# 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

June 2024

South Ribble Borough Council

| Information | South Ribble Borough Council Details |
|---|---|
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| **Report Reference Number** | ASR2024 |
| **Date** | June 2024 |

# Executive Summary: Air Quality in Our Area

This report fulfils the requirements of the Local Air Quality Management process as set out in Part IV of the Environment Act (1995), the Air Quality Strategy for England, Scotland, Wales and Northern Ireland 2007 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 exceedances are considered likely, the local authority must then declare an Air Quality Management Area (AQMA) and prepare an Air Quality Action Plan (AQAP) setting out the measures it intends to put in place in pursuit of the objectives.

The work that has been done in respect of air quality in South Ribble over recent years along with traffic management work undertaken by Lancashire County Council, has enabled the revocation of the Penwortham Air Quality Management Area in 2023.

Work has progressed to write a new Air Quality Strategy and update the Air Quality Action Plan, consultation on both documents started in September 2023, with a view to being formally adopted by Council in 2024.

Other work undertaken this year includes,

- Continuation of the air quality monitoring program.
- Launch of DEFRA grant funded Clean Air Crew project to enable all primary schools within South Ribble to have access to an air quality online resource to raise awareness and evoke behaviour change across the borough.
- Continuing to request electric vehicles (EV) charging points on planning applications and to have air quality assessed as part of these.
- Installation of 19 EV charging points (serving 38 car parking bays in public car parks) during 2023 and 2024. 16 of these have been installed with the remaining 3 due shortly.
- Providing 14 Dr Bike events, a free Council service where residents can bring their bike along for repairs and maintenance.
- Delivery of Bikeability, a cycling training scheme designed to give adults and children the skills and confidence to ride a bicycle. During 2023, 1856 participants received the Bikeability training.


South Ribble
Borough Council
BICYCLE REPAIRS DROP-IN EVENT (FREE!)
THE COUNCIL'S DEDICATED CYTECH BIKE MAINTENANCE TEAM WILL BE ON HAND TO FIX YOUR BICYCLE AND LOOK AT ESSENTIAL MAINTENANCE


CLEAN AIR CREW
Launch 29 September 2023

## Air Quality in South Ribble

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.<br>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.<br>$PM_{10}$ refers to particles under 10 micrometres. Fine particulate matter or $PM_{2.5}$ are particles under 2.5 micrometres. |

The principal pollutants of concern within South Ribble are those associated mainly with traffic, these being Nitrogen Dioxide, and Particulate Matter. The Council has historically only monitored Nitrogen Dioxide emissions via a network of diffusion tubes. Although during

[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

2022, three continuous analysers were purchased and deployed across two of the AQMAs, Leyland (AQMA 5), and Lostock Hall (AQMA 3), monitoring Nitrogen Dioxide and Particulate Matter. Two of these machines have been subject to vandalism and theft and have had to be repaired and replaced so there is not a full year's worth of data at these sites.

The borough currently has four declared Air Quality Management Areas. The firth AQMA Penwortham (AQMA 1) was revoked in 2023.

**Trend data over the last five years indicates that levels have generally reduced or remained stable, the results from 2023 show no areas of exceedance or near exceedance of the national objectives within the borough.**
**2023 monitoring results indicate that pollutant levels across the borough are generally declining and the continuous monitor data suggests that the particulate matter levels are not currently at significantly high enough levels to require any formal action by the Council**.

A new Air Quality Strategy is being produced in line with Defra guidance to Local Authorities and will be put up for formal adoption by Council in 2024. The Air Quality Action Plan is being updated and will also be put up for formal adoption by Council in 2024. Public consultation on both documents started in September 2023. These two new documents will sit with our existing Strategies and Action Plans for the Climate Emergency and Biodiversity. Both of these strategies are identified as priorities on the South Ribble Corporate Strategy.

Full details of the AQMAs and actions being taken in South Ribble can be found on our website - Air quality - South Ribble Borough Council

South Ribble Borough Council is committed to improving air quality by working with partners to

- improve public health under the Local Air Quality Management process.
- embed air quality and other climate and environment priorities into the emerging Central Lancashire Local Plan
- further develop EV charging and active travel infrastructures that link with neighbouring boroughs and fit with wider county level proposals.

## 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.

Over the last year the Council has continued to progress work to improve air quality and lower emissions. Much of the work undertaken is also identified within South Ribble Borough Council's Climate Emergency and Biodiversity Strategies and Action Plans, both corporate priorities for the Council.

The core actions include,

- The Council launched an online public portal for residents to view real-time air quality data from our three EarthSense Zephyr air quality sensors via South Ribble's public air quality portal and continues to promote "Ready to Burn" and smoke control campaigns.
- South Ribble Borough Council's Active Health Team continue to deliver Bikeability training in schools and bespoke training for adults, alongside their popular Dr Bike campaign to repair and repurpose bicycles free of charge to encourage active travel

[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

amongst residents. During 2023 the Council provided 14 Dr Bike sessions and delivered Bikeability training to 1856 participants.

- The Council's Tree for Every Resident tree planting project has been extended beyond its initial four-year lifespan. A total of 18,764 trees were planted or gifted to residents, schools and businesses in 2023, achieving a cumulative planting total of 173,197 trees planted in the Borough since the project started in winter 2019.
- The Defra funded Clean Air Crew schools project was officially launched in September 2023 after six months spent developing the bespoke sections of the website with staff from Sefton Council's Eco Centre. Eighty-two pupils and twenty staff from twelve primary schools attended the launch that was part of a larger climate event. By the end of 2023, ten schools had signed up to the project, five had completed the free visit offer with others booked for 2024. There have also been 27 parent sign ups to the website from three of the schools, proving that the project is working to disseminate the information through the wider school community. Feedback from all participating schools has been positive.
- The Council has received grant funding from the Office for Zero Emission Vehicles (OZEV) to install 19 EV charging points (serving 38 car parking bays in public car parks) during 2023 and 2024. 16 of these have been installed with the remaining 3 due shortly.
- South Ribble's Business Energy Efficiency scheme has worked with 15 businesses on energy and carbon footprint reduction options in 2023 via energy audits BEE Scheme - Business in South Ribble

## Conclusions and Priorities

Over the reporting period of 2023, there have been no likely exceedances of the national objective values for any of the pollutants of concern. The trend data shows that NOx levels remain stable or are decreasing in the majority of receptor locations. The new real time results are not complete as a result of theft of and vandalism to the monitors but from the data that has been collected levels do not appear to be in exceedance or likely exceedance of the objective levels.

Whilst the monitoring results for 2023 show all AQMAs to be below the air quality objective, there is no intention to revoke them at this time. The Council seeks to act prudently and await publication of the forthcoming Central Lancashire Local Plan to fully consider the

potential impact, particularly on local traffic, of potential forthcoming development sites and their potential impact upon the AQMAs before considering revocations.

The Defra funded Clean Air Crew project continues until March 2025, so there will be ongoing engagement with local primary schools around air quality. Schools will be invited to take part in South Ribble's second Climate event in October 2024 which will include the Clean Air Crew project and other air quality, climate and biodiversity elements.

Key actions 2024 will include

- The completion and adoption of a new Air Quality Strategy
- The update and adoption of the Air Quality Action Plan
- Continue to deliver the Defra funded Clean Air Crew project.
- Continue with diffusion tube monitoring.
- Continue to install the OZEV grant funded EV charging points within the Borough
- Working in partnership with Lancashire County Council in their delivery of the Local Electric Vehicle Infrastructure grant funded scheme (£10.1 million) to provide further EV charge points across the County, including South Ribble
- Review data and performance of the Zephyr air quality sensors having replaced the stolen sensor unit and repaired the one that was vandalised.
- Continue to carry out the inspections and enforcement of permitted premises within the borough under the Environmental Permitting Regulations
- To continue to work with the Central Lancashire planning team to embed the guidance within the emerging Central Lancashire Local Plan due in 2025.
- Continue to work with partners in Public Health Lancashire, and across the Lancashire District authorities in the development and publication of the Lancashire Air Quality Planning Guidance Document

## Local Engagement and How to get Involved.

South Ribble Borough Council's website has a page dedicated to air quality Air Quality - South Ribble Borough Council. This includes a Beginners Guide to Air Quality, an explanation of the monitoring that is undertaken in the Borough, the AQMAs and a list of actions that residents can take to improve air quality, indoors and outdoors.

All South Ribble Primary Schools are invited to sign up to the Clean Air Crew website and take advantage of the curriculum linked resources and up until March 2025, the free visit to Southport Eco Centre to undertake the air quality session and use their interactive room.

Consultation on the new Air Quality Strategy and updated Air Quality Action Plan have been and will continue to be published on the Councils dedicated Your Say Citizen Space - South Ribble website.

Consultation on the forthcoming Central Lancashire Local Plan continues, with a dedicated website for consultations https://centrallocalplan.lancashire.gov.uk/consultations/ This also provides the opportunity for residents to join a mailing list to be notified as consultations are launched.

If anyone would like further information or to get involved in future project work, then please contact the Climate Team at South Ribble Borough Council on 01772 625625 or climate.emergency@southribble.gov.uk

## Local Responsibilities and Commitment

This ASR was prepared by the Climate Team of South Ribble Borough Council with the support and agreement of the following officers and departments:

Environmental Health Team

Active Health Team

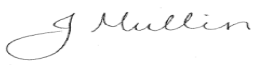
Investment and Skills Team

This ASR has been approved by:

Chris Sinnott, Chief Executive, South Ribble Borough Council

Signature: 

Jennifer Mullin, Director of Communities, South Ribble Borough Council

Signature: 

This ASR has not been signed off by a Director of Public Health, but has been provided for information

If you have any comments on this ASR, please send them to The Climate Team at:

Address: Environmental Health,
South Ribble Council,
Civic Centre,
West Paddock,
Leyland,
Lancashire,
PR25 1DH

Telephone 01772 625625

Email climate.emergency@southribble.gov.uk

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## Figures



## Tables

# 1 Local Air Quality Management

This report provides an overview of air quality in South Ribble 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 South Ribble Borough 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 South Ribble Borough Council can be found in Table 2.1. The table presents a description of the 4 AQMAs that are currently designated within South Ribble 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.

During 2023, a fifth AQMA was revoked. The location of this previous AQMA is provided within Appendix D.

## 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 |
|---|---|---|---|---|---|---|---|---|---|
| AQMA 1 | Declared August 2005, revoked July 2023 | $NO_2$ Annual Mean | An area encompassing a number of residential properties at the junction of Cop Lane, Liverpool Road and Priory Lane | NO | 44.7 | 0 | 5 (as of 2023) | South Ribble Borough Council, Air Quality Action Plan, 2018 | Air_Quality_Action_Plan_2018.pdf (southribble.gov.uk) |
| AQMA 2 | Declared August 2005 | $NO_2$ Annual Mean | An area encompassing a number of residential properties along Victoria Road. | NO | 52 | 0 | 6 | South Ribble Borough Council, Air Quality Action Plan, 2018 | Air_Quality_Action_Plan_2018.pdf (southribble.gov.uk) |
| AQMA 3 | Declared August 2005 | $NO_2$ Annual Mean | An area encompassing residential properties at the Tardy Gate Junction. | NO | 48 | 0 | 5 | South Ribble Borough Council, Air Quality Action Plan, 2018 | Air_Quality_Action_Plan_2018.pdf (southribble.gov.uk) |

| 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 |
|---|---|---|---|---|---|---|---|---|---|
| AQMA 4 | Declared August 2005 | $NO_2$ Annual Mean | An area encompassing a number of residential properties along Station Road. | NO | 44.9 | 0 | 6 | South Ribble Borough Council, Air Quality Action Plan, 2018 | Air_Quality_Action_Plan_2018.pdf (southribble.gov.uk) |
| AQMA 5 | Declared December 2017 | $NO_2$ Annual Mean | An area encompassing a number of residential properties along Turpin Green Lane, through Churchill Way to Golden Hill Lane. Also encompassing properties along Chapel Brow. | NO | 41 | 0 | 6 | South Ribble Borough Council, Air Quality Action Plan, 2018 | Air_Quality_Action_Plan_2018.pdf (southribble.gov.uk) |

☒ South Ribble Borough Council confirm the information on UK-Air regarding their AQMA(s) is up to date (confirm by selecting in box).

☒ South Ribble Borough Council confirm that all current AQAPs have been submitted to Defra (confirm by selecting in box).

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

Defra's appraisal of last year's ASR concluded,

1. There are some minor formatting issues within the texts highlighted in red. It is recommended that any texts in red font are changed to black, and the guidance removed from the template.
2. Table A.3 has not been completed correctly in the report for the automatic monitoring of $NO_2$.
3. The council is encouraged to continue to provide information on trends in air quality data in comparison to the Air Quality Objectives.
4. And continue to maintain high standards of QA/QC procedures with sufficient supporting evidence provided.

South Ribble Borough Council has noted the comments from the previous ASR report and 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. 61 measures are included within Table 2.2, with the type of measure and the progress South Ribble Borough 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 their respective Action Plans Air Quality Action Plan, Climate Emergency Strategy and Action plan and the Biodiversity Strategy and Action Plan. Key completed measures are:

- Revocation of the Penwortham AQMA
- Progress towards a new Air Quality Strategy
- Progress towards updating the Air Quality Action Plan
- Launch of the Defra funded Clean Air Crew, KS2 schools project.
- Launch of the public air quality portal linked to the Zephyr air quality sensors
- Linking Air Quality plans with new biodiversity strategy and action plan
- Updated air quality and climate webpages.

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

- Adoption of the new Air Quality Strategy
- Adoption of the updated Air Quality Action Plan
- Continuation of the Defra funded Clean Air Crew for all primary schools.

South Ribble Borough Council's priorities for the coming year are

- Continue the monitoring programme across the Borough.
- Work with Chorley Borough Council and Preston City Council to embed air quality and wider climate and biodiversity measures into the emerging Local Plan.
- To install new diffusion tubes in areas identified as a concern by residents
- To formally adopt the new Air Quality Strategy and updated Air Quality Action Plan

South Ribble Borough Council worked to implement these measures in partnership with the following stakeholders during 2023:

- Neighbouring local authorities
- National Highways Authority
- Defra
- Sefton Council – Eco Centre staff

The principal challenges and barriers to implementation that South Ribble Borough Council anticipates facing are a lack of resources, internally both financially and in terms of staffing and external from a lack of engagement from partner organisations.

South Ribble Borough Council anticipates that the measures stated above and in Table 2.2 will achieve compliance in Bamber Bridge, Walton le Dale, Lostock Hall and Leyland AQMAs.

Whilst the measures stated above and in Table 2.2 will help to contribute towards compliance, South Ribble Borough Council anticipates that further additional measures not yet prescribed will be required in subsequent years to achieve compliance and enable the revocation of Bamber Bridge, Walton le Dale, Lostock Hall and Leyland AQMAs.

The Council is not seeking revocation of any of these AQMAs at this time as the air quality data for the previous 5 years includes periods of pandemic related traffic restrictions which are not representative of usual traffic movements.

As the forthcoming Central Lancashire Local Plan is published in 2025 this will also be considered as to the implications for local traffic movement, before the revocation of the existing AQMAs is considered.

## 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 | Adoption of an Air Quality Strategy | Policy Guidance and Development Control | Air Quality Planning and Policy Guidance | | 2024 | South Ribble Borough Council | Existing Budgets | NO | Not Funded | < £10k | Implementation | Reduced emissions | Adoption of the Air Quality Strategy | Consultation process ongoing, scheduled to be presented to full Council for adoption in July 2024 | Revisions may be required following contributions from consultees and / or elected members |
| 2 | Adoption of a revised Air Quality Action Plan | Policy Guidance and Development Control | Air Quality Planning and Policy Guidance | | 2024 | South Ribble Borough Council, Defra, Lancashire County Council | Existing Budgets | NO | Not Funded | < £10k | Implementation | Reduced emissions | Adoption of the Air Quality Action Plan | Consultation process ongoing, scheduled to be presented to full Council for adoption in July 2024 | Revisions may be required following contributions from consultees and / or elected members |
| 3 | Local Plan Development | Policy Guidance and Development Control | Air Quality Planning and Policy Guidance | | 2025 | Preston City Council, South Ribble Borough Council and Chorley Council | Existing Budgets | NO | Partially Funded | £50k - £100k | Implementation | Reduced Emissions | Inclusion within the Central Lancs Plan | Central Lancs Local Plan progressing across the 3 LAs with Part One preferred options consultation complete. Consultation process progressing | Developers' reluctance to implement planning policy guidance. Timescale extended to external factors affecting progress by Local Plan Team. |
| 4 | To publicise and encourage the use of the Lancashire based Air Quality Guidance Document for Developers. | Policy Guidance and Development Control | Air Quality Planning and Policy Guidance | | 2021 | Lancashire Authorities EHL AQ Subgroup | Existing Budgets | NO | Not Funded | < £10k | Implementation | Additional mitigation measures incorporated in planning developments | Publication of the Guidance document. Inclusion of the Guidance Document within the Central Core Strategy | Guidance is being used by consultants within the planning process. | Lack of identifiable mitigation measures |
| 5 | To include the Lancashire based Air Quality Guidance Document for Developers within the revised Central Lancashire Local Plan | Policy Guidance and Development Control | Air Quality Planning and Policy Guidance | | 2025 | SRBC Planning | Existing Budgets | NO | Not Funded | < £10k | Implementation | Additional mitigation measures incorporated in planning developments | Inclusion of the Guidance Document within the Central Lancashire Local Plan | On-going consultation with planners | Consultation on Local Plan progressing |
| 6 | To develop and embed a low emission strategy into planning decisions | Policy Guidance and Development Control | Air Quality Planning and Policy Guidance | | 2022 | SRBC Planning | Existing Budgets | NO | Not Funded | < £10k | Implementation | Additional mitigation measures incorporated in planning developments | Inclusion of the Strategy Document within the Central | Implementation on-going | Waiting for the new Central Lancashire Local Plan, being used by planners on request. |

| 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | Lancashire Local Plan | | |
| 7 | To require a suitable air quality assessment in line with a published Air Quality Guidance Document for Developers for all planning applications as identified within the document | Policy Guidance and Development Control | Air Quality Planning and Policy Guidance | ongoing | 2022 | SRBC Planning/EH | Existing Budgets | NO | Not Funded | < £10k | Implementation | Additional mitigation measures incorporated in planning developments | AQA required for relevant developments - new guidance to be introduced | Implementation on-going | Waiting for the new Central Lancashire Local Plan, being used by planners on request. |
| 8 | Develop an 'Electric Vehicle Charging Points Guidance for Development' guidance document and have this included within the revised Central Lancashire Core Strategy | Policy Guidance and Development Control | Air Quality Planning and Policy Guidance | - | 2032 | SRBC EH/planning | Existing Budgets | NO | Not Funded | < £10k | Implementation | Reduced vehicle emissions from new developments | Completion of the guidance document. Inclusion in the Central Lancashire Local Plan | Implementation on-going | Development of the Central Core Strategy |
| 9 | Ensure adequate Electrical Vehicle charging infrastructure is provided on all Planning Applications in line with the Council's Electric Vehicle Charging Points Guidance for Developments | Policy Guidance and Development Control | Air Quality Planning and Policy Guidance | 2016 | 2032 | SRBC Planning | Existing Budgets | NO | Not Funded | < £10k | Implementation | encourage uptake of electric vehicles | Inclusion of EVR points on all relevant planning applications | Implementation on-going | Planning |
| 10 | Require suitable travel plans to be produced, and implemented on all relevant developments in line with the low emissions strategy | Policy Guidance and Development Control | Air Quality Planning and Policy Guidance | 2016 | 2032 | SRBC Planning | Existing Budgets | NO | Not Funded | < £10k | Implementation | encourage uptake of alternative forms of transport | Inclusion of travel plans on all relevant planning applications | Implementation on-going | Planning |
| 11 | Require secure cycle storage to be included on all relevant domestic, commercial, industrial, and leisure developments | Policy Guidance and Development Control | Air Quality Planning and Policy Guidance | 2018 | 2032 | SRBC Planning | Existing Budgets | NO | Not Funded | < £10k | Implementation | encourage uptake of alternative forms of transport | Inclusion of secure cycle storage on relevant planning applications. | Implementation on-going | Planning |
| 12 | Require adequate changing facilities to be provided for use of staff / visitors for all relevant commercial and industrial developments | Policy Guidance and Development Control | Air Quality Planning and Policy Guidance | 2018 | 2032 | SRBC Planning | Existing Budgets | NO | Not Funded | < £10k | Implementation | encourage uptake of alternative forms of transport | Inclusion of adequate changing facilities as part of planning applications. | Implementation on-going | Planning |
| 13 | Promotion of living walls / green roofs | Other | Other | Not Started | 2031 | SRBC | Existing Budgets | NO | Not Funded | £10k - 50k | Planning | Sequestration measures | Provision of living walls / green roofs | Ongoing | Now included in the Biodiversity Strategy and Action Plan |

| 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 14 | Investigate ways to limit the use of solid fuel heating in developments | Promoting Low Emission Plant | Other Policy | Not Started | 2023 | SRBC EH | Existing Budgets | NO | Partially Funded | £10k - 50k | Implementation | Encourage uptake of less polluting heating measures | | Advertising campaign regarding current Smoke Control areas and legislation undertaken. Ready to Burn promotion and visits to retailers. Details added to the AQ pages of our website | |
| 15 | Improved Planning enforcement | Policy Guidance and Development Control | Other policy | ongoing | 2031 | SRBC Planning | planning budget | NO | Funded | £50k - £100k | Implementation | | Timely Planning enforcement undertaken | Ongoing | |
| 16 | Securing three major road developments identified within the Lancashire County Council 'Central Lancashire Highways and Transport Masterplan' | Transport Planning and Infrastructure | Other | 2013 | 2025 | LCC Highways | City Deal | NO | Funded | £500k - £1 million | Implementation | Re-direct traffic away from areas of poor air quality | Completion and opening of the new roads | Cawsey link road complete, Dualling of A582 progressing, Penwortham by-pass complete, new junction complete | Funding |
| 17 | To review all traffic light sequencing within AQMA's to reduce the amount of standing traffic | Transport Planning and Infrastructure | Other | 2017 | 2023 | LCC Highways | unknown | NO | Not Funded | £50k - £100k | Planning | Improved traffic flow in the area to reduce idling, stop/start and traffic congestion | To review Traffic Signal sequencing at locations where Air Quality problems have been identified in order to ensure the safe and expeditious movement of traffic around the highway network. | County highways have stated they have no funding, time or staff to undertake this work. We need to provide evidence of an issue before they will look at it. ADMS modelling software purchased to begin evidence building. | LCC Highways - funding, prioritisation |
| 18 | To investigate the provision of a link road between Centurion Way and Tomlinson Road | Transport Planning and Infrastructure | Other | 2019 | 2032 | SRBC Planning / EH | unknown | NO | Not Funded | £100k - £500k | Aborted | Remove traffic from a declared AQMA | Development of the link road. | Site has been developed and link road can no longer be built. | No land available anymore. |
| 19 | Consider road layouts within the AQMA's to see whether improvements can be made to reduce congestion | Traffic Management | Strategic highway improvements, Re-prioritising road space | 2019 | 2023 | LCC Highways / SRBC EH | unknown | NO | Not Funded | < £10k | Planning | Reduced vehicle emissions | Review of all road layouts within the declared AQMAs | ADMS software purchased to enable modelling work to be | Finance, Staffing, LCC |

| 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | away from cars, including Access management, Selective vehicle priority, bus priority, high vehicle occupancy lane | | | | | | | | | | | undertaken, looking at traffic monitoring equipment | |
| 20 | Look to improve signage to re-direct HGV traffic away from areas of poor air quality | Traffic Management | Strategic highway improvements, Re-prioritising road space away from cars, including Access management, Selective vehicle priority, bus priority, high vehicle occupancy lane | 2018 | 2032 | SRBC | unknown, SRBC internal | NO | Not Funded | £10k - 50k | Planning | Reduced traffic | Improved signage | All businesses have been contacted again asking them to use alternative routes | Funding & suitable location for signage |
| 21 | Work with Highways England to improve signage to the motorways to advise HGVs to use Junction 29 instead of junction28 | Traffic Management | Strategic highway improvements, Re-prioritising road space away from cars, including Access management, Selective vehicle priority, bus priority, high vehicle occupancy lane | 2018 | 2032 | Highways England / SRBC EH | Unknown | NO | Not Funded | £50k - £100k | Planning | Re-direct traffic away from declared AQMA | New signage in place | Highways England willing to undertake work for new sign at SRBC expense ~£70K, | Funding £70K for new motorway sign. |
| 22 | Provide advice and contacts to businesses to help them choose low emission vehicles, & develop travel plans | Promoting Low Emission Transport | Company Vehicle Procurement - Prioritising uptake of low emission vehicles | Not Started | 2023 | SRBC EH / Public Health Lancashire / Chorley BC | Unknown | NO | Not Funded | < £10k | Planning | reduced vehicle emissions | production of advice literature (inc. social media) | Greening Homes and Businesses event in 2023 which included a range of EV fleet providers who offered advice to businesses | Resources |

| 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 23 | Improve the cycle infrastructure within the borough, especially along routes to schools and employment sites | Transport Planning and Infrastructure | Cycle network | 2018 | 2021 | LCC Highways / SRBC - Green links | Planning - S106, CIL, grants | NO | Partially Funded | £100k - £500k | Implementation | reduced vehicle trips | Green Links project completed | Green Links project progressing, | resources, funding, commitment from LCC Highways |
| 24 | Maintain & Sweep cycle routes on a regular basis throughout the borough | Transport Planning and Infrastructure | Cycle network | 2018 | 2032 | LCC Highways / SRBC Neighbourhoods | N/A | NO | Not Funded | < £10k | Planning | reduced vehicle trips | clean well-maintained cycle routes | LCC highways have stated no funding available to maintain cycle routes/ | There is currently no budget provision within LCC Highways to resource this measure. |
| 25 | Improve the electric vehicle infrastructure across the borough | Promoting Low Emission Transport | Procuring alternative Refuelling infrastructure to promote Low Emission Vehicles, EV recharging, Gas fuel recharging | 2016 | 2032 | SRBC, Lancashire County Council | Grants | NO | Partially Funded | £500k - £1 million | Planning | reduced vehicle emissions | Number of EVR points | Grant bid successful and installations ongoing.<br>LCC in receipt of LEVI grant funding | Resources, electrical infrastructure, finance |
| 26 | Provide electric vehicle charging points on council owned car parks and buildings | Promoting Low Emission Transport | Procuring alternative Refuelling infrastructure to promote Low Emission Vehicles, EV recharging, Gas fuel recharging | 2018 | 2025 | SRBC - EH / Neighbourhoods / Estates | Grants | NO | Funded | £100k - £500k | Planning | reduced vehicle emissions | number of charging points provided | Grant bids successful installations ongoing | Resources |
| 27 | Offer free or reduced parking tariffs for electric vehicles | Promoting Low Emission Transport | Priority parking for LEV's | - | 2023 | SRBC Neighbourhoods | N/A | NO | Not Funded | £10k - 50k | Planning | reduced vehicle emissions | New charging policy | To be considered with each carpark EV charging point | Resources |
| 28 | Anti-Idling Campaign in declared AQMA's and outside schools, colleges and leisure centres | Traffic Management | Anti-idling enforcement | 2019 | 2025 | SRBC - EH / Neighbourhoods / Estates | internal staff time | YES | Partially Funded | < £10k | Implementation | reduced vehicle emissions | Number of schools visited for enforcement | Campaign run in 2019, postponed in 2020. Staffing is an issue to attend sites at the correct times.<br>Defra funded Clean Air Crew campaign provided for all primary schools in the Borough | Resources |
| 29 | Encourage the greater use of public transport | Promoting Travel Alternatives | Other | Not Started | 2032 | SRBC | - | NO | Not Funded | < £10k | Planning | reduced vehicle emissions | Great use of public transport | Climate staff leading by example and | UK central government & Covid |

| 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | and less private car journeys | using public transports or car sharing to meetings wherever possible. Use of emerging Central Lancs Local Plan to encourage active travel and public transport | |
| 30 | Work with taxi firms to encourage the uptake of low emission vehicles (Electric) | Promoting Low Emission Transport | Procuring alternative Refuelling infrastructure to promote Low Emission Vehicles, EV recharging, Gas fuel recharging | 2018 | 2025 | SRBC EH / Licensing | OLEV bid | NO | Not Funded | £10k - 50k | Planning | reduced vehicle emissions | Number of LEV in taxi fleet | EV charging infrastructure installed | Taxi drivers, charging infrastructure |
| 31 | Further reduce the age limit of taxis within the borough | Promoting Low Emission Transport | Taxi Licensing conditions | | 2025 | SRBC EH / Licensing / AQ Sub-group | Existing Budgets | NO | Not Funded | < £10k | Planning | reduced vehicle emissions | New taxi policy | Taxi licensing adverse to intro tighter requirements to neighbouring authorities. Discussions held on a Lancashire wide basis, but no consensus reached. | Licensing committee |
| 32 | Stop taxis and buses idling within AQMA's and outside schools & Colleges | Traffic Management | Anti-idling enforcement | 2019 | 2023 | SRBC EH | internal staff resources | YES | Partially Funded | < £10k | Planning | reduced vehicle emissions | Anti-idling enforcement visits | Campaign run in 2019, postponed in 2020. Staffing is an issue to attend sites at the correct times. Defra funded Clean Air Crew campaign provided for all primary schools in the Borough | Resources |
| 33 | To consider a reduced taxi license fee for electric vehicles | Promoting Low Emission Transport | Taxi emission incentives | | 2025 | SRBC EH / Licensing | - | NO | Not Funded | < £10k | Planning | reduced vehicle emissions | reduced emissions | Taxi licensing teams are not in favour of this and don't think it will make any difference - still | Licensing committee |

| 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | to be progressed. | |
| 34 | To work with both bus and taxi companies to apply for any grant bids available | Promoting Low Emission Transport | Other | | 2032 | SRBC | on going | NO | Not Funded | £10k - 50k | Planning | reduced vehicle emissions | reduced emissions | - | |
| 35 | Implement an 'Electrify campaign – encouraging businesses to only use electric taxis | Traffic Management | Other | Not Started | 2022 | SRBC | | NO | Not Funded | £10k - 50k | Planning | reduced vehicle emissions | | Rapid EV charge [points installed for use by taxis | Charging infrastructure |
| 36 | Encouraging Car Sharing within the borough | Traffic Management | Other | Not Started | 2025 | SRBC | - | NO | Not Funded | < £10k | Planning | reduced vehicle emissions | reduced vehicle trips | N/A | resources |
| 37 | Development and delivery of educational programmes to schools | Public Information | Other | | 2032 | SRBC EH / PHL / Chorley BC | unknown | YES | Partially Funded | £10k - 50k | Planning | reduced vehicle emissions | reduced vehicle trips | Engagement officer working with schools. DEFRA grant funding for Clean Air crew scheme | Resources / schools |
| 38 | Development of educational material for businesses | Public Information | Other | | 2024 | SRBC EH / PHL / Chorley BC | unknown | NO | Not Funded | £10k - 50k | Planning | reduce vehicle trips | reduced vehicle trips | | Resources / business |
| 39 | Development and run a campaign to reduce school traffic e.g. walk/cycle to school | Promoting Travel Alternatives | Promotion of cycling | 2023 | 2024 | SRBC EH / Members | planning applications | YES | Partially Funded | £10k - 50k | Planning | reduce vehicle trips | reduced vehicle trips | Defra funded Clean Air Crew campaign provided for all primary schools in the Borough | Resources/ planning |
| 40 | Investigate the provision of personal travel plans for residents and employees within the borough | Promoting Travel Alternatives | Personalised Travel Planning | Not Started | 2028 | SRBC EH | planning applications | NO | Not Funded | £100k - £500k | Planning | reduce vehicle trips | reduced vehicle trips | Active Health Team carrying out personalised Bikeability training for residents | Resources/ Planning |
| 41 | Promote cycling within the borough, including cycle to work day, salary sacrifice scheme | Promoting Travel Alternatives | Promotion of cycling | | 2032 | SRBC EH / Sports Development | - | NO | Not Funded | £50k - £100k | Planning | reduce vehicle trips | reduced vehicle trips | Internal bike to work scheme promoted via intranet, internal EV lease scheme salary sacrifice scheme available Active Health Team delivering guided cycle rides and walks, adult Bikeability courses and Dr | Resources |

| 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | Bike - bike repair workshops | |
| 42 | Promote walking within the borough, including promotion of walking routes, the Leyland Loop | Promoting Travel Alternatives | Promotion of walking | | 2032 | SRBC EH / Sports Development | - | NO | Not Funded | £50k - £100k | Planning | reduce vehicle trips | reduced vehicle trips | Active Health have been delivering guided walks and cycle rides, Bikeability for adults, DR Bike repair workshops, reuse and recycling bikes | Resources |
| 43 | Encourage 'walk to school' and the use of 'walking buses' across the borough for all schools | Promoting Travel Alternatives | Promotion of walking | 2023 | | SRBC EH | planning applications | NO | Not Funded | £50k - £100k | Planning | reduced vehicle trips | No of walk to school/buses | Incorporated in the Defra funded Clean Air Crew schools project | resources, schools' parents |
| 44 | Encourage elected members to car share and use alternative forms of transport, in particular to council meetings and functions | Traffic Management | Other | | | SRBC Cabinet | ongoing | NO | Not Funded | < £10k | Implementation | reduced emissions | Members car shared on official duties | As an alternative, SRBC invested in ModGov and IT equipment to allow remote attendance of meetings | Members / Covid 19 |
| 45 | Replace the mayoral car with an electric car | Promoting Low Emission Transport | Public Vehicle Procurement - Prioritising uptake of low emission vehicles | | 2020 | SRBC Cabinet | internal | NO | Funded | £10k - 50k | Planning | | Provision of an electric mayoral car | Hybrid purchased | ELT / member commitment |
| 46 | Provide education and information relating to air quality through members learning hours, leaflets and councillor connect | Public Information | Other | 2016 | 2032 | SRBC EH / Cllrs | internal | NO | Not Funded | < £10k | Implementation | reduced emissions | production and roll out of educational material | On-going training/learning hours undertaken, nothing in 2020-21 due to covid Cllr Learning Hour delivered in 2022. 2023 session cancelled<br>Members have access to the Clean Air Crew website | resources / CoVid-19 |
| 47 | Air Quality shall be considered within the decision-making process on every report to | Policy Guidance and | Other policy | 2019 | 2021 | SRBC - EH / Democratic Services | - | NO | Not Funded | < £10k | Implementation | - | AQ considered on all reports | Air Quality is being considered on each report | Needs proper consideration on the reports by authors |

| 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | cabinet, council, portfolio holder decision etc | Development Control | | | | | | | | | | | | | |
| 48 | Replace the civic centre pool car with an electric car | Promoting Low Emission Transport | Public Vehicle Procurement - Prioritising uptake of low emission vehicles | Stalled | 2022 | SRBC - ELT | Vehicle fleet budget | NO | Partially Funded | £10k - 50k | Planning | | Provision of an electric pool car | Pool Car removed | |
| 49 | Systematically replace the depot vans with electric vehicles | Promoting Low Emission Transport | Public Vehicle Procurement - Prioritising uptake of low emission vehicles | 2020 | 2030 | SRBC - Neighbourhoods Cllrs | Vehicle fleet budget | NO | Partially Funded | £1 million - £10 million | Planning | | | 3 small electric vans have been purchased, technology is still not good enough for bin wagons and larger/high mileage vehicles | commitment, funding Electricity supply capacity for charging a whole fleet |
| 50 | Systematically replace grounds vehicles with electric vehicles as technology becomes available | Promoting Low Emission Transport | Public Vehicle Procurement - Prioritising uptake of low emission vehicles | 2021 | 2032 | SRBC - Neighbourhoods / Cllrs | Equipment fleet budget | NO | Partially Funded | £100k - £500k | Planning | reduced emissions | programme to exchange vehicles required and to be followed | handheld equipment being replaced with electric/battery operated equipment. | Funding / provision of suitable technology |
| 51 | The provision of electric vehicle charging points at council buildings, initially the civic centre and depot. These may be provided free of charge to enable the installation of cheaper charging points and encourage the uptake of electric vehicles | Promoting Low Emission Transport | Procuring alternative Refuelling infrastructure to promote Low Emission Vehicles, EV recharging, Gas fuel recharging | 2018 | 2025 | SRBC Neighbourhoods | ongoing | NO | Partially Funded | £100k - £500k | Implementation | Encourage uptake of LEV | Provision of EVR points at council buildings | 2 chargers at civic centre and 2 at depot installed. 6 at Bamber Bridge leisure centre, 4 rapid units installed and 2 to be installed at SR Tennis Centre.<br>Addition 6 chargers installed at Leyland leisure Centre | funding |
| 52 | Apply for the Workplace EVR point Government scheme | Promoting Low Emission Transport | Procuring alternative Refuelling infrastructure to promote Low Emission Vehicles, EV recharging, Gas fuel recharging | Not started | | SRBC Neighbourhoods | | NO | | | Planning | | | | |
| 53 | Sign up to the ‘NHS fleet solutions salary sacrifice scheme’ this allows staff | Promoting Low | Company Vehicle Procurement - | Stalled | | SRBC ELT / HR | Stalled | NO | | | | Uptake based on mileage claims made | Provision of a suitable salary | New salary sacrifice lease scheme | Equality issues. |

| 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | to purchase via salary sacrifice a new car (to be restricted to electric vehicles only) including all insurance, tax, and servicing | Emission Transport | Prioritising uptake of low emission vehicles | | | | | | | | | to the Council from use of private cars | sacrifice scheme | launched internally, not as good as NHS and allows all vehicle types due to equality issues with staff pay. | |
| 54 | Provide secure lockable cycle storage facilities at the civic and depot | Promoting Travel Alternatives | Promotion of cycling | 2018 | 2021 | SRBC EH / Neighbourhoods | - | NO | Not Funded | £10k - 50k | Implementation | reduced commuter mileage, encourage uptake of cycling | Provide secure cycle storage at Civic Centre and Moss Side Depot | Complete | |
| 55 | Provide suitable changing rooms and storage facilities for use of staff | Promoting Travel Alternatives | Other | 2018 | 2021 | SRBC - ELT | - | NO | Funded | £10k - 50k | Completed | reduced commuter mileage, encourage uptake of cycling / walking | Provision of changing facilities at Civic Centre | Complete | - |
| 56 | Continue with the 'bike to work' salary sacrifice scheme | Promoting Travel Alternatives | Promotion of cycling | 2018 | 2032 | SRBC HR | internal | NO | Not Funded | £10k - 50k | Implementation | reduced commuter mileage, encourage uptake of cycling | Provision of the bike to work scheme | ongoing offer for staff | - |
| 57 | Provide cycle reassurance training for any member of staff, elected members who wish to receive it | Promoting Travel Alternatives | Promotion of cycling | 2018 | 2032 | SRBC Sports Development | internal | NO | Not Funded | £10k - 50k | Implementation | reduced commuter mileage, encourage uptake of cycling | Provision of training. Uptake of training | ongoing offer for staff | Staff |
| 58 | Encourage staff to use alternative modes of travel e.g. cycling and walking | Promoting Travel Alternatives | Other | 2018 | 2032 | SRBC | internal | NO | Not Funded | £10k - 50k | Implementation | reduce vehicle trips | increased use of alternative travel options | Requires joint working with Active Health Team | resources, facilities staff willingness to change |
| 59 | Promote car sharing among staff | Traffic Management | Other | 2018 | 2032 | SRBC | internal | NO | Not Funded | £10k - 50k | Implementation | Reduced vehicle emissions | Increase in car sharing among staff | Car sharing being promoted for staff and to external visitors to events at our venues. | Covid - 19 / resources / staff willingness to adapt |
| 60 | Alter the policy to allow essential users to leave their cars at home and walk/cycle to work on certain days in line with business requirements and manager agreement | Policy Guidance and Development Control | Other policy | | 2022 | SRBC ELT / HR | - | NO | Not Funded | < £10k | Completed | Encourage uptake of alternative forms of transport | Change of Policy | Policy has been changed / Complete | - |

| 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | without the risk of loss of the lump sum | | | | | | | | | | | | | | |
| 61 | Develop an internal travel plan and offer individual travel planning guidance to staff and elected members | Promoting Travel Alternatives | Workplace Travel Planning | Not Started | 2024 | SRBC | - | NO | Not Funded | £50k - £100k | Planning | Reduce Vehicle emissions | Less staff travelling to work in private cars | Post Covid, moved to hybrid working, staff travel has changed and this needs readdressing in a new format | Resources Hybrid working arrangements |

## 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[6], 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.

South Ribble Borough Council is taking the following measures to address $PM_{2.5}$, either directly or indirectly as a co benefit of other projects.

- Updating the Air Quality Action Plan
- Publishing a new Air Quality Strategy
- Waiting for DNO connections to enable decarbonisation work at all of our leisure centres to go live.
- Continuing to install EV charging points and working with Lancashire County Council to secure addition chargers via LEVI funding.
- Continual monitoring of PM levels via the Zephyr air quality sensors to establish levels and trends withing two of our AQMAs and to promote the live public portal to residents.
- Continue to promote and support the Defra funded Clean Air Crew schools' project.
- Continue to support national campaigns such as Ready to Burn and Clean Air Day
- Working with Lancashire County Council and other Lancashire authorities to develop the Lancashire Local Cycling and Walking Infrastructure Plan
- Continuing to deliver bikeability and Dr Bike workshops to encourage the use of active travel options.

The majority of the borough of South Ribble is covered by smoke control orders. These maps will be updated during 2024 and published on the air quality pages of our website.

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

In 2023, 59 smoke related contacts were dealt with by our Environmental Health Team. Seven warning letters were sent out, the remainder were responded to, and advice given where necessary.

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

This section sets out the monitoring undertaken within 2023 by South Ribble Borough 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.

## 2.4 Summary of Monitoring Undertaken

### 2.4.1 Automatic Monitoring Sites

South Ribble Borough Council undertook automatic (continuous) monitoring at three sites during 2023. Table A.1 in Appendix A shows the details of the automatic monitoring sites. This system uses Zephyr air quality sensors provided by EarthSense Systems Limited.

The South Ribble Public Air Quality Portal page presents automatic monitoring results for South Ribble Borough Council. They are not available through the UK-Air website.

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

### 2.4.2 Non-Automatic Monitoring Sites

South Ribble Borough Council undertook non- automatic (i.e. passive) monitoring of $NO_2$ at 31 sites during 2023 Table A.2 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.

## 2.5 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.

### 2.5.1 Nitrogen Dioxide ($NO_2$)

Table A.3 and Table A.4 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.

Table A.5 in Appendix A compares the ratified continuous monitored $NO_2$ hourly mean concentrations for the past five years with the air quality objective of 200µg/$m^3$, not to be exceeded more than 18 times per year.

The data that is avaliable indicates that there are no exceedances of the annual mean objective and are below the proposed objectives and the World Health Organisation guidelines.

### 2.5.2 Particulate Matter ($PM_{10}$)

Table A.6 in Appendix A: Monitoring Results compares the ratified and adjusted monitored $PM_{10}$ annual mean concentrations for the past five years with the air quality objective of 40µg/$m^3$.

Table A.7 in Appendix A compares the ratified continuous monitored $PM_{10}$ daily mean concentrations for the past five years with the air quality objective of 50µg/$m^3$, not to be exceeded more than 35 times per year.

South Ribble Borough Council monitors $PM_{10}$ using Zephyr air quality sensors. Theft of one monitor and vandalsim of another means that there is not a full dataset for 2023. The data that is avaliable indicates that there are no exceedances of the annual mean

objective and are below the proposed objectives and the World Health Organisation guidelines.

### 2.5.3 Particulate Matter ($PM_{2.5}$)

Table A.8 in Appendix A presents the ratified and adjusted monitored $PM_{2.5}$ annual mean concentrations for the past five years.

South Ribble Borough Council monitors $PM_{2.5}$ using Zephyr air quality sensors. Theft of one sensor unit and vandalsim of another means that there is not a full dataset for 2023. The data that is avaliable indicates that there are no exceedances of the annual mean objective and are below the proposed objectives and the World Health Organisation guidelines.

### 2.5.4 Sulphur Dioxide ($SO_2$)

South Ribble Borough Council does not monitor $SO_2$ levels. However, a check of the Defra background maps indicates no likely exceedances of the objective levels for this pollutant.

# Appendix A: Monitoring Results

## Table A.1 – Details of Automatic Monitoring Sites

| Site ID | Site Name | Site Type | X OS Grid Ref (Easting) | Y OS Grid Ref (Northing) | Pollutants Monitored | In AQMA? Which AQMA? | Monitoring Technique | Distance to Relevant Exposure (m) (1) | Distance to kerb of nearest road (m) (2) | Inlet Height (m) |
|---|---|---|---|---|---|---|---|---|---|---|
| Z1 | Lostock Hall | Roadside | 354370 | 425788 | NO, $NO_2$, O3, PM (1, 2.5,10) | YES AQMA 3 | Electrochemical sensor / Mass concentration | 3.2 | 1.4 | 3 |
| Z2 | Golden Hill | Roadside | 353866 | 422656 | NO, $NO_2$, O3, PM (1, 2.5,10) | YES AQMA 5 | Electrochemical sensor / Mass concentration | 2 | 2.1 | 3 |
| Z3 | Turpin Green Lane | Roadside | 354667 | 422249 | NO, $NO_2$, O3, PM (1, 2.5,10) | YES AQMA 5 | Electrochemical sensor / Mass concentration | 4.9 | 1.6 | 3 |

**Notes:**

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

(2) N/A if not applicable

## Table A.2 – 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, 2, 3 | Civic Centre, Leyland | Urban Background | 353626 | 421781 | NO2 | - | | | No | 2.4 |
| 4 | 12 Turpin Green Lane/Charnock St, Leyland | Roadside | 354527 | 422371 | NO2 | AQMA 5 | 0.0 | 5.2 | No | 2.3 |
| 5 | 38 Turpin Green Lane, Leyland | Roadside | 354588 | 422269 | NO2 | AQMA 5 | 0.0 | 5.6 | No | 2.6 |
| 6 | "Gentle Touch" 65 Turpin Green Lane, Leyland | Roadside | 354678 | 422249 | NO2 | AQMA 5 | 0.0 | 5.6 | No | 2.2 |
| 7 | 66 Turpin Green Lane, Leyland | Roadside | 354730 | 422212 | NO2 | AQMA 5 | 0.0 | 7.8 | No | 2.2 |
| 8 | 87 Turpin Green Lane, Leyland | Roadside | 354744 | 422231 | NO2 | AQMA 5 | 0.0 | 5.7 | No | 2.0 |
| 9, 10, 11 | 36 Golden Hill Lane | Roadside | 354438 | 422645 | NO2 | AQMA 5 | 0.0 | 2.9 | No | 2.2 |
| 12, 13, 14 | 130 Golden Hill Lane | Roadside | 353890 | 422654 | NO2 | AQMA 5 | 0.0 | 2.6 | No | 2.1 |
| 15 | 57 Leyland Lane | Roadside | 353048 | 422809 | NO2 | - | 0.0 | 4.9 | No | 2.6 |
| 16 | 233 Leyland Lane, Penwortham | Roadside | 353751 | 426828 | NO2 | - | 4.0 | 2.4 | No | 2.2 |
| 17 | 28-30 Watkin Lane, Lostock Hall | Roadside | 354514 | 425695 | NO2 | AQMA 3 | 0.0 | 5.4 | 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) (1) | Distance to kerb of nearest road (m) (2) | Tube Co-located with a Continuous Analyser? | Tube Height (m) |
|---|---|---|---|---|---|---|---|---|---|---|
| 18 | Spar, Watkin Lane, Lostock Hall | Roadside | 354368 | 425783 | NO2 | AQMA 3 | 0.0 | 2.4 | No | 2.3 |
| 19 | 13 Brownedge Road, Lostock Hall | Roadside | 354410 | 425835 | NO2 | AQMA 3 | 0.0 | 2.7 | No | 2.3 |
| 20, 21, 22 | Tardy Gate PH, Leyland Rd, Lostock Hall | Roadside | 354354 | 425845 | NO2 | AQMA 3 | 0.0 | 4.1 | No | 2.3 |
| 23 | 477 Leyland Road, Lostock Hall | Roadside | 354296 | 425903 | NO2 | AQMA 3 | 4.9 | 2.6 | No | 2.3 |
| 24 | 11 Library Liverpool Road, Penwortham | Roadside | 352116 | 428445 | NO2 | AQMA 1 (revoked) | 0.0 | 9.8 | No | 2.1 |
| 25 | "Robert&Co", 36e Liverpool Road, Penwortham | Roadside | 351875 | 428428 | NO2 | AQMA 1 (revoked) | 0.0 | 2.4 | No | 2.8 |
| 26 | Fleece Inn, 43 Liverpool Road, Penwortham | Roadside | 351891 | 428404 | NO2 | AQMA 1 (revoked) | 3.5 | 1.5 | No | 2.2 |
| 27 | Upper Crust / Dewhurst Homes, Liverpool Road, Penwortham. LOWER | Roadside | 351927 | 428460 | NO2 | AQMA 1 (revoked) | 3.5 | 1.5 | No | 2.0 |
| 28 | Upper Crust / Dewhurst Homes, Liverpool Road, Penwortham. UPPER | Roadside | 351927 | 428460 | NO2 | AQMA 1 (revoked) | 0.0 | 1.5 | No | 3.0 |
| 29 | The Cawsey, Penwortham | Roadside | 354175 | 426713 | NO2 | - | 0.0 | 9.7 | No | 2.3 |

| 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) |
|---|---|---|---|---|---|---|---|---|---|---|
| 30 | Broad Oak Lane, Penwortham | Roadside | 351879 | 426968 | NO2 | - | 0.0 | 6.4 | No | 2.2 |
| 31 | 14 Victoria Road, Walton-le-Dale | Roadside | 355370 | 428571 | NO2 | AQMA 2 | 4.4 | 2.7 | No | 2.0 |
| 32, 33, 34 | 40 Victoria Road, Walton-le-Dale | Roadside | 355429 | 428518 | NO2 | AQMA 2 | 0.0 | 2.0 | No | 2.2 |
| 35 | 69 Victoria Road, Walton-le-Dale | Roadside | 355521 | 428467 | NO2 | AQMA 2 | 0.0 | 2.0 | No | 2.8 |
| 36 | 146/Library, Station Road, Bamber Bridge | Roadside | 356437 | 426303 | NO2 | AQMA 4 | 0.0 | 6.1 | No | 2.2 |
| 37 | 243 Station Road, Bamber Bridge | Roadside | 356530 | 425840 | NO2 | AQMA 4 | 0.0 | 8.9 | No | 2.5 |
| 38 | 244 Station Road, Bamber Bridge | Roadside | 356506 | 425793 | NO2 | AQMA 4 | 4.1 | 2.9 | No | 2.2 |
| 39 | 266 Station Road, Bamber Bridge | Roadside | 356511 | 425695 | NO2 | AQMA 4 | 0.0 | 3.0 | No | 2.4 |
| 40 | 361 Station Road, Bamber Bridge | Roadside | 356426 | 425364 | NO2 | AQMA 4 | 0.0 | 1.6 | No | 2.2 |
| 41 | 301 Station Road, Bamber Bridge | Roadside | 356510 | 425601 | NO2 | AQMA 4 | 0.0 | 7.1 | No | 2.2 |

**Notes:**

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

(2) N/A if not applicable.

## Table A.3 – Annual Mean $NO_2$ Monitoring Results: Automatic Monitoring (µg/m$^3$)

| Site 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 |
|---|---|---|---|---|---|---|---|---|---|---|
| Z1 | 354370 | 425788 | Roadside | 100 | 66 | | | | 21.58 | 23.85 |
| Z2 | 353866 | 422656 | Roadside | 100 | 100 | | | | 18.11 | 17.26 |
| Z3 | 354667 | 422249 | Roadside | | | | | | 26.55 | |

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

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

☒ Where exceedances of the $NO_2$ annual mean objective occur at locations not representative of relevant exposure, the fall-off with distance concentration has been calculated and reported concentration provided in brackets for 2023.

**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**.

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%).

## Table A.4 – 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, 2, 3 | 353626 | 421781 | Urban Background | 92.3 | 92.3 | 17.2 | 12.4 | 12.2 | 11.7 | 10.6 |
| 4 | 354527 | 422371 | Roadside | 100 | 100.0 | 31.4 | 28.9 | 26.5 | 25.5 | 24.9 |
| 5 | 354588 | 422269 | Roadside | 100 | 100.0 | 31.3 | 26.2 | 21.1 | 23.8 | 23.1 |
| 6 | 354678 | 422249 | Roadside | 100 | 100.0 | 38.6 | 31.8 | 33.8 | 27.8 | 30.6 |
| 7 | 354730 | 422212 | Roadside | 82.7 | 82.7 | 28.6 | 19.0 | 21.0 | 19.3 | 20.3 |
| 8 | 354744 | 422231 | Roadside | 100 | 100.0 | 33.9 | 30.1 | 32.3 | 29.6 | 29.8 |
| 9, 10, 11 | 354438 | 422645 | Roadside | 100 | 100.0 | 36.2 | 30.9 | 28.9 | 26.9 | 28.0 |
| 12, 13, 14 | 353890 | 422654 | Roadside | 100 | 100.0 | 34.6 | 28.2 | 28.1 | 27.0 | 27.8 |
| 15 | 353048 | 422809 | Roadside | 100 | 100.0 | 25.9 | 20.9 | 21.3 | 22.5 | 20.5 |
| 16 | 353751 | 426828 | Roadside | 100 | 100.0 | | | | 17.0 | 15.8 |
| 17 | 354514 | 425695 | Roadside | 100 | 100.0 | 26.1 | 22.0 | 25.0 | 22.6 | 21.6 |
| 18 | 354368 | 425783 | Roadside | 100 | 100.0 | 32.1 | 23.8 | 25.6 | 24.5 | 24.4 |
| 19 | 354410 | 425835 | Roadside | 100 | 100.0 | 38.8 | 29.7 | 28.2 | 27.5 | 26.7 |
| 20, 21, 22 | 354354 | 425845 | Roadside | 100 | 100.0 | 35.4 | 27.7 | 28.4 | 26.6 | 25.8 |
| 23 | 354296 | 425903 | Roadside | 100 | 100.0 | 30.5 | 22.6 | 24.6 | 22.0 | 21.8 |
| 24 | 352116 | 428445 | Roadside | 100 | 100.0 | 25.9 | 16.4 | 18.2 | 19.9 | 17.5 |
| 25 | 351875 | 428428 | Roadside | 84.6 | 84.6 | 30.0 | 17.7 | 17.7 | 14.7 | 14.1 |
| 26 | 351891 | 428404 | Roadside | 75 | 75.0 | 30.0 | 18.0 | 17.9 | 17.3 | 15.6 |
| 27 | 351927 | 428460 | Roadside | 100 | 100.0 | 23.0 | 17.9 | 16.9 | 18.0 | 17.1 |
| 28 | 351927 | 428460 | Roadside | 90.4 | 90.4 | 31.0 | 19.0 | 17.6 | 16.9 | 16.5 |
| 29 | 354175 | 426713 | Roadside | 100 | 100.0 | - | - | 12.5 | 12.5 | 11.8 |
| 30 | 351879 | 426968 | Roadside | 100 | 100.0 | - | 21.0 | 22.0 | 20.3 | 18.9 |
| 31 | 355370 | 428571 | Roadside | 92.3 | 92.3 | 32.0 | 23.4 | 25.0 | 24.0 | 21.2 |
| 32, 33, 34 | 355429 | 428518 | Roadside | 100 | 100.0 | 25.0 | 23.0 | 22.9 | 24.1 | 22.3 |
| 35 | 355521 | 428467 | Roadside | 63.5 | 63.5 | 31.7 | 25.1 | 25.5 | 26.9 | 25.2 |
| 36 | 356437 | 426303 | Roadside | 92.3 | 92.3 | 29.8 | 23.5 | 24.6 | 23.4 | 21.9 |
| 37 | 356530 | 425840 | Roadside | 92.3 | 92.3 | 29.0 | 22.7 | 22.9 | 21.7 | 20.5 |

| 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 |
|---|---|---|---|---|---|---|---|---|---|---|
| 38 | 356506 | 425793 | Roadside | 100 | 100.0 | 22.3 | 19.1 | 16.3 | 16.8 | 15.3 |
| 39 | 356511 | 425695 | Roadside | 69.2 | 69.2 | 30.0 | 26.9 | 27.2 | 28.2 | 23.4 |
| 40 | 356426 | 425364 | Roadside | 100 | 100.0 | 24.8 | 20.3 | 28.0 | 25.9 | 25.9 |
| 41 | 356510 | 425601 | Roadside | 100 | 100.0 | 35.9 | 28.4 | 20.5 | 18.8 | 17.4 |

☒ 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.1.1 – Trends in Annual Mean $NO_2$ Concentrations – AQMA 1 Penwortham (now revoked)**

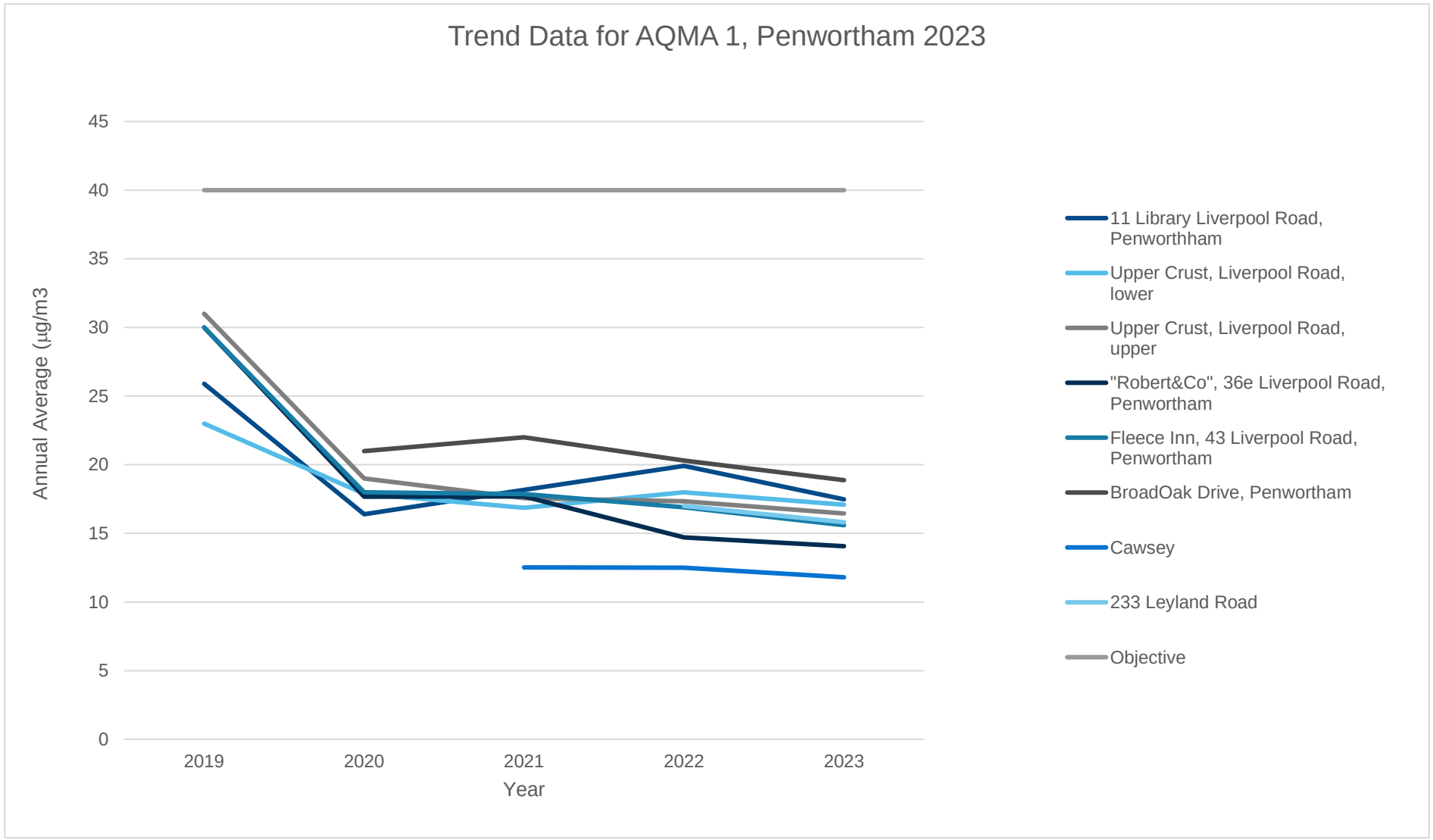


**Figure A.2.2 – Trends in Annual Mean $NO_2$ Concentrations – AQMA 2 Walton le Dale**

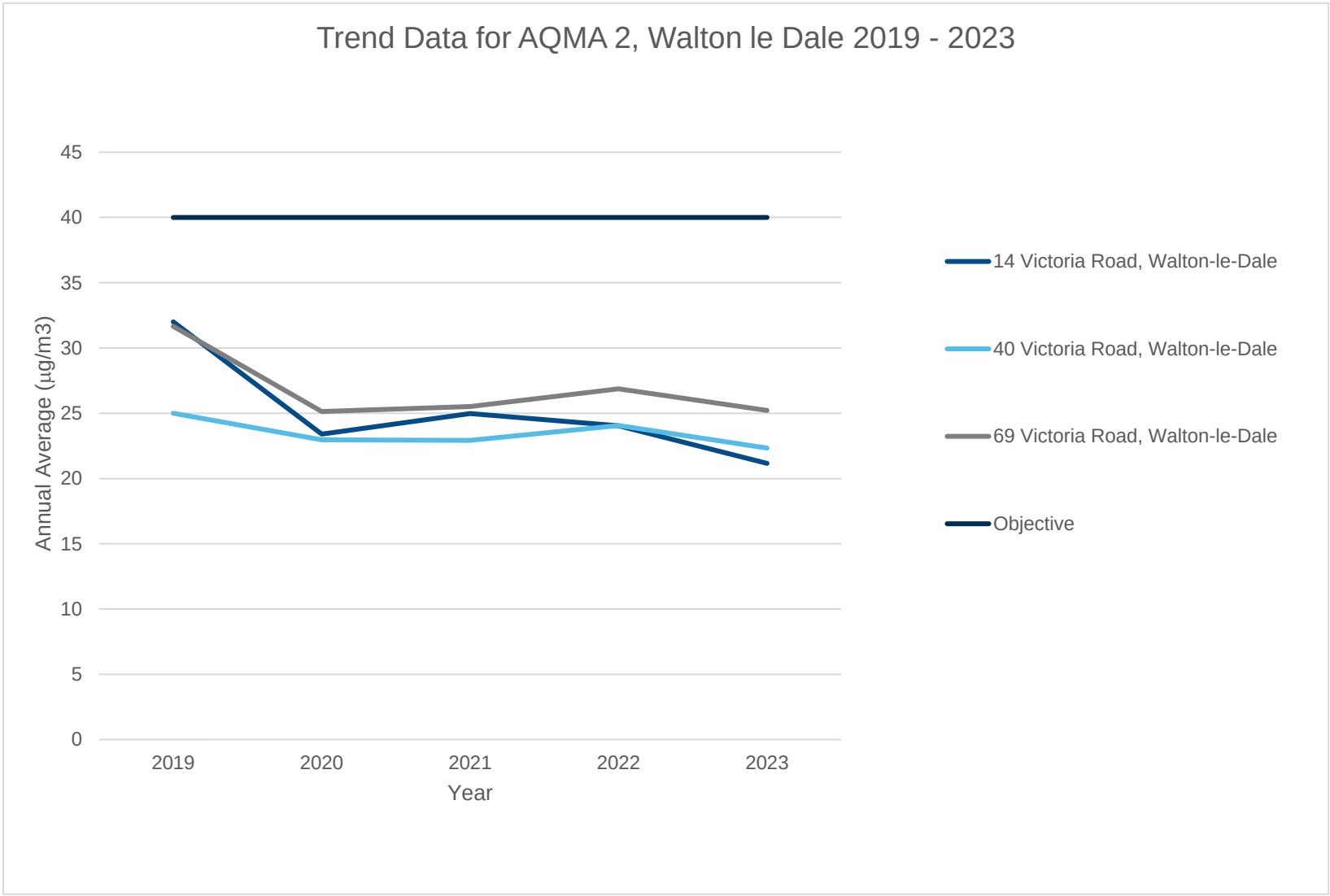


Figure A.3.3 – Trends in Annual Mean $NO_2$ Concentrations – AQMA 3 Lostock Hall

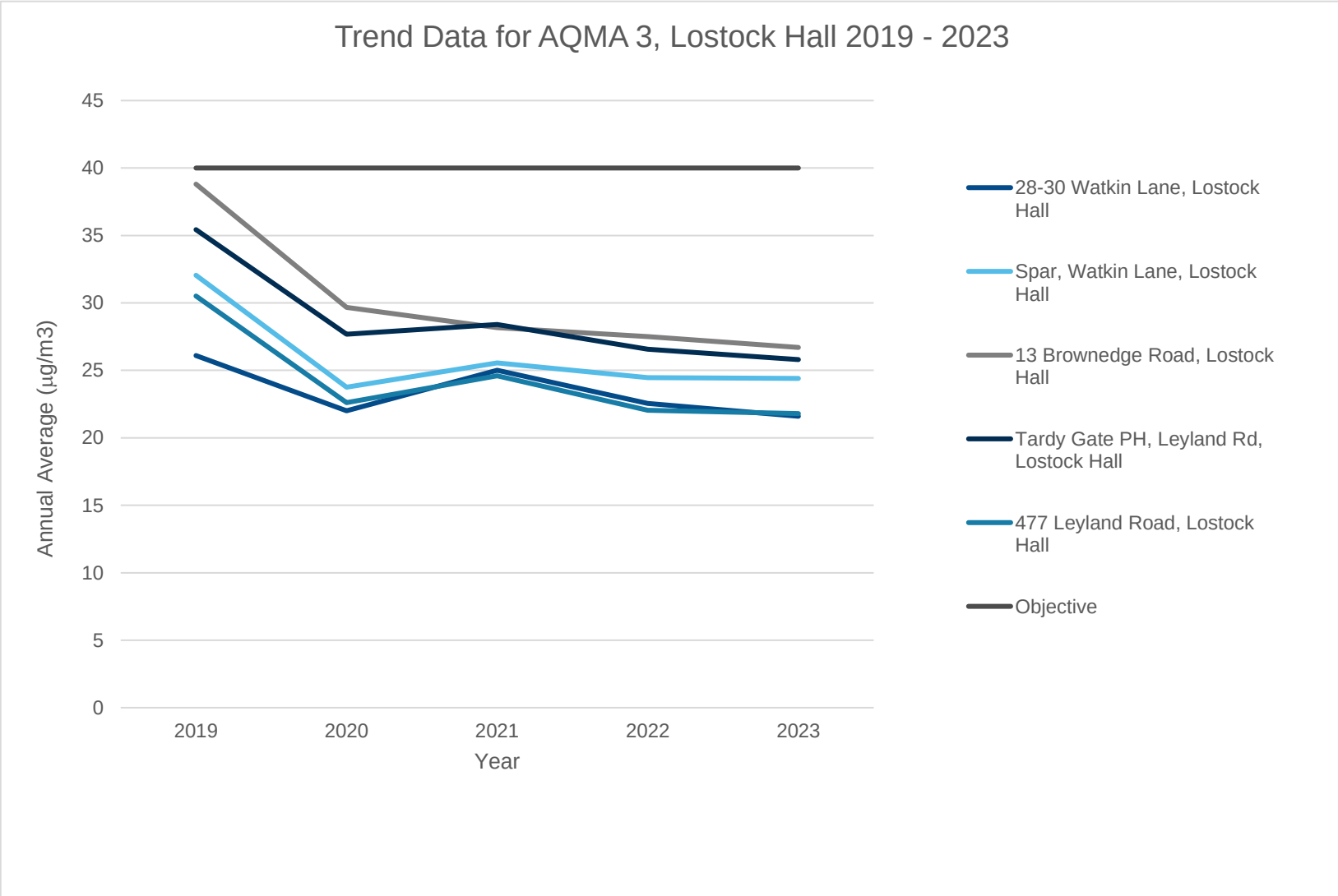


**Figure A.4.4 – Trends in Annual Mean $NO_2$ Concentrations – AQMA 4 Bamber Bridge**

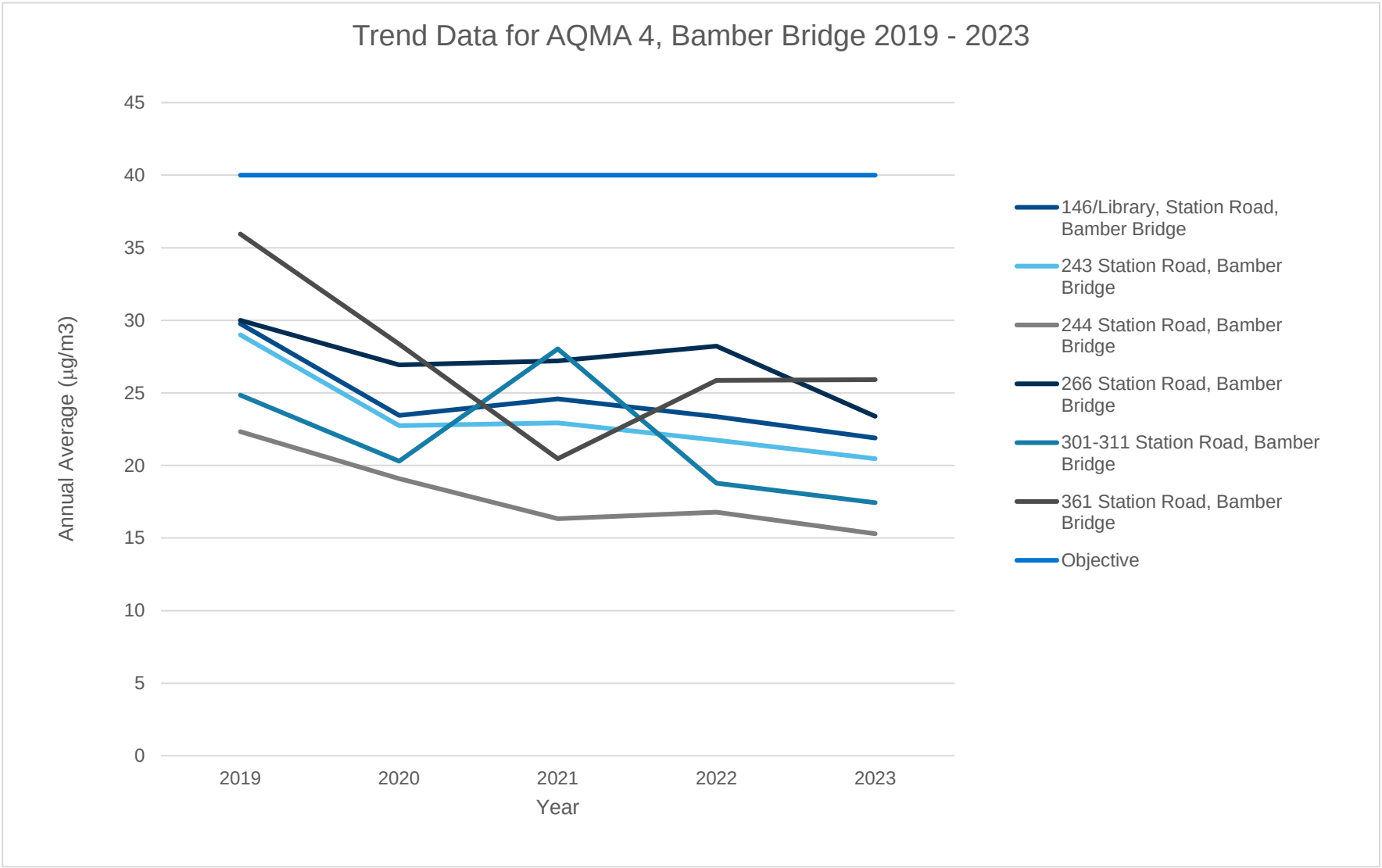
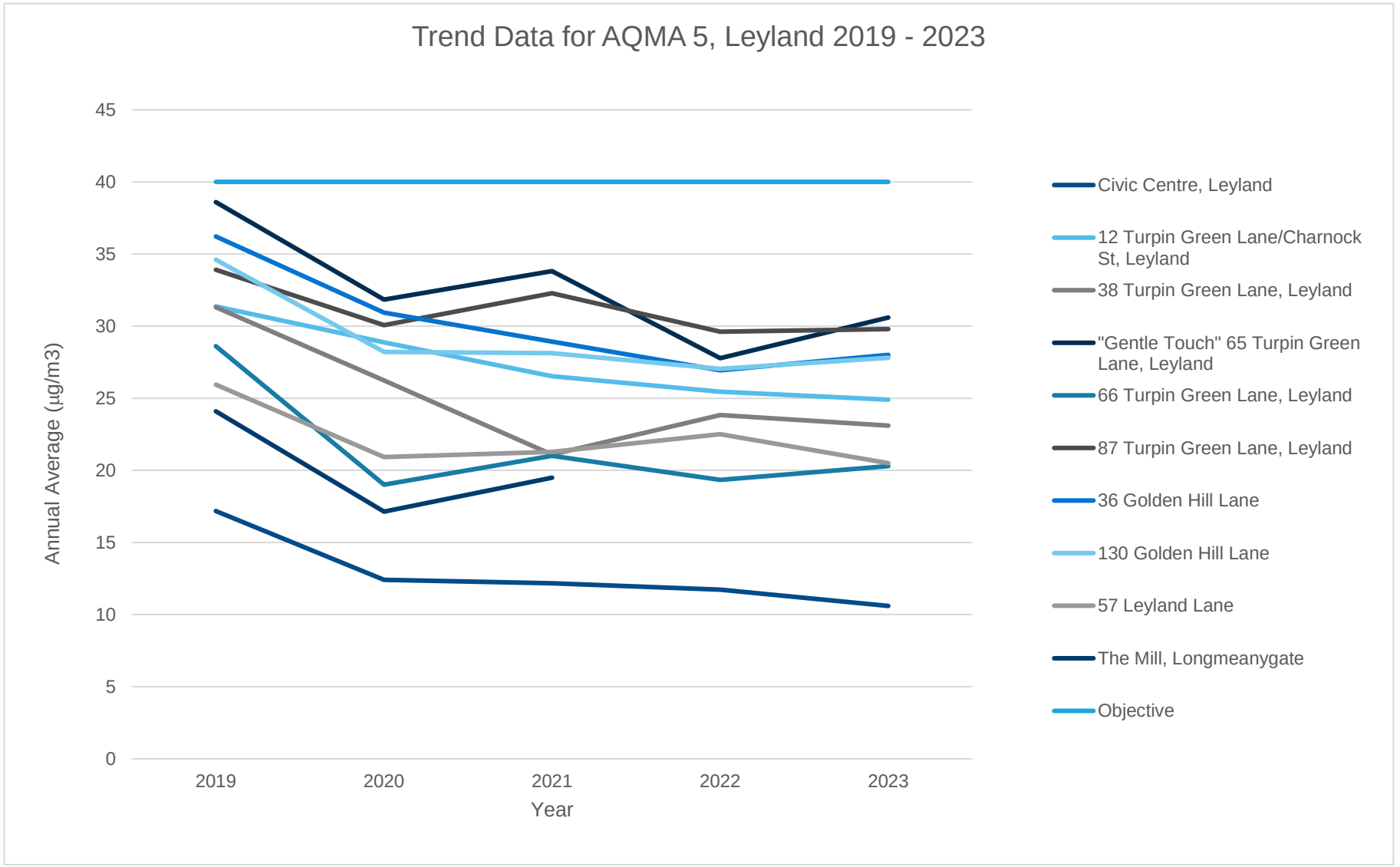


**Figure A.5.5 – Trends in Annual Mean $NO_2$ Concentrations – AQMA 5 Leyland**



## Table A.5 – 1-Hour Mean $NO_2$ Monitoring Results, Number of 1-Hour Means > 200µg/m$^3$

| Site 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 |
|---|---|---|---|---|---|---|---|---|---|---|
| Z1 | 354370 | 425788 | Roadside | 100 | 66 | | | | 0 | 0 |
| Z2 | 353866 | 422656 | Roadside | 100 | 100 | | | | 0 | 0 |
| Z3 | 354667 | 422249 | Roadside | | | | | | 9 | |

**Notes:**

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

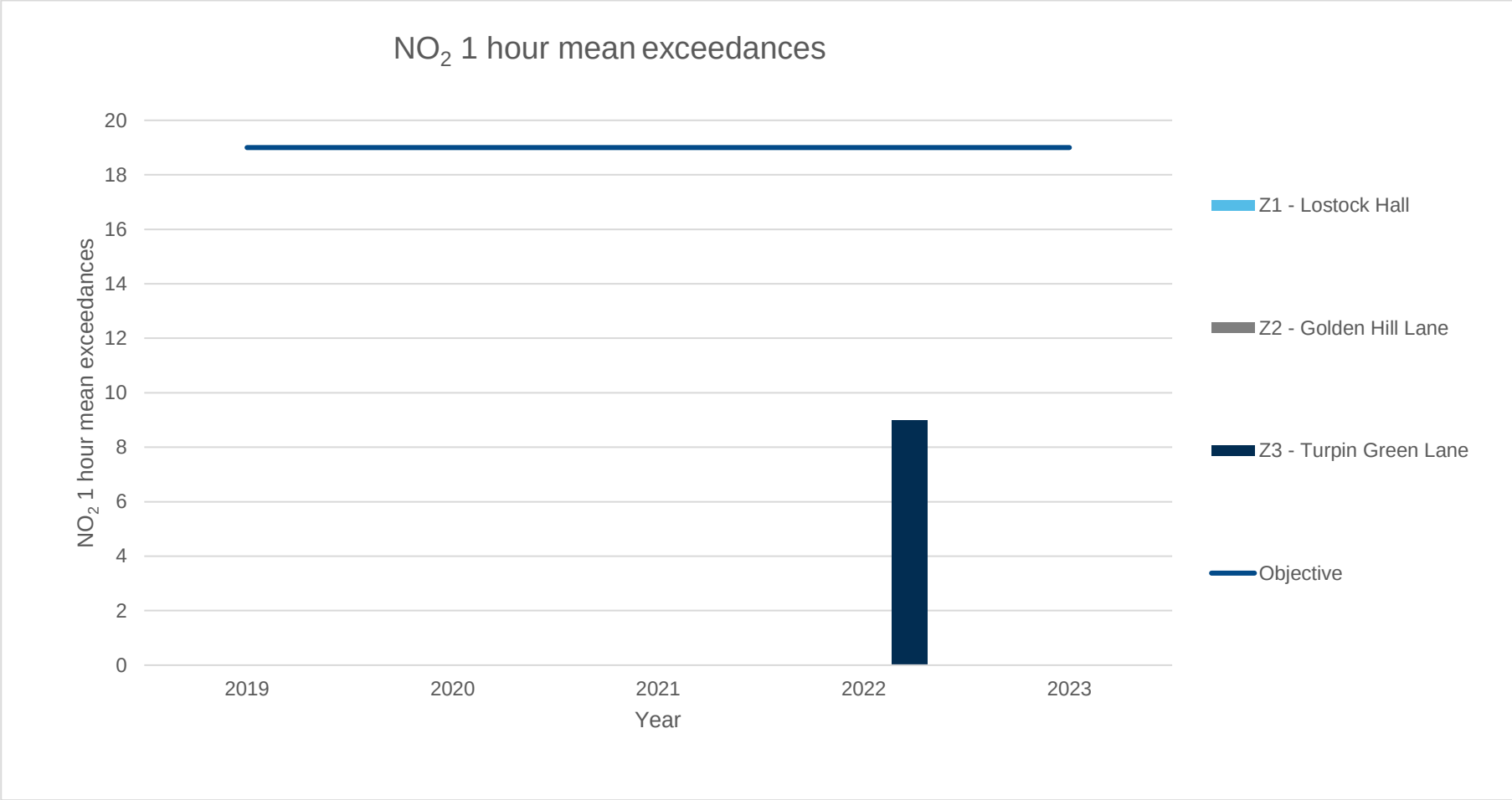
Exceedances of the $NO_2$ 1-hour mean objective (200µg/m$^3$ not to be exceeded more than 18 times/year) are shown in **bold**.

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

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

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

**Figure A.6 – Trends in Number of $NO_2$ 1-Hour Means > 200µg/m$^3$**




Theft of the Zephyr sensor unit in 2023 means that there is no viable data available for Z3- Turpin Green Lane

Zephyrs were installed in 2022, so no data exists prior to this date.

## Table A.6 – Annual Mean $PM_{10}$ Monitoring Results ($\mu g/m^3$)

| Site 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 |
|---|---|---|---|---|---|---|---|---|---|---|
| Z1 | 354370 | 425788 | Roadside | 100 | 66 | | | | 12.7 | 10.8 |
| Z2 | 353866 | 422656 | Roadside | 100 | 100 | | | | 11.0 | 9.5 |
| Z3 | 354667 | 422249 | Roadside | | | | | | 12.4 | |

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

**Notes:**

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

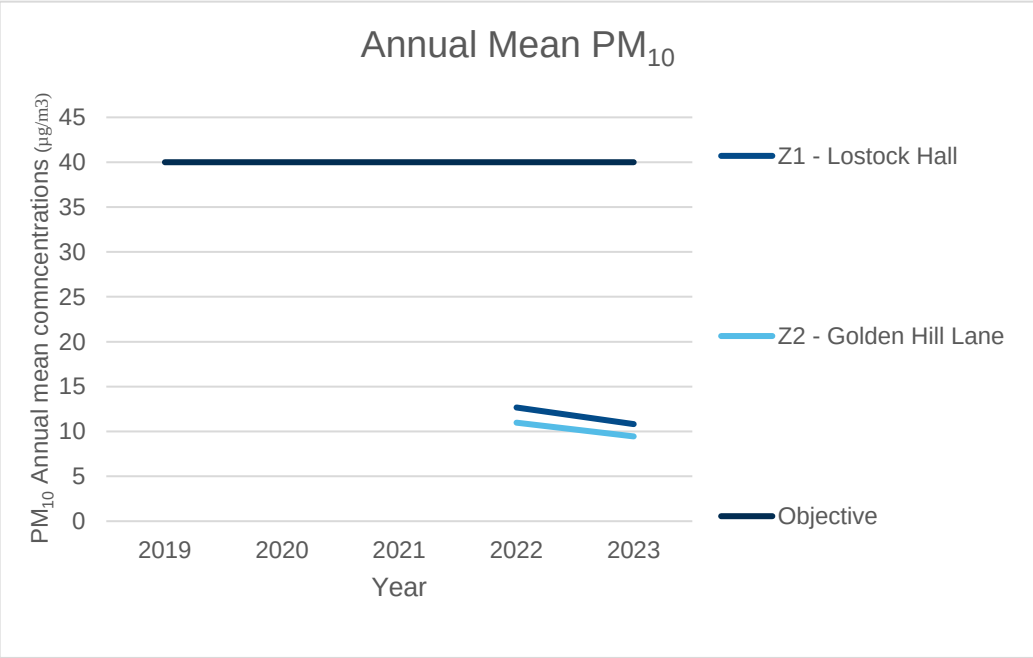
Exceedances of the $PM_{10}$ annual mean objective of 40$\mu g/m^3$ are shown in **bold**.

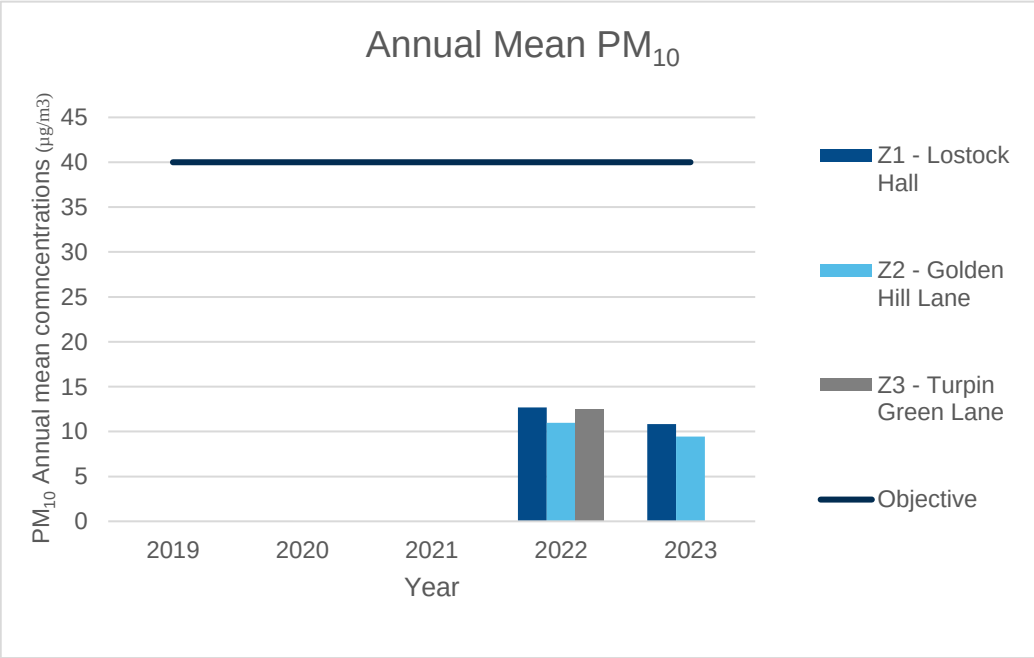
All means have been "annualised" as per LAQM.TG22 if valid data capture for the full calendar year is less than 75%. See Appendix C for details.

(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.7 – Trends in Annual Mean $PM_{10}$ Concentrations**




Theft of the Zephyr sensor unit in 2023 means that there is no viable data available for Z3 - Turpin Green Lane

Zephyrs were installed in 2022, so no data exists prior to this date.

Table A.7 – 24-Hour Mean $PM_{10}$ Monitoring Results, Number of $PM_{10}$ 24-Hour Means > 50µg/m$^3$

| Site 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 |
|---|---|---|---|---|---|---|---|---|---|---|
| Z1 | 354370 | 425788 | Roadside | 100 | 66 | | | | 1 | 0 |
| Z2 | 353866 | 422656 | Roadside | 100 | 100 | | | | 0 | 0 |
| Z3 | 354667 | 422249 | Roadside | | | | | | 1 | |

**Notes:**

Results are presented as the number of 24-hour periods where daily mean concentrations greater than 50µg/m$^3$ have been recorded.

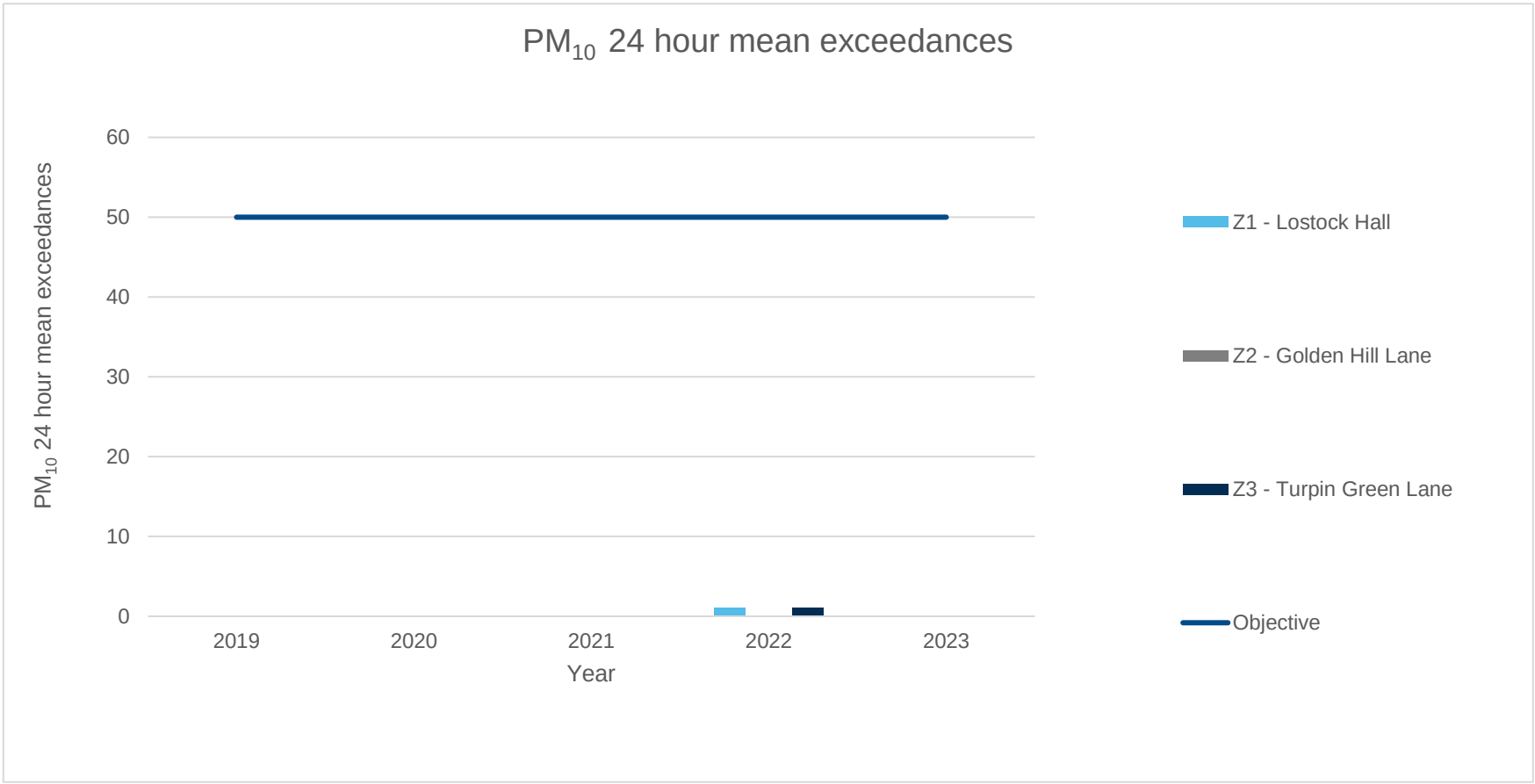
Exceedances of the $PM_{10}$ 24-hour mean objective (50µg/m$^3$ not to be exceeded more than 35 times/year) are shown in **bold**.

If the period of valid data is less than 85%, the 90.4th percentile of 24-hour means is provided in brackets.

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

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

**Figure A.8 – Trends in Number of 24-Hour Mean $PM_{10}$ Results > 50µg/m³**




Theft of the Zephyr sensor unit in 2023 means that there is no viable data available for Z3 - Turpin Green Lane

Zephyrs were installed in 2022, so no data exists prior to this date.

## Table A.8 – Annual Mean $PM_{2.5}$ Monitoring Results ($\mu g/m^3$)

| Site 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 |
|---|---|---|---|---|---|---|---|---|---|---|
| Z1 | 354370 | 425788 | Roadside | 100 | 66 | | | | 8.1 | 5.2 |
| Z2 | 353866 | 422656 | Roadside | 100 | 100 | | | | 7.1 | 6 |
| Z3 | 354667 | 422249 | Roadside | | | | | | 8.2 | |

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

**Notes:**

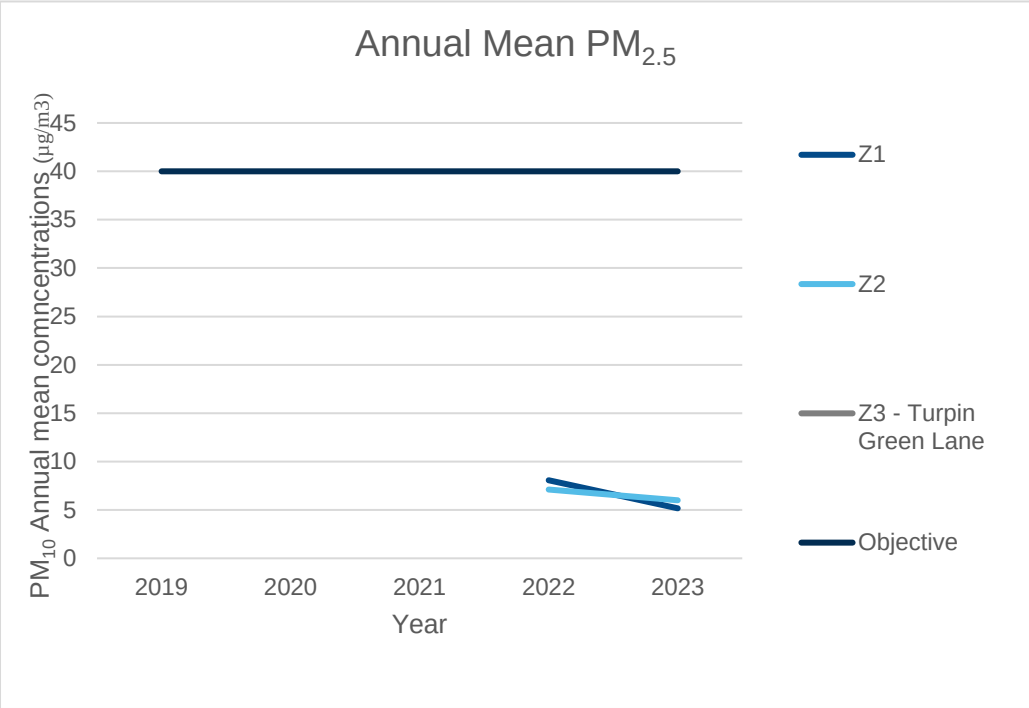
The annual mean concentrations are presented as $\mu g/m^3$.

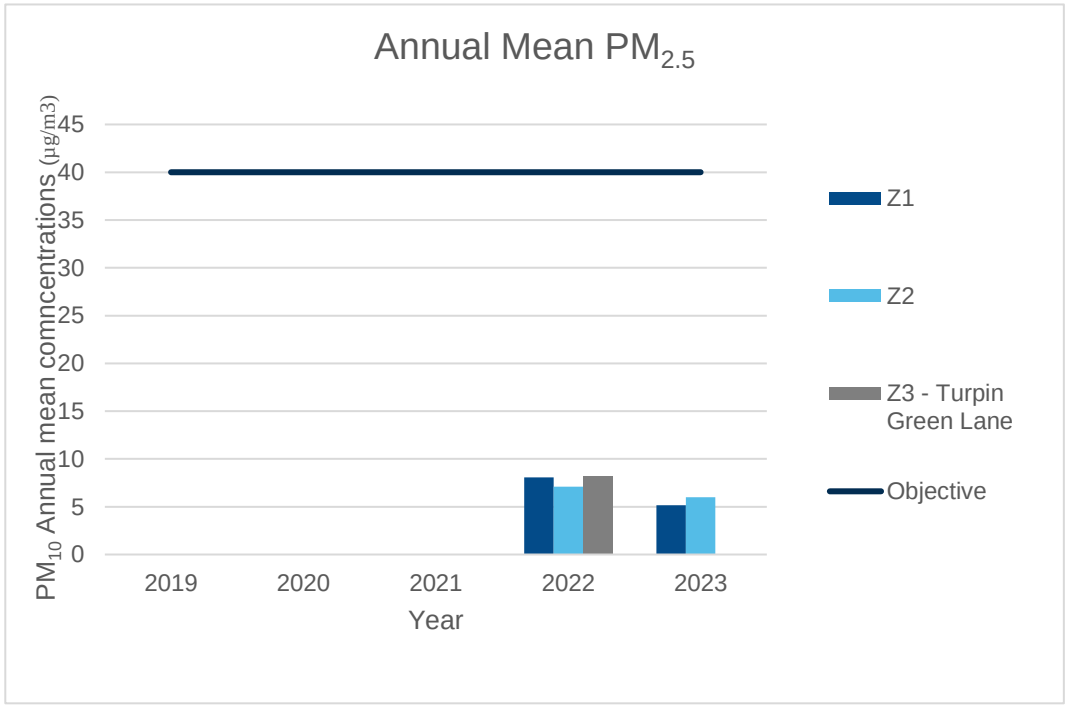
All means have been “annualised” as per LAQM.TG22 if valid data capture for the full calendar year is less than 75%. See Appendix C for details.

(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.9 – Trends in Annual Mean $PM_{2.5}$ Concentrations.**




Theft of the Zephyr sensor units in 2023 means that there is no viable data available for Z3- Turpin Green Lane

Zephyrs were installed in 2022, so no data exists prior to this date.

## Table A.9 – $SO_2$ 2023 Monitoring Results, Number of Relevant Instances

South Ribble Borough Council does not collect this data

# 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 0.83 | Annual Mean: Distance Corrected to Nearest Exposure | Comment |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1, 2, 3 | 353626 | 421781 | 18.7 | 16.5 | 13.4 | 12.3 | 7.8 | 9.1 | 6.7 | 8.9 | 13.0 | | 22.5 | 11.9 | 12.8 | 10.6 | | |
| 4 | 354527 | 422371 | 38.9 | 37.1 | 32.5 | 30.5 | 23.7 | 23.3 | 21.3 | 24.6 | 32.6 | 31.1 | 37.6 | 26.9 | 30.0 | 24.9 | | |
| 5 | 354588 | 422269 | 35.3 | 28.5 | 28.1 | 25.6 | 24.5 | 24.5 | 23.8 | 24.7 | 31.6 | 29.1 | 35.3 | 23.4 | 27.9 | 23.1 | | |
| 6 | 354678 | 422249 | 45.2 | 42.7 | 41.9 | 41.2 | 37.1 | 22.1 | 27.2 | 32.8 | 39.6 | 40.5 | 42.4 | 29.3 | 36.9 | 30.6 | | |
| 7 | 354730 | 422212 | 28.2 | 24.5 | 24.3 | 24.2 | 21.4 | 40.4 | 12.9 | 19.0 | 23.3 | 26.2 | | | 24.4 | 20.3 | | |
| 8 | 354744 | 422231 | 41.9 | 36.6 | 37.2 | 35.6 | 40.8 | 36.7 | 25.8 | 34.6 | 35.5 | 37.7 | 40.9 | 26.9 | 35.9 | 29.8 | | |
| 9, 10, 11 | 354438 | 422645 | 40.1 | 38.1 | 32.8 | 33.8 | 33.1 | 32.0 | 25.9 | 30.7 | 37.0 | 34.4 | 40.0 | 27.3 | 33.8 | 28.0 | | |
| 12, 13, 14 | 353890 | 422654 | 39.9 | 35.9 | 40.6 | 35.1 | 29.5 | 34.5 | 23.6 | 26.6 | 34.5 | 37.3 | 37.6 | 26.5 | 33.5 | 27.8 | | |
| 15 | 353048 | 422809 | 28.4 | 27.2 | 24.6 | 27.2 | 18.6 | 24.7 | 18.5 | 19.2 | 27.0 | 29.5 | 30.2 | 21.8 | 24.7 | 20.5 | | |
| 16 | 353751 | 426828 | 26.4 | 22.8 | 20.9 | 17.3 | 15.4 | 14.7 | 13.4 | 15.2 | 20.6 | 20.5 | 25.1 | 16.4 | 19.1 | 15.8 | | |
| 17 | 354514 | 425695 | 34.5 | 30.6 | 28.5 | 26.1 | 22.9 | 20.9 | 17.4 | 21.8 | 26.4 | 29.7 | 33.8 | 20.1 | 26.1 | 21.6 | | |
| 18 | 354368 | 425783 | 37.3 | 33.7 | 29.2 | 27.4 | 28.6 | 25.3 | 23.7 | 27.1 | 30.3 | 27.8 | 37.2 | 24.9 | 29.4 | 24.4 | | |
| 19 | 354410 | 425835 | 38.8 | 37.0 | 32.8 | 31.1 | 30.5 | 30.7 | 25.1 | 30.2 | 34.0 | 35.4 | 33.6 | 27.4 | 32.2 | 26.7 | | |
| 20, 21, 22 | 354354 | 425845 | 36.2 | 34.0 | 33.7 | 33.2 | 28.3 | 30.7 | 20.6 | 27.0 | 32.2 | 34.6 | 36.8 | 25.6 | 31.1 | 25.8 | | |
| 23 | 354296 | 425903 | 33.2 | 30.9 | 29.8 | 28.7 | 23.6 | 26.0 | 15.7 | 20.5 | 25.4 | 30.1 | 32.7 | 19.1 | 26.3 | 21.8 | | |
| 24 | 352116 | 428445 | 31.2 | 29.8 | 24.4 | 21.0 | 15.6 | 16.2 | 13.5 | 15.7 | 18.8 | 22.3 | 29.0 | 15.2 | 21.1 | 17.5 | | |
| 25 | 351875 | 428428 | 25.7 | | 19.2 | 16.0 | 12.6 | 14.6 | 9.9 | 11.8 | 17.7 | | 23.4 | 18.8 | 16.9 | 14.1 | | |
| 26 | 351891 | 428404 | | 22.3 | 19.9 | 19.4 | 14.5 | | 11.8 | 13.4 | | 24.1 | 25.8 | 18.0 | 18.8 | 15.6 | | |
| 27 | 351927 | 428460 | 26.3 | 25.1 | 23.0 | 20.1 | 14.2 | 18.6 | 10.9 | 13.9 | 20.7 | 25.5 | 29.3 | 19.7 | 20.6 | 17.1 | | |
| 28 | 351927 | 428460 | 23.8 | 22.5 | 20.3 | 18.8 | 12.9 | 15.9 | 11.5 | | 19.9 | 26.5 | 27.4 | 18.6 | 19.8 | 16.5 | | |
| 29 | 354175 | 426713 | 18.4 | 18.5 | 15.7 | 13.4 | 10.0 | 11.3 | 8.1 | 11.5 | 15.6 | 12.0 | 22.9 | 13.4 | 14.2 | 11.8 | | |
| 30 | 351879 | 426968 | 27.7 | 25.4 | 22.9 | 22.1 | 17.1 | 22.9 | 19.8 | 19.6 | 25.5 | 23.7 | 27.1 | 19.2 | 22.7 | 18.9 | | |
| 31 | 355370 | 428571 | | 30.1 | 27.0 | 23.3 | 22.9 | 21.2 | 24.1 | 23.5 | 27.4 | 26.9 | 30.1 | 23.9 | 25.5 | 21.2 | | |
| 32, 33, 34 | 355429 | 428518 | 35.8 | 29.2 | 34.1 | 24.7 | 21.7 | 21.6 | 23.1 | 22.5 | 27.3 | 26.9 | 29.7 | 26.3 | 26.9 | 22.3 | | |
| 35 | 355521 | 428467 | 39.6 | 34.8 | | | 24.3 | 28.0 | 21.7 | | 30.9 | 31.1 | | 24.4 | 29.4 | 25.2 | | |
| 36 | 356437 | 426303 | 33.6 | 28.4 | 26.1 | | 21.7 | 23.0 | 19.2 | 23.1 | 28.7 | 30.7 | 34.0 | 21.7 | 26.4 | 21.9 | | |

| 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 0.83 | Annual Mean: Distance Corrected to Nearest Exposure | Comment |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 37 | 356530 | 425840 | 29.6 | 30.6 | 24.6 | 22.3 | | 21.1 | 18.8 | 20.3 | 24.0 | 26.3 | 32.0 | 21.7 | 24.7 | 20.5 | | |
| 38 | 356506 | 425793 | 26.6 | 23.3 | 18.6 | 16.9 | 14.0 | 15.2 | 12.2 | 14.5 | 18.4 | 21.3 | 24.1 | 16.2 | 18.4 | 15.3 | | |
| 39 | 356511 | 425695 | 36.4 | | 28.8 | | | 20.4 | 22.6 | 23.1 | 30.5 | | 37.5 | 23.7 | 27.9 | 23.4 | | |
| 40 | 356426 | 425364 | 39.6 | 36.8 | 31.4 | 32.2 | 25.0 | 29.7 | 23.2 | 25.6 | 32.3 | 34.0 | 38.0 | 26.8 | 31.2 | 25.9 | | |
| 41 | 356510 | 425601 | 28.8 | 25.8 | 21.9 | 21.2 | 15.9 | 17.4 | 14.3 | 16.8 | 21.5 | 25.1 | 23.1 | 20.2 | 21.0 | 17.4 | | |

☒ 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.

☒ South Ribble Borough 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.

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

## New or Changed Sources Identified Within South Ribble During 2023.

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

## Additional Air Quality Works Undertaken by South Ribble Borough Council During 2023

South Ribble Borough Council has completed consultation exercises for the development of a new Air Quality Strategy and an update of the Air Quality Action Plan, both due for publication in 2024.

## QA/QC of Diffusion Tube Monitoring

The diffusion tubes used by South Ribble Borough Council were supplied by Gradko Environmental Ltd, using a 50% TEA / Acetone solution. The Air Quality Review and Assessment website gives a bias adjustment figure of 0.83 for the 2023 data set.

No co-location study has been undertaken by South Ribble Borough Council, and so the national bias adjustment figure derived from the table below has been used to adjust all results obtained by South Ribble Borough Council. This bias adjust figure has been obtained from the March 2024 spreadsheet.

The results of the AIR $NO_2$ Proficiency Testing Scheme are presented below and a field inter-comparison exercise, precision survey indicated a good overall level of precision with collocated studies for the Gradko diffusion tubes.

**Summary of Precision Results for Nitrogen Dioxide Diffusion Tube Collocation Studies by Laboratory, 2021-2023**

| Diffusion Tube Preparation Method | 2021 Good | 2021 Bad | 2022 Good | 2022 Bad | 2023 Good | 2023 Bad |
|---|---|---|---|---|---|---|
| **Gradko, 50% TEA in Acetone** | **16** | **0** | **16** | **0** | **14** | **0** |
| Gradko, 20% TEA in Water | 34 | 0 | 33 | 0 | 21 | 0 |
| ESG Didcot / SOCOTEC, 50% TEA in Acetone | 25 | 3 | 29 | 0 | 28 | 0 |
| ESG Didcot / SOCOTEC, 20% TEA in Water | 14 | 1 | 11 | 0 | 4 | 0 |
| Staffordshire Scientific Services | 15 | 1 | 13 | 0 | 11 | 0 |
| Glasgow Scientific Services | 2 | 5 | 3 | 3 | 1 | 0 |
| Edinburgh Scientific Services | 6 | 0 | 1 | 0 | 0 | 1 |
| Milton Keynes Council | 4 | 0 | 1 | 0 | 1 | 0 |
| Tayside Scientific Services | 1 | 0 | 1 | 0 | 1 | 0 |
| Lambeth Scientific Services | 8 | 1 | 6 | 4 | 3 | 0 |
| Aberdeen Scientific Services | 7 | 0 | 7 | 0 | 7 | 0 |
| South Yorkshire Air Quality Samplers | 1 | 0 | 0 | 0 | 0 | 0 |
| ESG Glasgow, 50% TEA in Acetone | 0 | 1 | 1 | 0 | 1 | 0 |
| ESG Glasgow, 20% TEA in Water | 0 | 1 | 1 | 0 | 1 | 0 |
| Somerset County Council | 11 | 0 | 14 | 0 | 4 | 0 |

The diffusion tube monitoring program has been completed in line with the 2023 Diffusion Tube Monitoring Calendar. All tubes were exposure for the minimum of 4 weeks with no tubes exposed for longer than 5 weeks.

## Diffusion Tube Annualisation

Annualisation of two sites was required for the 2023 monitoring data. Details of these are provided below within Table below. Data from the nearest automatic continuous analysers at Preston and Wigan has been used to determine a suitable correction factor for each site.

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

| Site ID | Annualisation Factor <Site 1 Name> | Annualisation Factor <Site 2 Name> | Annualisation Factor <Site 3 Name> | Annualisation Factor <Site 4 Name> | Average Annualisation Factor | Raw Data Annual Mean | Annualised Annual Mean |
|---|---|---|---|---|---|---|---|
| 35 | 1.0256 | 1.0440 | | | 1.0348 | 29.4 | 30.4 |
| 39 | 1.0130 | 1.0090 | | | 1.0110 | 27.9 | 28.2 |

## 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.

South Ribble Borough Council have applied a national bias adjustment factor of 0.83 to the 2023 monitoring data. A summary of bias adjustment factors used by South Ribble Borough Council over the past five years is presented in Table C..

**Figure C.1 – Screenshot of National Diffusion Tube Bias Adjustment Factor 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: | Step 2: | Step 3: | Step 4: |
|---|---|---|---|
| Select the Laboratory that Analyses Your Tubes from the Drop-Down List | Select a Preparation Method from the Drop-Down List | Select a Year from the Drop-Down List | Where there is only one study for a chosen combination, you should use the adjustment factor shown with caution. Where there is more than one study, use the overall factor[3] shown in blue at the foot of the final column. |
| If a laboratory is not shown, we have no data for this laboratory. | If a preparation method is not shown, we have no data for this method at this laboratory. | If a year is not shown, we have no data[2] | If you have your own co-location study then see footnote[4]. If uncertain what to do then contact the Local Air Quality Management Helpdesk at LAQMHelpdesk@bureauveritas.com or 0800 0327953 |

| Analysed By[1] | Method (To undo your selection, choose (All) from the pop-up list) | Year[5] (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) |
|---|---|---|---|---|---|---|---|---|---|---|
| Edinburgh Scientific Services | 50% TEA in acetone | 2023 | | Overall Factor[3] (1 study) | | | | Use | | 0.81 |
| Glasgow Scientific Services | 20% TEA in water | 2023 | | Overall Factor[3] (1 study) | | | | Use | | 0.74 |
| Gradko | 20% TEA in water | 2023 | | Overall Factor[3] (23 studies) | | | | Use | | 0.81 |
| Gradko | 50% TEA in acetone | 2023 | | Overall Factor[3] (15 studies) | | | | Use | | 0.83 |
| Lambeth Scientific Services | 50% TEA in acetone | 2023 | | Overall Factor[3] (3 studies) | | | | Use | | 0.85 |
| Milton Keynes Council | 20% TEA in water | 2023 | | Overall Factor[3] (1 study) | | | | Use | | 0.72 |
| SOCOTEC Didcot | 20% TEA in water | 2023 | | Overall Factor[3] (4 studies) | | | | Use | | 0.75 |
| SOCOTEC Didcot | 50% TEA in acetone | 2023 | | Overall Factor[3] (28 studies) | | | | Use | | 0.77 |
| SOCOTEC Glasgow | 20% TEA in water | 2023 | | Overall Factor[3] (1 study) | | | | Use | | 0.72 |
| SOCOTEC Glasgow | 50% TEA in acetone | 2023 | | Overall Factor[3] (1 study) | | | | Use | | 0.77 |
| Somerset County Council | 20% TEA in water | 2023 | | Overall Factor[3] (4 studies) | | | | Use | | 0.79 |
| Staffordshire Scientific Services | 20% TEA in water | 2023 | | Overall Factor[3] (11 studies) | | | | Use | | 0.86 |
| Tayside Scientific Services | 20% TEA in water | 2023 | | Overall Factor[3] (1 study) | | | | Use | | 0.68 |

### Table C.2 – Bias Adjustment Factor

| Monitoring Year | Local or National | If National, Version of National Spreadsheet | Adjustment Factor |
|---|---|---|---|
| **2023** | National | 03/24 | 0.83 |
| **2022** | National | 03/23 | 0.82 |
| **2021** | National | 03/22 | 0.83 |
| **2020** | National | 06/21 | 0.83 |
| **2019** | National | 06/20 | 0.89 |

### Local Bias Adjustment Calculation

No local bias adjustment factor has been calculated.

### $NO_2$ 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.

No diffusion tube $NO_2$ monitoring locations within South Ribble Borough Council required distance correction during 2023.

## QA/QC of Automatic Monitoring

Three Zephyr air quality sensors manufactured by EarthSense Systems Limited (Leicester, UK) were purchased in 2021. Calibration was carried out prior to installation over seven days in June 2021, at the EarthSense manufacturing facility.

The performance of Zephyr units is periodically checked remotely by EarthSense and, where required, remote re-calibrations are applied to the collected data. This process does not overwrite existing data but is applied to all newly acquired data.

Periodic re-calibrations are made where systematic biases are present when comparing Zephyr data with a regional average of EU-standard reference stations for a representative environment category. This second re-calibration was not required during this study.

Day-to-day data management and periodic visual inspections are undertaken by Chorley Council officers.

Live and historic data is available at the following website: https://portal.earthsense.co.uk/SouthRibblePublic/data

The MCERTS Certificate No: MC210393/00 for EarthSense Systems Indicative Ambient Particulate Monitors is at: https://www.csagroup.org/wp-content/uploads/MC21039300a.pdf

The type of PM10/PM2.5 monitor(s) utilised within South Ribble do not require the application of a correction factor.

### $PM_{10}$ and $PM_{2.5}$ Monitoring Adjustment

The type of EarthSense Zephyr sensor(s) utilised within South Ribble do not require the application of a correction factor.

### Automatic Monitoring Annualisation

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

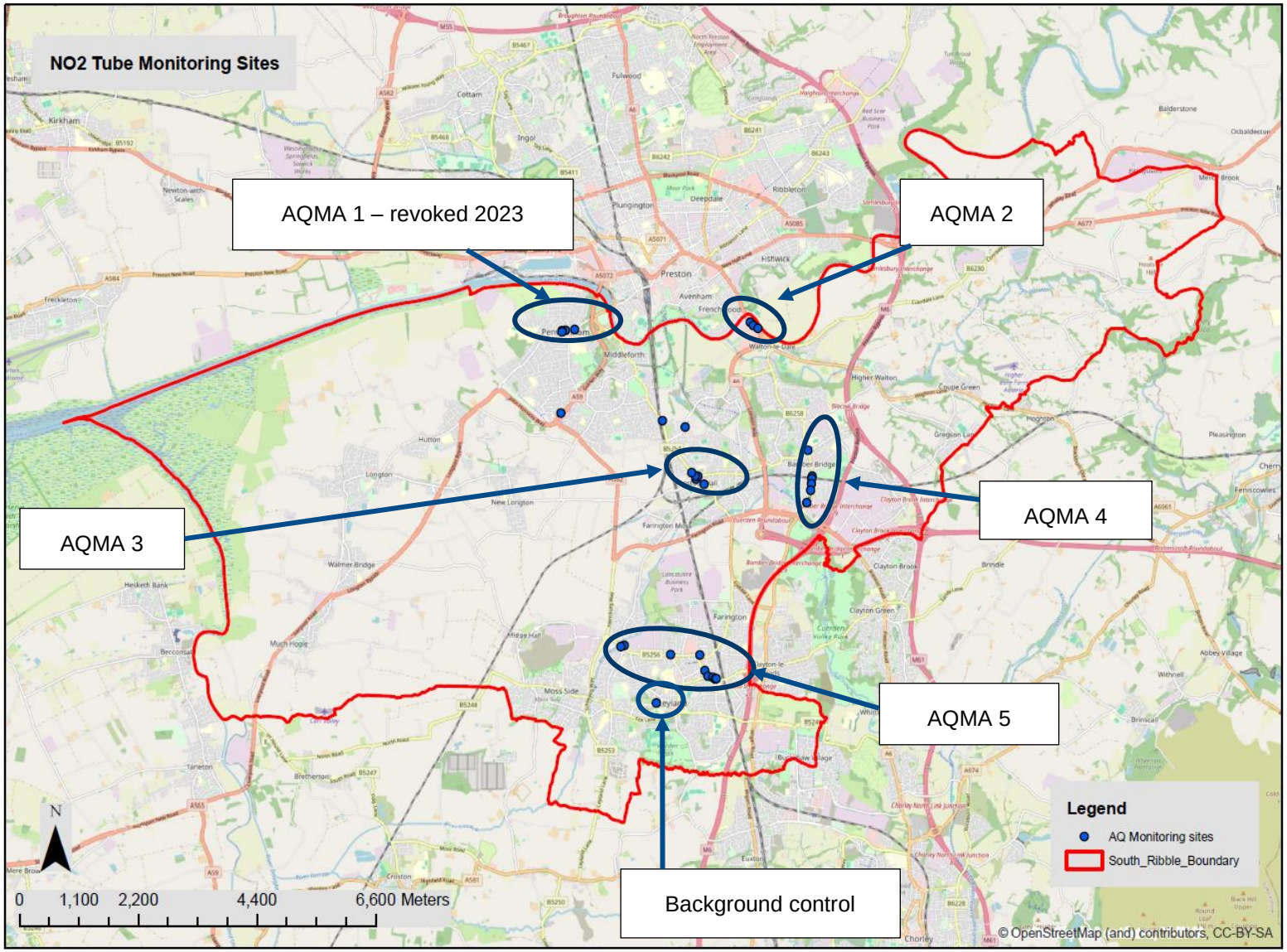
### $NO_2$ Fall-off with Distance from the Road

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 $NO_2$ fall-off with distance calculator available on the LAQM Support website. Where appropriate, automatic annual mean $NO_2$ concentrations corrected for distance are presented in Table A.3.

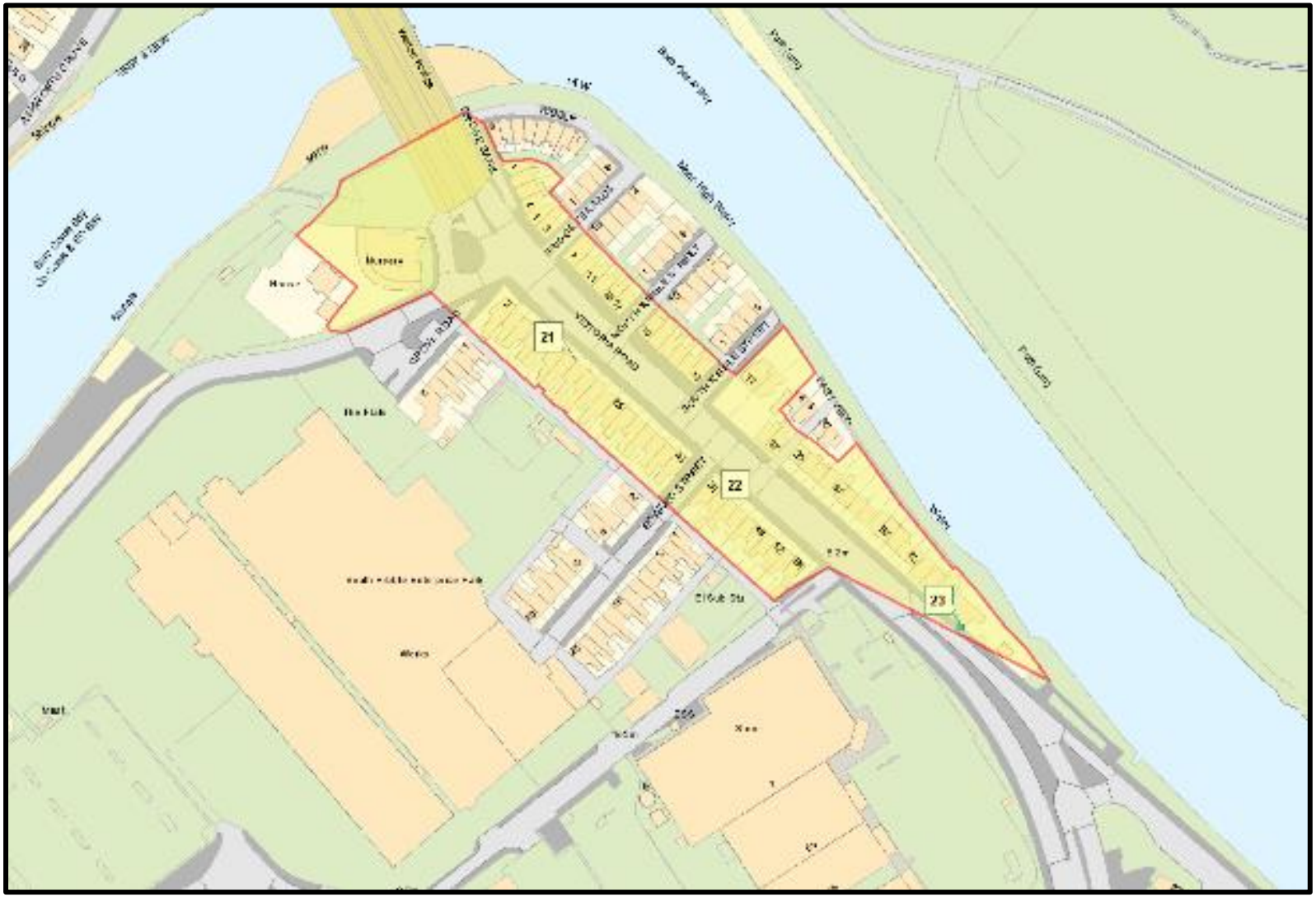
No automatic $NO_2$ monitoring locations within South Ribble Borough Council required distance correction during 2023.

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

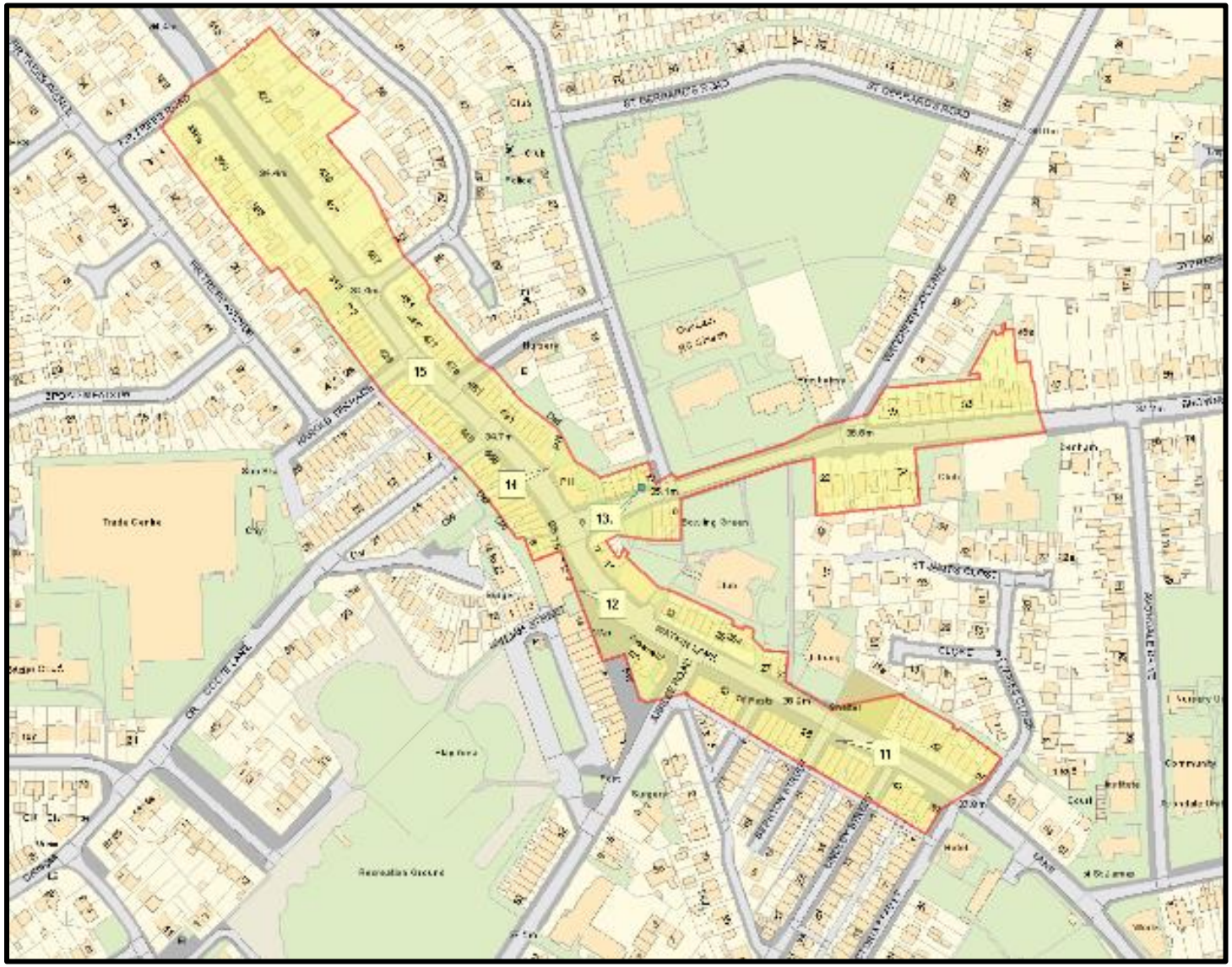
## Figure D.1 – Map of Non-Automatic Monitoring Sites



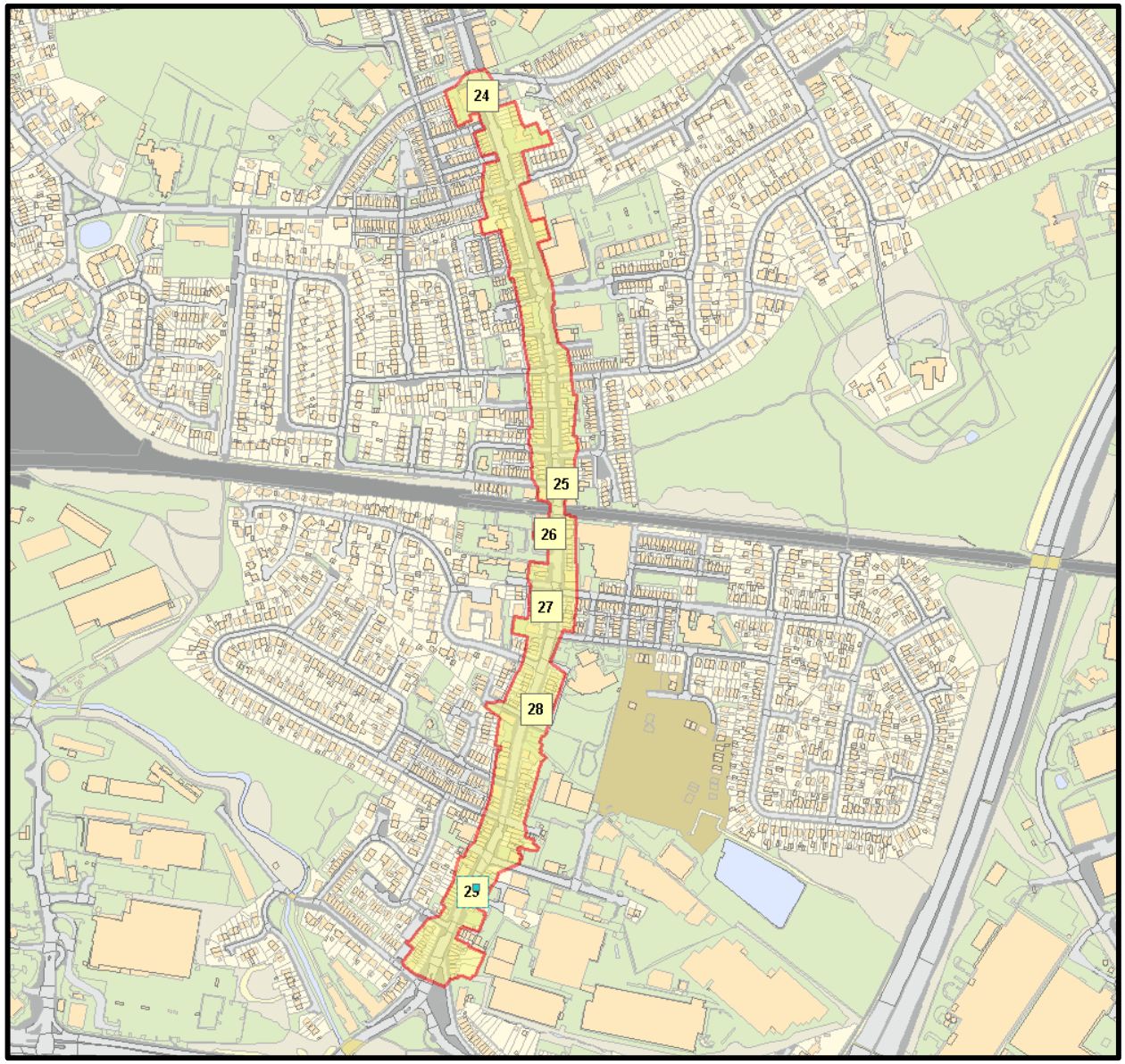
## AQMA 2 – Walton le Dale



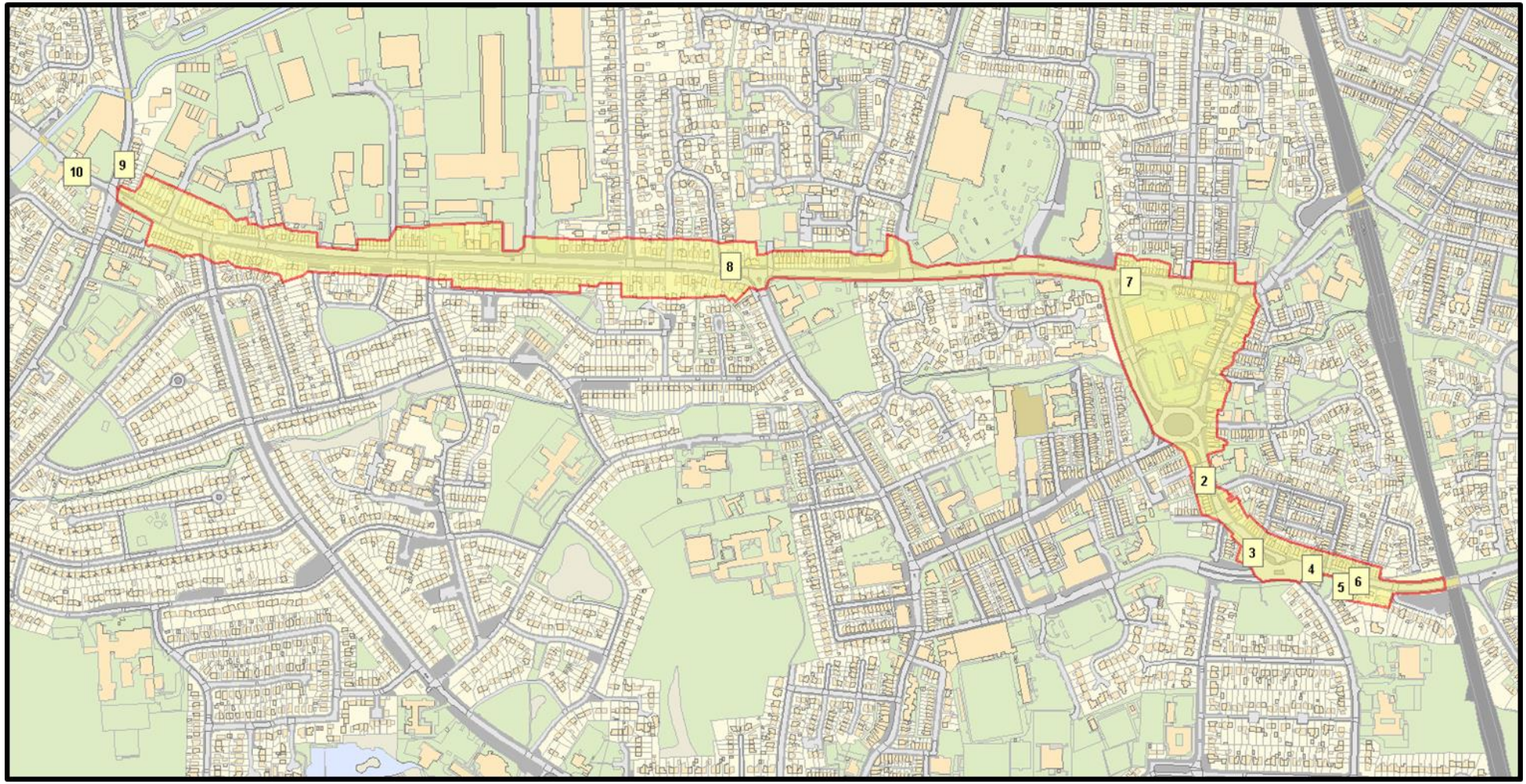
## AQMA 3 – Lostock Hall



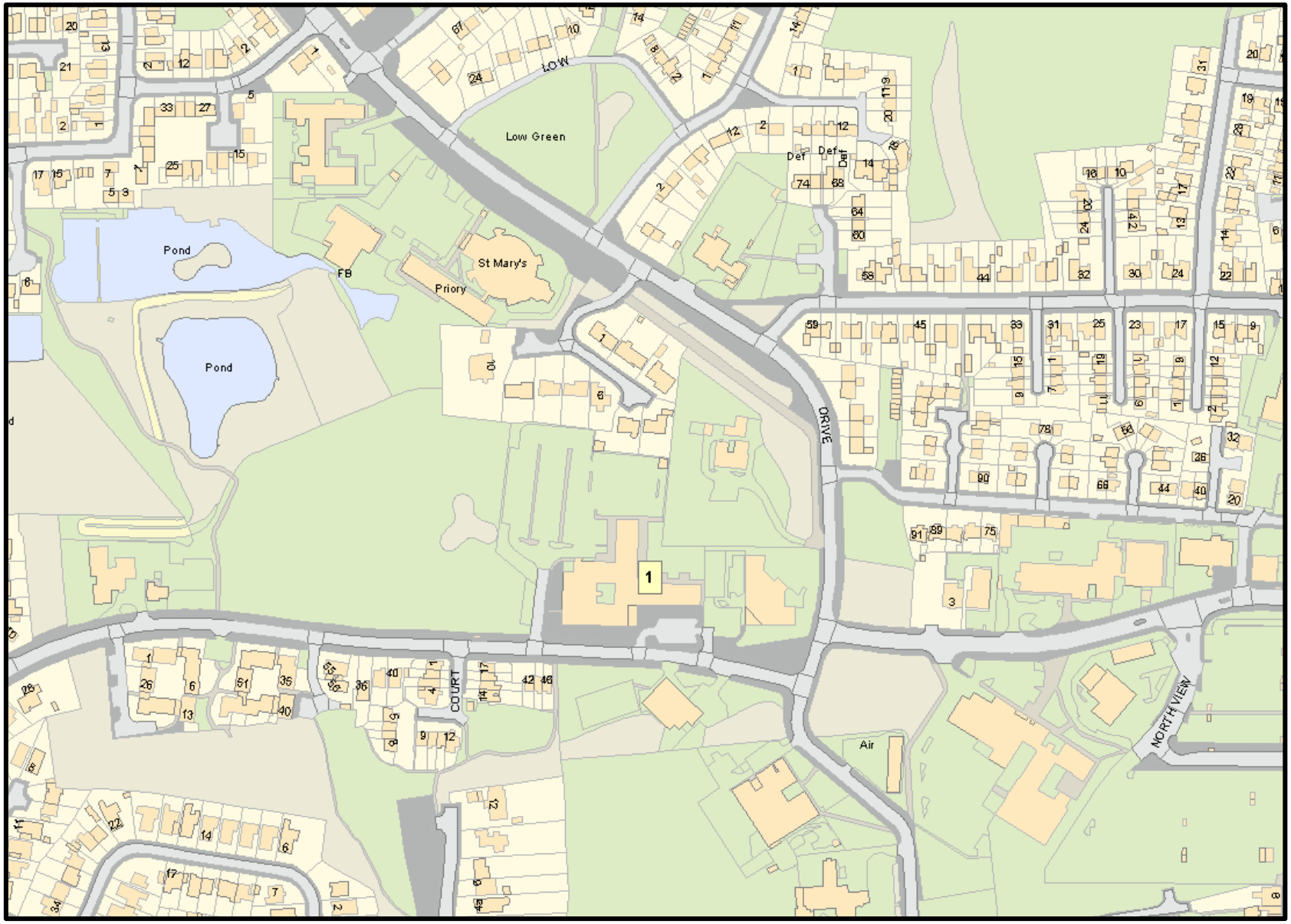
## AQMA 4 – Bamber Bridge



## AQMA 5 - Leyland



## Background monitoring – Civic Centre, Leyland



# Appendix E: Summary of Air Quality Objectives in England

### Table E.1 – Air Quality Objectives in England[7]

| 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 |

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

# Glossary of Terms

| Abbreviation | Description |
|---|---|
| AQAP | Air Quality Action Plan - A detailed description of measures, outcomes, achievement dates and implementation methods, showing how the local authority intends to achieve air quality limit values' |
| AQMA | Air Quality Management Area – An area where air pollutant concentrations exceed / are likely to exceed the relevant air quality objectives. AQMAs are declared for specific pollutants and objectives |
| ASR | Annual Status Report |
| Defra | Department for Environment, Food and Rural Affairs |
| DMRB | Design Manual for Roads and Bridges – Air quality screening tool produced by National Highways |
| EU | European Union |
| FDMS | Filter Dynamics Measurement System |
| LAQM | Local Air Quality Management |
| $NO_2$ | Nitrogen Dioxide |
| $NO_x$ | Nitrogen Oxides |
| $PM_{10}$ | Airborne particulate matter with an aerodynamic diameter of 10µm or less |
| $PM_{2.5}$ | Airborne particulate matter with an aerodynamic diameter of 2.5µm or less |
| QA/QC | Quality Assurance and Quality Control |
| $SO_2$ | Sulphur Dioxide |

# References


- Local Air Quality Management Technical Guidance LAQM.TG22. August 2022. Published by Defra in partnership with the Scottish Government, Welsh Assembly Government and Department of the Environment Northern Ireland.
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- South Ribble Borough Council – A beginners guide to air quality AQ_A_Beginners_Guide.pdf (southribble.gov.uk)
- South Ribble Borough Council – EarthSense Live public portal EarthSense
- South Ribble Borough Council (2018) Air Quality Action Plan Air_Quality_Action_Plan_2018.pdf (southribble.gov.uk)
- South Ribble Borough Council – public consultation website South Ribble - Your Say - Citizen Space Site - Citizen Space