewsbury are not exceeding the current interim

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

[8] PHE. Public Health Outcomes Framework. Available at: https://fingertips.phe.org.uk/profile/public-health-outcomes-framework/data

[9] Defra Background Maps https://uk-air.defra.gov.uk/data/laqm-background-home

target[10] of 12µg/m^3 or the future 10µg/m^3 air quality objective which is effective from 2040. The highest predicted background concentration of $PM_{2.5}$ in the local authority area in 2023 was 8.3µg/m^3.

[10] https://www.gov.uk/government/publications/the-air-quality-strategy-for-england/air-quality-strategy-framework-for-local-authority-delivery#annex-a-tables-of-pollutants-and-limits

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

This section sets out the monitoring undertaken within 2023 by Shropshire 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

Shropshire Council did not undertake any automatic monitoring in 2023.

3.1.2 Non-Automatic Monitoring Sites

Shropshire Council undertook non-automatic (i.e. passive) monitoring of NO_2 at 62 sites including a duplicate site 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.

Shropshire Council reviewed the number and location of diffusion tubes in 2023 and commenced monitoring at six new positions which are detailed in the tables below, showing the Council's commitment to improving air quality monitoring in the area.

3.2 Individual Pollutants

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

3.2.1 Nitrogen Dioxide (NO_2)

Table A.1 and Table A.2 in Appendix A compare the ratified and adjusted monitored NO_2 annual mean concentrations for the past five years with the air quality objective of 40µg/m^3. Note that the concentration data presented represents the concentration at the location of the monitoring site, following the application of bias adjustment and annualisation, as required (i.e. the values are exclusive of any consideration to fall-off with distance adjustment).

For diffusion tubes, the full 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.

Whilst the overall five-year trends within both Shrewsbury and Bridgnorth AQMA's indicate an overall reduction in levels, there were two sites still exceeding 40µg/m^3 in 2023 and four monitoring locations within 10% of the NO_2 annual mean Air Quality Standard (AQS) objective. The highest annual mean concentration within the Bridgnorth AQMA was 44.5µg/m^3 at monitoring location 83 – Pound Street. Concentrations of NO_2 have decreased over the last three years. However, the exceedance of the air quality objective currently remains at this position. This was the only exceedance within the Bridgnorth AQMA during 2023. It should be noted that two further monitoring locations within the Bridgnorth AQMA we within 10% of the 40µg/m^3 air quality objective, 71 – Pound Street, recorded a concentration within 10%, following distance correction and the concentration was 36.6µg/m^3 at 48 Whitburn Street Downspout which is also within 10%. There were no exceedances of the AQS objective for NO_2 in the wider Bridgnorth area.

The highest concentration of NO_2 within the Shrewsbury AQMA was 39.7µg/m^3. This was recorded at monitoring position 438, located on the façade of the Station on Castle Foregate. The site of diffusion tube 438 is not considered a representative location of relevant exposure. As such, the concentration DTDPT. Following distance correction, the predicted concentration at the sensitive receptor was 39.2µg/m^3 which was still within 10% of the AQS objective and could therefore represent an area of continued exceedance within AQMA.

An exceedance of the annual NO_2 air quality objective was monitored outside the AQMA designations at 233 – Tern Hill, Market Drayton. This location has exceeded the annual mean objective for the last five years, however the diffusion is situated at a road traffic junction and is not representative of relevant exposure. The concentration at the location of nearest exposure was 32.6µg/m^3 in 2023 and therefore not exceeding the air quality objective.

The trends in Bridgnorth, Shrewsbury and the wider local authority area are detailed in Figures A.1 – A.4.

3.2.2 Particulate Matter (PM_{10} and $PM_{2.5}$)

Shropshire Council do not monitor PM_{10} or $PM_{2.5}$ within the local authority area.

3.2.3 Sulphur Dioxide (SO_2)

Shropshire Council do not monitor SO_2 within the local authority area.

Appendix A: Monitoring Results

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

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube Co-located with a Continuous Analyser?	Tube Height (m)
1	1 - Discount Store (Opp Clock Tower)	Roadside	371951	292992	NO_2	No	0.1	1.5	No	2.5
2	2 - The Albion (Tumbledown) Downspout	Roadside	349405	312972	NO_2	Shrewsbury No.3 AQMA	0.1	2.0	No	2.0
3	3 - 75 Scotland Street, lamp post	Roadside	339731	334685	NO_2	No	0.1	2.0	No	3.0
4	3 - Parking Sign Nexus Apartments, Roushill, SY1 1PT	Kerbside	349077	312701	NO_2	Shrewsbury No.3 AQMA	0.1	0.5	No	2.0
9	09 - Lamp post between Squirrel Court & Pound Street	Roadside	371351	293077	NO_2	Bridgnorth AQMA	0.1	1.4	No	2.5
20	20 - Bryan & Knott Bridgnorth	Roadside	371580	293257	NO_2	No	0.0	3.8	No	2.0
27	27 - Smithfield	Roadside	371397	293179	NO_2	No	0.1	3.3	No	2.0
28	28 - 50 Whitburn Street	Roadside	371321	293131	NO_2	Bridgnorth AQMA	0.2	1.7	No	2.0
29	29 - Adj Rutters	Roadside	371297	293108	NO_2	Bridgnorth AQMA	1.0	3.3	No	2.0
58	58 - 8 Underhill Street	Roadside	371795	292947	NO_2	No	0.0	1.9	No	2.0
59	59 - 2A Underhill Street	Roadside	371799	293011	NO_2	No	0.0	1.6	No	2.0
62	62 - 2 Mill Street	Roadside	372031	292993	NO_2	No	0.0	1.0	No	2.0
65	65 - 49 Mill Street	Roadside	372026	293058	NO_2	No	0.0	2.1	No	2.0
71	71 - 6 Pound Street, (On Pelican Crossing)	Roadside	371346	293086	NO_2	Bridgnorth AQMA	0.3	1.1	No	2.0

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) [1]	Distance to kerb of nearest road (m) [2]	Tube Co-located with a Continuous Analyser?	Tube Height (m)
72	72 - Mini Roundabout - Listley Street (lamp column)	Roadside	371375	293066	NO_2	Bridgnorth AQMA	4.4	1.6	No	2.0
73	73 - 18 Pound Street (Downspout)	Roadside	371354	293089	NO_2	Bridgnorth AQMA	0.1	1.2	No	2.0
74	74 - Lamp Column 48 - New Build	Roadside	371340	293125	NO_2	Bridgnorth AQMA	1.9	2.0	No	2.0
75	75 - Lamp Column 9 - Steps of new build	Roadside	371345	293106	NO_2	Bridgnorth AQMA	1.1	3.0	No	2.0
76	76 - Higgs/Stanton Ralph (Opp 45 Whitburn Street)	Roadside	371366	293146	NO_2	Bridgnorth AQMA	0.1	1.5	No	2.0
77	77 - 39/40 Whitburn Street Lamp Column	Roadside	371375	293161	NO_2	Bridgnorth AQMA	0.5	2.2	No	2.0
78	78 - Pedestrian Crossing outside 42 Whitburn Street	Roadside	371360	293152	NO_2	Bridgnorth AQMA	0.2	1.7	No	2.0
79	79 - Chill Salon Downspout between green and black door	Roadside	371346	293143	NO_2	Bridgnorth AQMA	0.1	1.5	No	2.0
80	80 - 48 Whitburn Street Downspout	Roadside	371334	293139	NO_2	Bridgnorth AQMA	0.1	1.8	No	2.0
81	81 - Stretton House 3 Salop Street Downspout	Roadside	371288	293119	NO_2	No	0.1	1.2	No	2.0
82	82 - Pedestrian Crossing outside 8 Salop Street	Roadside	371264	293120	NO_2	No	2.5	0.7	No	2.0
83	83 - Downspout of 2 Pound Street Bridgnorth	Roadside	371341	293096	NO_2	Bridgnorth AQMA	0.0	0.5	No	2.0
223	223 - Tern Hill Barn	Roadside	363640	332232	NO_2	No	2.2	1.3	No	2.0
305	305 - 74 Castle Street	Roadside	328978	329879	NO_2	No	0.1	1.9	No	2.0

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube Co-located with a Continuous Analyser?	Tube Height (m)
314	314 - Downspout on 10 Upper Church Street (Bookbinders)	Roadside	328866	329269	NO_2	No	0.1	1.3	No	2.0
400	400 - A49 Bayston Hill opp 3 Fishes	Roadside	348726	308959	NO_2	No	0.0	1.4	No	2.0
403	403 - Smithfield Road Corner of Victoria Avenue	Roadside	348891	312721	NO_2	Shrewsbury No.3 AQMA	0.0	2.4	No	2.0
404	404 - Town Walls, opp Murivance	Roadside	348889	312326	NO_2	No	0.4	1.8	No	2.0
407	407 - Dogpole (Car Entrance)	Roadside	349330	312503	NO_2	Shrewsbury No.3 AQMA	0.2	2.1	No	2.0
413	413 - Ravens Meadow, outside 23 Meadow Terrace	Roadside	349283	312851	NO_2	Shrewsbury No.3 AQMA	1.7	0.7	No	2.0
420	420 - Outside 25 Castle Street	Roadside	349396	312742	NO_2	Shrewsbury No.3 AQMA	1.0	3.0	No	2.0
428A	428A - Brittania Inn (Post office lamp post)	Roadside	349445	313090	NO_2	Shrewsbury No.3 AQMA	N/A	2.0	No	2.0
429	429 - 6a Severn Steps adj lamp post	Roadside	349237	312900	NO_2	Shrewsbury No.3 AQMA	0.1	1.5	No	2.0
436, 437	437 - The Albert (duplicate)	Roadside	349283	312889	NO_2	Shrewsbury No.3 AQMA	14.0	2.8	No	2.0
438	438 - Station Hotel 4 Castle Foregate (facade)	Roadside	349400	312954	NO_2	Shrewsbury No.3 AQMA	0.1	1.2	No	2.0
448	448 - Dalton Drive (lamp post)	Roadside	345769	313223	NO_2	No	0.1	2.8	No	2.0
449	449 - 2 Vaughan's Cottages (downpipe)	Roadside	346796	313509	NO_2	No	5.5	0.2	No	2.0
457B	457B - Ellesmere Road / Berwick Road (Traffic Signal)	Roadside	349243	313457	NO_2	No	0.1	1.4	No	2.0

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) [1]	Distance to kerb of nearest road (m) [2]	Tube Co-located with a Continuous Analyser?	Tube Height (m)
457	457 - Ellesmere Road / Berwick Road between Nos. 37/38	Roadside	349235	313441	NO_2	No	0.4	0.9	No	2.0
458	458 - Under Railway Bridge Over Castle Foregate	Roadside	349426	313028	NO_2	Shrewsbury No.3 AQMA	N/A	2.0	No	2.0
459	459 - Post in car park outside railway station	Roadside	349424	312936	NO_2	Shrewsbury No.3 AQMA	N/A	18.0	No	2.0
461	461 - Junction of Dogpole with High St/Wyle Cop	Roadside	349327	312389	NO_2	Shrewsbury No.3 AQMA	2.0	2.0	No	2.0
462	462 - Welshpool Road	Roadside	345248	313412	NO_2	No	2.0	13.0	No	2.5
468	468 - Downpipe on Front of Number 3 Witchurch Road	Roadside	350376	314599	NO_2	No	0.0	7.3	No	2.0
474	474 - Lamp Column, 2 Whiterock Cottages	Roadside	348647	308771	NO_2	No	0.9	1.7	No	2.0
476	476 - Chester Street on street parking bay height sensor post	Roadside	349360	312962	NO_2	Shrewsbury No.3 AQMA	0.3	1.4	No	2.0
477	477 - Bus opp Community Church, Chester St	Roadside	349299	313108	NO_2	Shrewsbury No.3 AQMA	1.0	2.1	No	2.0
480	480 - lamp post by takeaway near Britaninia Inn	Roadside	349466	313151	NO_2	Shrewsbury No.3 AQMA	0.5	2.6	No	2.0
482	482 - Royal Mail Lamp column by traffic lights	Roadside	349436	313064	NO_2	Shrewsbury No.3 AQMA	N/A	1.0	No	2.0
485	485 - Frankwell Terrace	Roadside	348815	312854	NO_2	Shrewsbury No.3 AQMA	1.4	2.6	No	2.0
487	487 - English Bridge by St Julian Friars (No Entry Sign)	Roadside	349529	312328	NO_2	Shrewsbury No.3 AQMA	7.7	3.0	No	2.0
488	488 – Lamp post infront of Hobbit House	Roadside	349223	313449	NO_2	No	1.0	1.0	No	2.0

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube Co-located with a Continuous Analyser?	Tube Height (m)
	Berwick Road Shrewsbury Corner of Ellesmere Rd and Berwick Rd									
489	489 - Bus stop outside 9 Berwick Road Shrewsbury	Roadside	349148	313444	NO_2	No	0.2	0.6	No	2.0
490	490 – Lamp post outside 41 Berwick Road Shrewsbury	Roadside	348964	313466	NO_2	No	10.0	0.2	No	2.0
501	501 - Corner of 25 Chester Street / Cross Street	Roadside	349349	313071	NO_2	Shrewsbury No.3 AQMA	1.8	1.6	No	2.0
502	502 - Post outside Cambrian House	Roadside	349364	312998	NO_2	Shrewsbury No.3 AQMA	0.5	2.5	No	2.0
503	503 - Downspout 68-69 Frankwell	Roadside	348611	312969	NO_2	No	0.1	0.7	No	2.0
504	504 - Lamp Column 9-11 St Georges Court	Roadside	348669	312885	NO_2	Shrewsbury No.3 AQMA	1.0	2.4	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.2 – Annual Mean NO_2 Monitoring Results: Non-Automatic Monitoring (µg/m^3)

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) [1]	Valid Data Capture 2023 (%) [2]	2019	2020	2021	2022	2023
1	371951	292992	Roadside	32.7	32.7	-	-	-	-	21.3
2	349405	312972	Roadside	15.4	15.4	-	-	-	-	-
3	339731	334685	Roadside	32.7	32.7	-	-	-	-	21.6
4	349077	312701	Kerbside	9.6	9.6	-	-	-	-	-
9	371351	293077	Roadside	25.0	25.0	-	-	-	-	27.8
20	371580	293257	Roadside	75.0	75.0	20.8	15.0	17.8	19.8	17.6
27	371397	293179	Roadside	67.3	67.3	25.8	19.7	23.6	15.8	15.9
28	371321	293131	Roadside	75.0	75.0	-	-	36.7	35.8	33.7
29	371297	293108	Roadside	75.0	75.0	28.5	21.6	23.9	23.3	22.5
58	371795	292947	Roadside	75.0	75.0	28.5	26.2	29.1	27.6	26.3
59	371799	293011	Roadside	75.0	75.0	28.5	23.4	24.0	24.5	22.9
62	372031	292993	Roadside	57.7	57.7	-	25.2	29.1	28.1	27.1
65	372026	293058	Roadside	75.0	75.0	-	24.6	28.3	25.5	24.6
71	371346	293086	Roadside	75.0	75.0	**49.1**	**40.8**	**43.2**	**41.5**	39.9
72	371375	293066	Roadside	65.4	65.4	28.2	22.4	23.8	22.6	19.4
73	371354	293089	Roadside	75.0	75.0	34.2	26.5	28.7	27.3	26.9
74	371340	293125	Roadside	65.4	65.4	29.4	22.7	25.2	24.4	21.1

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) [1]	Valid Data Capture 2023 (%) [2]	2019	2020	2021	2022	2023
75	371345	293106	Roadside	75.0	75.0	27.6	22.4	24.1	23.9	22.0
76	371366	293146	Roadside	75.0	75.0	31.8	28.4	28.8	29.5	28.0
77	371375	293161	Roadside	65.4	65.4	38.7	30.4	29.9	29.2	29.3
78	371360	293152	Roadside	75.0	75.0	38.5	32.2	35.9	32.9	31.9
79	371346	293143	Roadside	75.0	75.0	**42.3**	35.3	36.9	35.6	33.8
80	371334	293139	Roadside	75.0	75.0	**43.6**	37.2	**40.3**	37.5	36.6
81	371288	293119	Roadside	75.0	75.0	26.7	20.1	23.3	21.3	23.5
82	371264	293120	Roadside	57.7	57.7	22.7	17.0	20.4	19.1	17.4
83	371341	293096	Roadside	75.0	75.0	-	-	**49.4**	**47.8**	**44.5**
223	363640	332232	Roadside	82.7	82.7	**42.8**	**43.1**	**45.9**	**43.9**	**40.1**
305	328978	329879	Roadside	82.7	82.7	27.2	19.9	20.0	21.6	21.0
314	328866	329269	Roadside	75.0	75.0	33.9	27.2	25.9	27.2	26.6
400	348726	308959	Roadside	82.7	82.7	29.3	22.5	22.3	21.3	21.9
403	348891	312721	Roadside	92.3	92.3	30.8	23.0	23.0	25.0	22.4
404	348889	312326	Roadside	82.7	82.7	18.2	12.0	12.0	11.8	11.0
407	349330	312503	Roadside	100.0	100.0	23.4	18.1	19.6	19.8	18.1
413	349283	312851	Roadside	92.3	92.3	26.3	21.2	22.7	23.1	23.1
420	349396	312742	Roadside	100.0	100.0	26.3	21.2	21.9	23.3	21.1

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) [1]	Valid Data Capture 2023 (%) [2]	2019	2020	2021	2022	2023
428A	349445	313090	Roadside	90.4	90.4	-	-	-	32.4	31.2
429	349237	312900	Roadside	90.4	90.4	28.8	21.8	22.7	24.1	23.4
436, 437	349283	312889	Roadside	100.0	100.0				28.7	26.6
438	349400	312954	Roadside	92.3	92.3	**53.0**	**40.2**	**43.9**	**43.4**	39.7
448	345769	313223	Roadside	92.3	92.3	9.1	7.2	7.0	7.1	6.0
449	346796	313509	Roadside	82.7	82.7	17.2	13.5	14.7	15.0	16.3
457B	349243	313457	Roadside	90.4	90.4	-	-	-	25.5	24.1
457	349235	313441	Roadside	92.3	92.3	-	-	-	28.3	26.4
458	349426	313028	Roadside	100.0	100.0	**48.6**	38.5	**42.2**	**42.6**	38.3
459	349424	312936	Roadside	100.0	100.0	35.6	26.6	29.2	29.8	27.3
461	349327	312389	Roadside	100.0	100.0	26.2	18.7	20.1	21.3	19.2
462	345248	313412	Roadside	32.7	32.7	-	-	-	-	13.7
468	350376	314599	Roadside	75.0	75.0	20.9	27.5	17.7	18.0	17.9
474	348647	308771	Roadside	82.7	82.7	**42.1**	36.3	35.2	33.0	31.5
476	349360	312962	Roadside	100.0	100.0	29.1	22.5	24.4	25.0	23.1
477	349299	313108	Roadside	100.0	100.0	29.8	23.1	23.9	24.8	22.0
480	349466	313151	Roadside	100.0	100.0	31.6	24.8	27.9	28.3	27.1
482	349436	313064	Roadside	100.0	100.0	38.2	32.3	32.9	31.7	30.2
485	348815	312854	Roadside	100.0	100.0	26.1	20.3	22.4	22.9	20.8

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2023 (%) (2)	2019	2020	2021	2022	2023
487	349529	312328	Roadside	84.6	84.6	21.9	17.5	17.5	17.9	15.7
488	349223	313449	Roadside	92.3	92.3	-	-	22.9	22.5	20.9
489	349148	313444	Roadside	100.0	100.0	-	-	18.6	18.4	17.0
490	348964	313466	Roadside	100.0	100.0	-	-	13.3	14.5	12.4
501	349349	313071	Roadside	100.0	100.0	33.5	24.6	27.8	28.5	25.1
502	349364	312998	Roadside	100.0	100.0	-	-	-	22.0	20.7
503	348611	312969	Roadside	90.4	90.4	-	-	26.1	23.6	22.6
504	348669	312885	Roadside	90.4	90.4	-	-	-	23.0	20.4

☒ **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 µg/m^3.

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

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

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

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

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

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

Figure A.1 – Trends in Annual Mean NO_2 Concentrations in Bridgnorth AQMA

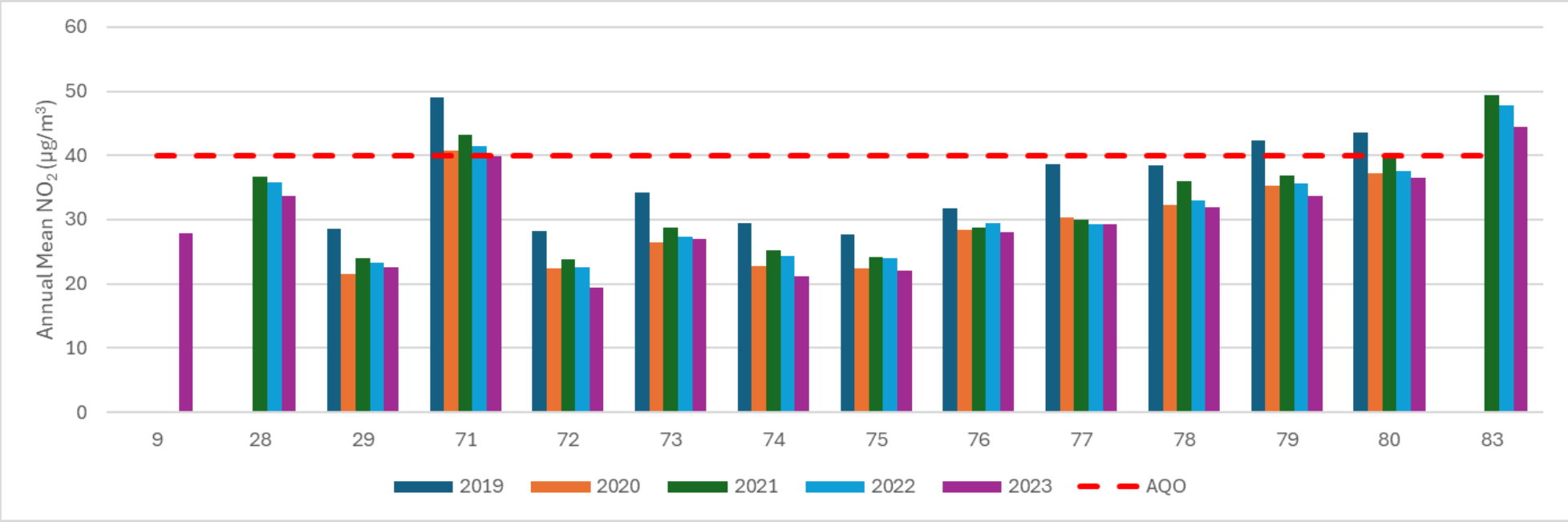


Figure A.2 – Trends in Annual Mean NO_2 Concentrations in Shrewsbury AQMA

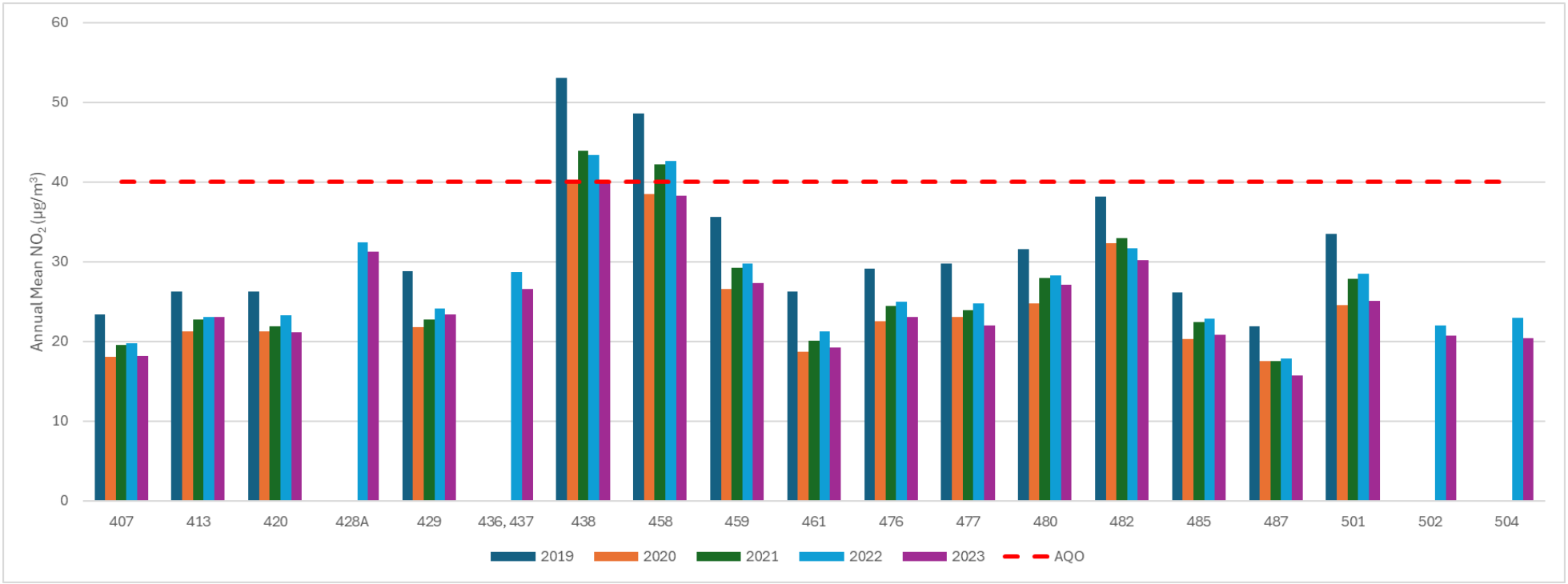


Figure A.3 – Trends in Annual Mean NO_2 Concentrations outside the AQMAs (part 1)

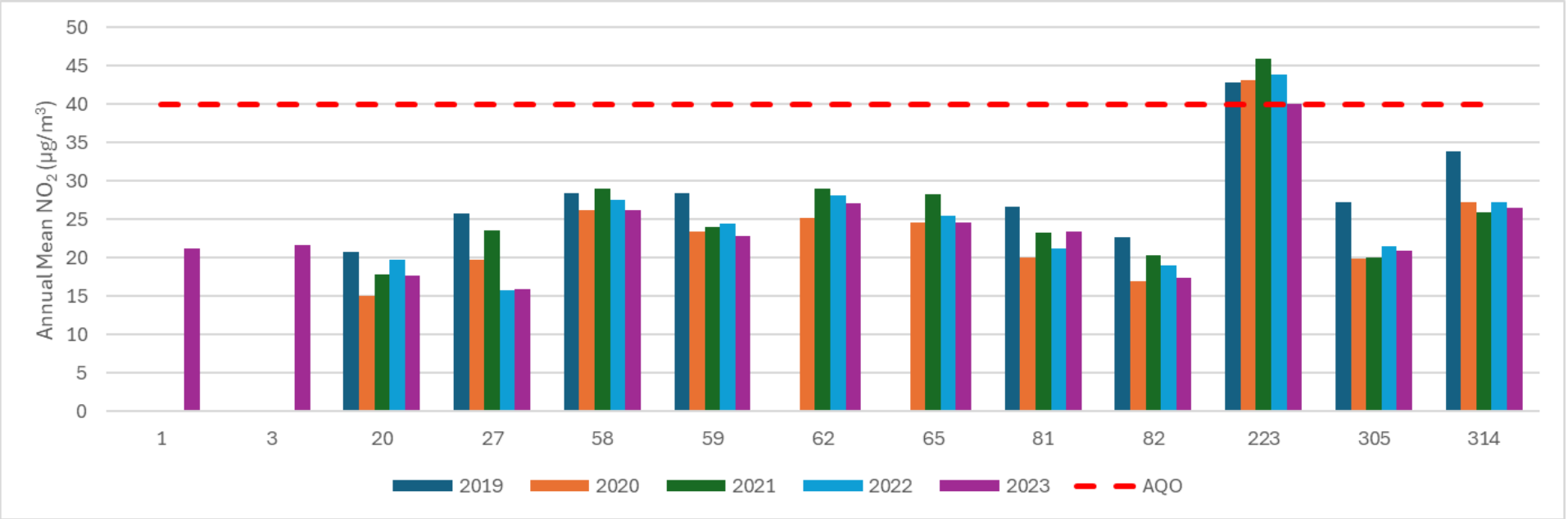
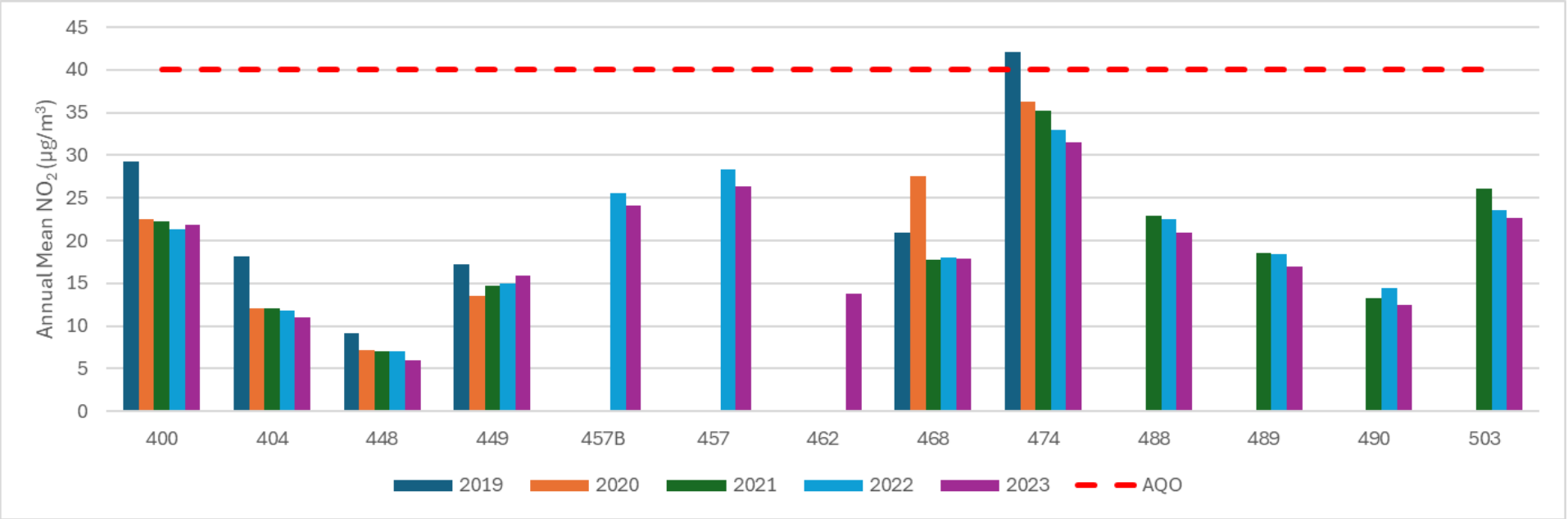


Figure A.4 – Trends in Annual Mean NO_2 Concentrations outside the AQMAs (part 2)



Appendix B: Full Monthly Diffusion Tube Results for 2023

Table B.1 – NO_2 2023 Diffusion Tube Results ($\mu g/m^3$)

DT ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Jan	Feb	Mar	Apr	May*	Jun*	Jul*	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Annualised and Bias Adjusted (0.81)	Annual Mean: Distance Corrected to Nearest Exposure	Comment
1	371951	292992	-	-	-	-	-	-	-	-	29.3	29.6	29.3	28.4	29.2	21.3	-	Monitoring commenced in 2023
2	349405	312972	-	-	-	-	-	-	-	-	42.3	43.3			-	-	-	Monitoring commenced in 2023
3	339731	334685	-	-	-	-	-	-	-	-	29.9	28.9	34.0	25.9	29.7	21.6	-	Monitoring commenced in 2023
4	349077	312701	-	-	-	-	-	-	-	-			26.8		-	-	-	Monitoring commenced in 2023
9	371351	293077	-	-	-	-	-	-	-	-		35.0	44.1	40.5	39.9	27.8	-	Monitoring commenced in 2023
20	371580	293257	25.1	30.5	24.4	24.1	-	-	-	13.6	18.3	19.9	20.2	20.1	21.8	17.6	-	Diffusion tube over exposed May-July 2023, data therefore removed as error
27	371397	293179	17.8	21.6	17.3	17.7	-	-	-	18.5	27.4	29.6	28.0		22.2	15.9	-	Diffusion tube over exposed May-July 2023, data therefore removed as error
28	371321	293131	40.4	50.4	42.8	42.2	-	-	-	31.6	40.6	41.0	44.7	40.7	41.6	33.7	-	Diffusion tube over exposed May-July 2023, data therefore removed as error
29	371297	293108	25.5	31.7	26.3	30.7	-	-	-	22.1	29.0	32.2	28.2	24.6	27.8	22.5	-	Diffusion tube over exposed May-July 2023, data therefore removed as error
58	371795	292947	33.6	40.1	34.0	33.5	-	-	-	27.2	30.6	28.5	34.8	29.9	32.5	26.3	-	Diffusion tube over exposed May-July 2023, data therefore removed as error
59	371799	293011	29.3	34.8	25.8	25.1	-	-	-	20.6	26.5	30.6	31.9	29.8	28.3	22.9	-	Diffusion tube over exposed May-July 2023, data therefore removed as error
62	372031	292993	31.5	40.3	35.1	40.9	-	-	-	25.9	31.1	-	-	30.5	33.6	27.1	-	Diffusion tube over exposed May-July 2023, data therefore removed as error
65	372026	293058	31.2	37.6	33.1	29.1	-	-	-	25.7	29.7	25.5	31.7	30.3	30.4	24.6	-	Diffusion tube over exposed May-July 2023, data therefore removed as error
71	371346	293086	49.5	59.6	51.0	45.0	-	-	-	39.7	50.8	45.3	52.4	49.7	49.2	39.9	38.2	Diffusion tube over exposed May-July 2023, data therefore removed as error
72	371375	293066	26.9	31.3	27.5	26.0	-	-	-	-	26.9	28.6	28.3	24.1	27.4	19.4	-	Diffusion tube over exposed May-July 2023, data therefore removed as error
73	371354	293089	30.7	39.6	34.5	33.1	-	-	-	26.3	32.3	35.5	37.4	29.7	33.2	26.9	-	Diffusion tube over exposed May-July 2023, data therefore removed as error
74	371340	293125	28.4	33.5	30.5	29.9	-	-	-	-	28.9	32.1	28.7	26.7	29.8	21.1	-	Diffusion tube over exposed May-July 2023, data therefore removed as error
75	371345	293106	26.0	32.1	27.9	27.5	-	-	-	22.2	27.1	27.3	28.3	26.2	27.2	22.0	-	Diffusion tube over exposed May-July 2023, data therefore removed as error

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
76	371366	293146	34.2	39.2	35.7	33.0	-	-	-	27.3	34.1	36.3	34.9	36.2	34.5	28.0	-	Diffusion tube over exposed May-July 2023, data therefore removed as error
77	371375	293161	37.0	46.6	-	59.6	-	-	-	29.3	33.9	34.1	42.1	32.4	39.4	29.3	-	Diffusion tube over exposed May-July 2023, data therefore removed as error
78	371360	293152	41.9	49.6	38.9	36.3	-	-	-	33.2	38.7	33.2	45.7	36.4	39.3	31.9	-	Diffusion tube over exposed May-July 2023, data therefore removed as error
79	371346	293143	44.0	47.1	41.1	39.6	-	-	-	36.0	41.4	39.0	47.3	39.6	41.7	33.8	-	Diffusion tube over exposed May-July 2023, data therefore removed as error
80	371334	293139	45.6	59.2	45.5	41.6	-	-	-	37.1	43.0	42.3	49.8	42.1	45.1	36.6	36.2	Diffusion tube over exposed May-July 2023, data therefore removed as error
81	371288	293119	55.8	29.0	27.9	29.1	-	-	-	19.8	23.7	26.8	27.9	21.2	29.0	23.5	-	Diffusion tube over exposed May-July 2023, data therefore removed as error
82	371264	293120	22.4	26.6	25.0	-	-	-	-		22.5	25.2	28.7	22.0	24.6	17.4	-	Diffusion tube over exposed May-July 2023, data therefore removed as error
83	371341	293096	55.2	59.2	55.7	50.9	-	-	-	44.5	57.7	52.9	63.1	55.2	54.9	**44.5**	-	Diffusion tube over exposed May-July 2023, data therefore removed as error
223	363640	332232	47.3	53.2	49.0	55.5	44.7	-	-	40.3	61.5	49.4	53.5	40.7	49.5	**40.1**	32.6	Diffusion tube over exposed May-July 2023, data therefore removed as error
305	328978	329879	29.0	28.9	24.9	24.4	20.6	-	-	20.2	24.4	28.9	32.3	25.5	25.9	21.0	-	Diffusion tube over exposed May-July 2023, data therefore removed as error
314	328866	329269	42.0	36.7	33.8	26.5	-	-	-	25.5	29.9	31.5	37.4	32.1	32.8	26.6	-	Diffusion tube over exposed May-July 2023, data therefore removed as error
400	348726	308959	27.6	29.4	25.7	25.5	22.6	-	-	23.3	25.0	28.9	39.9	22.3	27.0	21.9	-	Diffusion tube over exposed May-July 2023, data therefore removed as error
403	348891	312721	30.8	32.3	29.2	30.1	22.8	26.7	21.9	23.3	27.6	29.2	30.3		27.6	22.4	-	
404	348889	312326	14.0	17.2	15.2		10.5	10.7	7.0		12.7	16.8	17.9	13.1	13.5	11.0	-	
407	349330	312503	22.8	25.5	23.0	26.2	20.9	23.8	13.9	18.7	21.1	25.1	26.6	20.9	22.4	18.1	-	
413	349283	312851	26.5	31.4	25.7	28.7	24.0	26.8		35.1	27.5	30.6	31.3	25.9	28.5	23.1	-	
420	349396	312742	25.8	33.2	27.3	28.5	26.8	24.1	17.3	22.9	27.4	27.1	29.7	22.9	26.1	21.1	-	
428A	349445	313090	33.9	42.0	41.1	46.9	35.9	38.1	27.6		39.7	33.6	53.0	32.2	38.5	31.2	-	
429	349237	312900	27.0	34.6	27.4	30.8	24.8		22.3	22.9	29.9	32.5	37.1	28.0	28.9	23.4	-	
436	349283	312889	31.8	35.1	33.7	36.8	32.5	35.9	26.4	28.1	35.8	37.0	34.9	31.1	-	-	-	Duplicate Site with 436 and 437 - Annual data provided for 437 only
437	349283	312889	30.2	35.1	34.1	37.4	36.0	33.9	26.6	29.9	30.1	27.2	38.1	29.6	32.8	26.6	-	Duplicate Site with 436 and 437 - Annual data provided for 437 only
438	349400	312954	44.9	58.4	53.0	56.1	61.0	49.4	36.5	43.7	49.0	48.9	38.4		49.0	39.7	39.2	

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
448	345769	313223	10.4	10.2	7.5	7.5	4.7	4.9	4.0	5.1	6.8	9.5	11.2		7.4	6.0	-	
449	346796	313509	17.8	19.5	17.0	19.9	15.5	32.8	-	-	17.6	21.5	20.5	15.0	19.7	16.0	-	Diffusion tube over exposed Jun-Jul 203, data therefore removed as error
457B	349243	313457	32.5	35.4	30.0	30.9	36.6	27.2	21.5	26.1	31.9	32.0		23.8	29.8	24.1	-	
457	349235	313441	26.8	41.7	32.9	32.6	29.9	31.0	17.7	46.8	31.4	31.7	36.1		32.6	26.4	-	
458	349426	313028	47.2	55.9	51.0	53.2	52.0	49.5	40.7	45.3	47.7	47.4	34.0	43.6	47.3	38.3	-	
459	349424	312936	33.0	40.8	36.3	38.0	33.5	28.6	26.2	28.0	30.6	35.5	39.3	35.1	33.8	27.3	-	
461	349327	312389	24.8	24.7	24.4	28.5	26.6	24.8	16.3	21.4	16.6	27.7	26.6	21.8	23.7	19.2	-	
462	345248	313412	-	-	-	-	-	-	-	-	15.7	20.7	22.5	16.5	18.8	13.7	-	Monitoring commenced in 2023
468	350376	314599	21.0	22.7	23.0	25.2	-	-	-	16.2	23.9	25.4	22.4	19.1	22.1	17.9	-	Diffusion tube over exposed May-Jul 203, data therefore removed as error
474	348647	308771	42.6	46.3	39.4	40.7	34.3	-	-	32.8	42.4	43.0	30.7	36.5	38.9	31.5	-	Diffusion tube over exposed Jun-Jul 203, data therefore removed as error
476	349360	312962	29.4	33.0	30.6	30.4	26.9	27.0	22.8	23.0	27.7	29.9	33.4	27.5	28.5	23.1	-	
477	349299	313108	28.2	33.7	27.5	27.9	20.9	22.1	23.5	24.9	28.5	29.0	32.1	27.4	27.1	22.0	-	
480	349466	313151	27.3	36.7	34.9	39.5	29.3	33.9	24.1	26.7	36.7	33.5	50.7	28.7	33.5	27.1	-	
482	349436	313064	36.6	47.5	41.9	41.2	34.0	34.9	29.6	30.9	38.9	39.8	36.5	36.2	37.3	30.2	-	
485	348815	312854	23.1	29.3	26.3	29.8	29.1	26.8	16.8	22.7	24.3	28.0	29.4	22.5	25.7	20.8	-	
487	349529	312328	-	-	21.5	21.2	19.2	18.6	11.8	16.1	18.5	22.8	25.0	18.8	19.4	15.7	-	
488	349223	313449	24.1	29.6	26.6	28.8	22.6	24.7	-	20.0	27.9	29.8	26.9	23.2	25.8	20.9	-	
489	349148	313444	19.3	25.2	21.4	23.5	17.7	20.6	14.8	18.8	22.5	24.7	24.0	19.0	20.9	17.0	-	
490	348964	313466	16.0	18.9	16.0	18.3	14.6	14.3	9.9	13.2	12.9	18.0	18.2	13.9	15.4	12.4	-	
501	349349	313071	29.4	35.7	33.0	36.7	31.8	32.1	22.2	26.9	32.6	32.8	35.4	22.8	31.0	25.1	-	
502	349364	312998	19.1	27.2	26.9	33.7	26.9	31.2	16.5	19.9	28.0	30.2	25.2	22.3	25.6	20.7	-	
503	348611	312969	26.5	32.7	28.9	30.9	28.5	27.4	20.4	26.8	28.9	31.7	-	24.6	27.9	22.6	-	
504	348669	312885	28.0	31.4	25.2	26.7	22.9	21.8	20.3	21.2	25.6	28.0	-	26.5	25.2	20.4	-	

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

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

☐ **Local bias adjustment factor used.**

☒ **National bias adjustment factor used.**

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

☒ **Shropshire Council confirm that all 2023 diffusion tube data has been uploaded to the Diffusion Tube Data Entry System.**

Notes:

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

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

See Appendix C for details on bias adjustment and annualisation.

* Due to difficulties experienced by Shropshire Council in 2023, several diffusion tube monitoring locations were overexposed during May, June and July. The concentrations returned by the Gradko for the months of May, June and July were considered anomalous and not consistent with the remaining data. The erroneous data was removed before processing in the Diffusion Tube Data Processing Tool (DTDPT) as detailed within Table B-1. Annualisation was undertaken where necessary to account for reduced data capture at the relevant locations.

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

New or Changed Sources Identified Within Shropshire Council During 2023

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

Additional Air Quality Works Undertaken by Shropshire Council During 2023

During 2023, Shropshire Council commissioned Bureau Veritas to draft a new AQAP for each of the Shrewsbury and Bridgnorth AQMAs which were submitted to Defra in draft in February 2024.

QA/QC of Diffusion Tube Monitoring

Gradko International Ltd supply and analyse Shropshire Council's diffusion tubes. The tubes were prepared using the 20% TEA in water preparation method. During 2023, Shropshire Council's diffusion tube monitoring was carried out in accordance with the 2023 Diffusion Tube Monitoring Calendar for the majority of the calendar year with the exception of May, June and July where there were some variances which affected two diffusion tubes.

Gradko International Ltd, a UKAS accredited laboratory, participate in the AIR-PT scheme for NO_2 diffusion tube analysis and Annual Field Intercomparison Exercise. These provide strict criteria relating to performance that participating laboratories must meet, thereby ensuring that the reported NO_2 concentrations are of a high calibre. In the first four rounds of results during 2023, running form January – October (AIR-PT AR055, AR056, AR058 and AR059), Gradko International Ltd were awarded a score of 100% – the percentage score is an indication of the results deemed satisfactory based upon the z-score of < ±2. At the time of writing this report, the AIR-PT results for October - December 2023 were not available. For all observations during 2023, the precision of NO_2 diffusion tubes supplied by Gradko International Ltd was classified as 'good'. The precision is an indication of the laboratory's performance and consistency in the preparation, analysis and handling of the diffusion tubes (full details of the precision results are available here).

Diffusion Tube Annualisation

Annualisation was undertaken where data capture was more than 25% and less than 75% in the year. A higher proportion of tubes required annualisation than would be preferred due to the overexposure of diffusion tubes in May, June and July alongside additional months where tubes where missing. Annualisation was undertaken using data from the closest three representative background AURN sites in Aston Hill, Leominster and Telford Hollinswood where data capture for NO_2 was greater than 85%. The annualisation process is detailed in Table C.1 below.

Table C.1 – Annualisation Summary (concentrations presented in µg/m^3)

Site ID	Annualisation Factor Aston HIll	Annualisation Factor Leominster	Annualisation Factor Telford Hollinswood	Average Annualisation Factor	Raw Data Annual Mean	Annualised Annual Mean
1	0.9632	0.8963	0.8394	0.8996	29.2	26.2
3	0.9632	0.8963	0.8394	0.8996	29.7	26.7
9	0.9352	0.8597	0.7872	0.8607	39.9	34.3
27	0.9375	0.8522	0.8588	0.8829	22.2	19.6
62	1.0721	0.9464	0.9636	0.9940	33.6	33.4
72	0.9313	0.8542	0.8371	0.8742	27.4	24.0
74	0.9313	0.8542	0.8371	0.8742	29.8	26.1
77	1.0043	0.8729	0.8768	0.9180	39.4	36.2
82	0.9574	0.8327	0.8306	0.8736	24.6	21.5
462	0.9632	0.8963	0.8394	0.8996	18.8	17.0

Diffusion Tube Bias Adjustment Factors

The diffusion tube data presented within the 2023 ASR have been corrected for bias using an adjustment factor. Bias represents the overall tendency of the diffusion tubes to under or over-read relative to the reference chemiluminescence analyser. LAQM.TG22 provides guidance with regard to the application of a bias adjustment factor to correct diffusion tube monitoring. Triplicate co-location studies can be used to determine a local bias factor based on the comparison of diffusion tube results with data taken from NO_x/NO_2 continuous analysers. Alternatively, the national database of diffusion tube co-location surveys provides bias factors for the relevant laboratory and preparation method.

Shropshire Council have applied a national bias adjustment factor of 0.81 to the 2023 monitoring data taken from the National Bias Adjustment Spreadsheet detailed in Figure C.1 below. A summary of bias adjustment factors used by Shropshire 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	03/24	0.81
2022	National	06/23	0.84
2021	National	03/22	0.84
2020	National	06/21	0.81
2019	National	03/20	0.93

Figure C.1 – National Bias Adjustment Spreadsheet

National Diffusion Tube Bias Adjustment Factor Spreadsheet — Spreadsheet Version Number: 03/24

Follow the steps below **in the correct order** to show the results of **relevant** co-location studies
Data only apply to tubes exposed monthly and are not suitable for correcting individual short-term monitoring periods
Whenever presenting adjusted data, you should state the adjustment factor used and the version of the spreadsheet
This spreadsheet will be updated every few months: the factors may therefore be subject to change. This should not discourage their immediate use.

This spreadsheet will be updated at the end of June 2024

LAQM Helpdesk Website

The LAQM Helpdesk is operated on behalf of Defra and the Devolved Administrations by Bureau Veritas, in conjunction with contract partners AECOM and the National Physical Laboratory.

Spreadsheet maintained by the National Physical Laboratory. Original compiled by Air Quality Consultants Ltd.

Step 1: Select the Laboratory that Analyses Your Tubes from the Drop-Down List

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

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

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

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

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

Step 4:

Where there is only one study for a chosen combination, you should use the adjustment factor shown with caution.
Where there is more than one study, use the overall factor[3] shown in blue at the foot of the final column.

If you have your own co-location study then see footnote[5]. If uncertain what to do then contact the Local Air Quality Management Helpdesk at LAQMHelpdesk@bureauveritas.com or 0800 0327953

Analysed By[1]	Method To undo your selection, choose (All) from the pop-up list	Year[4] To undo your selection, choose (All)	Site Type	Local Authority	Length of Study (months)	Diffusion Tube Mean Conc. (Dm) (µg/m³)	Automatic Monitor Mean Conc. (Cm) (µg/m³)	Bias (B)	Tube Precision[6]	Bias Adjustment Factor (A) (Cm/Dm)
Gradko	20% TEA in Water	2023	R	Monmouthshire County Council	11	33	26	26.5%	G	**0.79**
Gradko	20% TEA in water	2023	R	Blackburn With Darwen Bc	12	23	16	43.8%	G	**0.70**
Gradko	20% TEA in water	2023	R	Lancaster City Council	10	35	27	28.6%	G	**0.78**
Gradko	20% TEA in water	2023	R	Eastleigh Borough Council	12	33	26	26.4%	G	**0.79**
Gradko	20% TEA in water	2023	R	Eastleigh Borough Council	12	22	19	12.5%	G	**0.89**
Gradko	20% TEA in water	2023	R	Plymouth City Council	12	35	26	38.3%	S	**0.72**
Gradko	20% TEA in water	2023	R	Plymouth City Council	10	39	31	24.2%	S	**0.80**
Gradko	20% TEA in water	2023	UC	Belfast City Council	10	26	19	38.3%	G	**0.72**
Gradko	20% TEA in water	2023	R	Cheshire West And Chester	12	35	32	10.0%	G	**0.91**
Gradko	20% TEA in water	2023	R	Cheshire West And Chester	10	32	28	14.6%	G	**0.87**
Gradko	20% TEA in water	2023	R	Dudley Mbc	12	27	23	17.1%	G	**0.85**
Gradko	20% TEA in water	2023	UB	Dudley Mbc	12	19	13	45.4%	G	**0.69**
Gradko	20% TEA in water	2023	R	Dudley Mbc	12	40	37	7.7%	G	**0.93**
Gradko	20% TEA in water	2023	R	Gateshead Council	12	23	20	17.7%	G	**0.85**
Gradko	20% TEA in water	2023	R	Gateshead Council	11	23	18	26.9%	G	**0.79**
Gradko	20% TEA in water	2023	R	Gateshead Council	12	27	22	20.7%	G	**0.83**
Gradko	20% TEA in water	2023	R	Gateshead Council	12	29	23	25.9%	G	**0.79**
Gradko	20% TEA in water	2023	R	Gateshead Council	12	30	33	-7.8%	G	**1.08**
Gradko	20% TEA in water	2023	KS	Marylebone Road intercomparison	11	45	38	20.3%	G	**0.83**
Gradko	20% TEA in water	2023	B	South Holland District Council	10	8	7	12.4%	G	**0.89**
Gradko	20% TEA in water	2023	R	Worcestershire	12	12	11	17.4%	G	**0.85**
Gradko	20% TEA in Water	2023	R	Ards And North Down Borough Council	12	33	21	60.2%	G	**0.62**
Gradko	20% TEA in Water	2023	R	Lisburn & Castlereagh City Council	11	24	20	22.1%	G	**0.82**
Gradko	20% TEA in water	2023		**Overall Factor[3] (23 studies)**				Use		**0.81**

NO_2 Fall-off with Distance from the Road

Wherever possible, monitoring locations are representative of exposure. However, where this is not possible, the NO_2 concentration at the nearest location relevant for exposure has been estimated using the Diffusion Tube Data Processing Tool/NO_2 fall-off with distance calculator available on the LAQM Support website. Where appropriate, non-automatic annual mean NO_2 concentrations corrected for distance are presented in Table B.1.

Table C.3 – Non-Automatic NO_2 Fall off With Distance Calculations (concentrations presented in µg/m^3)

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
71	1.1	1.4	39.9	5.9	*38.2*	
80	1.8	1.9	36.6	5.9	*36.2*	
223	1.3	3.5	40.1	4.8	32.6	
438	1.2	1.3	39.7	8.4	*39.2*	
458	2.0	-	38.3	7.4	-	No relevant exposure nearby (within 50m)

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

Figure D.1 – Map of Non-Automatic Monitoring Site - Oswestry

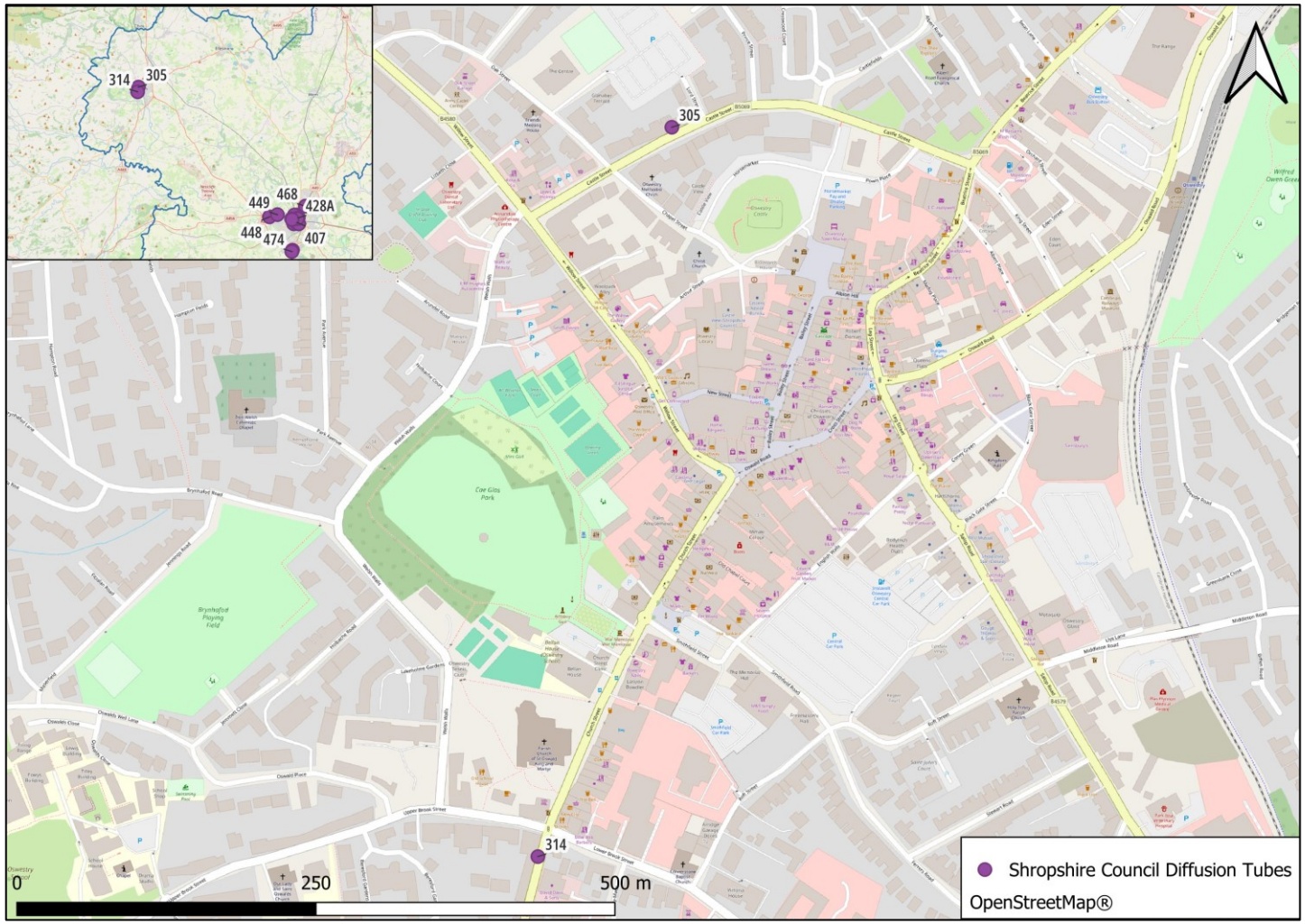


Figure D.2 – Map of Non-Automatic Monitoring Site – Tern Hill

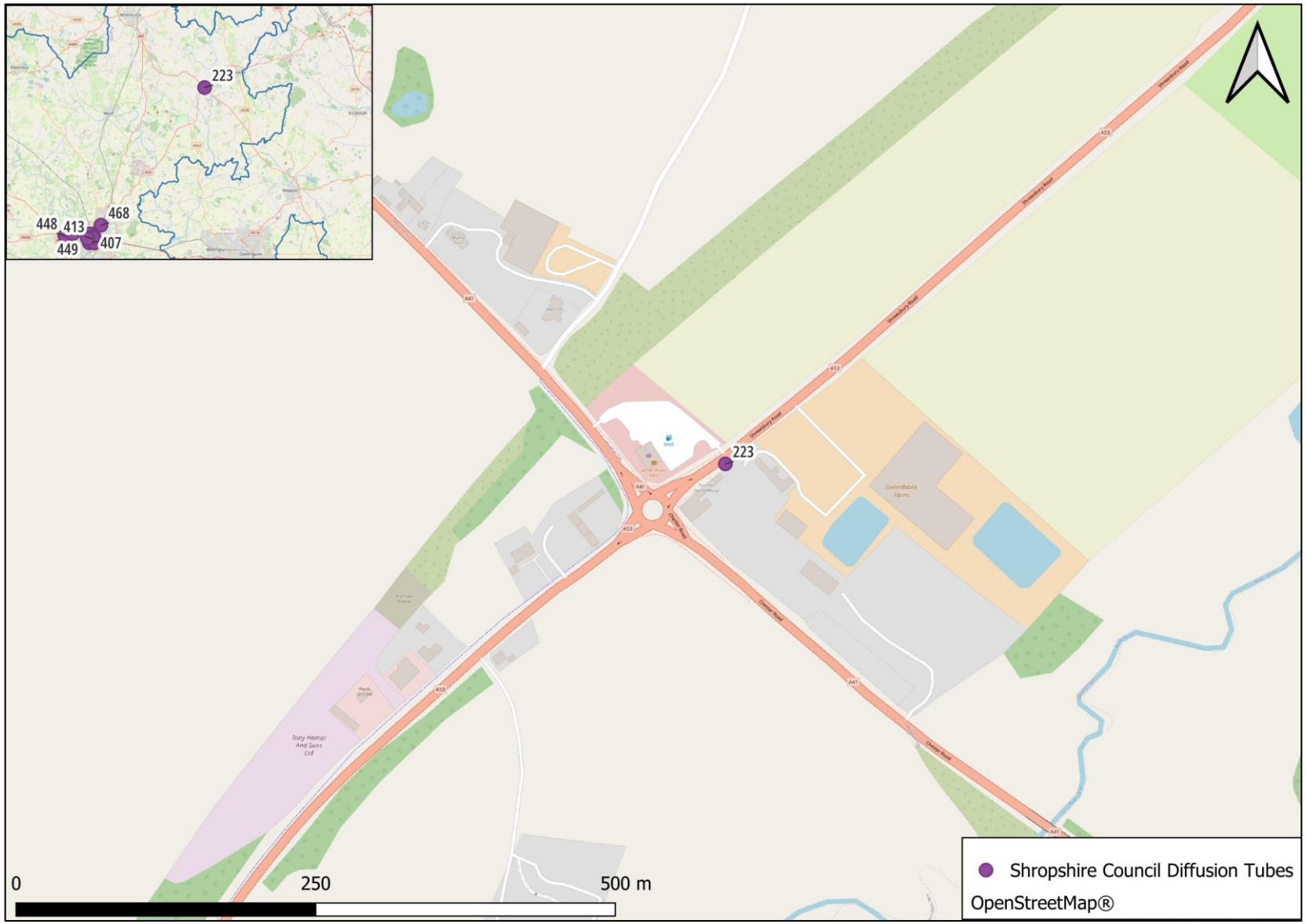


Figure D.3 – Map of Non-Automatic Monitoring Site – Shrewsbury (North)

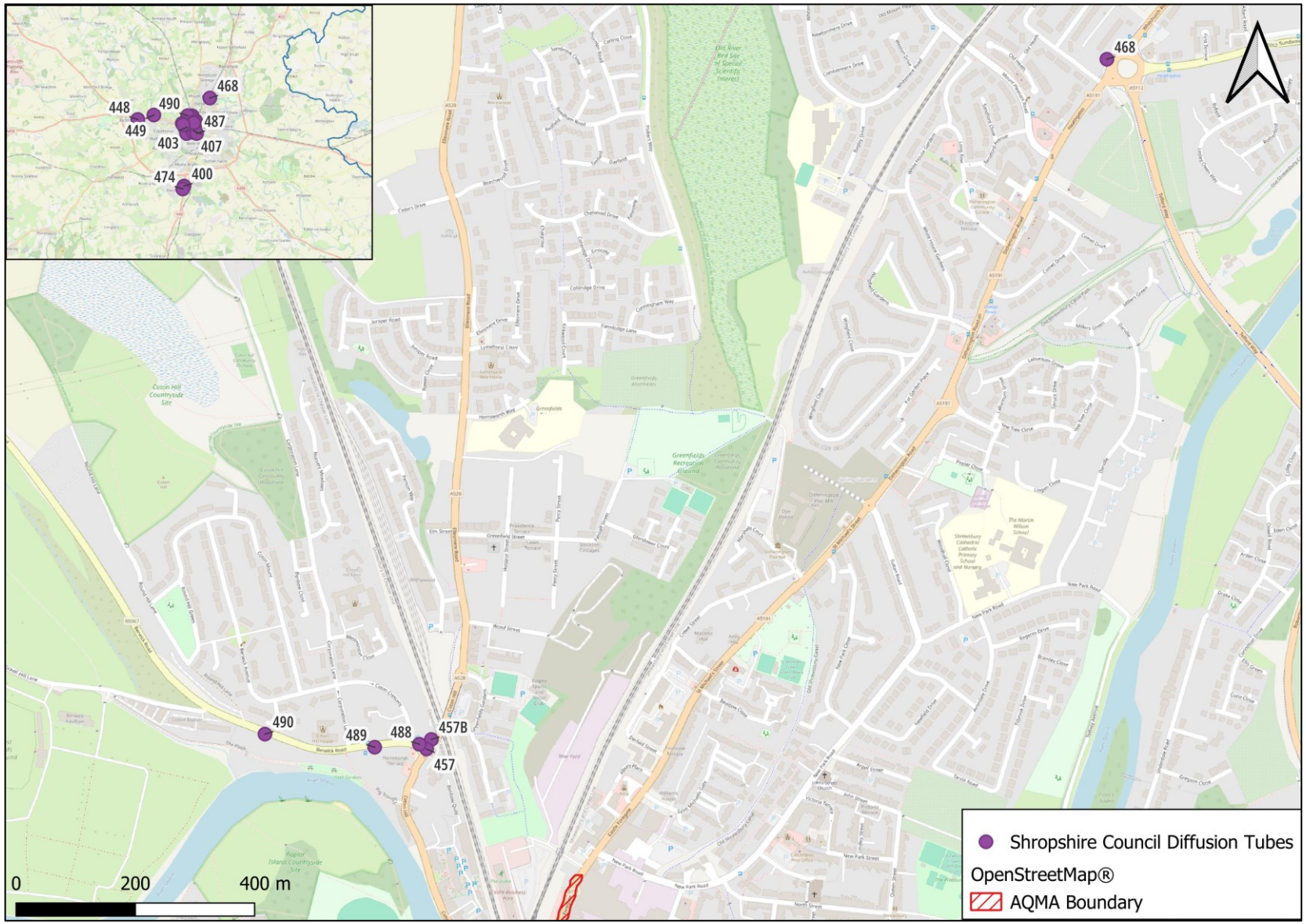


Figure D.4 – Map of Non-Automatic Monitoring Site – Shrewsbury AQMA

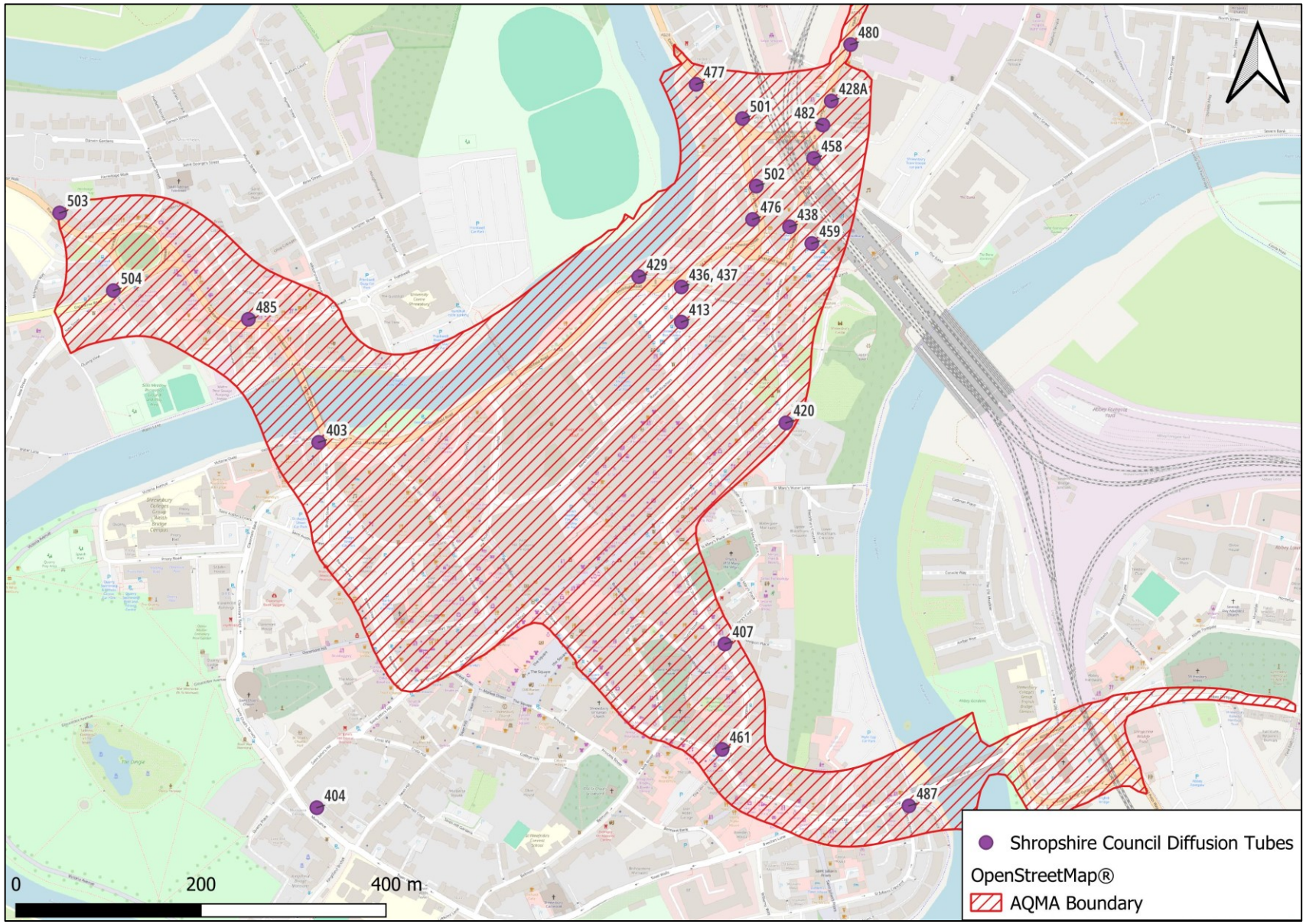


Figure D.5 – Map of Non-Automatic Monitoring Site – Shrewsbury (West)

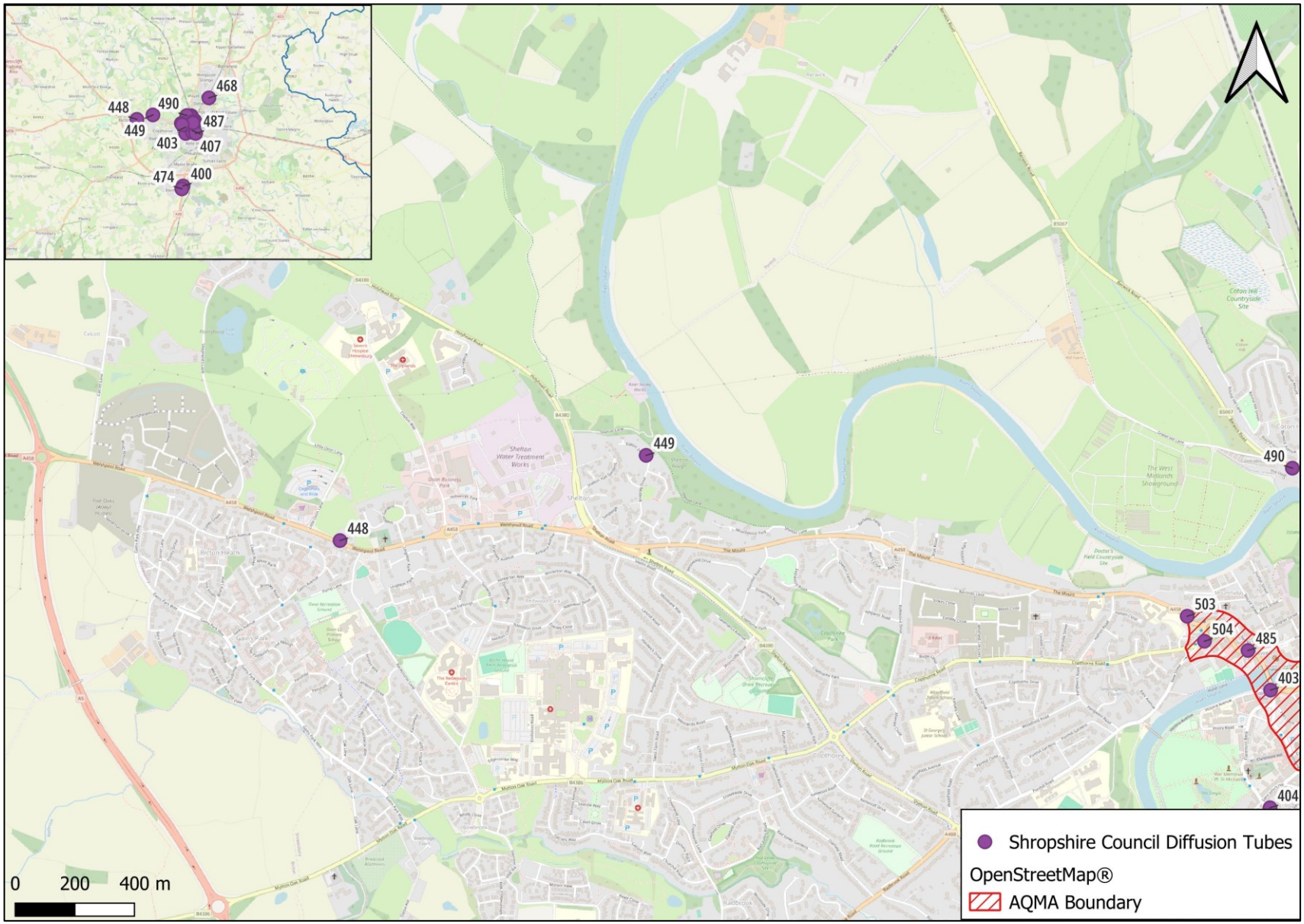


Figure D.6 – Map of Non-Automatic Monitoring Site – Shrewsbury (South)

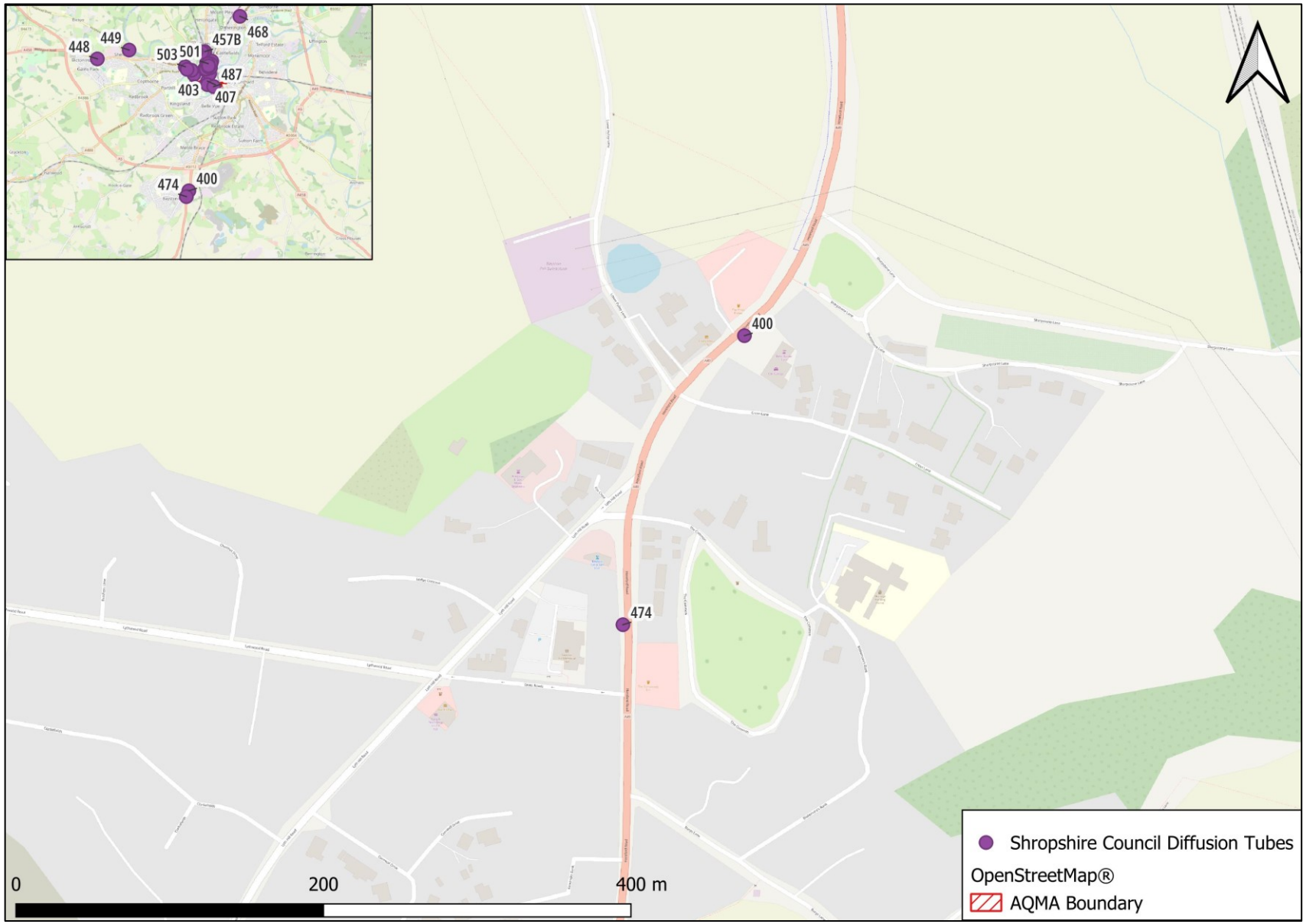


Figure D.7 – Map of Non-Automatic Monitoring Site – Bridgnorth AQMA

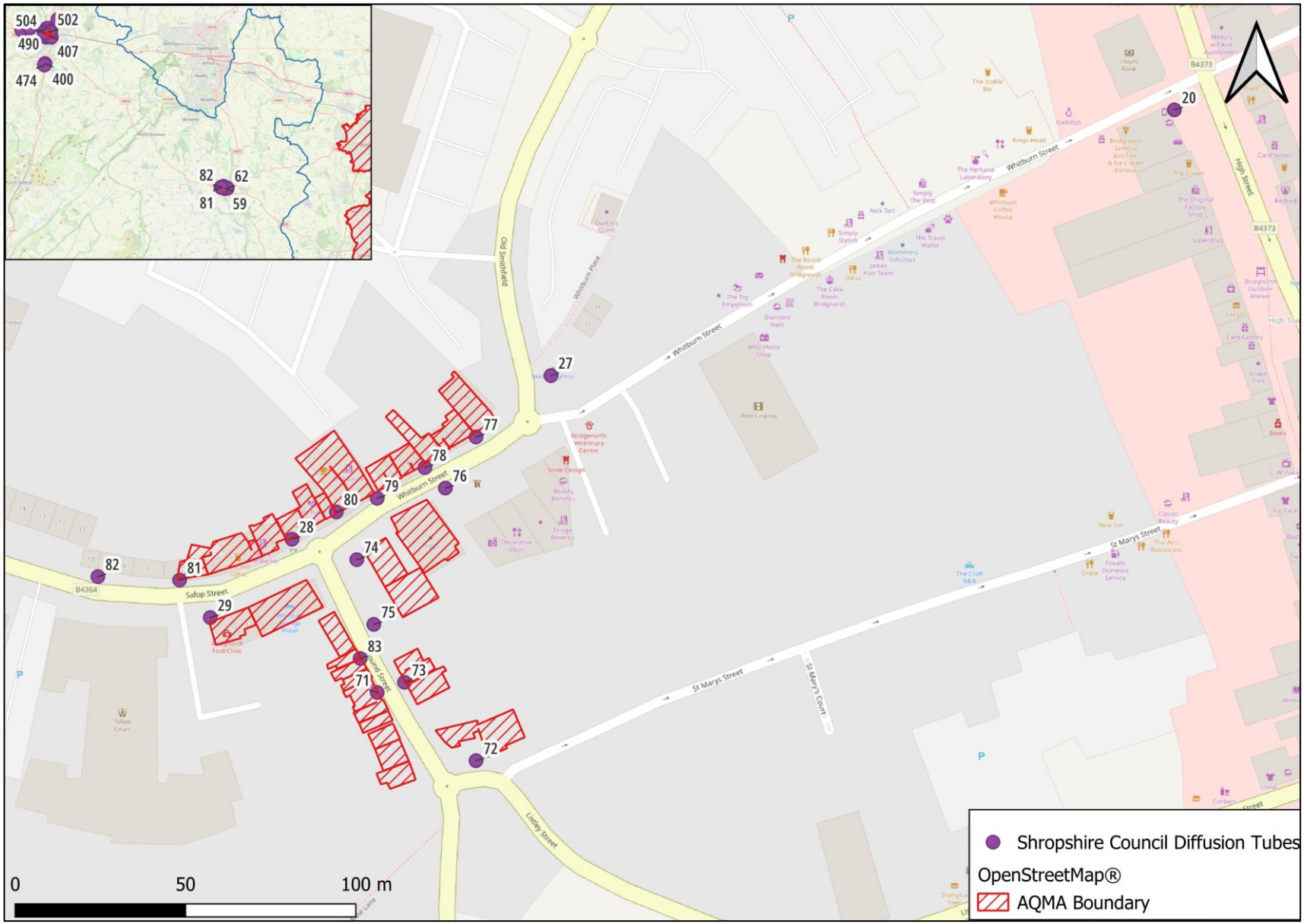
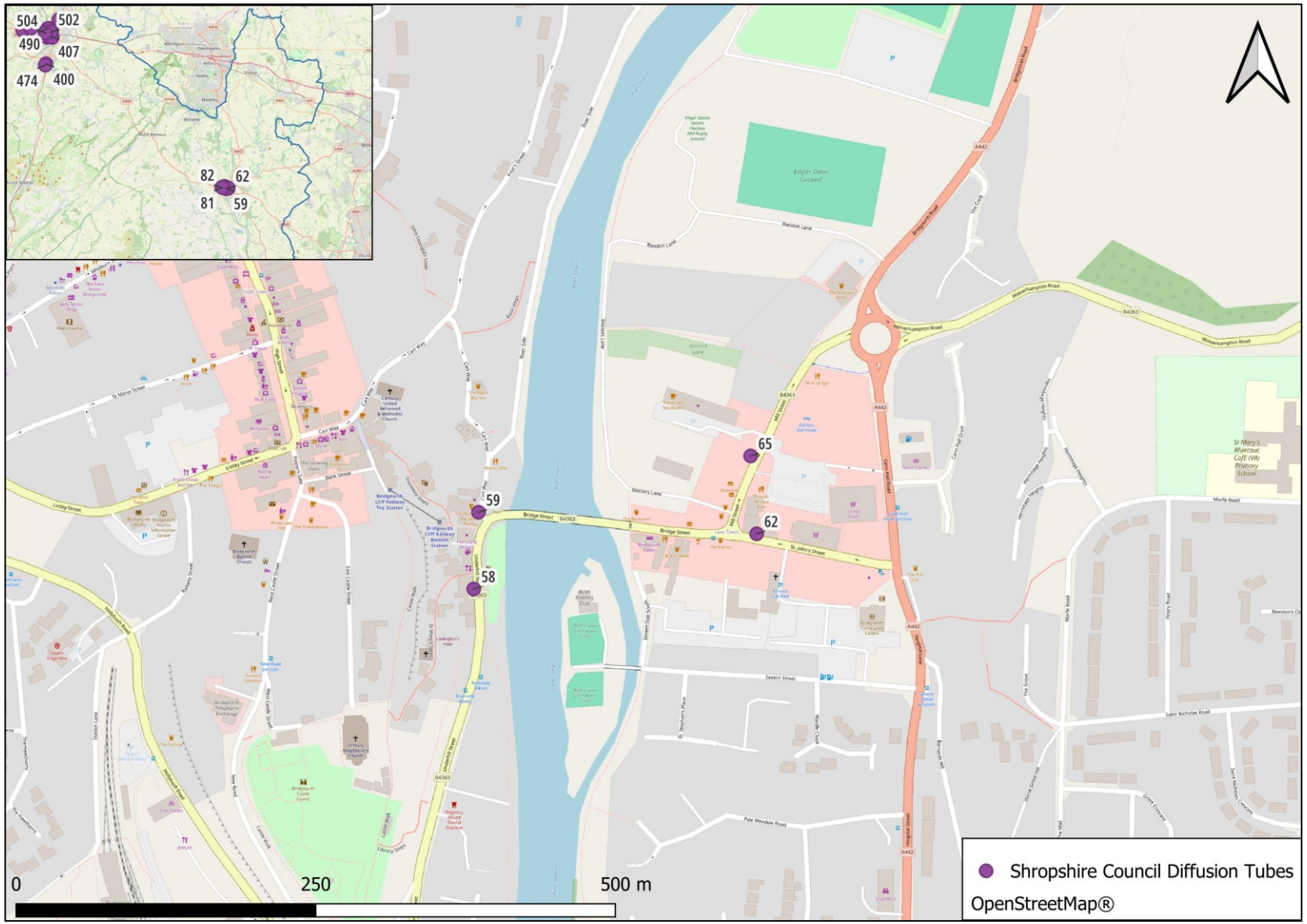


Figure D.8 – Map of Non-Automatic Monitoring Site – Bridgnorth Bridge Street



Appendix E: Summary of Air Quality Objectives in England

Table E.1 – Air Quality Objectives in England[11]

Pollutant	Air Quality Objective: Concentration	Air Quality Objective: Measured as
Nitrogen Dioxide (NO_2)	200µg/m^3 not to be exceeded more than 18 times a year	1-hour mean
Nitrogen Dioxide (NO_2)	40µg/m^3	Annual mean
Particulate Matter (PM_{10})	50µg/m^3, not to be exceeded more than 35 times a year	24-hour mean
Particulate Matter (PM_{10})	40µg/m^3	Annual mean
Sulphur Dioxide (SO_2)	350µg/m^3, not to be exceeded more than 24 times a year	1-hour mean
Sulphur Dioxide (SO_2)	125µg/m^3, not to be exceeded more than 3 times a year	24-hour mean
Sulphur Dioxide (SO_2)	266µg/m^3, not to be exceeded more than 35 times a year	15-minute mean

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

Glossary of Terms

Abbreviation	Description
AQAP	Air Quality Action Plan - A detailed description of measures, outcomes, achievement dates and implementation methods, showing how the local authority intends to achieve air quality limit values'
AQMA	Air Quality Management Area – An area where air pollutant concentrations exceed / are likely to exceed the relevant air quality objectives. AQMAs are declared for specific pollutants and objectives
AQO	Air Quality Objective
ASR	Annual Status Report
AURN	Automatic Urban and Rural Network
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
EV	Electric Vehicle
FDMS	Filter Dynamics Measurement System
HGV	Heavy Goods Vehicle
LAQM	Local Air Quality Management
LCWIP	Local Cycling and Walking Infrastructure Plan
NO_2	Nitrogen Dioxide
NO_x	Nitrogen Oxides
NWRR	North West Relief Road
PM_{10}	Airborne particulate matter with an aerodynamic diameter of 10µm or less
$PM_{2.5}$	Airborne particulate matter with an aerodynamic diameter of 2.5µm or less
QA/QC	Quality Assurance and Quality Control
SO_2	Sulphur Dioxide

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