West Lancashire Borough Council

2025 Air Quality Annual Status Report

July 2025

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	Name	Job Title	Signature
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2025 Air Quality Annual Status Report (ASR)

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

Date: July 2025

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Local Responsibilities and Commitment

This Annual Status Report (ASR) was prepared by Bureau Veritas on behalf of West Lancashire Borough Council (WLBC) with the support and agreement of the following officers and departments:

- Lyndsey Key, Environmental Health Manager, Environmental Health

This ASR has been approved by:

- Lyndsey Key, Environmental Health Manager, Environmental Health; and
- Paul Charlson, Assistant Director of Planning and Regulatory Services.

This ASR has not been signed off by a Director of Public Health as West Lancashire is a single tier authority.

If you have any comments on this ASR please send them to Lyndsey Key at:

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Executive Summary: Air Quality in Our Area

Air Quality in West Lancashire

Breathing in polluted air affects our health and costs the National Health Service (NHS) and our society billions of pounds each year. Air pollution is recognised as a contributing factor in the onset of heart disease and cancer and can cause a range of health impacts, including effects on lung function, exacerbation of asthma, increases in hospital admissions and mortality.

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

Table ES 1 provides a brief explanation of the key pollutants relevant to Local Air Quality Management (LAQM) 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 (PM) is everything in the air that is not a gas. Particles can come from natural sources such as pollen, as well as human made sources such as smoke from fires, emissions from industry and dust from tyres and brakes. PM_{10} refers to particles under 10 micrometres. Fine particulate matter or $PM_{2.5}$ are particles under 2.5 micrometres.

West Lancashire Borough Council (WLBC) is a local authority situated in the South of Lancashire, bordering Merseyside and Greater Manchester. The area occupies a key strategic position in the North West of England, with excellent access to the national

railway and motorway network. Thus, the Borough acts as a gateway for many to transit on to regional visitor attractions such as coastal holiday destinations, the Port of Liverpool, international airports at Manchester and Liverpool and natural beauty spots. The excellent connectivity, particularly in the areas adjoining the M58 motorway, supports a strong transport and logistics sector. Active travel is promoted through the West Lancashire Wheel Cycle Route and Trans-Pennine Trails, which involve various integrated walking and cycling routes that connect to the broader Lancashire region and encourage countryside tourism, such as the Cheshire Lines Path - a former railway track that runs between Maghull and Ainsdale.

West Lancashire Borough Council has an area of approximately 134 square miles, much of which is rural. The area boasts a significant area of excellent quality agricultural growing land and has a strong farming heritage. There are 69 Sites of Special Scientific Interest (SSSI) within Lancashire, with four in West Lancashire Borough Council jurisdiction: Martin Mere (Burscough), Downholland Moss, Mere Sands Wood, and Ravenhead Brickworks, and 28 conservation areas.

West Lancashire has a population of approximately 120,703 according to the recent Lancashire County Council Estimation. The largest urban area is the town of Skelmersdale with approximately 35,000 people residing there, followed by Ormskirk where approximately 28,000 people live and Burscough with approximately 10,000 people residing there. Other population centres across the Borough are Up Holland and Tarleton. The borough is the 31st most densely populated of the North West's 39 local authority areas, and is England's 106th least densely populated area of the 309 local authority areas, as per the Office for National Statistics (ONS).

Air pollution within the borough is predominantly caused by road traffic emissions originating from major roads including the M58, A5209, A565, and A570 that pass through and around the area. Additionally, car ownership in households in West Lancashire is higher than the national average, 80.2% compared to 78% respectively, as reported in the RAC Foundation and National Centre for Social Research – Department for Transport (DfT) Car Ownership: Evidence Review, with West Lancashire contributing approximately 8.3% to Lancashire's overall licensed car total for the region, according to Lancashire County Council (LCC) Licensed Motor Vehicle Investigation. Vehicles as the major contributor to air pollution in West Lancashire is reiterated by the West Lancashire Local Plan (WLLP) 2012-2027, which highlights that there is a need to minimise the requirement to travel by private car to employment, education and services due to the lack of provision

of convenient public transport and sustainable travel modes in the borough.

The Department for Transport (DfT) reported approximately 7.17 billion vehicle miles travelled on roads in Lancashire in 2023, with 2024 data not released at the time of ASR production. Due to the strategic nature of the road links in West Lancashire, the majority of vehicle movements in the Borough are from throughflow traffic, not starting or ending their journeys within West Lancashire. Some roads through the Borough have patterns of congestion, resulting in the stopping and starting of vehicles, which in turn leads to elevated pollutant concentrations.

Other pollution sources including commercial, industrial, agricultural and domestic sources also contribute to pollutant concentrations in the Borough.

Due to West Lancashire Borough Council's (WLBC's) historic elevated reported Nitrogen Dioxide (NO_2) concentrations, with some exceedances of the NO_2 Annual Mean Air Quality Standard (AQS) of 40µg/m^3, the area is considered to have some areas where the air quality is poor. An air quality management area (AQMA) has been declared in response to these elevated pollutant concentrations. West Lancashire Borough Council declared this AQMA in January 2010 for the NO_2 annual mean objective, with its extent encompassing properties in Moor Street and Stanley Street in Ormskirk.

During 2024, concentrations of NO_2 were monitored passively via a diffusion tube (DT) network of 11 sites, all triplicate locations with the exception of Site ID 8. As such, there were 31 tubes deployed each month across the borough during 2024. Of the 11 passive monitoring sites, five are located within the AQMA, Site ID's 12A/B/C, 13A/B/C, 14A/B/C, 15A/B/C, and 23A/B/C. When compared to the 11 sites that made up the diffusion tube network in the previous reporting year (2023), the NO_2 annual mean concentration decreased at 100% of sites in 2024. No single diffusion tube site recorded an NO_2 annual mean concentration above the air quality objective of 40 µg/m^3, with the maximum concentration within and outside of the AQMA being 27.4 µg/m^3 (DT 23A/B/C) and 20.2 µg/m^3 (DT 22A/B/C), respectively. These two locations also reported the maximum concentrations in West Lancashire Borough Council ASR 2020-2024 (2023 monitoring year), 29.2 µg/m^3 and 23.6 µg/m^3 respectively.

Compliance with the annual NO_2 Air Quality Standard (AQS) objective of 40 µg/m^3 has been achieved by West Lancashire for five years between 2020-2024, three years with the exception of 2020 and 2021 which are to be excluded due to the effects of COVID-19 on reported concentrations. Therefore, 2020 and 2021 cannot be accounted for when discussing compliance with the NO_2 annual mean objective of 40 µg/m^3, meaning West

Lancashire Borough Council has achieved compliance in 2022, 2023 and 2024 only. As such, the Council has sufficient monitoring data to support initiating revocation of the Ormskirk Air Quality Management Area (AQMA) in 2025.

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.

As part of the West Lancashire Borough Council's commitment to reduce the impacts of climate change, and specifically air pollution, the Council declared a climate emergency in July 2019 and continues to progress and aim to hit net-zero carbon emissions by 2030 for Council activities and across the borough, as reported in the West Lancashire Borough Council Climate Change Strategy and Action Plan 2020-2030. The Climate Plan sets out various actions across seven key priority areas to reduce Carbon Dioxide (CO_2) emissions, of which also have shared benefits in improving air quality through reducing both NO_2 and Particulate Matter (PM) emissions. Examples include increasing Council work-from-home (WFH) opportunities to limit unnecessary vehicle trips, remove procurement of single-use plastics across the Council, install Electric Vehicle (EV) charging infrastructure across the borough, trial EVs in the Council fleet, offering smart meters to electricity consumers, support community bike rental schemes, use renewable energy sources to power buildings, and further improve public transportation infrastructure across the borough.

The Council is developing and has implemented the following measures as part of the strategy in 2024:

- Implementation of new EV charging points across West Lancashire Borough, mainly within public car parks;
- Organised 'Community Energy Groups' which aim to empower communities to take action and control their energy and environmental future with environmental sustainability projects. Thus, improving air quality;
- Held 'Community Impact Days' between local residents and Council officers representative of the environment and other services, to promote environment sustainability projects in the borough; and
- Continued collaboration with Edge Hill University (EHU) to promote EV and cycling infrastructure across campus to encourage cleaner emission vehicle (i.e. Low

Emission Vehicle (LEV), Ultra Low Emission Vehicle (ULEV)) and active transportation uptake, thus encouraging action by all to work towards the carbon zero goal in accordance with the published Travel Plan Strategy.

Following social housing works in 2023, the Council remained committed in 2024 to improving the boroughs social housing stock as well as broader accommodation in West Lancashire, thus making it more energy efficient. The Council were awarded £1.8 million from the Social Housing Decarbonisation Fund to upgrade approximately 250 homes over two year period with energy efficient measures, thus seeking to limit the boroughs carbon footprint.

West Lancashire Borough Council have also maintained the collaborative pan-Lancashire relationship with 'Cosy Homes in Lancashire' (ChiL) to provide residents with advice and signposting in relation to available grant schemes, including the Affordable Warmth programme. It is acknowledged in April 2025, a new CHiL scheme will be implemented, with the extent of the initiative known to continue through 2025 and 2026. More information regarding the CHiL initiative is available here: https://www.westlancs.gov.uk/housing/private-housing/grants-and-schemes-for-homeowners/energy-efficiency.aspx

In 2024, West Lancashire Borough Council promoted 'Community Energy Groups'. The initiative aims to empower communities to take action to control their energy and environmental future with projects allowing local people to collaborate in creating and supporting installation of green, renewable energy sources and active transportation infrastructure. Thus, reducing energy demands and pollutant concentrations, subsequently improving air quality within their own community. This grassroots scheme also enables understanding of the contributing factors to air quality conditions borough-wide and seeks to ensure through implemented resources the longevity of improved environmental quality and individuals health, with active transportation a focal point for encouragement to limit air pollutant emissions. The Councils position through developing the scheme highlights its commitment to environmental responsibility by reducing its carbon footprint and seeking to improve air quality.

In 2024 West Lancashire Borough Council's Policy and Resources Committee agreed to allocate £360,898 of Community Infrastructure Levy (CIL) funding to five projects across the borough to be delivered between 2025-2027, following a round of public consultation. The significant investment will be utilised to upgrade popular walking routes such as Skelmersdale Heritage Trail and Pond Link Path at Tawd Valley Park, and Fairy Glen

Environmental Improvements Phase 2, Appley Bridge, as well as contribute to major highways improvement at Firswood Road Bridge Safety Scheme to provide safer pedestrian passage. Thus, benefitting tourists and residents in West Lancashire by providing more opportunities for safer active travel routes and encouraging vehicular emission reduction. More information is available at: https://www.westlancs.gov.uk/news/west-lancashire-borough-council-approves-new-infrastructure-funding-for-community-improvements.aspx#

Throughout 2024 the Council has supported the production of the West Lancashire Local Cycling and Walking Infrastructure Plan (LCWIP). Identified routes experience high commuting levels due to key destinations including the population centres as well as existing routes and geographical attractions such as the North-West coastline. Thus, it is proposed that greater active travel infrastructure is established to support the adoption comparative to vehicle commuting to these areas, therefore reducing emissions released.

West Lancashire Borough Council has a network of EV charging points in public car parks and residential parking areas with more information found at the following link: https://www.westlancs.gov.uk/environment/climate-change-and-green-living/electric-vehicle-charge-points.aspx To find out more information specifically relating to EV charging points implemented in Council owned car parks, please use the following link: https://www.westlancs.gov.uk/more/your-community/roads-and-travel/parking-in-ormskirk.aspx Some of the EV charging point installations in West Lancashire have been funded by the On-Street Residential Charge Point Scheme (ORCS), with private developments implementing ad-hoc charge points aligned with construction strategies. As more residents use electric vehicles, communities will benefit from improved air quality and lower their carbon footprint.

Lancashire County Council (LCC) was awarded £10.1 million of the Local Electric Vehicle Infrastructure (LEVI) fund from the United Kingdom (UK) Government in September 2023 to further enhance Lancashire's EV charging network, inclusive of West Lancashire Borough. In Q4 2024, LCC launched supplier market engagement opportunities for the future tender for Electric Vehicle Charging Infrastructure. LCC, on behalf of West Lancashire Borough Council and neighbouring local authorities, confirms it will be hosting various informative webinars in 2025, providing high-level overviews of the upcoming tender alongside outlining the market engagement process and its objectives. Post webinars LCC intends to host one-to-one online meetings with five suppliers (meetings to be allocated on a first-come-first-served-basis), to further discuss delivery of the Electric Vehicle Charging Infrastructure, across the Lancashire region, inclusive of West Lancashire, between September 2025-August 2040. More tender information can be found at: https://www.find-tender.service.gov.uk/Notice/007853-2025

To support rail passengers the 'Skelmersdale Rail Programme' has been launched in 2024 which provides continuous ticketing on rail and bus services to efficiently and effectively link railways stations with the existing bus network. Highlighting the benefits of well-connected and more frequent services of public transport on air quality comparative to

private vehicle use to commute.

Conclusions and Priorities

During 2024, the NO_2 annual mean objective was not exceeded at any monitoring location within West Lancashire. This is a continuing trend that has been observed across the borough since 2020, as shown in this ASR. The Council will continue to use the passive monitoring network to monitor air quality within the district and ensure compliance is maintained with the annual and 1-Hour NO_2 AQS objectives.

2020 and 2021 are considered COVID-19 pandemic years, where UK Government advice was given to stay at home where possible, resulting in decreased levels of traffic observed across the UK, and as such, reduced annual mean NO_2 concentrations recorded. Therefore, 2020 and 2021 cannot be accounted for when discussing compliance with the NO_2 annual mean objective of 40 µg/m^3. Therefore, West Lancashire Borough Council have achieved compliance in 2022, 2023 and 2024 only. As such, the Council has sufficient monitoring data to support initiating revocation of the Ormskirk Air Quality Management Area (AQMA) in 2025.

The maximum predicted $PM_{2.5}$ background concentration in 2024 is well below the current annual mean AQS objective of 20 µg/m^3 at 7.83 µg/m^3, a decrease of 0.65 µg/m^3 from predicted $PM_{2.5}$ background concentration of 8.48 µg/m^3 in 2023. As such, it is below the AQS objective of 10 µg/m^3 that is not to be exceeded at any monitoring station by 31st December 2040.

There has been continuation of new development in 2024 from 2023, which has been identified as having scope to impact air quality concentrations reported across the borough in 2024 and onwards. Further details regarding the developments can be found in Appendix C: Supporting Technical Information / Air Quality Monitoring Data QA/QC.

The following actions are considered to be key priorities in ensuring the air quality conditions within West Lancashire continue to comply with the AQS objectives:

- Review the current monitoring network, exploring the need to deploy new monitoring locations in areas where monitoring has not previously been undertaken and where it is believed that there may be elevated concentrations of NO_2 in areas of relevant public exposure;
- Actively engage with developers to embed environmental sustainability in planning processes;

- Continue to encourage uptake of effective active transport methods (e.g. public transport, cycling, and walking) – for example: promote the MerseyRail Skelmersdale Rail Programme;
- Seek options to improve the existing walking and cycling network through CIL funded development projects and by acquiring new funding for future development; and
- Implement measures within the Climate Change Strategy and Action Plan to further reduce concentrations of NO_2 and PM.

How to get Involved

Given the main source of air pollution across West Lancashire is from transport sources, the public can support the reduction in air pollutant(s) release and improve air quality within the borough by participating in active travel.

West Lancashire Borough Council have progressed additional public engagement work in 2024 through the below schemes, although the engagement schemes in 2023 are still active:

- Supporting the development of 'Community Energy Groups' across the borough which aim to empower communities to take action and control their energy and environmental future with projects supporting installation of green, renewable energy sources and active transportation infrastructure;
- Development of the 'Skelmersdale Rail Programme' alongside MerseyRail which provides continuous ticketing on rail and bus services to efficiently and effectively link railways stations with the existing bus network. Highlighting the benefits of well-connected and more frequent services of public transport on air quality comparative to private vehicle use to commute; and
- Promotion of active transport uptake.

The following measures are possible alternatives to private travel and actions that everyone can complete that would contribute to improving air quality across the borough:

- Use public transport where available – This reduces the number of private vehicles in operation reducing pollutant concentration through the volume of vehicles and limits congestion;

- Walk or cycle if your journey allows – From choosing to walk or cycle for your journey the number of vehicles is reduced and also there is the added health benefits through exercise;
- Car/lift sharing – Where a number of individuals are making similar journeys, such as travelling to work or to school car sharing reduces the volume of vehicles on the road and therefore the amount of emissions being released. This can be promoted via travel plans through the workplace and within schools;
- Alternative fuel / more efficient vehicles – Choosing a vehicle that meets the specific needs of the owner, fully electric, hybrid fuel and more fuel efficient cars are available, and all have different levels benefits by reducing the amount of emissions being released; and
- Asking your employer, school or college about the possibility of developing a green travel plan.

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Tables

1 Local Air Quality Management

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

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

West Lancashire Borough Council currently have one AQMA declared for exceedances of the NO_2 annual mean objective. The AQMA was implemented in January 2010 and is described as:

"An area encompassing properties in Moor Street and Stanley Street in Ormskirk."

The extent of the AQMA is shown below in Figure 2.1, and details of the AQMA are described in Table 2.1.

The Council demonstrates compliance with the NO_2 annual mean objective of 40 µg/m^3 between 2020 to 2024, with the maximum concentration across the borough reported in 2021 at Site 23A/B/C, 34.0 µg/m^3. 2020 and 2021 are considered COVID-19 pandemic years, where UK Government advice was given to stay at home where possible, resulting in decreased levels of traffic observed across the UK, and as such, reduced annual mean NO_2 concentrations recorded. Therefore, 2020 and 2021 cannot be accounted for when discussing compliance with the NO_2 annual mean objective of 40 µg/m^3. Therefore, West Lancashire Borough Council have achieved compliance in 2022, 2023 and 2024 only.

There have been no exceedances of the NO_2 annual mean objective within the last five years and three consecutive years of compliance; with the notable exclusion of monitored data in 2020 and 2021 due to COVID-19 lockdown influences, there is sufficient monitoring evidence to support initiating revocation of the Ormskirk AQMA in 2025 (see Table A.2). The Council were given approval by Defra to delay updating their 2011 AQAP document pending review of 2024 monitoring data, given the potential for AQMA revocation. On the above basis, the Council will alongside an environmental consultancy, develop a local Air Quality Strategy for the borough to prevent and reduce polluting activities.

West Lancashire Borough Council acknowledge that progress towards the Air Quality Strategy is in early stages, however there is no formal deadline for submission of the Air Quality Strategy to Defra, but it is a requirement the Council must provide.

Appendix D: Maps of Monitoring Locations and Ormskirk AQMA provides maps of the Ormskirk AQMA and also the air quality monitoring locations in relation to the AQMA.

Figure 2.1 – West Lancashire Borough Council Ormskirk AQMA (2010)

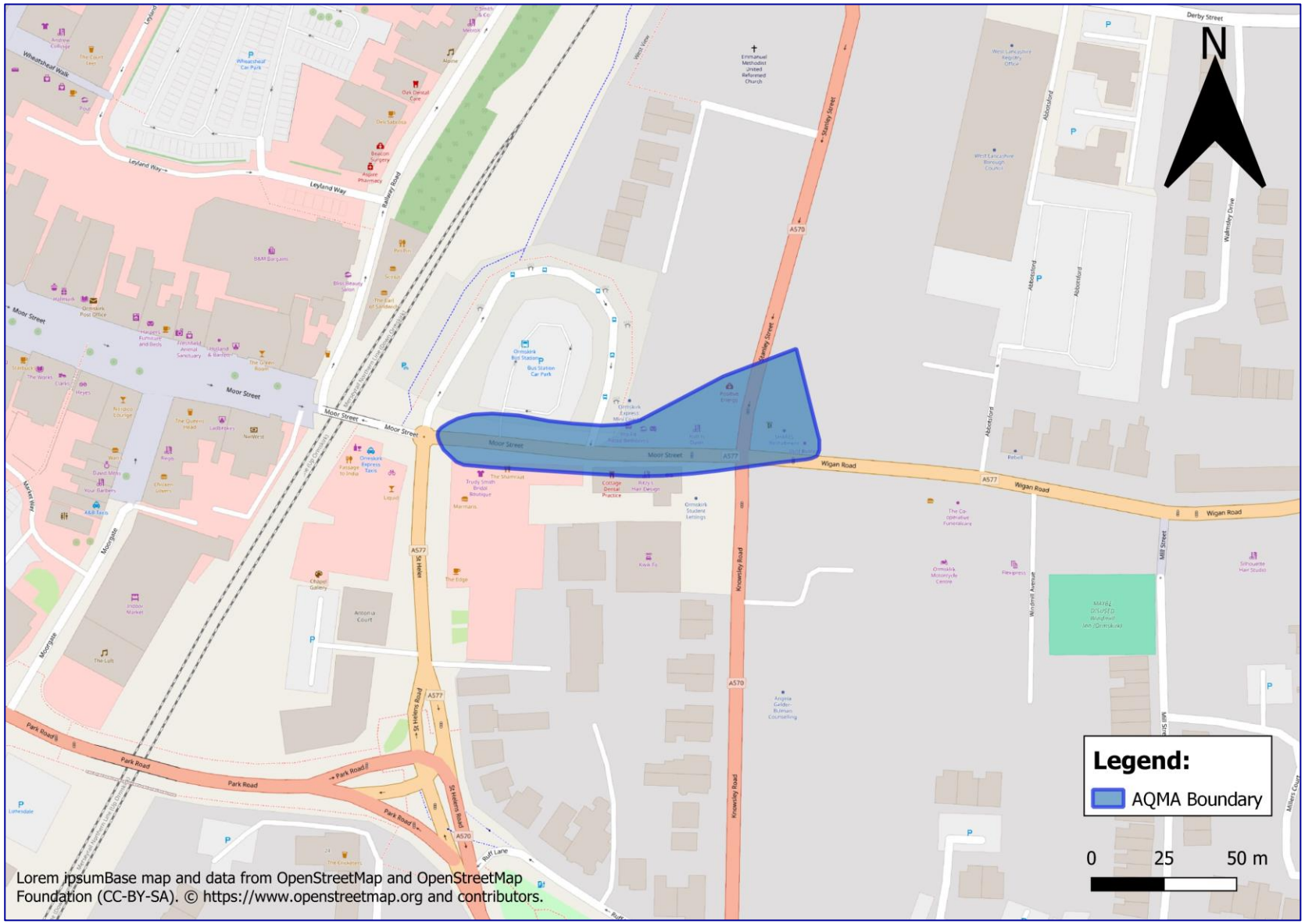


Table 2.1 – Declared Air Quality Management Areas

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
Ormskirk AQMA	20/01/2010	NO_2 Annual Mean	An area encompassing properties in Moor Street and Stanley Street in Ormskirk	No	57.1 µg/m^3 (Site ID 23A/B/C)	27.4 µg/m^3 (Site ID 23A/B/C)	3 years (Excluding 2020 and 2021 – COVID-19 years)	Air Quality Action Plan for West Lancashire Borough Council (March 2011)	https://www.westlancs.gov.uk/media/47240/air-quality-action-plan-final.pdf Or via: https://www.westlancs.gov.uk/environment/environmental-issues/air-quality.aspx

☒ **West Lancashire Borough Council confirm the information on UK-Air regarding their AQMA is up to date.**

☒ **West Lancashire Borough Council confirm that all current AQAPs have been submitted to Defra.(1)**

Notes:

(1) The most recent and subsequently current West Lancashire Borough Council AQAP is 2011. The Council are aware this is outdated but aforementioned discussions with Defra and review of 2024 monitoring data have confirmed AQAP updates are exempt and an AQS is required instead.

2.2 Progress and Impact of Measures to address Air Quality in West Lancashire

Defra's appraisal (document reference: ASR24-2236) of last year's ASR concluded that:

"The report is well structured, detailed, and provides the information specified in the Guidance."

The following comments were designed to help inform West Lancashire Borough Council 2025 ASR:

1. WLBC have submitted a combined ASR for 2019 – 2023. In future, WLBC should ensure to submit annual reports instead.
    a. *West Lancashire Borough Council have prepared the 2025 ASR as required for the 2024 annual monitoring period – it will be submitted in line with the annual reporting Defra deadline via the LAQM Portal for 2025 ASRs.*
2. WLBC have included a large amount of detail in the section on measures to improve $PM_{2.5}$ concentrations, this is welcomed and should be continued in future ASRs.
3. In Table 2.2, there are three rows which are highlighted. There is no explanation given as to why these rows are highlighted, either an explanation should be added to the ASR or these rows should be unhighlighted.
    a. *It is noted in the ASR Template document released that the top three air quality measures implemented by the Council should be identified and example measures are highlighted. This has been completed as per the template document issued. In the 2025 ASR, a comment has been included to provide clarity on why the top three air quality measures are highlighted.*
4. WLBC have included very clear maps showing both the diffusion tube monitoring locations as well as the AQMA boundary, this is appreciated.
5. As well as including comparison to the Air Quality Standards (AQS) for NO_2, WLBC have included comparison to 10% of the AQS as well as discussing trends observed at the diffusion tubes immediately outside the AQMA in order to show that no change to the AQMA boundary is required. This is welcomed.
6. In Table C.1 and C.2, each triplicate site can be combined into one row rather than repeating the same data three times for A, B and C separately.

    a. *This has been acknowledged and the suggestion has been implemented in the 2025 ASR.*

7. It is reassuring to see that WLBC plan to revoke the Ormskirk AQMA if 2024 monitoring data continues to show compliance with the air quality objective (AQO).
    a. *The Council can confirm that 2024 monitoring data highlights compliance with the annual NO_2 air quality objective, as such there are five years of consecutive compliant annual NO_2 data (three years with the exception of 2020 and 2021 as previously discussed). Therefore, supporting initiation of Ormskirk AQMA revocation in 2025, which the Council will action.*

West Lancashire Borough Council has taken forward a number of direct measures during the current reporting year of 2024 in pursuit of improving local air quality. Details of all measures completed, in progress or planned are set out in Table 2.2. There are 15 measures included within Table 2.2, with the type of measure and the progress West Lancashire Borough Council have made during the reporting year of 2024 presented. Where there have been, or continue to be, barriers restricting the implementation of the measure, these are also presented within Table 2.2. It is noted that the top three air quality measures presented in Table 2.2 are highlighted as the priority measures for the Council to continue delivering into 2025 and onwards.

As the existing AQAP for West Lancashire is significantly outdated, produced in 2011, set to become void pending successful revocation of Ormskirk AQMA, and the Air Quality Strategy is not yet publicly available, further detail regarding existing and new measures can be found in West Lancashire Borough Council Climate Change Strategy and Action Plan 2020-2030, West Lancashire Local Plan (WLLP) 2023-2040, West Lancashire Local Cycling and Walking Infrastructure Plan (LCWIP), and via the hyperlinks provided for measures referenced throughout the ASR 2025.

Key completed measures:

- Public Transportation
    - Supported 'Skelmersdale Rail Programme' alongside MerseyRail which provides continuous ticketing on rail and bus services to link the two transportation networks. Highlighting benefits of well-connected and more frequent public transport services on air quality comparative to private vehicle use to commute;
- Community Infrastructure Levy (CIL) Development

    - In 2024 £360,898 CIL funding was awarded across five projects to be delivered between 2025-2027. Three schemes incorporate upgrading and/or implementing active travel routes, encouraging uptake by residents and tourists through safer access and promoting vehicular emission reduction.
- Community Energy Groups
    - During 2024, WLBC promoted 'Community Energy Groups' such as bonfire night skip days which aim to encourage local people to collaborate in environmental sustainability projects with involvement also in renewable energy sources and active transportation infrastructure.

West Lancashire Borough Council expects the following measures to be completed over the course of the next reporting year through being a priority for the coming year:

- Promote energy efficiency projects and grant schemes in private sector houses in the borough to improve properties by installing energy saving measures;
- To encourage participation in the 'Community Energy Groups' across the borough promoted by the local authority to empower communities through environmental actions;
- Promote the 'Skelmersdale Rail Programme' alongside MerseyRail which provides continuous ticketing on rail and bus services to efficiently and effectively link railways stations with the existing bus network for commuting;
- Support CIL funded schemes across the borough, three of which (Skelmersdale Heritage Trail and Pond Link Path at Tawd Valley Park, Fairy Glen Environmental Improvements Phase 2, Appley Bridge, and Firswood Road Bridge Safety Scheme) include upgrading walking routes and major highways improvement to provide safer pedestrian passage, thus providing more opportunities for safer active travel routes and encouraging vehicular reduction; and
- Greater implementation of EV charge points across the borough where practicable given resourcing, funding and procurement implications.

The principal challenges and barriers to implementation of air quality improvement measures that West Lancashire Borough Council anticipates facing in 2025 and onwards are:

- Increased budget constraints.

West Lancashire Borough Council worked to support these measures in partnership with the following stakeholders during 2024:

- Edge Hill University;
- Lancashire County Council;
- MerseyRail (Skelmersdale Rail Programme);
- UK Government (LEVI Fund);

West Lancashire Borough Council anticipates that the measures stated above and in Table 2.2 will continue to support the area achieving compliance in Ormskirk AQMA as it has done between 2020-2024 and subsequently beyond its revocation, proposed in 2025.

Table 2.2 – Progress on Measures to Improve Air Quality

Measure No.	Measure Title	Category	Classification	Year Measure Introduced in AQAP	Estimated / Actual Completion Date	Organisations Involved	Funding Source	Funding Status	Estimated Cost of Measure	Measure Status	Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Barriers to Implementation
1	West Lancashire Highways and Transport Masterplan and Route Management Strategy	Traffic Management	Other	2014	2018	LCC/WLBC	LCC	Partially Funded	> £10 million	Implementation	Not known	To review highway network in the Borough	Ormskirk Town Centre Strategy produced	Local Plan changes/funding
2	Ormskirk Movement Strategy	Traffic Management	Other	2018	2025	LCC/WLBC	LCC	Partially Funded	> £10 million	Implementation	Not known	Options for change identified by consultants. These need to be tested using traffic data and monitoring results	Published behind schedule in Dec 2018. Traffic modelling underway, behind schedule. https://www.lancashire.gov.uk/media/908686/ormskirk-town-centre-movement-strategy-stage-1-report.pdf	Funding, however, works on re-developing bus station now complete.
3	Local Air Quality Planning Guidance	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	2022	2027	WLBC/ Regional groups developing area wide strategies with improving air quality at the centre.	WLBC	Not Funded	< £10k	Planning	Not known	None	Initial work on developing and understanding of what measures could be implemented to via the Development Control/Planning Policy regimes.	-
4	Local Transport Plan	Policy Guidance and Development Control	Other policy	2012	2024	LCC	LCC	Partially Funded	> £10 million	Implementation	Not known	To review highway network in the Borough	Ongoing	https://www.lancashire.gov.uk/council/strategies-policies-plans/roads-parking-and-travel/highways-and-transport-masterplans
5	Review West Lancs Council Fleet	Vehicle Fleet Efficiency	Fleet efficiency and recognition schemes	2020	2027	WLBC	Not secured to date	Not Funded	> £10 million	Planning	Not known	None	-	Financial constraints may limit progress
6	Ormskirk Train Station secure cycle parking	Other	Other	2020	2020	Network Rail	Network Rail	Funded	£10k - 50k	Completed	Not known	None	Operational and well used by commuters	N/A
7	Review of local bus operators	Vehicle Fleet Efficiency	Fleet efficiency and recognition schemes	2019	2025	ARRIVA/ WLBC/LCC	-	Not Funded	-	Implementation	Not known	None	Implemented and ongoing	Route optimisation to gain efficiencies
8	Review local business travel plan	Promoting Travel Alternatives	Other	2023	2028	Edge Hill University	Edge Hill University	Funded	< £10k	Implementation	Not known	None	-	-
9	School Travel Plans	Promoting Travel Alternatives	Other	2019	2025	LCC	LCC	Partially Funded	£10k - 50k	Implementation	Not known	None	-	LCC working with school to introduce such initiatives
10	SCOOT traffic signal system in and around AQMA	Traffic Management	UTC, Congestion management, traffic reduction	2021	2025	LCC	LCC	Not Funded	£50k - £100k	Planning	Not known	None	Awaiting baseline traffic data	LCC resources
11	Review the Council's Taxi Licensing Policy	Promoting Low Emission Transport	Other	2022	2024	WLBC	WLBC	Partially Funded	< £10k	Implementation	Not known	None	Ongoing	Resistance from sector. Evidence to confirm benefits required.
12	Speed limits in residential areas	Traffic Management	Reduction of speed limits, 20mph zones	2018	2022	LCC	LCC	Funded	£10k - 50k	Completed	Not known	None	Completed	Implemented in several residential areas
13	Lancashire Public Health, Air Quality Co-ordination	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	2018	2024	Regional Groups coordinating programmes to develop Strategies to	LCC	Partially Funded	£10k - 50k	Implementation	Not known	None	Report produced to highlight effects on AQ on health. AQ monitoring project and	-

Measure No.	Measure Title	Category	Classification	Year Measure Introduced in AQAP	Estimated / Actual Completion Date	Organisations Involved	Funding Source	Funding Status	Estimated Cost of Measure	Measure Status	Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Barriers to Implementation
						improve air quality							anti-idling project with schools	
14	Air Quality Information	Public Information	Via the Internet	2018	2026	WLBC	-	Not Funded	-	Implementation	Not known	None	Air Quality reporting is provide to public via the internet.	-
15	West Lancashire Local Cycling and Walking Infrastructure Plan (2024)	Policy Guidance and Development Control	Other Policy	-	2034	WLBC/ LCC	-	Not funded	-	Planning	Not known	None	Identification of deliverable projects and costing of works	Availability of funding

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

As detailed in Policy Guidance LAQM.PG22 (Chapter 8) and the Air Quality Strategy[1], local authorities are expected to work towards reducing emissions and/or concentrations of fine particulate matter ($PM_{2.5}$). There is clear evidence that $PM_{2.5}$ (particulate matter smaller 2.5 micrometres) has a significant impact on human health, including premature mortality, allergic reactions, and cardiovascular diseases.

$PM_{2.5}$ Monitoring:

There is not currently any monitoring of PM_{10} or $PM_{2.5}$ across West Lancashire. As such, no concentration values can be reported or estimated using the method described in Box 7.7 of LAQM.TG(22), which provides a for estimating $PM_{2.5}$ concentrations from PM_{10} measurements.

$PM_{2.5}$ Background Concentrations:

The current Defra 2024 background maps for West Lancashire Borough Council (2021 based)[2] show that all background concentrations of $PM_{2.5}$ are significantly below the current annual mean AQS objective of 20 µg/m^3. The highest background concentration is predicted to be 7.83 µg/m^3 within the grid square (1 km x 1 km) with the centroid grid reference 350500, 404500. This grid square encompasses the South-East of Skelmersdale, including the A577 and M58 which are key arterial routes into and through West Lancashire, where the PM secondary fraction (formed of gaseous pollutants) constitutes as the key contributor to $PM_{2.5}$.

The maximum predicted $PM_{2.5}$ background concentration in 2024 is well below the current annual mean AQS objective of 20 µg/m^3 at 7.83 µg/m^3, a decrease of 0.65 µg/m^3 from predicted $PM_{2.5}$ background concentration of 8.48 µg/m^3 in 2023. As such, it is below the AQS objective of 10 µg/m^3 that is not to be exceeded at any monitoring station by 31st December 2040. It is recommended as good practice and to further reduce $PM_{2.5}$ pollutant

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

[2] Defra Background Mapping (2021 Based). Available at: https://uk-air.defra.gov.uk/data/laqm-background-maps?year=2021

emissions that West Lancashire Borough Council considers further actions as well as continuing those implemented already to reduce $PM_{2.5}$ across the borough.

Smoke Control Areas:

Smoke control areas (SCAs) are designated zones in which smoke it is an offence to emit smoke from a chimney of a building, from a furnace or from any fixed boiler. It is also an offence to acquire an unauthorised fuel for use within a SCA unless it is used within an exempt appliance (exempted from the controls which generally apply in SCAs). There are currently a number of SCAs declared within West Lancashire, as detailed below:

- Skelmersdale;
- Up Holland;
- Crawford Village;
- Part of Roby Mill - up to and including Bank Road/Ayrefield Farm;
- Part of Tontine - up to the boundary with Sandbrook; and
- Holland Moss, including Nipe Lane and Pimbo.

Concerns in relation to nuisance, breaches of a SCA requirement or related matters are investigated and action taken as necessary. The need to introduce further areas will be considered as necessary.

During 2024, the Council's Environmental Health Department received two service requests with regards to the established SCA's. Of the two service requests, one was for advice and one was a complaint. There were no formal enforcement actions taken.

More information regarding the boroughs SCAs is available to review here: https://www.westlancs.gov.uk/environment/environmental-issues/air-quality/smoke-control-areas

Impact on Human Health:

The Public Health Outcomes Framework (PHOF) data tool[3], compiled by Public Health England (PHE) quantifies the mortality burden of $PM_{2.5}$ within England on a county and local authority scale. The 2023 fraction of mortality attributable to $PM_{2.5}$ emissions across West Lancashire is 4.7%, which is lower than the average for the North-West of England (4.9%) and England as a whole (5.2%).

[3] Public Health England – Public Health Outcomes Framework. Available at: https://fingertips.phe.org.uk/profile/public-health-outcomes-framework/data#page/1/gid/1000043/pat/6/ati/501/are/E06000046/iid/93861/age/230/sex/4/cat/-1/ctp/-1/yrr/1/cid/4/tbm/1/fip/0

Measures to Improve $PM_{2.5}$ Concentrations:

West Lancashire Borough Council is taking the following measures:

- Continued development of the 'Community Energy Groups' which aim to empower communities to take action and control their energy and environmental future with projects allowing local people to collaborate in creating and supporting installation of green, renewable energy sources and active transportation infrastructure. Thus, reducing energy demands, carbon emissions and pollutant concentrations, improving borough wide air quality.

The Council acknowledge that the move to electric vehicles is not the only solution for air quality and associated heath concerns due to particulate matter, including $PM_{2.5}$, being sourced from brake and tyre wear. As such, the Council have also implemented alternate initiatives with active travel at the forefront:

- Investment through CIL funding into three projects (Skelmersdale Heritage Trail and Pond Link Path at Tawd Valley Park, Fairy Glen Environmental Improvements Phase 2, Appley Bridge, and Firswood Road Bridge Safety Scheme) between 2025-2027 which includes upgrading popular walking routes and contribution to major highways improvement to provide safer pedestrian passage, thus benefitting tourists and residents in West Lancashire by providing more opportunities for safer active travel routes and encouraging vehicular emission reduction.

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

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

3.1 Summary of Monitoring Undertaken

3.1.1 Automatic Monitoring Sites

West Lancashire Borough Council did not undertake any automatic (continuous) monitoring during 2024.

3.1.2 Non-Automatic Monitoring Sites

West Lancashire Borough Council undertook non-automatic (i.e. passive) monitoring of NO_2 at 11 sites during 2024, all triplicate locations except for Site ID 8. As such, there were 31 tubes deployed each month across the borough during these monitoring years. Of the 11 passive monitoring sites, five are located within the AQMA, Site ID's 12A/B/C, 13A/B/C, 14A/B/C, 15A/B/C, and 23A/B/C. Table A.1 in Appendix A presents the details of the non-automatic sites.

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

During 2024, the diffusion tube network was well maintained, with tubes deployed and collected in line with the LAQM calendar dates (±2 days) with the exception of March-April and August-September, where tubes were over exposed for the monitoring periods. As such, over exposed tube data has been excluded from data analysis resulting in an average data capture of 65.8%, thus all sites fall within the threshold for annualisation. With the exception of Site ID 12A/B/C, all diffusion tube sites had at least eight months of data during the entire monitoring period. Eight months of data is post exclusion of over

exposed months and accounts for triplicate annual averages of Site ID's 'C' results. It is acknowledged that missing tube results are due to: 1) Site ID 12A in November 2024 having a broken tube lid, yielding an erroneous result as confirmed by SOCOTEC Didcot laboratory, and 2) intentional exclusion of data due to abnormal, significantly low concentrations, thus, providing erroneous results.

3.2 Individual Pollutants

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

3.2.1 Nitrogen Dioxide (NO_2)

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

In comparison to the 11 sites that made up the diffusion tube monitoring network in 2023, the NO_2 annual mean concentration decreased at all 11 sites in 2024, equating to a reduction in pollutant concentration at 100% of sites. The maximum decrease in NO_2 concentration between the two reporting years was 5.2 µg/m^3 at Site ID 8, located on Liverpool Road South (A59) in Burscough. This is unlike the previous reporting year, where concentrations decreased between 2022 and 2023 at 64% of sites, with the maximum decrease 5.3 µg/m^3 at Site ID 15A/B/C.

Due to the low monitored concentrations, fall-off with distance correction was not required. Following bias adjustment and annualisation, the maximum reported concentration in 2024 was 27.4 µg/m^3 at diffusion tube monitoring location 23A/B/C, a roadside site, located along Moor Street in Ormskirk and within the Ormskirk AQMA. This location has also consecutively reported the maximum concentrations between 2020 and 2023, 32.5 µg/m^3, 34.0 µg/m^3, 33.1 µg/m^3 and 29.2 µg/m^3 respectively.

Figure A.1 and Figure A.2 present the 2024 annual mean NO_2 concentrations at West Lancashire Borough Council's monitoring sites. The diffusion tubes around the edge of the

current Ormskirk AQMA boundary (Site ID's 16A/B/C, 21A/B/C and 22A/B/C) showed decreases between 2023 and 2024 of 3.0 µg/m^3 (Site ID 16A/B/C/), 2.8 µg/m^3 (Site ID 21/A/B/C) and 3.4 µg/m^3 (Site ID 22A/B/C) respectively. The decline in reported concentrations between 2023 and 2024 is greater than the decrease reported between 2022 and 2023 at the same locations, 2.0 µg/m^3 (Site ID 16A/B/C), 0.6 µg/m^3 (Site ID 21A/B/C) and 0.2 µg/m^3 (Site ID 22A/B/C) respectively. This demonstrates as time has elapsed from the influence of COVID-19,and associated pandemic restrictions and decreased pollutant concentrations, air quality measures implemented by the Council remain effective in reducing concentrations around the AQMA, despite pre-pandemic vehicular and traffic pattern norms returning. All sites outside the AQMA highlight a greater NO_2 concentration decrease than the average NO_2 concentration decrease observed across the entire diffusion tube network between 2023 and 2024 (2.8 µg/m^3), with the exception of Site ID 21A/B/C outlining a decrease of 2.8 µg/m^3 and Site ID 26A/B/C reporting a decrease of 1.7 µg/m^3 between the two reporting years. As such, recent monitoring evidence suggests that there is no need to extend the current boundary for which the AQMA is designated.

Across the five diffusion tubes that are located within the Ormskirk AQMA (Site ID's: 12A/B/C, 13A/B/C, 14A/B/C, 15A/B/C and 23A/B/C), all sites recorded an NO_2 annual mean concentration below the air quality objective of 40 µg/m^3 and below the 10% threshold of the annual air quality objective, 36 µg/m^3, in 2024. Site ID 23A/B/C reported the greatest concentration in 2024 within the Orsmkirk AQMA at 27.4 µg/m^3, a decrease from the 2023 annual concentration by 1.8 µg/m^3. The maximum concentration recorded within the AQMA since 2020 was at Site ID 23A/B/C in 2021 with 34 µg/m^3, 2 µg/m^3 below 10% of the annual NO_2 AQS and significantly below the annual NO_2 40 µg/m^3 objective by 6 µg/m^3.

All monitoring sites within the borough of West Lancashire continue to report annual mean NO_2 concentrations below the annual AQS objective of 40 µg/m^3, and below 10% of the annual NO_2 AQS (36 µg/m^3). Therefore, all passive monitoring sites are compliant and not expected to exceed the objective or be an area of concern. As such, the Council do not need to implement a further AQMA to the borough. The Council has acquired three years of consecutive compliant data: 2022, 2023 and 2024. It is noted that although data reported in 2020 and 2021 demonstrates compliance, due to COVID-19 influence on air pollution and associated concentrations detected, these two years cannot be considered for compliance in relation to AQMA revocation. Based on the above, the Council will seek

to initiate revocation processes for Ormskirk AQMA in 2025.

For diffusion tubes, the full 2024 dataset of monthly mean values is provided in Appendix B. Note that the concentration data presented in Table B.1 includes distance corrected values, only where relevant. The monitoring dates coincide with the Defra calendar dates for the year, whereby all changeovers were completed within ±2 days of the specified date, with the exception of March-April and August-September, where tubes were over exposed for the monitoring periods, thus concerns regarding data reliability are applicable requiring subsequent tube data to be excluded from data analysis. With the exception of Site ID 12A/B/C all remaining diffusion tube sites had at least eight months of data during the entire monitoring period. Eight months of data is post exclusion of over exposed months and accounts for triplicate annual averages of Site ID's 'C' results. It is acknowledged that missing tube results are due to: 1) Site ID 12A in November 2024 having a broken tube lid, yielding an erroneous result confirmed by the SOCOTEC Didcot laboratory, and 2) intentional exclusion of data due to abnormal, significantly low concentrations, thus, providing erroneous results.

The rejected data in aforementioned months supports a decreased data capture for 2024. It is noted that the data capture during 2024 is lower than reported in 2023, identifying that the decrease in concentrations observed across West Lancashire in 2024 could be associated with the referenced poor data capture. However, a continuous declining trend in annual NO_2 concentrations reported is identifiable following review of concentrations reported between 2020-2024 and acknowledgement of intentional 2024 data rejection due to diffusion tube overexposure between March-April and August-September. Therefore, it can be deduced that decreased reported concentrations are indicative of successful air quality measures and actions implemented, comparative to being associated with and resultant of poor data capture.

It is possible to infer the risk of exceedances of the 1-hour mean NO_2 AQS objective at diffusion tube monitoring sites. LAQM.TG(22) provides an empirical relationship that states exceedances of the 1-hour objective are unlikely when the annual mean concentration is below 60µg/m^3. Given that the highest recorded annual mean concentration at any of the diffusion tube monitoring sites is 28.1 µg/m^3 in 2024, and 34.0 µg/m^3 since 2020 (acknowledging the impacts COVID-19 Pandemic had on air pollutant emission release and subsequent annual pollutant concentrations), it is possible to conclude that there have been no exceedances of the hourly mean NO_2 objective at all monitoring locations in the last five years.

3.2.2 Particulate Matter (PM_{10})

Particulate Matter (PM_{10}) is not monitored in West Lancashire.

3.2.3 Particulate Matter ($PM_{2.5}$)

Particulate Matter ($PM_{2.5}$) is not monitored in West Lancashire.

3.2.4 Sulphur Dioxide (SO_2)

Sulphur Dioxide (SO_2) is not monitored in West Lancashire.

Appendix A: Monitoring Results

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

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube Co-located with a Continuous Analyser?	Tube Height (m)
8	Liverpool Road South	Roadside	342943	410386	NO_2	No	2.0	3.0	No	2.5
12A, 12B, 12C	26 Stanley Street	Roadside	341698	408177	NO_2	Yes - Ormskirk AQMA	0.0	9.0	No	2.5
13A, 13B, 13C	41 Stanley Street	Roadside	341720	408176	NO_2	Yes - Ormskirk AQMA	0.0	6.0	No	2.5
14A, 14B, 14C	55 Moor Street	Roadside	341684	408166	NO_2	Yes - Ormskirk AQMA	0.0	2.0	No	2.5
15A, 15B, 15C	50 Moor Street	Roadside	341629	408155	NO_2	Yes - Ormskirk AQMA	0.0	2.0	No	2.5
16A, 16B, 16C	Junction at Moor Street/ St Helens Road	Roadside	341590	408153	NO_2	No	0.0	2.0	No	2.5
21A, 21B, 21C	Junction at Park Road/ Aughton Street	Roadside	341376	408130	NO_2	No	0.0	3.5	No	2.5
22A, 22B, 22C	3 Wigan Road	Roadside	341741	408164	NO_2	No	0.0	5.0	No	2.5
23A, 23B, 23C	Moor Street Dental Practice	Roadside	341665	408154	NO_2	Yes - Ormskirk AQMA	0.0	1.5	No	2.5
24A, 24B, 24C	42 Alder Lane	Roadside	349357	410430	NO_2	No	0.0	9.0	No	2.5

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube Co-located with a Continuous Analyser?	Tube Height (m)
25A, 25B, 25C	79 Liverpool Road South	Roadside	343522	410803	NO_2	No	0.0	8.0	No	2.5
26A, 26B, 26C	269 Mossy Lea Road	Roadside	353669	412654	NO_2	No	0.0	7.0	No	2.5

Notes:

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

(2) N/A if not applicable.

Table A.2 – Annual Mean NO_2 Monitoring Results: Non-Automatic Monitoring (µg/m^3)

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2024 (%) (2)	2020	2021	2022	2023	2024
8	342943	410386	Roadside	65.8	65.8	21.1	21.6	21.0	22.1	16.9
12A, 12B, 12C	341698	408177	Roadside	65.8	65.8	21.3	22.3	20.7	21.6	17.5
13A, 13B, 13C	341720	408176	Roadside	65.8	65.8	25.5	26.4	25.9	23.6	21.6
14A, 14B, 14C	341684	408166	Roadside	65.8	65.8	23.6	26.1	23.4	23.6	21.2
15A, 15B, 15C	341629	408155	Roadside	65.8	65.8	31.3	32.0	30.4	25.1	23.8
16A, 16B, 16C	341590	408153	Roadside	65.8	65.8	23.5	24.2	24.6	22.6	19.6
21A, 21B, 21C	341376	408130	Roadside	65.8	65.8	22.9	24.8	23.1	22.5	19.7
22A, 22B, 22C	341741	408164	Roadside	65.8	65.8	23.6	26.1	23.8	23.6	20.2
23A, 23B, 23C	341665	408154	Roadside	65.8	65.8	32.5	34.0	33.1	29.2	27.4
25A, 25B, 25C	343522	410803	Roadside	65.8	65.8	18.7	17.4	16.2	16.9	13.3
26A, 26B, 26C	353669	412654	Roadside	65.8	65.8	13.0	13.6	12.4	12.3	10.6

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

☒ **Diffusion tube data has been bias adjusted.**

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

Notes:

The annual mean concentrations are presented as µg/m^3.

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

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

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

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

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

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

Figure A.1 – Trends in Annual Mean NO_2 Concentrations – Diffusion Tubes Within Ormskirk AQMA

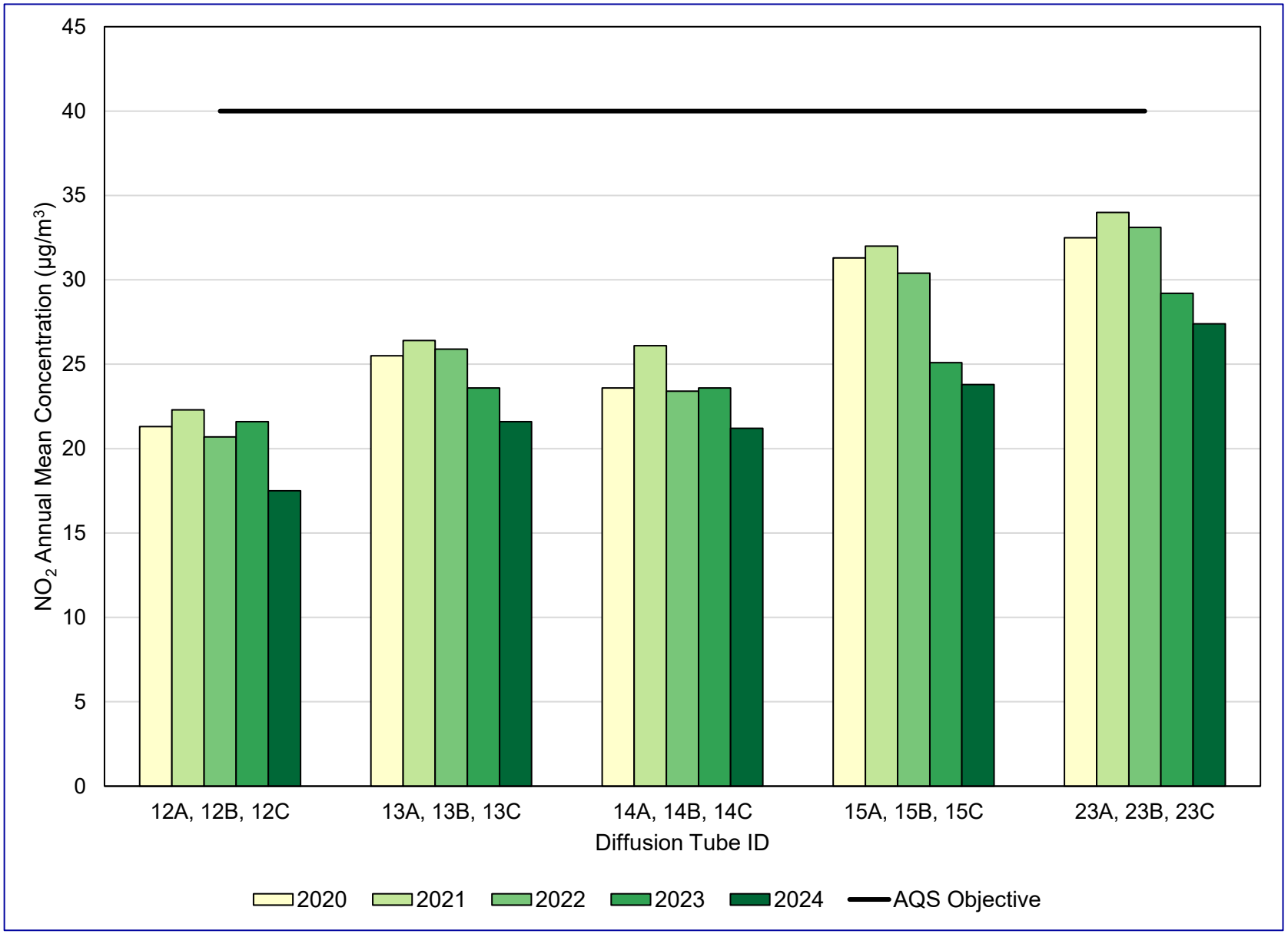
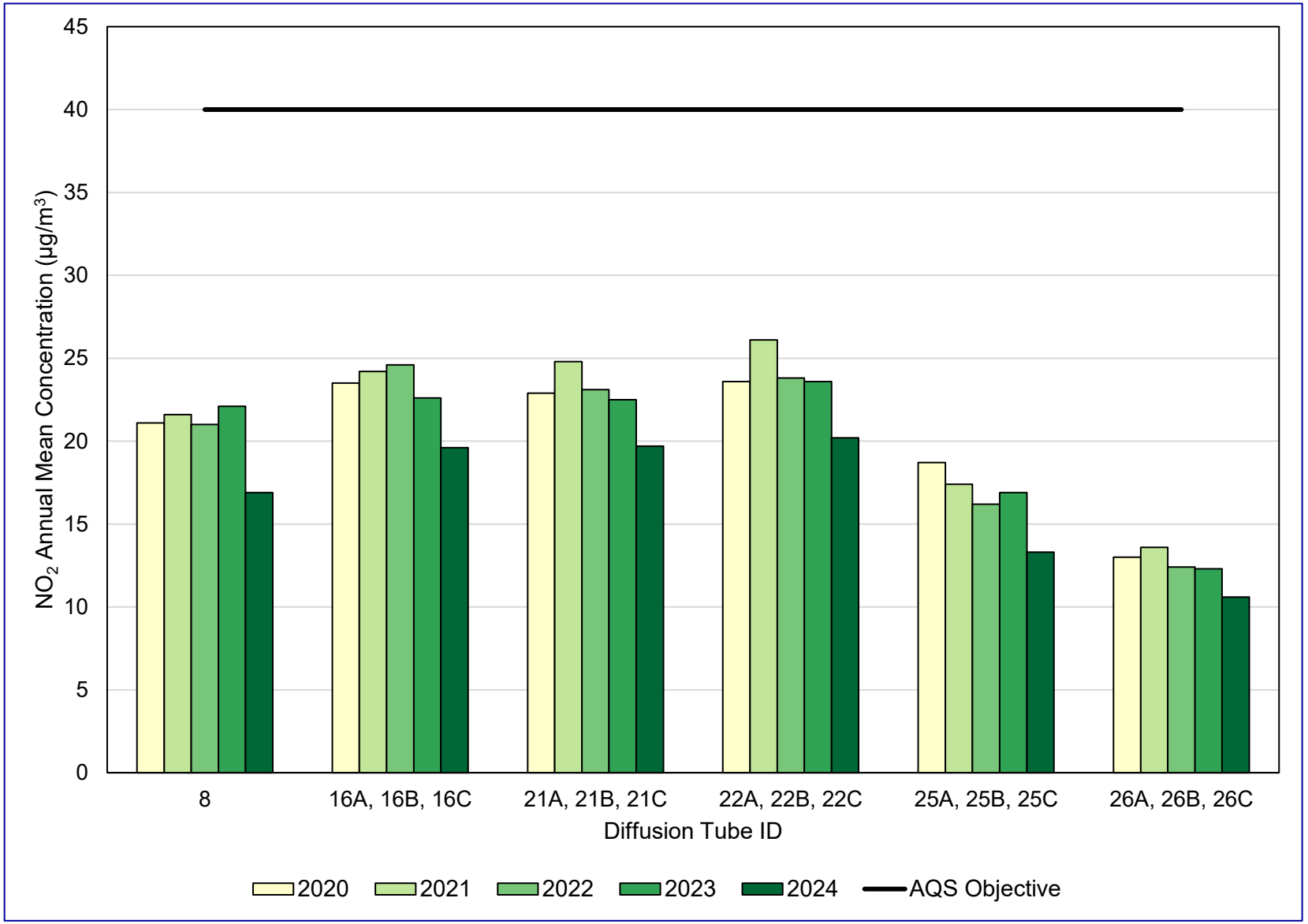


Figure A.2 – Trends in Annual Mean NO_2 Concentrations – Diffusion Tubes Outside Ormskirk AQMA



Appendix B: Full Monthly Diffusion Tube Results for 2024

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

DT ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Annualised and Bias Adjusted (0.78)	Annual Mean: Distance Corrected to Nearest Exposure	Comment
8	342943	410386	32.9	17.6	-	-	21.8	15.9	18.9	-	-	29.3	32.5	24.0	24.1	16.9	-	
12A	341698	408177	30.5	30.9	-	-	17.5	17.7	18.7	-	-	26.5	-	26.2	-	-	-	Triplicate Site with 12A, 12B and 12C - Annual data provided for 12C only
12B	341698	408177	27.9	30.4	-	-	21.0	17.5	17.7	-	-	25.1	26.3	27.6	-	-	-	Triplicate Site with 12A, 12B and 12C - Annual data provided for 12C only
12C	341698	408177	30.3	27.8	-	-	22.1	17.9	18.7	-	-	-	32.5	27.0	25.0	17.5	-	Triplicate Site with 12A, 12B and 12C - Annual data provided for 12C only
13A	341720	408176	34.0	36.0	-	-	30.1	24.9	27.0	-	-	32.2	35.3	22.7	-	-	-	Triplicate Site with 13A, 13B and 13C - Annual data provided for 13C only
13B	341720	408176	37.2	39.2	-	-	30.4	23.0	26.9	-	-	35.0	30.0	23.3	-	-	-	Triplicate Site with 13A, 13B and 13C - Annual data provided for 13C only
13C	341720	408176	35.0	38.1	-	-	30.3	24.4	26.9	-	-	34.6	37.0	23.7	30.8	21.6	-	Triplicate Site with 13A, 13B and 13C - Annual data provided for 13C only
14A	341684	408166		31.5	-	-	27.2	26.1	25.5	-	-	24.2	38.6	20.2	-	-	-	Triplicate Site with 14A, 14B and 14C - Annual data provided for 14C only
14B	341684	408166	**40.3**	29.0	-	-	32.2	21.8	24.7	-	-	31.3	35.0	33.5	-	-	-	Triplicate Site with 14A, 14B and 14C - Annual data provided for 14C only
14C	341684	408166	37.7	31.9	-	-	28.1	25.6	26.1	-	-	31.8	38.9	27.8	30.2	21.2	-	Triplicate Site with 14A, 14B and 14C - Annual data provided for 14C only
15A	341629	408155	36.2	34.2	-	-	30.0	21.4	28.3	-	-	35.2	**41.5**	-	-	-	-	Triplicate Site with 15A, 15B and 15C - Annual data provided for 15C only
15B	341629	408155	38.8	39.5	-	-	27.1	23.4	28.8	-	-	35.2	**41.0**	-	-	-	-	Triplicate Site with 15A, 15B and 15C - Annual data provided for 15C only
15C	341629	408155	38.0	**46.6**	-	-	29.3	22.5	26.2	-	-	**40.2**	**42.7**	33.3	33.9	23.8	-	Triplicate Site with 15A, 15B and 15C - Annual data provided for 15C only
16A	341590	408153	34.4	33.9	-	-	17.4	18.0	22.5	-	-	29.0	35.0	30.3	-	-	-	Triplicate Site with 16A, 16B and 16C - Annual data provided for 16C only
16B	341590	408153	38.1	34.0	-	-	23.2	19.6	22.4	-	-	28.9	31.8	28.0	-	-	-	Triplicate Site with 16A, 16B and 16C - Annual data provided for 16C only
16C	341590	408153	34.3	37.8	-	-	21.9	20.5	22.2	-	-	26.7	35.3	21.2	28.0	19.6	-	Triplicate Site with 16A, 16B and 16C - Annual data provided for 16C only

DT ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Annualised and Bias Adjusted (0.78)	Annual Mean: Distance Corrected to Nearest Exposure	Comment
21A	341376	408130	24.8	29.7	-	-	35.5	20.8	23.7	-	-	28.2	38.7	22.9	-	-	-	Triplicate Site with 21A, 21B and 21C - Annual data provided for 21C only
21B	341376	408130	36.8	32.8	-	-	29.3	19.5	23.4	-	-	24.3	36.3	19.3	-	-	-	Triplicate Site with 21A, 21B and 21C - Annual data provided for 21C only
21C	341376	408130	32.4	33.0	-	-	29.4	18.3	20.2	-	-	28.3	37.1	29.4	28.0	19.7	-	Triplicate Site with 21A, 21B and 21C - Annual data provided for 21C only
22A	341741	408164	36.7	31.5	-	-	23.3	26.8	27.8	-	-	29.9	36.5	26.1	-	-	-	Triplicate Site with 22A, 22B and 22C - Annual data provided for 22C only
22B	341741	408164	38.4	31.4	-	-	30.1	28.7	26.0	-	-	24.1	34.9	17.8	-	-	-	Triplicate Site with 22A, 22B and 22C - Annual data provided for 22C only
22C	341741	408164	29.3	33.5	-	-	28.1	28.7	26.3	-	-	28.6	35.6	14.9	28.7	20.2	-	Triplicate Site with 22A, 22B and 22C - Annual data provided for 22C only
23A	341665	408154	**44.9**	**50.4**	-	-	39.8	29.7	36.2	-	-	24.5	**50.4**	35.0	-	-	-	Triplicate Site with 23A, 23B and 23C - Annual data provided for 23C only
23B	341665	408154	**49.6**	**40.5**	-	-	36.0	31.1	27.8	-	-	**42.2**	**49.8**	24.3	-	-	-	Triplicate Site with 23A, 23B and 23C - Annual data provided for 23C only
23C	341665	408154	**43.7**	**44.9**	-	-	38.3	30.5	32.1	-	-	**48.1**	**43.6**	**43.4**	39.1	27.4	-	Triplicate Site with 23A, 23B and 23C - Annual data provided for 23C only
25A	343522	410803	22.4	22.6	-	-	16.0	16.3	14.3	-	-	19.9	24.7	14.1	-	-	-	Triplicate Site with 25A, 25B and 25C - Annual data provided for 25C only
25B	343522	410803	20.4	21.7	-	-	14.4	16.2	14.0	-	-	20.5	24.8	13.6	-	-	-	Triplicate Site with 25A, 25B and 25C - Annual data provided for 25C only
25C	343522	410803	20.6	22.6	-	-	15.2	17.0	14.5	-	-	20.0	26.4	20.5	18.9	13.3	-	Triplicate Site with 25A, 25B and 25C - Annual data provided for 25C only
26A	353669	412654	13.6	20.8	-	-	11.1	9.2	10.6	-	-	16.1	23.9	14.9	-	-	-	Triplicate Site with 26A, 26B and 26C - Annual data provided for 26C only
26B	353669	412654	16.0	17.5	-	-	10.9	9.2	10.6	-	-	16.7	-	14.7	-	-	-	Triplicate Site with 26A, 26B and 26C - Annual data provided for 26C only
26C	353669	412654	20.5	18.2	-	-	10.7	10.1	10.6	-	-	15.1	22.7	11.7	15.1	10.6	-	Triplicate Site with 26A, 26B and 26C - Annual data provided for 26C only

☒ **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.**

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

Notes:

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

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

See Appendix C for details on bias adjustment and annualisation.

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

New or Changed Sources Identified Within West Lancashire During 2024

West Lancashire Borough Council identified several new developments that required an Air Quality Assessment (AQA) or equivalent Environmental Assessments (EAs) / Construction Management Plans (CMPs) within the reporting year of 2024.

Further investigation between the Council's Planning Department and Environmental Health Department has identified that Air Quality Assessments (AQAs) or equivalent Environmental Assessments (EAs) / Construction Management Plans (CMPs) undertaken outline that the developments are not expected to significantly impact the air quality objectives within the borough as development progresses into the 2025 monitoring year and onwards.

It is acknowledged that certain applications are confidential, therefore specific information cannot be disclosed in the ASR. More detail regarding the specific applications can be obtained by contacting the Council.

A summary of the ongoing developments throughout 2024 has been provided in Table C.1 – 2024 Ongoing Planned Developments in West Lancashire.

Table C.1 – 2024 Ongoing Planned Developments in West Lancashire

Application Number	Location	Proposal	Status
2015/0171/OUT	Yew Tree Farm, Liverpool Road, South Burscough, Lancashire, L40 7RE	Outline planning permission (including details of access) for the erection of up to 580 dwellings (C3); Extra Care or Care Accommodation (C2); a Local Centre (comprising up to 500m2 of A1, A2, A3, A4 and A5 floorspace; and community uses); the construction of 4.6 hectares of Employment Development (up to 13,800m^2 of B1, B2 and B8 floorspace); the provision of open space and associated recreation facilities (including parkland, allotments, play areas, a linear park, cycle and pedestrian facilities); together with the provision of related infrastructure including the	Approved – Build in Progress

Application Number	Location	Proposal	Status
		construction of drainage works (including sustainable urban drainage systems), roads, services and related utilities; and associated works.	

Additional Air Quality Works Undertaken by West Lancashire Borough Council During 2024

West Lancashire Borough Council has not completed any additional works within the reporting year of 2024.

QA/QC of Diffusion Tube Monitoring

West Lancashire Borough Council's diffusion tubes in 2024 were supplied and analysed by SOCOTEC Didcot, using the 50% Triethanolamine (TEA) in acetone preparation method. SOCOTEC Didcot's laboratory is UKAS accredited and participates in the Air and Stack Emissions Proficiency Testing (AIR-PT) Scheme for NO_2 tube analysis and the Annual Field Inter-Comparison Exercise. These provide strict performance criteria for participating laboratories to meet, thereby ensuring NO_2 concentrations reported are of a high calibre. The lab follows the procedures set out in the Harmonisation Practical Guidance (HPG). In the AIR PT intercomparison scheme for comparing spiked Nitrogen Dioxide diffusion tubes.

There were 37 local authority co-location studies which used tubes supplied by SOCOTEC Didcot with the 50% TEA in acetone preparation method in 2024, 33 were rated as 'good', as shown by the precision summary results. This precision reflects the laboratory's performance and consistency in preparing and analysing the tubes, as well as the subsequent handling of the tubes in the field. Tubes are considered to have a "good" precision where the coefficient of variation of duplicate or triplicate diffusion tubes for eight or more monitoring periods during a year is less than 20%.

Monitoring in 2024 was partially completed in adherence with the 2024 Defra Diffusion Tube Monitoring Calendar. Changeovers completed in January-February, May-July, and October-December 2024 were within ±2 days of the specified date. In March-April, and August-September 2024 tubes were over exposed across the monitoring periods, deployed between dates below:

- March-April 2024: 06/03/2024 (ON) - 09/05/2024 (OFF); and
- August-September 2024: 31/07/2024 (ON) - 02/10/2024 (OFF).

Thus, in accordance with Section 3.2.5 in Defra Diffusion Tube for Ambient NO_2 Monitoring Guidance and Section 7.199 in LAQM.TG(22), data for the 2024 aforementioned months with over exposed tubes have been excluded from the analysis due to concerns regarding data reliability, justified below:

- *Section 3.2.5: "Individual exposures should ideally be 2-4 weeks (no longer than 5 weeks and no shorter than 1 week)."*
- *Section 7.199: "If diffusion tubes are left out for significantly longer or shorter periods than the four and five weeks recommended, then the data may not be reliable as the diffusion rate may not have been accurately defined."*

Diffusion Tube Annualisation

For any site where data capture is below 75%, annualisation is to be performed. This is because section 7.196 of LAQM.TG(22) states that:

"If data capture is below 75% for the year, then it is necessary to annualise the data… [as] the concentration varies throughout the year, and the instrument may have been operational for a period of above or below average concentrations".

In 2024, all diffusion tube sites required annualisation, owing to the fact that the tubes were over exposed in March, April, August, and September, thus data was excluded from analysis due to its unreliability. As such, there was insufficient data capture at all locations (65.8%), and only eight months of data reported, January-February, May-July, and October-December 2024, with the known exception of Site ID 12A which was also missing November 2024 data due to a broken tube lid, yielding an erroneous result as confirmed by SOCOTEC Didcot laboratory, thus was excluded.

In order to complete the annualisation process, data has been taken from a number of background monitoring station that are part of the Automatic Urban and Rural Network (AURN) – Warrington, Blackpool Marton, Wirral Tranmere, and Wigan Centre. This is in line with Box T-9 of TG(22), which states to annualise data:

"Identify two to four nearby, long-term, continuous monitoring sites, ideally those forming part of the national network. The data capture for each of these sites should be at least 85%. These sites should be background (Urban Background, Suburban or Rural) sites to avoid any very local effects that may occur at Urban Centre, Roadside or Kerbside sites, and should, wherever possible lie within a radius of about 50 miles".

It is noted that the automatic monitor AURN Warrington did not achieve ≥85% data capture

in 2024, therefore this site was rejected for annualisation.

Table C.2 – Annualisation Summary (concentrations presented in µg/m^3)

Site ID	Annualisation Factor AURN Warrington	Annualisation Factor AURN Blackpool Marton	Annualisation Factor AURN Wirral Tranmere	Annualisation Factor AURN Wigan Centre	Average Annualisation Factor	Raw Data Simple Annual Mean (µg/m^3)	Annualised Data Simple Annual Mean (µg/m^3)	Comments
8	Did not achieve data capture requirement	0.9143	0.8849	0.8975	0.8989	24.1	21.6	-
12A/B/C	Did not achieve data capture requirement	0.9143	0.8849	0.8975	0.8989	25.0	22.4	*Triplicate Site with 12A, 12B and 12C - Annual data provided for 12C only*
13A/B/C	Did not achieve data capture requirement	0.9143	0.8849	0.8975	0.8989	30.8	27.7	*Triplicate Site with 13A, 13B and 13C - Annual data provided for 13C only*
14A/B/C	Did not achieve data capture requirement	0.9143	0.8849	0.8975	0.8989	30.2	27.2	*Triplicate Site with 14A, 14B and 14C - Annual data provided for 14C only*
15A/B/C	Did not achieve data capture requirement	0.9143	0.8849	0.8975	0.8989	33.9	30.5	*Triplicate Site with 15A, 15B and 15C - Annual data provided for 15C only*
16A/BC	Did not achieve data capture requirement	0.9143	0.8849	0.8975	0.8989	28.0	25.2	*Triplicate Site with 16A, 16B and 16C -*

Site ID	Annualisation Factor AURN Warrington	Annualisation Factor AURN Blackpool Marton	Annualisation Factor AURN Wirral Tranmere	Annualisation Factor AURN Wigan Centre	Average Annualisation Factor	Raw Data Simple Annual Mean (µg/m^3)	Annualised Data Simple Annual Mean (µg/m^3)	Comments
								Annual data provided for 16C only
21A/B/C	Did not achieve data capture requirement	0.9143	0.8849	0.8975	0.8989	28.0	25.2	*Triplicate Site with 21A, 21B and 21C - Annual data provided for 21C only*
22A/B/C	Did not achieve data capture requirement	0.9143	0.8849	0.8975	0.8989	28.7	25.8	*Triplicate Site with 22A, 22B and 22C - Annual data provided for 22C only*
23A/B/C	Did not achieve data capture requirement	0.9143	0.8849	0.8975	0.8989	39.1	35.1	*Triplicate Site with 23A, 23B and 23C - Annual data provided for 23C only*
25A/B/C	Did not achieve data capture requirement	0.9143	0.8849	0.8975	0.8989	18.9	17.0	*Triplicate Site with 25A, 25B and 25C - Annual data provided for 25C only*
26A/B/C	Did not achieve data capture requirement	0.9143	0.8849	0.8975	0.8989	15.1	13.5	*Triplicate Site with 26A, 26B and 26C - Annual data provided for 26C only*

Diffusion Tube Bias Adjustment Factors

The diffusion tube data presented within the 2025 ASR, for monitoring year 2024, 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.

West Lancashire Borough Council have applied a national bias adjustment factor of 0.78 to the 2024 monitoring data. No co-location studies are carried out by West Lancashire Borough Council therefore only a national factor can be applied. A summary of bias adjustment factors used by West Lancashire Borough Council over the past five years is presented in Table C.3.

The national factor for SOCOTEC Didcot 50% TEA in acetone, as presented in the Diffusion Tube Bias Factors Spreadsheet v06/25, was 0.78 based on 37 studies. The National Bias Adjustment Spreadsheet is presented in Figure C.1.

Table C.3 – Bias Adjustment Factor

Monitoring Year	Local or National	If National, Version of National Spreadsheet	Adjustment Factor
2024	National	06/25	0.78
2023	National	03/24	0.77
2022	National	09/23	0.76
2021	National	09/22	0.77
2020	National	09/21	0.76

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 (DTDPT)/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 monitoring location within the borough of West Lancashire required distance correction during 2024.

Figure C.1 – National Bias Adjustment Factor Spreadsheet (06/25)

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

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

This spreadsheet will be updated at the end of September 2025
LAQM Helpdesk Website

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

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

Step 1: Select the Laboratory that Analyses Your Tubes from the Drop-Down List. If a laboratory is not shown, we have no data for this laboratory.

Step 2: Select a Preparation Method from the Drop-Down List. If a preparation method is not shown, we have no data for this method at this laboratory.

Step 3: Select a Year from the Drop-Down List. If a year is not shown, we have no data[2]

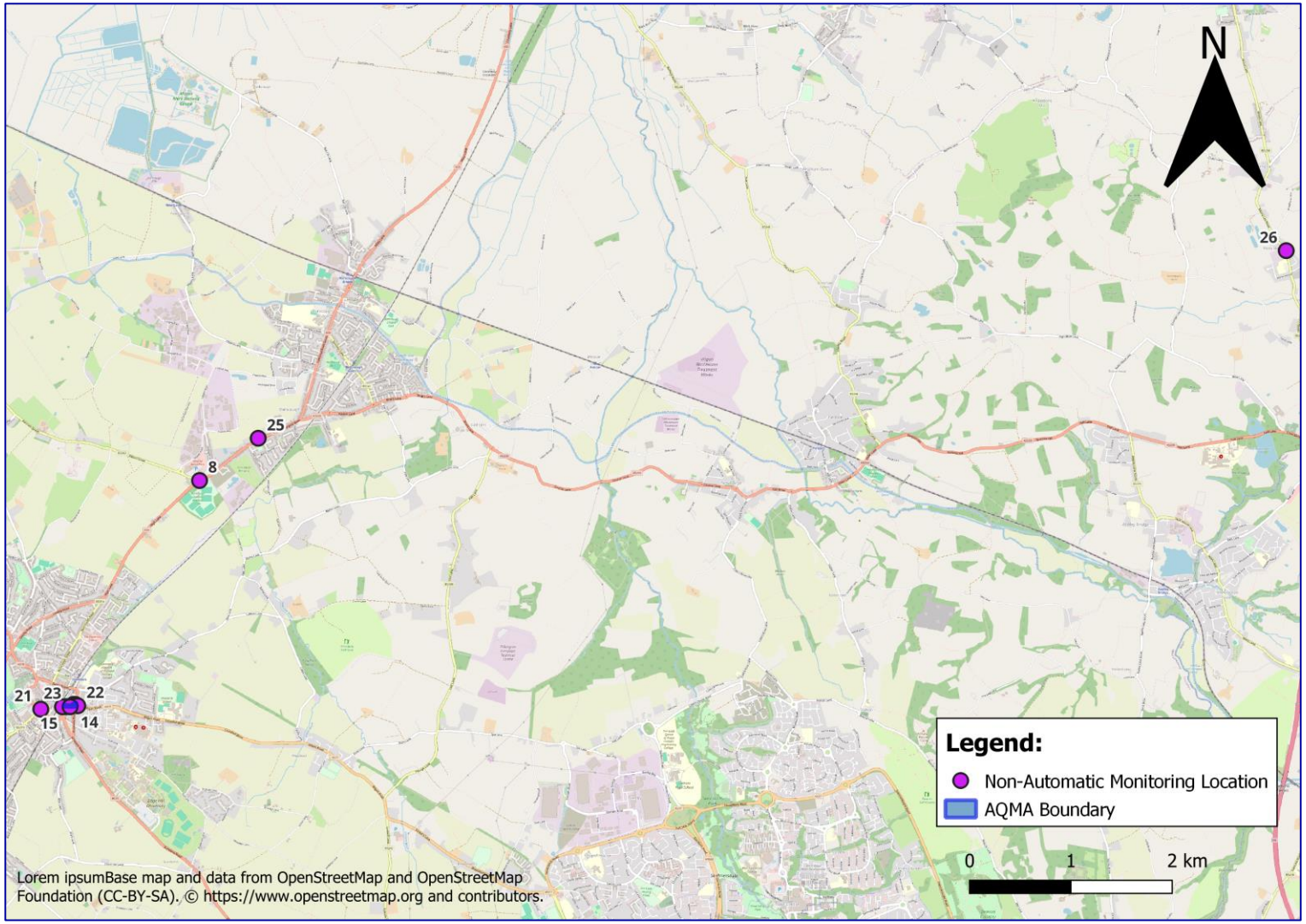
Step 4: **Where there is only one study for a chosen combination, you should use the adjustment factor shown with caution. Where there is more than one study, use the overall factor[3] shown in blue at the foot of the final column.**

If you have your own co-location study then see footnote[4]. If uncertain what to do then contact the Local Air Quality Management Helpdesk at LAQMHelpdesk@bureauveritas.com or 0800 0327953

Analysed By[1]	Method (To 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)
SOCOTEC Didcot	50% TEA in acetone	2024	R	Cambridge City Council	11	20	15	31.0%	G	**0.76**
SOCOTEC Didcot	50% TEA in acetone	2024	R	Cardiff Council / Shared Regulatory Services	9	35	31	14.2%	G	**0.88**
SOCOTEC Didcot	50% TEA in acetone	2024	R	Ipswich Borough Council	9	24	20	21.0%	G	**0.83**
SOCOTEC Didcot	50% TEA in acetone	2024	R	Ipswich Borough Council	11	36	26	37.9%	G	**0.73**
SOCOTEC Didcot	50% TEA in acetone	2024	UB	City Of York Council	11	13	11	16.0%	P	**0.86**
SOCOTEC Didcot	50% TEA in acetone	2024	R	City Of York Council	11	22	18	22.9%	G	**0.81**
SOCOTEC Didcot	50% TEA in acetone	2024	R	City Of York Council	11	26	20	31.0%	G	**0.76**
SOCOTEC Didcot	50% TEA in acetone	2024	R	East Suffolk Council	9	26	20	32.8%	G	**0.75**
SOCOTEC Didcot	50% TEA in acetone	2024	KS	Marylebone Road Intercomparison	10	47	36	30.5%	G	**0.77**
SOCOTEC Didcot	50% TEA in acetone	2024	UB	Hull City Council	10	21	16	25.4%	P	**0.80**
SOCOTEC Didcot	50% TEA in acetone	2024	R	Hull City Council	9	27	20	35.3%	G	**0.74**
SOCOTEC Didcot	50% TEA in acetone	2024	R	Waverley Borough Council	10	21	18	13.7%	G	**0.88**
SOCOTEC Didcot	50% TEA in acetone	2024	R	Waverley Borough Council	11	22	16	32.3%	G	**0.76**
SOCOTEC Didcot	50% TEA in acetone	2024	R	Wrexham County Borough Council	10	15	13	17.0%	G	**0.85**
SOCOTEC Didcot	50% TEA in acetone	2024	UB	Gravesham Borough Council	11	21	19	9.7%	P	**0.91**
SOCOTEC Didcot	50% TEA in acetone	2024	R	Slough Borough Council	11	35	24	43.5%	G	**0.70**
SOCOTEC Didcot	50% TEA in acetone	2024	R	Slough Borough Council	11	26	20	32.6%	G	**0.75**
SOCOTEC Didcot	50% TEA in acetone	2024	R	Slough Borough Council	11	23	17	34.0%	G	**0.75**
SOCOTEC Didcot	50% TEA in acetone	2024	R	Slough Borough Council	10	31	23	33.4%	G	**0.75**
SOCOTEC Didcot	50% TEA in acetone	2024	R	Slough Borough Council	11	30	23	33.7%	G	**0.75**
SOCOTEC Didcot	50% TEA in acetone	2024	R	Thanet Distric Council	10	19	15	24.3%	G	**0.80**
SOCOTEC Didcot	50% TEA in acetone	2024	UB	Wirral Council	9	14	12	19.9%	G	**0.83**
SOCOTEC Didcot	50% TEA in acetone	2024	R	Derry City And Strabane District Council	11	28	32	-11.8%	G	**1.13**
SOCOTEC Didcot	50% TEA in acetone	2024	UB	Derry City And Strabane District Council	11	11	7	58.1%	G	**0.63**
SOCOTEC Didcot	50% TEA in Acetone	2024	R	Horsham District Council	11	22	17	31.1%	G	**0.76**
SOCOTEC Didcot	50% TEA in Acetone	2024	R	Leeds City Council	10	36	28	32.5%	G	**0.75**
SOCOTEC Didcot	50% TEA in Acetone	2024	KS	Leeds City Council	11	29	20	42.7%	G	**0.70**
SOCOTEC Didcot	50% TEA in Acetone	2024	R	Leeds City Council	11	24	18	36.4%	G	**0.73**
SOCOTEC Didcot	50% TEA in Acetone	2024	UC	Leeds City Council	10	25	19	31.2%	G	**0.76**
SOCOTEC Didcot	50% TEA in Acetone	2024	R	Huntingdonshire District Council	10	28	23	21.1%	G	**0.83**
SOCOTEC Didcot	50% TEA in Acetone	2024	R	North East Lincolnshire Council	11	39	21	84.1%	G	**0.54**
SOCOTEC Didcot	50% TEA in Acetone	2024	UB	North East Lincolnshire Council	10	12	10	20.0%	G	**0.83**
SOCOTEC Didcot	50% TEA in Acetone	2024	R	North East Lincolnshire Council	11	21	18	15.7%	G	**0.86**
SOCOTEC Didcot	50% TEA in Acetone	2024	UI	North Lincolnshire Council	11	13	11	17.3%	P	**0.85**
SOCOTEC Didcot	50% TEA in acetone	2024	R	Horsham District Council	10	20	16	26.6%	G	**0.79**
SOCOTEC Didcot	50% TEA in acetone	2024	R	Horsham District Council	11	21	16	27.0%	G	**0.79**
SOCOTEC Didcot	50% TEA in acetone	2024	R	Vale Of White Horse District Council	11	19	13	44.9%	G	**0.69**
SOCOTEC Didcot	50% TEA in acetone	2024		**Overall Factor[3] (37 studies)**				**Use**		**0.78**

Appendix D: Maps of Monitoring Locations and Ormskirk AQMA

Figure D.1 – All Monitoring Locations in West Lancashire and Ormskirk AQMA



NOTE:

All sites are triplicates besides Site ID 8. For ease of visuals the A/B/C triplicate references have been removed.

Figure D.1 Ormskirk AQMA overlaps Site IDs: 12, 13, 14, 15 and 23.

Non-automatic monitoring stations Site IDs that overlap on Figure D.1 due to locational proximity:

- 12 and 13;
- 16 and 25.

Figure D.2 – Non-Automatic Monitoring Locations: Ormskirk

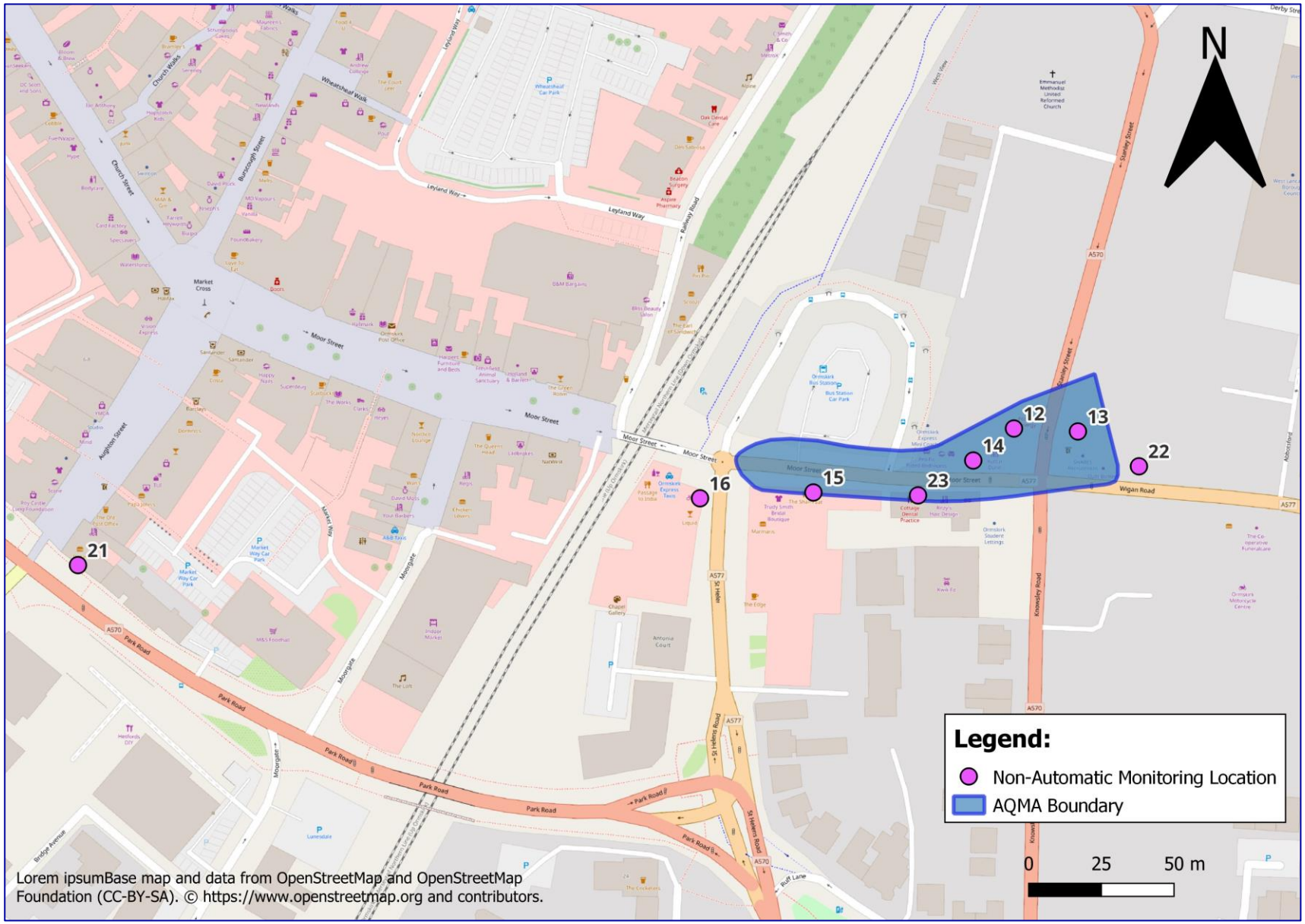


Figure D.3 – Non-Automatic Monitoring Locations: Burscough

Figure D.4 – Non-Automatic Monitoring Locations: Mossy Lea

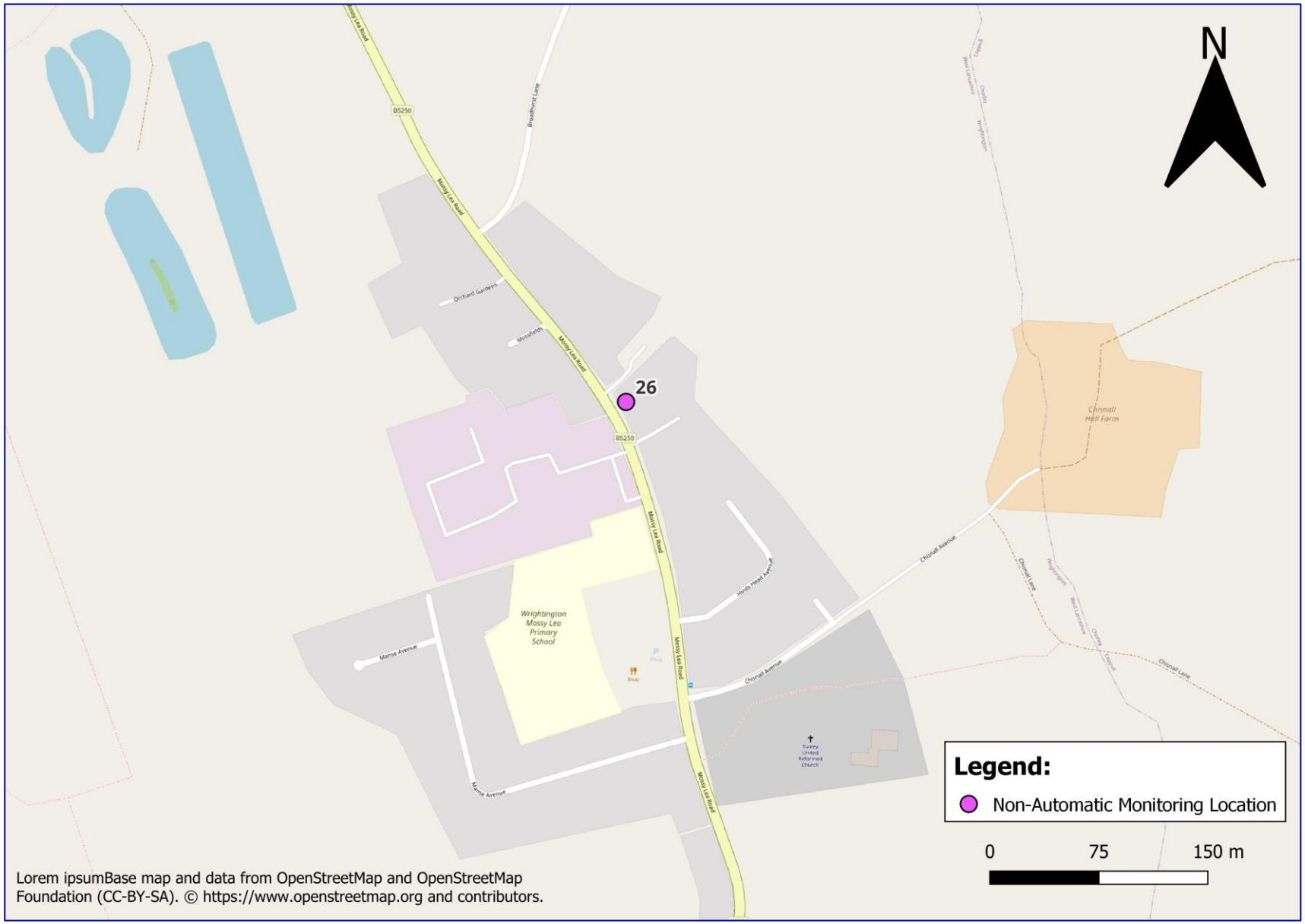
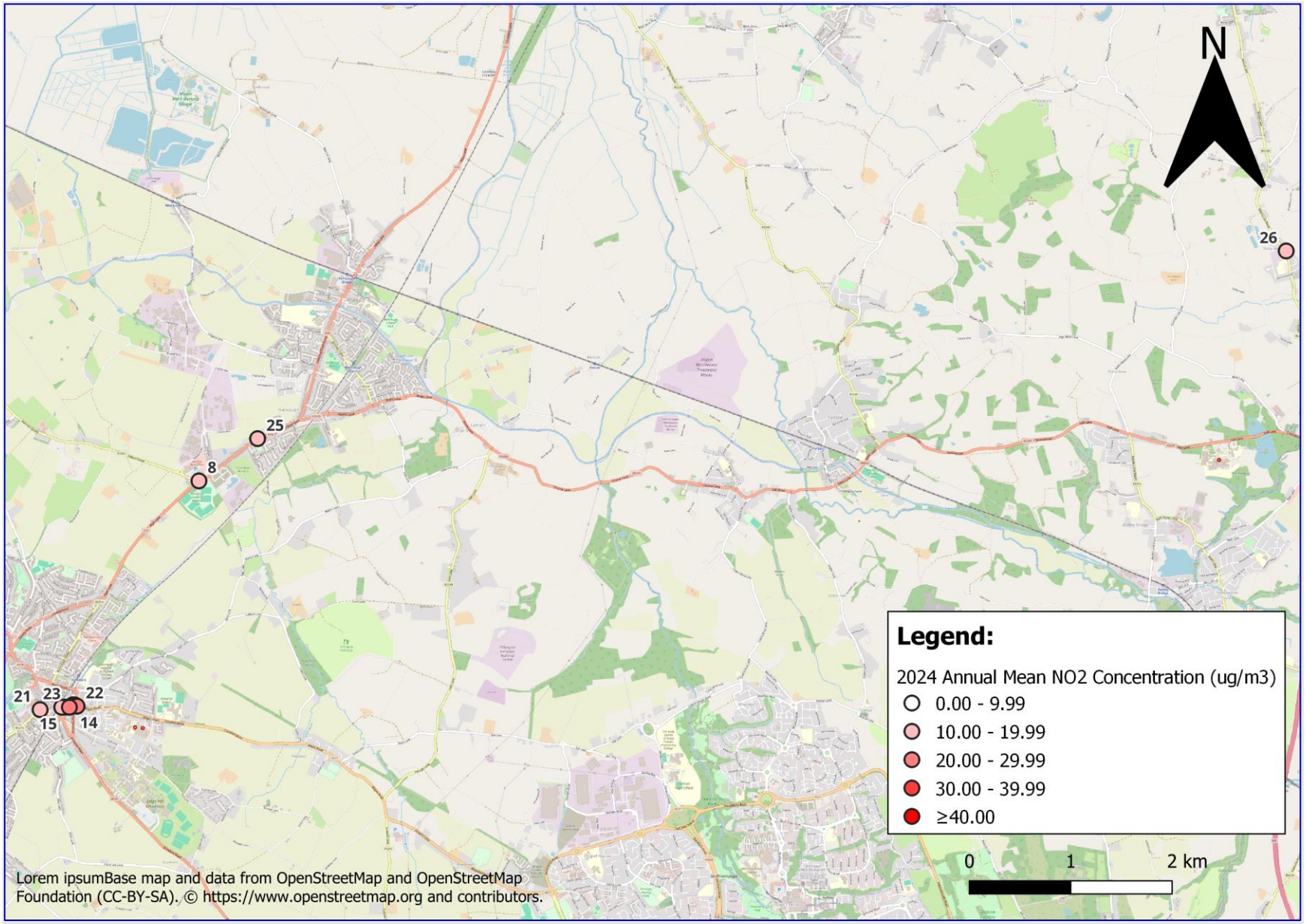


Figure D.5 – 2024 Annual NO_2 Concentrations All Non-Automatic Monitoring Locations



Appendix E: Summary of Air Quality Objectives in England

Table E.1 – Air Quality Objectives in England[4]

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

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

Glossary of Terms

Abbreviation	Description
AIR-PT	Air and Stack Emissions Proficiency Testing Scheme
AQA	Air Quality Assessment
AQAP	Air Quality Action Plan - A detailed description of measures, outcomes, achievement dates and implementation methods, showing how the local authority intends to achieve air quality limit values'
AQMA	Air Quality Management Area – An area where air pollutant concentrations exceed / are likely to exceed the relevant air quality objectives. AQMAs are declared for specific pollutants and objectives
AQO	Air Quality Objective
AQS	Air Quality Standard
ASHP	Air Source Heat Pump
ASR	Annual Status Report
AURN	Automatic Urban and Rural Network
CHiL	Cosy Homes in Lancashire
CIL	Community Infrastructure Levy
CMP	Construction Management Plan
COVID-19	Coronavirus-19
CO_2	Carbon Dioxide
CWZ	Core Walking Zone
Defra	Department for Environment, Food and Rural Affairs
DfT	Department for Transport
DMRB	Design Manual for Roads and Bridges – Air quality screening tool produced by National Highways
DT	Diffusion Tube
DTDPT	Diffusion Tube Data Processing Tool
EA	Environmental Assessment
EHU	Edge Hill University
EPC	Energy Performance Certificate
EV	Electric(al) Vehicle

Abbreviation	Description
GHG	Green Homes Grant
GP	General Practitioner
HPG	Harmonisation Practical Guidance
LAQM	Local Air Quality Management
LCC	Lancashire County Council
LCN	Local Cycle Network
LCWIP	Local Cycling and Walking Infrastructure Plan
LEV	Low Emission Vehicle
LEVI	Local Electric Vehicle Infrastructure
N/A	Not Applicable
NCN	National Cycle Network
NHS	National Health Service
NO_2	Nitrogen Dioxide
NO_x	Nitrogen Oxides
ONS	Office for National Statistics
OSRCPS	On-Street Residential Charge Point Scheme
OZEV	Office of Zero Emission Vehicles
PG	Policy Guidance
PHE	Public Health England
PHOF	Public Health Outcomes Framework
PM	Particulate Matter
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
PV	Photovoltaic
QA/QC	Quality Assurance and Quality Control
SCA	Smoke Control Area
SO_2	Sulphur Dioxide
SSSI	Sites of Special Scientific Interest

Abbreviation	Description
TEA	Triethanolamine
TG	Technical Guidance
UK	United Kingdom
UKAS	United Kingdom Accreditation Service
ULEV	Ultra Low Emission Vehicle
WFH	Work From Home
WLBC	West Lancashire Borough Council
WLLP	West Lancashire Local Plan
WLSP	West Lancashire Sport Partnership

References

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