Annual Progress Report (APR)

2025 Air Quality Annual Progress Report (APR) for West Lothian Council

In fulfilment of Part IV of the Environment Act 1995, as amended by the Environment Act 2021

Local Air Quality Management

June 2025

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Report Reference Number	5961
Date	June 2025

Executive Summary: Air Quality in Our Area

Air Quality in West Lothian Council

West Lothian Council has continued to review and assess air quality throughout the district during 2024 to determine whether or not Scottish air quality objectives are likely to be achieved. Overall, there were no objective exceedances recorded throughout the West Lothian Council air quality monitoring network in 2024 and the air quality in the area remains good.

Air pollutants Nitrogen Dioxide (NO_2) and fine particulates (PM_{10} & $PM_{2.5}$), which are mainly associated with vehicle emissions and domestic fuel burning, have been measured using a network of three continuous air quality monitoring stations located in Linlithgow, Broxburn and Newton.

Alongside this, there is also a network of 30 NO_x passive diffusion tubes located at 24 sites throughout West Lothian. There is one tube located at 21 sites and three tubes co-located with the air quality monitoring stations at Broxburn, Linlithgow and Newton (Sites DT4, DT14 and DT2N respectively) – we also employ 1 travel tube. The locations of all the diffusion tubes can be found on the Air Quality in Scotland website: **https://www.scottishairquality.scot/latest**

A diffusion tube location map (Figure 6) is also provided at the end of this report in Appendix C, page 52.

The 2024 monitoring data at all three continuous air quality monitoring stations has shown that the NO_2, PM_{10} and $PM_{2.5}$ long term average air quality objectives have been met.

NO_2 levels slightly decreased at all three continuous monitoring sites from the levels found in 2023. There were no exceedances of the short term NO_2 at any of the three sites.

West Lothian Council measured PM_{10} concentrations at three sites during 2024. The levels were slightly lower at Newton & Broxburn. At Linlithgow the concentration level was the same as measured in 2024 compared to levels measured in 2023.

$PM_{2.5}$ levels were the same at Newton & Broxburn in 2024 compared to levels measured in 2023. At Linlithgow the levels were similar compared to the previous year.

In relation to the diffusion tube data it can be noted that during 2024 all of the measured concentrations have decreased from last years measured levels apart from DT9 (Armadale Cross) which increased slightly from 16.7µg/m³ to 18.0µg/m³. This is still considerably below objective levels for NO_2. This could be due to new housing development near to Armadale and as a result increased traffic.

Further information on the location of West Lothian's AQMA's can be found at **West Lothian Air Pollution**

Actions to Improve Air Quality

Bikeability activities have continued during 2024. The scheme is set to meet the target of 34 schools within West Lothian delivering Level 2 Bikeability to their pupils. This will be a new record high for West Lothian Council and equates to 50% of the council's primary schools delivering essential, on road cycle training.

Further bikeability activities which took place during the 2024 session included;

- 4 x Bikeability Scotland Instructor courses ran for teachers and volunteers in West Lothian
- Planned Maintenance for Bikeability cycle fleet
- Cycle Kits for schools getting a member of staff trained as a Bikeability Scotland Instructor
- Working with West Lothian Bike Library for the use of adaptive bikes to ensure cycle training is inclusive to all
- Dr Bikes arranged pre Bikeability delivery for pupils who need their bikes checked over
- Ever increasing engagement from schools enquiring about Bikeability with lots of positive feedback from both teachers and pupils

The longer term goal is to have 100% of Primary Schools in West Lothian delivering Level 2 Bikeability training to their pupils meaning that all children attending a Primary School in West Lothian will have the opportunity to participate in essential cycle training. Cycle training is an essential life skill which will help us move to a more sustainable future and is an important part of every child's learning and development.

In Summary during 2024:

- 68 primary schools were contacted
- 31 schools were visited
- 21 schools were utilising Bikeability Loan Bikes
- 22 schools delivered Level 1 Bikeability (terms 1-3)
- 12 schools were planning to deliver Level 1 Bikeability (term 4)
- 24 schools delivered Level 2 Bikeability (terms 1-3)
- 10 schools planning to deliver Level 2 Bikeability (term 4)
- 709 level 1 certificates have been awarded in terms 1-3
- 597 level 2 certificates have been awarded in terms 1-3

West Lothian Council also continues to provide the management and administration support for the East Central Scotland Vehicle Emissions Partnership (VEP), which is a collaboration with Stirling, East Lothian, Midlothian and Falkirk Councils. The remit of the VEP is to assist in reducing vehicle emissions by encouraging drivers to switch off their engine whenever possible, promote good travel modes and vehicle choices and handling idling and emissions complaints. In addition, the VEP uses a broad variety of advertising media to encourage change in driving habits across the councils' areas. Media used includes local TV, radio, public transport networks such as buses and social media. Further information can be found at the VEP's **Switch Off and Breathe** website. The main way of reporting complaints/enquiries to the partnership is by use of the webform which is available on the website.

During 2024, there was further expansion of the publicly available EV charging points and a further two charging points were installed by West Lothian Council. There are currently 78 charging devices providing various charging capacities (7kW and 50kW) across 53 locations. It is planned to continue installing additional bays and devices in various public spaces throughout the West Lothian Council area in the upcoming year.

In August 2023 the **West Lothian Public Electric Vehicle Infrastructure Plan** was published which sets out an overarching vision for EV charging in West Lothian. It sets out proposals for expanding the network and plans for the expansion of public EV charging infrastructure across the district up until 2026 with 2 key objectives identified:

- 10% of parking spaces in key West Lothian Council owned car parks will be EV by 2026
- over 50% of households with no off-road parking in West Lothian will be within a reasonable walk (200-400m) of a charging site by 2026.

There are also plans to take it forward in the coming year, with some potential for collaboration with neighbouring authorities.

In December 2022, the Council introduced tariffs for the use of its EV charge points with different tariff levels specified for different charger types. Further details on the charges and the locations of charging points can be found on the **West Lothian Council EV Charging** webpage.

New development in the West Lothian area is a key issue affecting air quality. Where relevant, development applications are required to submit an Air Quality Impact Assessment to allow for any potential impact to be assessed and any necessary mitigation measures to be applied. Applications that may be required to submit an AQIA include developments where increased traffic emissions e.g. major housing developments, may be an issue and major industrial sites. These will be assessed and considered in line with our **Air Quality Supplementary Planning Guidance.**

Local Priorities and Challenges

During 2024 West Lothian Council's main priorities were the revocation of the three AQMA'S in Newton, Broxburn & Linlithgow. The revocation order for Newton & Linlithgow came into force on the 7th October 2024 and for Broxburn the revocation order came into force on 26th January 2024.

West Lothian Council has committed to carrying out a review of diffusion tube locations at the end of 2025, to ensure that these are located in areas where exposure may be increasing. This may then inform any decisions on relocation of the automatic monitors, if required.

Funding applications will continue to be made to the Scottish Government for monitoring equipment.

How to Get Involved

If you would like to find out more about air quality within West Lothian, please visit the **Air Pollution** pages of our website.

There are three automatic air quality monitoring sites across the West Lothian Council area. The air quality data from all 3 sites can be viewed on the **Scottish Air Quality** website map.

Table of Contents

List of Tables

List of Figures

1 Local Air Quality Management

This report provides an overview of air quality in West Lothian Council 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 pursuit of the objectives. This Annual Progress Report (APR) summarises the work being undertaken by West Lothian Council to improve air quality and any progress that has been made.

Table 1.1 – Summary of Air Quality Objectives in Scotland

Pollutant	Air Quality Objective Concentration	Air Quality Objective Measured as	Date to be Achieved by
Nitrogen dioxide (NO_2)	200 µg/m^3 not to be exceeded more than 18 times a year	1-hour mean	31.12.2005
Nitrogen dioxide (NO_2)	40 µg/m^3	Annual mean	31.12.2005
Particulate Matter (PM_{10})	50 µg/m^3, not to be exceeded more than 7 times a year	24-hour mean	31.12.2010
Particulate Matter (PM_{10})	18 µg/m^3	Annual mean	31.12.2010
Particulate Matter ($PM_{2.5}$)	10 µg/m^3	Annual mean	31.12.2021
Sulphur dioxide (SO_2)	350 µg/m^3, not to be exceeded more than 24 times a year	1-hour mean	31.12.2004
Sulphur dioxide (SO_2)	125 µg/m^3, not to be exceeded more than 3 times a year	24-hour mean	31.12.2004
Sulphur dioxide (SO_2)	266 µg/m^3, not to be exceeded more than 35 times a year	15-minute mean	31.12.2005
Benzene	3.25 µg/m^3	Running annual mean	31.12.2010
1,3 Butadiene	2.25 µg/m^3	Running annual mean	31.12.2003

Pollutant	Air Quality Objective Concentration	Air Quality Objective Measured as	Date to be Achieved by
Carbon Monoxide	10.0 mg/m^3	Running 8-Hour mean	31.12.2003

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 must prepare publish and implement an Air Quality Action Plan (AQAP) within the shortest possible time and no later than 12 months of the date of AQMA Designation Order. The AQAP must set out measures the local authority intends to put in place in pursuit of the objectives within the shortest possible time. Measures should be provided with milestones and a final date for completion. The action plan itself should have a timescale for completion and for revocation of the AQMA. Where measures to reduce air pollution may require a longer timescale an action plan shall be reviewed and republished within five years of initial publication and then five-yearly thereafter.

West Lothian Council currently does not have any AQMAs. All three AQMAs were revoked during 2024. Further information related to the revoked AQMAs can be found on the AQMA Orders for Linlithgow, Broxburn and Newton. These are available online, please see the following link: **Air Pollution - West Lothian Council.** West Lothian Council will continue to monitor NO_2 and PM_{10} at the three existing automatic monitoring sites for the foreseeable future.

2.2 Cleaner Air for Scotland 2

Cleaner Air for Scotland 2 - Towards a Better Place for Everyone is Scotland's second air quality strategy, setting out how the Scottish Government and its partner organisations propose to further reduce air pollution to protect human health and fulfil Scotland's legal responsibilities over the period 2021-2026. CAFS2 was published in July 2021, accompanied by a **Delivery Plan**. This replaces **Cleaner Air for Scotland – The Road to a Healthier Future** (CAFS) which was published in 2015. CAFS2 aims to achieve the ambitious vision for Scotland "to have the best air quality in Europe".

The CAFS2 key partner organisations are:

- Scottish Government
- Transport Scotland
- Scottish Environment Protection Agency (SEPA)
- Public Health Scotland
- Local authorities

Engagement and support from a wide range of stakeholders including representatives from the transport and planning sectors and NGOs is also vital to achieving the aims of CAFS2.

Progress is supported by the CAFS2 Delivery Group, which is directly accountable to a Ministerial Group, and actions are managed by specific sub-groups and policy leads across partner organisations tasked with delivering actions across the 10 overarching policy themes set out in CAFS2.

West Lothian Council's Active Travel Plan was approved following unanimous support from elected members of the Council Executive on Tuesday 22 October 2024. West Lothian's newly refreshed Active Travel Plan is now available and this can be viewed via the following link: **2024-29_ATP_-_REPORT_-_FINAL_Rotated.pdf**

2.2.1 Placemaking – Plans and Policies

Local authorities, with support from the Scottish Government will assess how effectively air quality is embedded in plans, policies, City Deals and other initiatives, and more generally in cross departmental working, identifying and addressing evidence, skills, awareness and operational gaps.

West Lothian Council currently has the following strategies, plans and policies in place which will help contribute to the principles of CAFS2.

West Lothian Council Local Development Plan 1 (LDP1) was adopted in 2018 in accordance with the Town and Country Planning (Scotland) Act 1997 and sets out a local interpretation of the requirements of national and strategic policy. LDP1 comprises a written statement which provides the general policy context against which planning

applications for new development proposals will be assessed. This is supported by 5 proposal maps which show the range of development opportunities and constraints within the area. Air quality is considered throughout the plan but specifically under sections 'Policy EMG4 Air Quality' and Section 252, Air Quality and Noise.

The Council has begun the process of preparing a new Local Development Plan for West Lothian (LDP2) which will replace the existing LDP1. The new plan will set out planning policies and proposals for the use and development of land within West Lothian for a ten-year period starting from when it is adopted, intended to be by the end of 2026. It would be expected that air quality would be considered as part of the new plan.

West Lothian Council 'decarbonising the fleet' working group has been suspended for now but it is hoped that it will start up again during 2025. At a national level West Lothian Council has continued to liaise with Transport Scotland on how local authorities can meet the Scottish Government's fleet decarbonisation targets. Most recently Fleet helped arrange a presentation by Transport Scotland on the Fleet decarbonisation Public Sector action plan at the APSE Fleet, Waste and Grounds Seminar.

West Lothian Council, in partnership with the South East of Scotland Transport Partnership (SEStran), operates a free car-sharing service which is open to anyone to use. The scheme can be accessed through **Tripshare West Lothian** and is part of the national Liftshare network for car-sharing. This scheme can help reduce carbon footprint and vehicle emissions and can also save the user of a car sharing scheme an average of £880 per year.

The West Lothian Council Health Improvement Team, in partnership with community bike lending libraries, have a range of bikes, adult trikes, adaptive bikes (suitable for adults with a wide range of disabilities), folding bikes and power assisted bikes to borrow. The aim of the library is to give access to bikes to those who may otherwise be unable to do so. The Council also run a Bicycle Recycling Project through its Community Payback initiative. So far refurbished bicycles have been donated to RiverKids, a West Lothian children's charity.

As a public body, West Lothian Council has a duty to help achieve national climate change and sustainability targets set by the Climate Change Scotland Act 2009. For further information please see the following link**:** **Climate change - gov.scot**. The council has been committed to acting to mitigate and adapt to the impacts of climate change for some time. West Lothian Council signed the Climate Change Declaration in 2007 and declared a **Climate Emergency** in September 2019.

West Lothian Council have a climate change group which also meets regularly to discuss and consolidate issues around the climate change emergency which includes matters linked to air quality.

Other relevant policies and plans which also contain initiatives that affect air quality include:

- West Lothian Council Climate Change Strategy 2021-28
- Local Outcomes Improvement Plan 2023-2033
- Local Heat and Energy Efficiency Strategy 2023-2028
- Supplementary Planning Guidance Air Quality 2019
- 2024-29_ATP_-_REPORT_-_FINAL_Rotated.pdf(Active Travel plan for West Lothian 2024 – 2029)
- West Lothian Council Carbon Management Plan 2015-2020

2.3 Implementation of Air Quality Action Plan(s) and/or measures to address air quality

In order to ensure that local authorities implement the measures within an action plan by the timescales stated within that plan, the Scottish Government expects authorities to submit updates on progress through the APR process. West Lothian Council has taken forward a number of measures during the current reporting year of 2024 in pursuit of improving local air quality and meeting the air quality objectives within the shortest possible time. Details of all measures completed, in progress or planned are set out in Table 2.2.

West Lothian Council expects the following measures to be completed or continued over the course of the next reporting year:

- Ongoing Local Site Operator training of staff within Environmental Health;
- Continued extensive tree planting projects and woodland management has taken place in the district. During 2024 this has taken place at Witchcraig, Blackmoss Nature Park, along the Shale Trail route, and a number of ‘wee forests’ have been planted in 2024-25.
- Further progress in the installation of council operated electric vehicle charging points;

- Environmental Health continue to deal with environmental nuisance (including dust and smoke) complaints across the district;
- Developers continue to be encouraged to include active travel measures in to their plans – included in air quality and planning guidance and general planning condition requirements.
- A review of the diffusion tube data and locations to ascertain whether there is merit in re-locating any of the automatic monitors.
- WLC is working with other councils to increase EV infrastructure. The Electric vehicle agreement is with WLC, Edinburgh, Falkirk, Mid Lothian, East Lothian, Scottish Borders, Dumfries & Galloway and Fife.

The measures that were expected to be completed during 2024 have now been completed.

- The revocation of the Broxburn Air Quality Management Area was finalised. Monitoring at the automatic monitoring site has continued to ensure that levels remain below the target air quality objectives.

- Both the Newton AQMA (PM_{10}) and Linlithgow AQMA (NO_2 and PM_{10}) were revoked during 2024. A period of consultation took place with relevant stakeholders and consultees during 2024 for the planned revocations. Monitoring also continued at the automatic monitoring sites in Newton and Linlithgow to ensure that levels remained below air quality targets.

- A review of the current Air Quality Action Plans was carried out in the context of AQMA revocations during 2024.

Photo 2.1 – Example of permanent pavement widening in West Lothian on Linlithgow High Street completed in 2024.

Photo 2.2 – Two EV Charging points installed at Bryson Court, Pumpherston in 2024.

Table 2.2 – Progress on Measures to Improve Air Quality

Measure No.	Measure	Category	Expected/Actual Completion year	Organisations Involved	Measure Status	Funding Status	Key Milestones	Progress	Barriers to implementation
1	(a)Electric Vehicle Charging Point Infrastructure (b)Electric vehicle agreement with other local regional councils	Promoting low emission transport	Ongoing	West Lothian Council Also Edinburgh Council, Falkirk Council, Mid Lothian Council, East Lothian Council, Scottish Borders Council, Dumfries & Galloway Council & Fife Council	Annual increase in charging bays/facilities within WLC area	Funding provided through Transport Scotland's Local Authority Installation Programme (LAIP)	Installation of EV charging points and bays	Ongoing programme of installing chargers on Council land	There may be generic barriers such as funding and infrastructure requirements such as the availability of suitable electricity supplies.
2	Updated Active Travel Plan and Cycling Infrastructure	Promoting Travel Alternatives	Ongoing	West Lothian Council	Scheme uptake and participation statistics compiled annually	Cycling, Walking and Safer Routes grant funding WLC received from Transport Scotland. Annual SG funding	During 2024 4 x Bikeability Scotland Instructor courses ran for Teachers & volunteers in West Lothian Increased Bikeability cycle fleet enabling more schools to borrow bikes for Bikeability training in their school	Ongoing	Reduced SG grant funding

							Dr Bikes arranged pre Bikeability delivery for pupils who need their bikes checked over Working with West Lothian bike library for the use of adaptive bikes to ensure cycling is inclusive to all		
3	Review West Lothian Council's supplementary Air Quality Guidance	Policy Guidance	2025/26	West Lothian Council	In Progress	LA funded	Guidance assists Officers in considering air quality in the planning process	In Progress	Non-statutory planning guidance
4	Removal of solid fuel fires in Council Housing in Newton	Domestic solid fuel burning	Ongoing	West Lothian Council	In Progress	Funding is via the Housing Revenue Account budget which is part of a 5 year housing capital improvements programme budget for Council owned housing stock	Installation of air source heat Pumps in all 12 Council properties in Newton. 7 homes have been completed, 5 still to go.	The Council owns 12 homes in Newton, so far 7 have had air source heat pumps installed, with 5 still to be done.	There has been no change again during 2024 as there has been no turnover at these houses and therefore no opportunity to upgrade the houses. The current tenants were offered ASHP again during 2024 but declined the offer

5	Inclusion of Air Quality in the West Lothian Local Development Plan	Policy guidance and development control	Ongoing	West Lothian Council	In progress	LA Funded	Local planning considerations aim to mitigate the cumulative negative air quality impacts of new developments.	Inclusion of air quality statements in local development plan	
6	Electric pool cars available for Council staff use during 2024	Vehicle fleet efficiency	2021	West Lothian Council	Completed	Funding awarded annually through the SG's Switched on Fleets programme	Pool cars available for staff use at Linlithgow office	Four electric pool cars in use with the removal of petrol and diesel vehicles. During 2024 there were 42 Electric vehicles in use at WLC	Direction from the SG is that funding is now to be solely used for infrastructure projects rather than the acquisition of electric vehicles.
7	Member of the East Central Scotland Vehicle Emissions Partnership (ECSVEP)	Promoting low emission transport	Ongoing	West Lothian Council, Stirling, East Lothian, Mid Lothian & Falkirk Councils.	Member of the partnership to help reduce vehicle idling, the reporting of idling complaints, enforcing of fixed penalty notices and the provision of educational resources for the public.	SG funded	Anticipated reduction in emissions mainly in town centre areas through anti-idling enforcement. Provides the public with a means to report idling complaints and smoky vehicles.	The VEP continues to promote anti-idling in the West Lothian Council area with various complaints investigated and improvements in campaigns and advertising.	Reduction in SG grant funding would mean that sufficient progress could not be made to promote idling awareness.

3 Air Quality Monitoring Data and Comparison with Air Quality Objectives

3.1 Summary of Monitoring Undertaken

3.1.1 Automatic Monitoring Sites

This section sets out what monitoring has taken place and how local concentrations of the main air pollutants compare with the objectives.

West Lothian Council undertook automatic (continuous) monitoring at three sites during 2024. Table A.1 in Appendix A shows the details of the sites. National monitoring results are available at Home page | Scottish Air Quality.

Maps showing the location of the monitoring sites are provided in Appendix C, Figures 7&8 (pages 55-56). Further details on how the monitors are calibrated and how the data has been adjusted are included in Appendix C.

3.1.2 Non-Automatic Monitoring Sites

West Lothian Council undertook non- automatic (passive) monitoring of NO_2 at 24 sites during 2024. Table A.2 in Appendix A shows the details of the sites.

Maps showing the location of the monitoring sites are provided in Appendix C, Figure 6(page 54). Further details on Quality Assurance/Quality Control (QA/QC) and bias adjustment for the diffusion tubes (table C.1) are included in Appendix C.

3.1.3 Other Monitoring Activities

There were no other monitoring activities carried out within West Lothian Council during 2024.

3.2 Individual Pollutants

The air quality monitoring results presented in this section are, where relevant, adjusted for annualisation and bias. Further details on adjustments are provided in Appendix C.

3.2.1 Nitrogen Dioxide (NO_2)

Table A.3 in Appendix A compares the ratified monitored NO_2 annual mean concentrations for the past five years with the air quality objective of 40 µg/m^3 at automatic monitoring sites. The table shows that the annual mean objective was met at all three continuous monitoring sites, along with all of the diffusion tube locations. NO_2 levels were lower at all three continuous monitoring sites compared to the previous year.

Table A.4 in Appendix A compares the adjusted monitored NO_2 annual mean concentrations for the past five years with the air quality objective of 40 µg/m^3 at non-automatic monitoring sites.

For diffusion tubes, the full 2024 dataset of monthly mean values is provided in Appendix B, Table B.1.

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 200 µg/m^3, not to be exceeded more than 18 times per year. There were no exceedances for this objective during 2024. West Lothian Council has consistently met this objective at the 3 continuous monitoring stations over the last five years.

3.2.2 Particulate Matter (PM_{10})

Table A.6 in Appendix A compares the ratified and adjusted monitored PM_{10} annual mean concentrations for the past five years with the air quality objective of 18 µg/m^3. All three continuous monitoring sites have remained within the objective limit during 2024.

The Scottish Government issued Guidance Note “Measurement of Ambient Particulate Matter (PM) and the LAQM Reporting of Measured Concentrations – May 2023” which requires the application of a correction factor to PM_{10} and $PM_{2.5}$ concentrations with Palas Fidas 200 analysers in operation. Corrected and uncorrected results are displayed in

Tables A.6 and Table A.8. The correction factors have been applied to 2023 and 2024 data as the guidance was issued in 2023. The results remain below objective levels.

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 50 µg/m^3, not to be exceeded more than seven times per year. There were no exceedances of the objective levels during 2024. The PM_{10} levels were the same this year compared to the previous year at Linlithgow. At Broxburn & Newton the levels were slightly lower compared to the previous year.

3.2.3 Particulate Matter ($PM_{2.5}$)

Table A.8 in Appendix A compares the ratified and adjusted monitored $PM_{2.5}$ annual mean concentrations for the past five years with the air quality objective of 10 µg/m^3.

The Scottish Government issued Guidance Note “Measurement of Ambient Particulate Matter (PM) and the LAQM Reporting of Measured Concentrations – May 2023” which requires the application of a correction factor to PM_{10} and $PM_{2.5}$ concentrations with Palas Fidas 200 analysers in operation. Corrected and uncorrected results are displayed in Tables A.6 and Table A.8. The correction factors have also been applied to 2022 and 2023 data as the guidance was issued in 2023. The results for 2024 remain below objective levels and the $PM_{2.5}$ levels for 2024 were the same as the previous year at Broxburn & Newton. At Linlithgow the levels were similar to the previous year.

3.2.4 Sulphur Dioxide (SO_2)

During 2024 there was no monitoring of SO_2 carried out in West Lothian.

3.2.5 Carbon Monoxide, Lead and 1,3-Butadiene

During 2024 there was no monitoring of Carbon Monoxide, Lead and 1,3-Butadiene carried out within West Lothian.

4 New Local Developments

4.1 Road Traffic Sources

The total length of roads adopted by West Lothian Council during 2024 was 7526m and as last year these were mainly associated with new housing developments. In total 24 roads were adopted in 2024. We only hold record of the roads following adoption, so it is important to note that others will have been constructed and placed on a 12-month pre-adoption maintenance period.

There were no new narrow congested streets constructed with residential properties close to the kerb. No new busy streets were constructed where people may spend one hour or closer to traffic. There were no new roads with significantly changed traffic flows, no roads with new/changed layout and no new bus or coach stations were constructed in 2024.

4.2 Other Transport Sources

There are no new other transport sources in 2024.

4.3 Industrial Sources

SEPA were contacted and they advised that there were no new or substantially varied PPC/WML activities in the West Lothian local authority area recorded for 2024.

There were also no new industrial installations with new or proposed installations for which an air quality assessment has been carried out. There were no new industrial installations with existing installations where emissions have increased substantially or where new relevant exposure has been introduced. There were no new major fuel storage depots storing petrol installed, no new petrol stations installed and no new poultry farms in West Lothian.

4.4 Commercial and Domestic Sources

There were no new Biomass combustion plants in West Lothian, no areas where the combined impact of several biomass combustion sources may be relevant and no new combined heat and power (CHP) plants.

During 2024, West Lothian Council have continued to receive complaints in relation to smoke and odour from domestic sources such as wood burning stoves and open bonfires in gardens. These complaints were investigated and advice was provided on burning and smoke control area rules. Guidance is provided by West Lothian Council Environmental Health during the initial planning consultation of any new residential or commercial developments who may be considering installing new combustion appliances such as wood burning stoves. This may include providing information on DEFRA approved stoves, authorised fuels and providing advice on flue heights which will allow effective smoke dispersal to minimise smoke and odour nuisance complaints.

Installation of wood burning stoves continued to grow in West Lothian during 2024. Across the district there have been a total of 7 applications in which Environmental Health have been consulted on that included plans for the installation of a wood burning stove. These applications are generally given consent subject to acceptable flue height and applicants are given advice in line with DEFRA requirements for exempt appliances and authorised fuels. During 2021, the Environmental Health team started recording the details of wood burning stove applications which assists in identifying potential hot spot areas.

A map of the smoke control area within West Lothian can be viewed at the following link:

https://www.westlothian.gov.uk/media/4233/Smoke-Control-Areas-Map/pdf/Smoke_Control_Areas_Map.pdf?m=1404985283643

There were no applications for any larger scale commercial or domestic developments during 2024.

4.5 New Developments with Fugitive or Uncontrolled Sources

There were no new fugitive or uncontrolled sources during 2024.

5 Planning Applications

West Lothian Councils Local Development Plan (LDP1) has identified a number of sites for large scale development since 2018. Each development site shall be assessed for the impact on air quality through the planning process. Where appropriate, detailed air quality impact assessments will be required to be submitted.

There were four planning applications received during 2024 that required an Air Quality impact assessment (AQIA or EIA) in West Lothian.

The following planning applications required an AQIA:

0949/P/24 – Land at Drumshoreland Road, Pumpherston, West Lothian EH53 0LQ.

Planning permission in principle for the proposed residential development, access arrangements, landscaping, open space, all associated infrastructure and engineering works (including land remediation) (Grid Ref: 307232,669600) at Land At Drumshoreland Road, Pumpherston, West Lothian, EH53 0LQ.

The air quality impact assessment for the development can be found at the following link:

0949/P/24 | Planning permission in principle a 5.65ha residential development, access arrangements, landscaping, open space, infrastructure and engineering works | Land At Drumshoreland Road Pumpherston West Lothian EH53 0LQ

The assessment predicts the levels of dust deposition and airborne particles as PM10 and PM2.5 from the current commercial operations, taking account of the intensity of working, using semi-quantitative techniques and an atmospheric dispersion model. The emission estimates in the assessment are intended to provide an indication of the likely exposure to dust deposition and airborne particles. There is considerable uncertainty in the emission estimates from fugitive releases from this type of operation. However, such studies can provide a useful indication of the likely extent and scale of impact off-site. Two Scenarios were assessed:

• Scenario 1 – Dust emissions from operations within the existing commercial site assuming no mitigation; and AS 1104 Pumpherston Page 4 of 23 The Airshed Air Quality Impact Assessment 29th November 2024

• Scenario 2 – Dust emissions from operations within the existing commercial site assuming good practice dust mitigation.

The predicted PM2.5 impacts from the adjacent operations at the existing commercial site were predicted to be of negligible significance even assuming no effective mitigation at source. Annual mean exposure to PM10 was predicted to be negligible at the proposed development assuming the adoption of good practice measures at the adjacent commercial site. Dust deposition rates were predicted to be insignificant at the proposed development assuming the adoption of good practice measures at the adjacent commercial site.

0805/P/23 – East Mains Industrial Estate, Broxburn, West Lothian

Planning permission in principle for the proposed 3.4 ha development of general industrial (class 5), storage or distribution (class 6), petrol filling station, electric vehicle charging station, food and drink (class 3) and hot food takeaways (sui generis) and associated infrastructure (Phase 1) (Grid Ref: 309058,672222).

The air quality impact assessment for the development can be found at the following link:

3486788.pdf

A computer-based dispersion model (ADMS Roads) was used to predict local air quality. The results from the model have been compared with WLC's NO2 measurements for the year 2022 (Scenario 1). The model predictions are generally in broad agreement with the measured levels. Correction factors have been applied to the predicted contribution of NOx from local traffic in accordance with the method set out in the Scottish Government's Technical Guidance (TG22). Scenarios 2 and 3 both assume the Scottish Government estimates for background air pollution for the year 2022 and vehicle emission rates for the year 2022, and do not take account of forecast reductions in air pollution. A model sensitivity analysis has been conducted to assess the significance of meteorological variability. The worst case one year in five for meteorological data has been used to predict air quality impacts. Impacts have been assessed against the statutory annual mean Limit Value for NO2 and the Scottish Government's annual mean objectives for particles (as PM10 and PM2.5).

The impact from the proposed development traffic was predicted to be of negligible significance at all existing sensitive receptors within the two-study area in terms of statutory limit values for NO2 and Scottish Government air quality objectives for particles as PM10 and PM2.5. Air quality at the proposed development was predicted to comply with the statutory Limit Values for NO2 and the Scottish Government's objectives for particles as PM10 and PM2.5.

0806/P/23 – site at East Mains Industrial Estate, Broxburn

Planning permission in principle for the proposed 15.6ha development of general industrial (class 5), storage or distribution (class 6) and associated infrastructure (Phase 2) (Grid Ref: 309058,672222).

The air quality impact assessment for the development can be found at the following link:

0806/P/23 | Planning permission in principle for the proposed 15.6ha development of general industrial (class 5), storage or distribution (class 6) and associated infrastructure (Phase 2) | Site At East Mains Industrial Estate Broxburn West Lothian

Airshed was appointed to conduct an air quality impact assessment (AQIA) for the proposed development. This assessment considered how vehicle exhaust emissions from road traffic generated by the proposed development may affect local air quality. West Lothian Council (WLC) had declared an Air Quality Management Area (AQMA) in Broxburn town centre which would experience increased road traffic as a consequence of the development. The Broxburn AQMA was declared in 2011 due to concerns that levels of PM10 and NO2 were then thought to be at risk of exceeding annual mean air quality objectives and limit values. The council announced its intention to revoke the AQMA due to the significant improvement in local air quality in recent years. The council conducts air quality monitoring for NO2 using diffusion tubes at two sites in Broxburn for which baseline road traffic flows are available. This monitoring indicates that the annual mean NO2 has trended downwards over recent years, where air quality at all monitoring locations complies with the statutory annual mean limit value. The results also indicate that levels of PM10 have complied with the Scottish Government's annual mean Objective over the last decade.

The impact from the proposed development traffic was predicted to be of negligible significance at all existing sensitive receptors within the two-study area in terms of statutory limit values for NO2 and Scottish Government air quality Objectives for particles

as PM10 and PM2.5. Air quality at the proposed development was predicted to comply with the statutory limit values for NO2 and the Scottish Government's Objectives for particles as PM10 and PM2.5.

0192/EIA/24 – Gavieside Farm, Livingston, West Calder EH55 8PT

EIA scoping opinion for a mixed-use development including housing, neighbourhood centre, primary school, employment uses and open space with associated transportation, drainage and landscape infrastructure (Grid Ref: 302440,665560) at Land Surrounding Gavieside Farm, Livingston, West Lothian, EH55 8PT.

The Environmental impact assessment for the development can be found at the following link:

Gavieside.pdf

The proposed development included mixed residential and employment uses to be constructed in phases. The air quality impact assessment (AQIA) considered the potential impacts from the existing environment on future sensitive receptors and the impacts form the scheme on existing sensitive receptors.

The Proposed Development site was mainly for agricultural use with an operational poultry intensive livestock unit (ILU) within the western part of the Site boundary. The A71 and Edinburgh to Glasgow (via Shotts) rail line lies to the south of the Site. The Site was not within an Air Quality Management Area. Air quality in the proposed Development site was likely to be well within current air quality standards.

Estimates of background pollution of particles (PM10) and oxides of nitrogen (NOx and NO2) for the baseline traffic conditions were obtained from the Scottish Government sponsored air quality archive and the Department for Environment, Food and Rural Affairs (DEFRA).

The baseline conditions also have regard to local air quality data published by the council including their current LAQM review and assessment. Air quality was assessed in accordance with the Scottish Government's air quality Objectives for particles as PM10 and PM2.5 and the statutory annual mean limit value for NO2.

The following planning applications are for industrial installations with new or significantly changed installations with no previous air quality assessment:

- **0784/FUL/24** – Brucefield Park East, Livingston. Erection of 2508sqm industrial units (use classes 4,5 and 6) including site access, landscaping and associated works.
- **0845/FUL/24** – Uphall Business Park, Uphall. Erection of 2,273sqm industrial building (Class 5/6)

6 Conclusions and Proposed Actions

6.1 Conclusions from New Monitoring Data

The 2024 monitoring data at all three continuous air quality monitoring stations has shown that the NO_2, PM_{10} and $PM_{2.5}$ long term average air quality objectives have been met and compliance has been achieved with the target air quality objectives.

NO_2 levels decreased at all three continuous monitoring sites from the levels found in 2023 and have remained below the objective limit. There were no exceedances of the short term NO_2 at any of the three sites during 2024.

West Lothian Council measured PM_{10} concentrations at 3 sites during 2024. There were no exceedances of the objective levels during 2024. The PM_{10} levels were found to be the same as the previous year at the Linlithgow site. At Newton & Broxburn sites the levels were slightly lower compared to the previous year (2023).

The $PM_{2.5}$ results for 2024 remain below objective levels and the $PM_{2.5}$ levels for 2024 were the same as the previous year at our Broxburn and Newton sites. At the Linlithgow site the levels were similar compared to the previous year.

In relation to the diffusion tube data it can be noted that during 2024 all of the measured concentrations have decreased from last years measured levels apart from DT9 (Armadale Cross) which increased slightly from 16.7µg/m³ to 18.0µg/m³. This is still considerably below objective levels for NO_2. The most significant decrease was at DT7N (Alderstone Road, Livingston) which decreased from 17.1µg/m³ to 11.3µg/m³. Therefore, diffusion tube concentrations continue to be well below target objective levels.

6.2 Conclusions relating to New Local Developments

There have been no new local developments that have the potential to introduce new exceedances of relevant air quality objectives in West Lothian. The Local Development Plan (LDP1) for West Lothian identifies various residential sites in and around the AQMA's. It's possible that these developments will introduce further traffic related emissions in the future and may be required to submit an Air Quality Impact Assessment

(AQIA) as part of the planning process. These would be considered in line with our adopted Air Quality Supplementary Planning Guidance as and when they arise.

There may also continue to be increased demand from domestic households in relation to the installation of alternative heat and power sources in their homes. The installation of wood burning stoves continues to be popular and West Lothian Council will assess these in line with relevant guidance.

6.3 Proposed Actions

Monitoring data for 2024 has not highlighted any need for additional monitoring to take place. There are no new exceedances of the objectives for any pollutant measured. This has shown that levels of pollutants in West Lothian have continued to be comfortably below target air quality objectives for several years.

Environmental Health will continue to focus resources on continuous monitoring equipment currently deployed to ensure good data capture, with reliable and quality data. This however is subject to West Lothian receiving funding from the Scottish Government towards maintenance of any continuous monitoring sites in operation.

West Lothian Council will continue to ensure that sufficient staff within Environmental Health are suitably trained and are competent in local site operator duties.

As part of the East Central Scotland Vehicle Emissions Partnership, West Lothian continues to coordinate campaigning activities and complaint investigation to promote better air quality in the West Lothian area.

The Air Quality Progress Report (APR) as required by the Scottish Government for 2025 shall be submitted by West Lothian Council in June 2026.

Appendix A: Monitoring Results

Table A.1 – Details of Automatic Monitoring Sites

Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	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)
CM1	Linlithgow High Street	Roadside	300426	677172	NO_2; PM_{10}; $PM_{2.5}$	N	N/A	FIDAS 200; T200 API NO_X Analyser	4	1.36	2.32
CM2	Broxburn CNC	Roadside	308314	672231	NO_2; PM_{10}; $PM_{2.5}$	N	N/A	FIDAS 200; T200 API NO_X Analyser	3.5	2.20	2.36
CM3	Newton CNC	Roadside	309258	677728	NO_2; PM_{10}; $PM_{2.5}$	N	N/A	FIDAS 200; Serinus 40 NO_X Analyser	1.8	1.92	2.41

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

Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	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)
DT1N	Newton new site	Roadside	309187	677663	NO_2	Yes Newton	0.5	1.9	N	2.3
DT2N	Newton CNC (3 co-located diffusion tubes)	Roadside	309251	677723	NO_2	Yes Newton	1.9	1.9	Y	2.3
DT3N	Pumpherston Road, Uphall Station	Roadside	306061	670495	NO_2	No	1.2	1.8	N	2.4
DT4	Broxburn CNC (3 co-located diffusion tubes)	Roadside	308314	672231	NO_2	Yes Broxburn	3.2	1.7	Y	2.5
DT5N	Edinburgh Road, Broxburn	Roadside	308856	672226	NO_2	No	3.4	2.4	N	2.5
DT6	Cedric Rise, Dedridge	Urban background	306403	666341	NO_2	No	2.5	1.6	N	2.4

Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	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)
DT7N	Alderstone Road, Livingston	Roadside	304630	666968	NO_2	No	4.5	1.7	N	2.4
DT8	Whitburn Partnership Centre	Roadside	294687	665030	NO_2	No	2	0.5	N	2.2
DT9	Armadale Cross	Roadside	293842	668588	NO_2	No	3	1.4	N	2.3
DT10N	Armadale South Street	Roadside	293473	668944	NO_2	No	4.1	1.8	N	2.4
DT11	Bathgate Steelyard	Roadside	297467	668734	NO_2	No	Façade	2	N	2.5
DT12	Bathgate King St	Roadside	297570	668586	NO_2	No	5	4	N	2.5
DT13	Bathgate High St	Urban Background	297656	669298	NO_2	No	3	10	N	1.5
DT14	Linlithgow CNC (3 co-located diffusion tubes)	Roadside	300412	677124	NO_2	Yes Linlithgow	4	1.36	Y	2.5

Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	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)
DT15	Linlithgow NW High St	Roadside	299930	677070	NO_2	Yes Linlithgow	2	1.4	N	2.4
DT16	Linlithgow SW High St	Roadside	299911	677052	NO_2	Yes Linlithgow	2	2.9	N	2.3
DT17N	Hopetoun St, Bathgate	Roadside	297456	668937	NO_2	No	Façade	1.5	N	2.3
DT18N	Polkemmet Rd, Whitburn	Roadside	293382	664399	NO_2	No	20	2.2	N	2.4
DT19N	Manse Road, Whitburn	Roadside	294668	664931	NO2	No	6.2	1.7	N	2.4
DT20	Linlithgow High Street S (Old Post Office pub)	Roadside	300405	677118	NO_2	Yes Linlithgow	Façade	3	N	2.7
DT21	Main St, East Calder	Roadside	308641	667912	NO_2	No	2.0	1.8	N	2.7
DT22	Butcher's, Winchburgh	Roadside	308957	675025	NO_2	No	Façade	1.8	N	2.5

Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	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)
DT23	Main St, Winchburgh	Roadside	309133	675028	NO_2	No	Façade	1.5	N	2.7
DT24N	Barber's, Linlithgow	Roadside	299957	677067	NO_2	No	Façade	2.8	N	2.4

Notes:

(1) 0m if the monitoring site is at a location of exposure (e.g. installed on/adjacent to 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 2024 (%) (2)	2020	2021	2022	2023	2024
CM1	300426	677172	Roadside	N/A	99.6	16.4	19.6	17.3	20	18.8
CM2	308314	672231	Roadside	N/A	99.2	19	22	21.4	22.4	19.2
CM3	309258	677728	Roadside	N/A	99.6	12.6	15.7	12.7 (11.4)	13	11.3

Notes:

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

NO_2 annual means exceeding 60 µg/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.

(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 2024 (%) (2)	2020	2021	2022	2023	2024
DT1N*	309187	677663	Roadside	N/A	100	-	-	11.0	11.7	11.3
DT2Na* DT2Nb, DT2Nc	309251	677723	Roadside	N/A	100	-	-	14.1	13.2	11.8
DT3N*	306061	670495	Roadside	N/A	100	-	-	15.2	16.8	15.1
DT4a, DT4b, DT4c	308314	672231	Roadside	N/A	100	15.5	25.6	22.7	22.3	19.1
DT5N*	308856	672226	Roadside	N/A	100	-	-	13.8	13.9	12.9
DT6	306403	666341	Urban Background	N/A	100	6.9	9.7	10	9.0	7.6
DT7N*	304630	666968	Roadside	N/A	100	-	-	12.1	17.1	11.3
DT8	294687	665030	Roadside	N/A	90.6	14.9	21.7	18.8	17.7	16.3
DT9	293842	668588	Roadside	N/A	100	12.6	20.4	18.2	16.7	18.0

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
DT10N*	293473	668944	Roadside	N/A	100	-	-	14.9	17.5	12.3
DT11	297467	668734	Roadside	N/A	100	9.1	21.5	17.2	17.7	15.4
DT12	297570	668586	Roadside	N/A	90.6	15.3	21.1	23.4	20.0	17.5
DT13	297656	669298	Urban Background	N/A	100	6.1	8.2	7.4	6.7	6.1
DT14a, DT14b, DT14c	300412	677124	Roadside	N/A	100	13.9	19.3	18.5	18.3	14.4
DT15	299930	677070	Roadside	N/A	100	11.8	18.4	17.3	17.1	14.7
DT16	299911	677052	Roadside	N/A	92.5	13.8	21.3	20.8	18.4	15.9
DT17N*	297456	668937	Roadside	N/A	100	-	-	15.9	16.0	14.3
DT18N*	293382	664389	Roadside	N/A	100	-	-	8.4	9.3	6.6
DT19N*	294668	664931	Roadside	N/A	100	-	-	17	16.0	14.7
DT20	300405	677118	Roadside	N/A	100	13.9	17.9	18.1	17.2	14.0

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
DT21	308641	667912	Roadside	N/A	100	6.3	11.9	10.2	10.8	10.2
DT22	308957	675025	Roadside	N/A	100	9.0	13.8	12	13.1	9.3
DT23	309133	675028	Roadside	N/A	100	7.7	13.5	11.3	11.8	9.4
DT24N**	299957	677067	Roadside	N/A	100			17.8 (12.8)	18.9	15.5

*New sites added January 2022

** New site added October 2022

Shaded rows - results shown for these sites are averages of the 3 co-located tubes. Please see table B.1 for the results for each individual tube

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

Notes:

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

NO_2 annual means exceeding 60 µg/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.TG(22) if valid data capture for the full calendar year is less than 75%. See Appendix C for details.

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

(4) 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.5 – 1-Hour Mean NO_2 Monitoring Results, Number of 1-Hour Means > 200 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 2024 (%) (2)	2020	2021	2022	2023	2024
CM1	300426	677172	Roadside	N/A	100	0	0	0	0	0
CM2	308314	672231	Roadside	N/A	99	0	0	0	0	0
CM3	309258	677728	Roadside	N/A	100	0	0	0	0	0

Notes:

Exceedances of the NO_2 1-hour mean objective (200 µg/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%).

Table A.6 – Annual Mean PM_{10} Monitoring Results (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 2024 (%) (2)	2020	2021	2022	2023(Correction Factor applied to data in brackets)	2024	Correction factor applied to 2024 data (divide by 0.909) (3)
CM1	300426	677172	Roadside	N/A	100	8(7.7)	8.5	11.9	9(9.9)	9.0	9.9
CM2	308314	672231	Roadside	N/A	97	11	12	11.9	10(11.0)	9.3	10.2
CM3	309258	677728	Roadside	N/A	93	11(11.3)	11.3	8.2	10(11.0)	9.9	10.9

Notes:

Exceedances of the PM_{10} annual mean objective of 18 µg/m^3 are shown in bold.

All means have been "annualised" as per LAQM.TG(22), 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%).

(3) Correction factor applied in accordance with the Scottish Government Guidance Note "Measurement of Ambient Particulate Matter (PM) and the LAQM Reporting of Measured Concentrations - May 2023."

Table A.7 – 24-Hour Mean PM_{10} Monitoring Results, Number of PM_{10} 24-Hour Means > 50 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 2024 (%) (2)	2020	2021	2022	2023	2024
CM1	300426	677172	Roadside	N/A	100	0	0	0	0	0
CM2	308314	672231	Roadside	N/A	97	0	0	**2**	0	0
CM3	309258	677728	Roadside	N/A	93	0	0	0	0	0

Notes:

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

If the period of valid data is less than 85%, the 98.1st 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%).

Table A.8 – Annual Mean $PM_{2.5}$ Monitoring Results (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 2024 (%) (2)	2020	2021	2022	2023(Correction factor applied to data in brackets)	2024	Correction factor applied to 2024 data (multiply by 1.06) (3)
CM1	300426	677172	Roadside	N/A	100	5	5.4	6.5	5(5.3)	5.3	5.6
CM2	308314	672231	Roadside	N/A	97	6	6	6.3	5(5.3)	5.0	5.3
CM3	309258	677728	Roadside	N/A	93	8	7.3	4.6	6(6.36)	6.0	6.36

Notes:

Exceedances of the $PM_{2.5}$ annual mean objective of 10 µg/m^3 are shown in bold.

All means have been "annualised" as per LAQM.TG(22), 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%).

(3) Correction factor applied in accordance with the Scottish Government Guidance Note "Measurement of Ambient Particulate Matter (PM) and the LAQM Reporting of Measured Concentrations - May 2023."

Appendix B: Full Monthly Diffusion Tube Results for 2024

Table B.1 – NO_2 2024 Monthly Diffusion Tube Results (µg/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
DT1N	309187	677663	20.2	17.5	16.1	12.3	14.1	6.9	12.1	10.9	13.2	15.7	21.2	15.4	14.5	11.3	N/A	
DT2N (Overall average)	309251	677723	16.1	20	15.9	11.9	14.8	11.9	12.1	12.4	16.1	16.3	20.5	13.5	15.1	11.8	N/A	
DT2Na	309251	677723	14.1	20.9	16.0	11.2	14.8	10.8	11.5	12.7	15.6	15.7	21.0	14.0	14.9	11.6	N/A	
DT2Nb	309251	677723	17.4	20.9	14.8	12.1	15.1	14.7	12.7	12.4	16.4	15.5	23.6	12.0	15.6	12.2	N/A	
DT2Nc	309251	677723	16.9	18.2	17.0	12.3	14.4	10.3	12.0	11.9	16.3	17.8	16.9	14.6	14.8	11.5	N/A	
DT3N	306061	670495	21.7	26.4	27.9	16.4	20.0	13.1	19.5	12.2	22.5	16.0	24.4	15.0	19.3	15.1	N/A	
DT4 (Overall average)	308314	672231	29.1	31.4	25.2	22.8	27.6	20.3	18.8	18.7	27.5	21.9	32.4	20.6	24.5	19.1	N/A	
DT4a	308314	672231	29.6	31.4	28.9	21.5	27.8	22.3	19.7	17.6	28.0	17.7	32.8	20.0	24.8	19.3	N/A	
DT4b	308314	672231	26.9	30.3	17.3	22.8	26.8	19.6	18.4	19.1	27.0	22.8	38.2	23.1	24.4	19.0	N/A	

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
DT4c	308314	672231	30.8	32.5	29.5	24.0	28.3	18.9	18.4	19.3	27.5	25.3	26.2	18.8	24.9	19.4	N/A	
DT5N	308856	672226	18.5	0.7	47.9	13.4	12.0	10.6	12.3	11.4	21.9	18.5	26.0	14.0	16.5	12.9	N/A	
DT6	306403	666341	8.1	13.0	12.5	7.3	9.6	6.6	6.5	6.6	9.2	9.5	18.1	10.2	9.7	7.6	N/A	
DT7N	304630	666968	16.3	17.3	28.4	10.5	14.2	11.1	10.4	9.7	13.6	9.9	19.9	14.9	14.4	11.3	N/A	
DT8	294687	665030	16.9	27.2	27.5	20.1		19.1	16.7	16.9	24.4	14.6	26.4	21.3	20.9	16.3	N/A	
DT9	293842	668588	27.0	33.1	25.0	18.0	19.7	20.2	18.6	17.0	17.2	26.3	32.7	22.4	23.1	18.0	N/A	
DT10N	293473	668944	14.1	21.6	19.5	14.0	16.1	11.2	12.5	11.6	16.0	15.2	21.8	15.4	15.7	12.3	N/A	
DT11	297467	668734	34.0	23.3	13.4	17.2	17.7	16.8	16.3	14.8	19.7	18.2	33.1	17.5	19.8	15.4	N/A	
DT12	297570	668586	31.6	26.3	27.5	20.2	21.8	19.7	20.2	17.6	24.3		31.2	12.4	22.5	17.5	N/A	
DT13	297656	669298	12.0	10.0	9.7	5.2	6.2	4.4	6.3	4.7	5.9	8.3	14.7	8.4	7.9	6.1	N/A	
DT14 (Overall average)	300412	677124	22.5	29.1	34.9	15.9	18.8	13.5	13.2	13.6	17.8	12.8	21.3	12.1	18.5	14.4	N/A	

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
DT14a	300412	677124	22.9	27.8	20.5	15.8	18.5	13.5	14.0	14.5	19.2	10.4	22.3	5.9	17.1	13.3	N/A	
DT14b	300412	677124	28.1	29.3	20.9	16.1	18.8	13.2	12.8	12.2	16.1	9.2	23.7	11.5	17.7	13.8	N/A	
DT14c	300412	677124	16.5	30.3	63.4	15.7	19.2	13.8	12.7	14.0	18.1	18.9	17.9	18.9	21.6	16.8	N/A	
DT15	299930	677070	25.2	26.0	22.3	17.0	19.7	11.1	14.4	12.9	19.1	18.7	22.6	18.0	18.8	14.7	N/A	
DT16	299911	677052	29.0	27.9		11.1	22.7	16.6	15.9	17.3	20.6	21.6	22.7	18.9	20.3	15.9	N/A	
DT17N	297456	668937	28.4	23.1	20.2	15.7	17.9	13.3	13.4	12.8	18.5	17.6	22.2	20.0	18.4	14.3	N/A	
DT18N	293382	664389	9.8	12.6	9.0	5.9	9.6	7.8	6.1	7.0	10.7	5.3	15.8	4.1	8.5	6.6	N/A	
DT19N	294668	664931	22.1	23.1	22.1	16.3	21.1	14.5	13.1	14.8	20.7	18.0	24.7	16.5	18.8	14.7	N/A	
DT20	300405	677118	27.6	27.6	22.4	14.7	14.2	14.1	12.8	11.6	15.5	18.7	21.6	16.5	17.9	14.0	N/A	
DT21	308641	667912	16.1	17.4	7.6	11.4	13.8	11.2	10.5	11.1	11.8	13.4	19.0	13.1	13.1	10.2	N/A	
DT22	308957	675025	19.1	18.9	15.5	12.2	12.6	9.4	8.0	10.5	10.3	7.6	18.6	4.2	11.9	9.3	N/A	

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
DT23	309133	675028	17.8	15.5	8.0	9.7	13.5	8.8	9.3	8.3	12.6	13.1	17.7	11.6	12.1	9.4	N/A	
DT24N	299957	677067	25.2	30.4	12.0	16.7	20.3	15.5	15.4	17.7	19.4	22.0	23.5	19.1	19.9	15.5	N/A	

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

☒ **National bias adjustment factor used**

☒ **West Lothian 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 40 µg/m^3 are shown in **bold**.

NO_2 annual means exceeding 60 µg/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.

Table B.2 - Historical Monthly Diffusion Tube Results – 2020 to 2024

SITE ID	2020 Raw data	2020 Bias adjusted data	2021 Raw data	2021 Bias adjusted data	2022 Raw data	2022 Bias adjusted data	2023 Raw data	2023 Bias adjusted data	2024 Raw data	2024 Bias adjusted data
DT1N*	-	-	-	-	14.5	11.0	15.2	11.7	14.5	11.3
DT2N*	-	-	-	-	18.6	14.1	17.1	13.2	15.1	11.8
DT3N*	-	-	-	-	20.0	15.2	21.8	16.8	19.3	15.1
DT4	22.8	15.5	32.8	25.6	29.8	22.7	29.0	22.3	24.5	19.1
DT5N*	-	-	-	-	18.1	13.8	18.1	13.9	16.5	12.9
DT6	10.1	6.9	12.4	9.7	13.1	10	11.7	9.0	9.7	7.6
DT7N*					15.9	12.1	22.3	17.1	14.4	11.3
DT8	30.9	23.8	21.9	14.9	24.7	18.8	23.0	17.7	20.9	16.3
DT9	31.4	24.2	18.5	12.6	24.0	18.2	21.8	16.7	23.1	18.0
DT10N*					19.6	14.9	22.8	17.5	15.7	12.3
DT11	34.5	26.6	13.4	9.1	22.6	17.2	23.0	17.7	19.8	15.4
DT12	34.2	26.3	22.5	15.3	30.8	23.4	26.0	20.0	22.5	17.5
DT13	12.3	9.5	8.9	6.1	9.7	7.4	8.7	6.7	7.9	6.1
DT14	32.8	25.3	20.4	13.9	24.3	18.5	23.8	18.3	18.5	14.4
DT15	32	24.6	17.3	11.8	22.7	17.3	22.2	17.1	18.8	14.7

DT16	38.2	29.4	20.3	13.8	27.4	20.8	23.9	18.4	20.3	15.9
DT17N*					20.9	15.9	20.8	16.0	18.4	14.3
DT18N*					11.0	8.4	12.1	9.3	8.5	6.6
DT19N*					22.3	17	20.8	16.0	18.8	14.7
DT20	32.6	25.1	20.4	13.9	23.8	18.1	22.4	17.2	17.9	14.0
DT21	16.7	12.9	9.3	6.3	13.4	10.2	14.0	10.8	13.1	10.2
DT22	21.1	16.2	13.3	9.0	15.8	12	17.1	13.1	11.9	9.3
DT23	11.3	7.7	17.3	13.5	14.8	11.3	15.4	11.8	12.1	9.4
DT24N**					23.4(16.9)***	17.8(12.8)***	24.5	18.9	19.9	15.5

* New site added in January 2022

** New site added in October 2022

*** Annualised data in brackets – due to low data capture

NB: DT2N, DT4 and DT14 sites all have 3 tubes co-located with the continuous monitors.

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

New or Changed Sources Identified Within West Lothian Council during 2024

West Lothian Council has not identified any new sources relating to air quality within the reporting year of 2024.

Additional Air Quality Works Undertaken by West Lothian Council During 2024

West Lothian Council revoked all three of their AQMA's during 2024. Linlithgow and Newton AQMA's were revoked on 7th October 2024 and Broxburn AQMA was revoked on 26th January 2024. Further information can be found on the following pages: Revocation of Linlithgow Air Quality Management Area - West Lothian Council; Revocation of Newton Air Quality Management Area - West Lothian Council; Revocation Of Broxburn Air Quality Management Area - West Lothian Council.

QA/QC of Diffusion Tube Monitoring

The supplier used for diffusion tubes within 2024 in West Lothian was SOCOTEC and the method of preparation that was used was by spiking Acetone: Triethanolamine (50:50) onto the grids prior to the tubes being assembled. The tubes were desorbed with distilled water and the extract analysed using a segmented flow auto analyser with ultraviolet detection. The lab used for analysis was SOCOTEC Didcot.

The samples have been analysed in accordance with SOCOTEC's standard operating procedure ANU/SOP/1015. This method meets the guidelines set out in DEFRA's 'Diffusion Tubes for Ambient NO_2 Monitoring: Practical Guidance. As set out in the practical guidance, the results were initially calculated assuming an ambient temperature of 11°C, the reported values have been adjusted to 20°C to allow for direct comparison with EU limits. This

analysis of diffusion tube samples to determine the amount of nitrogen dioxide present on the tube is within the scope of our UKAS schedule. Any further calculations and assessments requiring exposure details and conditions fall outside the scope of our accreditation. In the AIR PT inter comparison scheme for comparing spiked Nitrogen Dioxide diffusion tubes, SOCOTEC currently holds the highest rank of a Satisfactory laboratory.

The same diffusion tube supplier was used in West Lothian throughout 2024.

West Lothian Council changed the diffusion tubes in accordance with the LAQM Nitrogen Dioxide Diffusion tube monitoring calendar throughout 2024.

Diffusion Tube Annualisation

All diffusion tube monitoring locations within West Lothian Council recorded data capture 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.

Diffusion Tube Bias Adjustment Factors

West Lothian Council has applied a national bias adjustment factor of 0.78 to the 2024 monitoring data. West Lothian council calculated both a national and local bias adjustment factor of 0.78 (national) and 0.82 (local) for 2024, for comparison. The local bias adjustment factor was calculated using the Diffusion tube data Processing tool (version 5 – see figure 2). A summary of bias adjustment factors used by West Lothian Council over the past five years is presented in Table C.1.

The data in Table B.1 has the national bias adjustment factor applied. With reference to LAQM TG22 Chapter 7 Box 7-13, it was decided to apply the national bias adjustment factor to the 2024 monitoring data for the following reasons:

- Diffusion tubes are changed monthly, but had they been changed more frequently, this would have favoured the use of the local bias adjustment factor;
- There are no unusual situations with any of our co-located sites; and
- The diffusion tube study was not less than 12 months. A national factor has been used for the diffusion tube bias adjustment factor.

Table C.1 – Bias Adjustment Factor

Year	Local or National	If National, Version of National Spreadsheet	Adjustment Factor
2024	National	04/25	0.78
2023	National	03/24	0.77
2022	National	03/23	0.76
2021	National	03/22	0.78
2020	Local	-	0.68

NO_2 Fall-off with Distance from the Road

No diffusion tube NO_2 monitoring locations within West Lothian Council required distance correction during 2024.

QA/QC of Automatic Monitoring

The data management and LSO duties are carried out by an Environmental Health Officer at West Lothian Council. LSO duties are also carried out by Public Health Protection Officers and other Environmental Health Officers at West Lothian Council.

Manual Calibrations have continued to be carried out fortnightly during 2024 on the NO_X analysers at each of the three automatic monitoring stations. These are carried out by both Public Health Protection Officers and Environmental Health Officers in the Public Health Team. Audits are carried out every 6 months by Ricardo AEA Technology and servicing is also carried out every 6 months by an engineer from Enviro Technology.

Ratification of the data is carried out by Ricardo AEA, and the monitoring data presented within the APR is ratified;

Live and historic data is currently available on the Scottish Air quality web-site. This is available on the Air Quality in Scotland website.

PM_{10} and $PM_{2.5}$ Monitoring Adjustment (Palas Fidas 200 Analyser)

The Scottish Government issued Guidance Note “Measurement of Ambient Particulate Matter (PM) and the LAQM Reporting of Measured Concentrations – May 2023” which requires the application of a correction factor to PM_{10} and $PM_{2.5}$ concentrations with Palas

Fidas 200 analysers in operation. Corrected and uncorrected results are displayed in Tables A.6 and Table A.8. The correction factors have only been applied to 2022, 2023 and 2024 data as the guidance was issued in 2023. The results remained below the objectives.

Automatic Monitoring Annualisation

All automatic monitoring locations within West Lothian Council 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

No automatic NO_2 monitoring locations within West Lothian Council required distance correction during 2024.

Figure 1 – Screenshot of National Diffusion Tube Bias Adjustment Factors Spreadsheet (DEFRA)

National Diffusion Tube Bias Adjustment Factor Spreadsheet

Spreadsheet Version Number: 04/25

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 June 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.

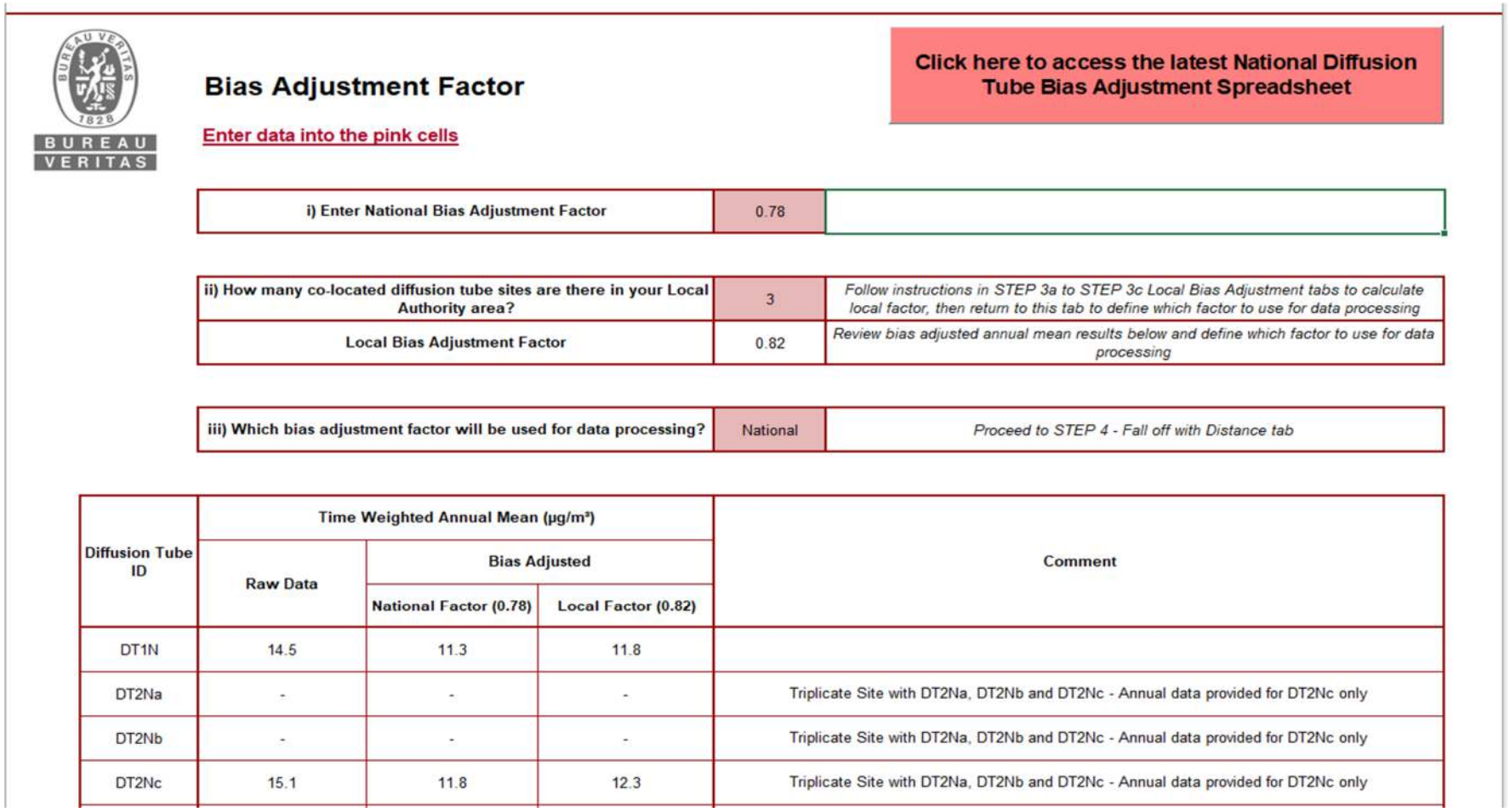
Step 3: Select a Year from the Drop-Down List
If a year is not shown, we have no data[2]

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	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		**Overall Factor[3] (33 studies)**				**Use**		**0.78**

Figure 2 – Screenshot of Diffusion tube data processing tool spreadsheet version 5 (calculation of local bias correction factor)



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Bias Adjustment Factor

Enter data into the pink cells

Click here to access the latest National Diffusion Tube Bias Adjustment Spreadsheet

i) Enter National Bias Adjustment Factor	0.78	
ii) How many co-located diffusion tube sites are there in your Local Authority area?	3	*Follow instructions in STEP 3a to STEP 3c Local Bias Adjustment tabs to calculate local factor, then return to this tab to define which factor to use for data processing*
Local Bias Adjustment Factor	0.82	*Review bias adjusted annual mean results below and define which factor to use for data processing*
iii) Which bias adjustment factor will be used for data processing?	National	*Proceed to STEP 4 - Fall off with Distance tab*

Diffusion Tube ID	Time Weighted Annual Mean (µg/m³)			Comment
	Raw Data	Bias Adjusted		
		National Factor (0.78)	Local Factor (0.82)	
DT1N	14.5	11.3	11.8	
DT2Na	-	-	-	Triplicate Site with DT2Na, DT2Nb and DT2Nc - Annual data provided for DT2Nc only
DT2Nb	-	-	-	Triplicate Site with DT2Na, DT2Nb and DT2Nc - Annual data provided for DT2Nc only
DT2Nc	15.1	11.8	12.3	Triplicate Site with DT2Na, DT2Nb and DT2Nc - Annual data provided for DT2Nc only

Figure 3 - Pollutant trend graphs over the past 5 years – NO2 trend graph 2020 to 2024

(Continuous monitoring sites and Diffusion tube sites)

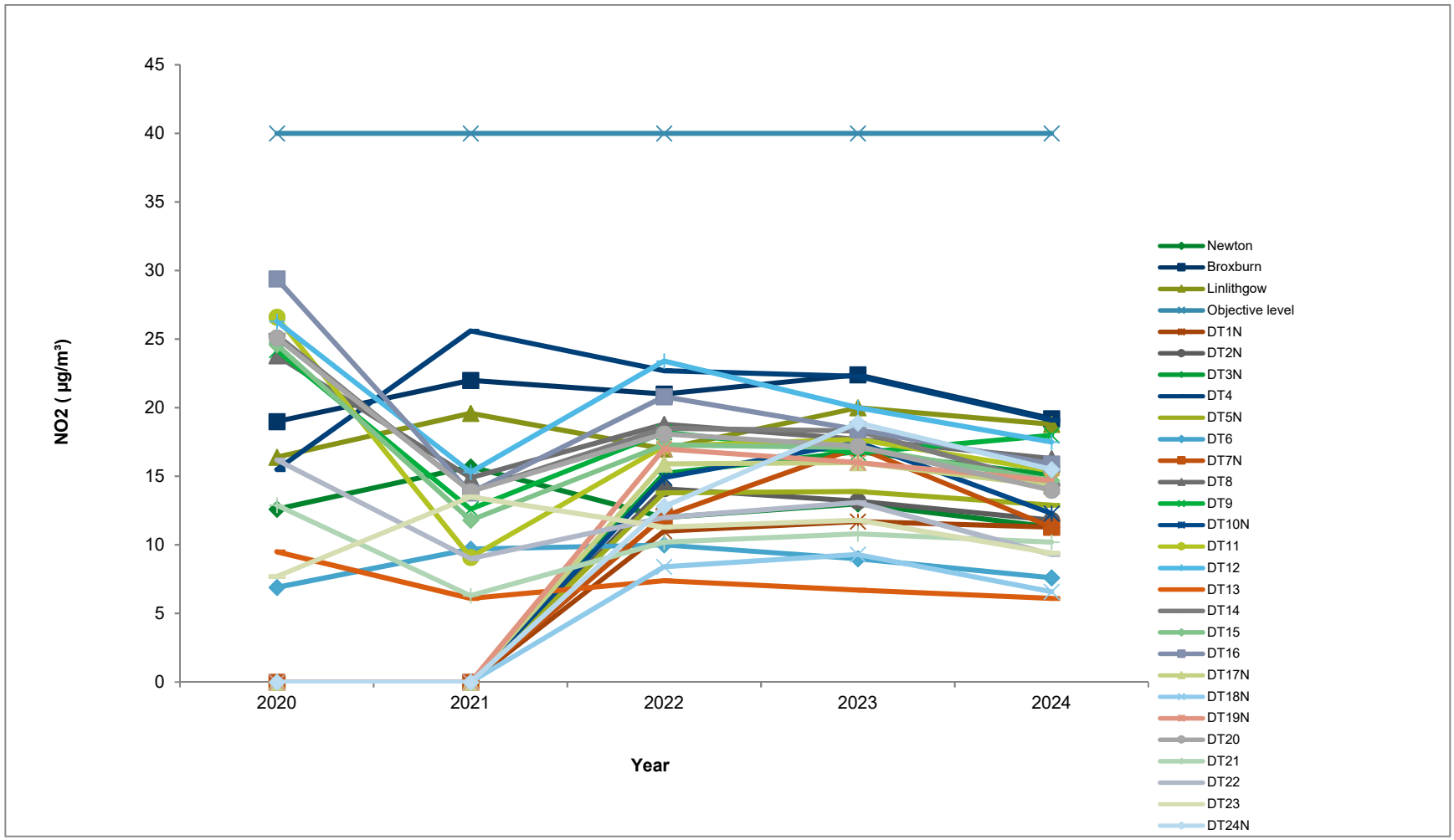


Figure 4 - Pollutant trend graphs over the past 5 years - PM10 trend graph 2020 to 2024

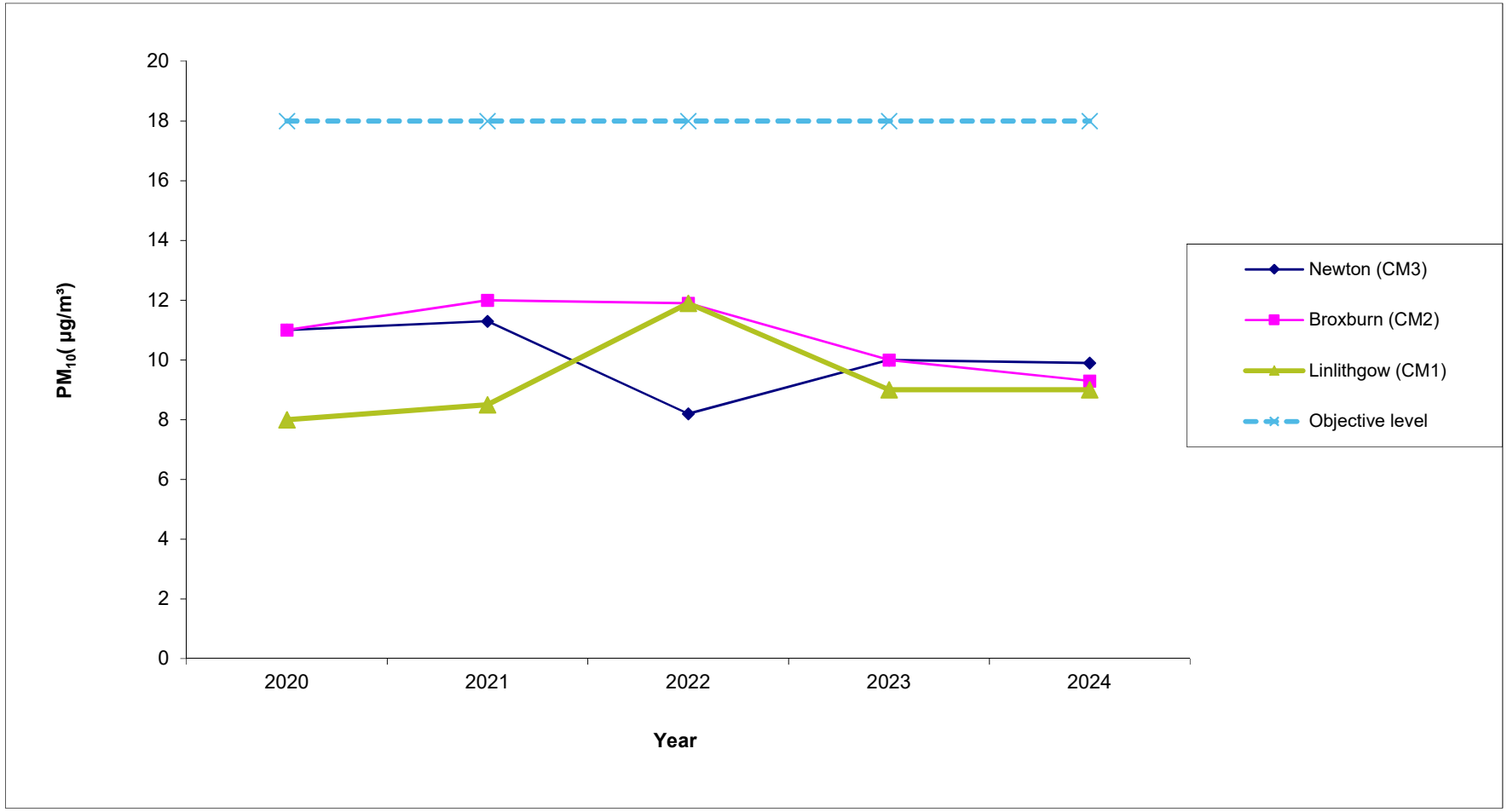


Figure 5 – Pollutant trend graphs over the past 5 years – PM2.5 trend graph 2020 to 2024

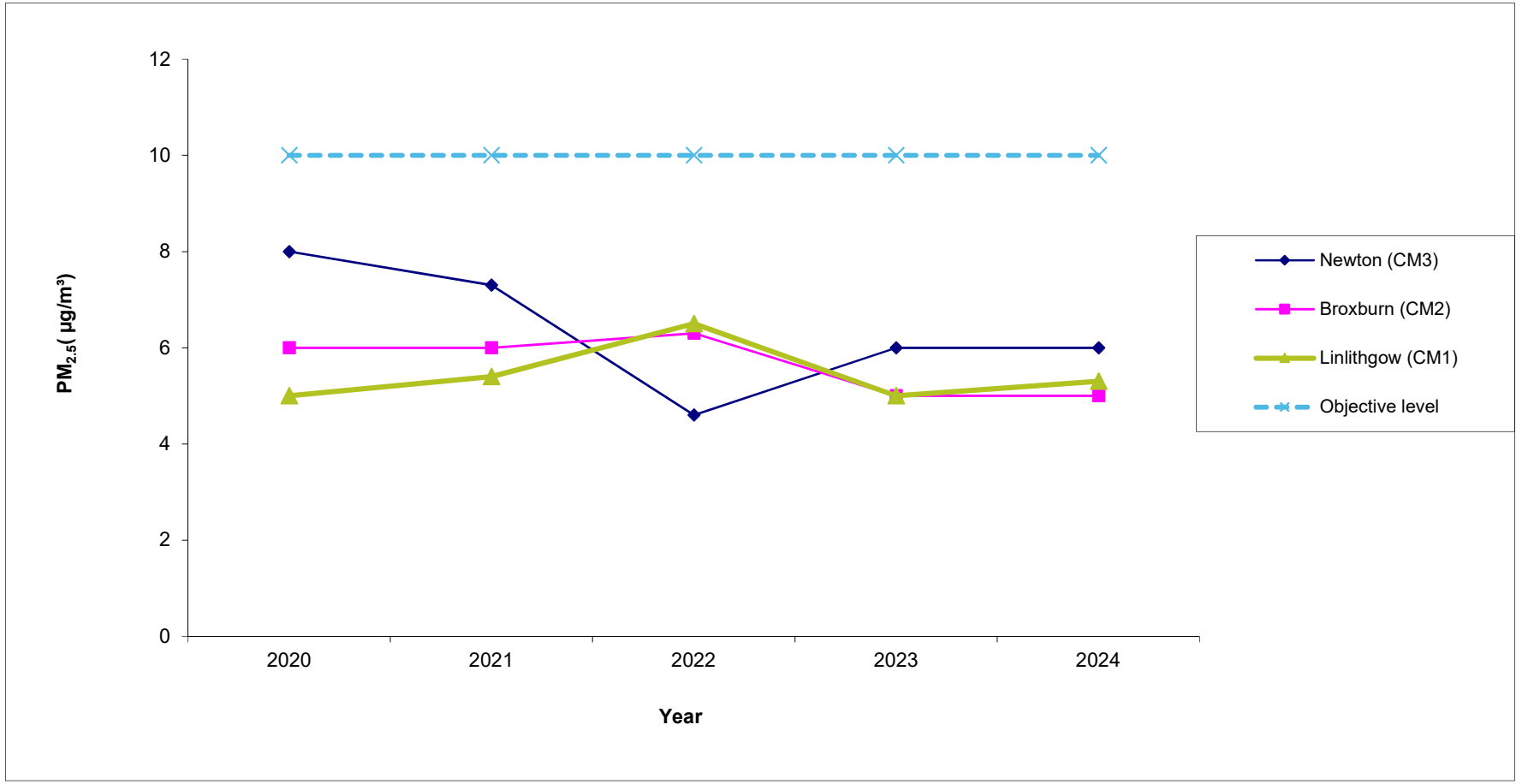


Figure 6 – Diffusion Tube Location Maps

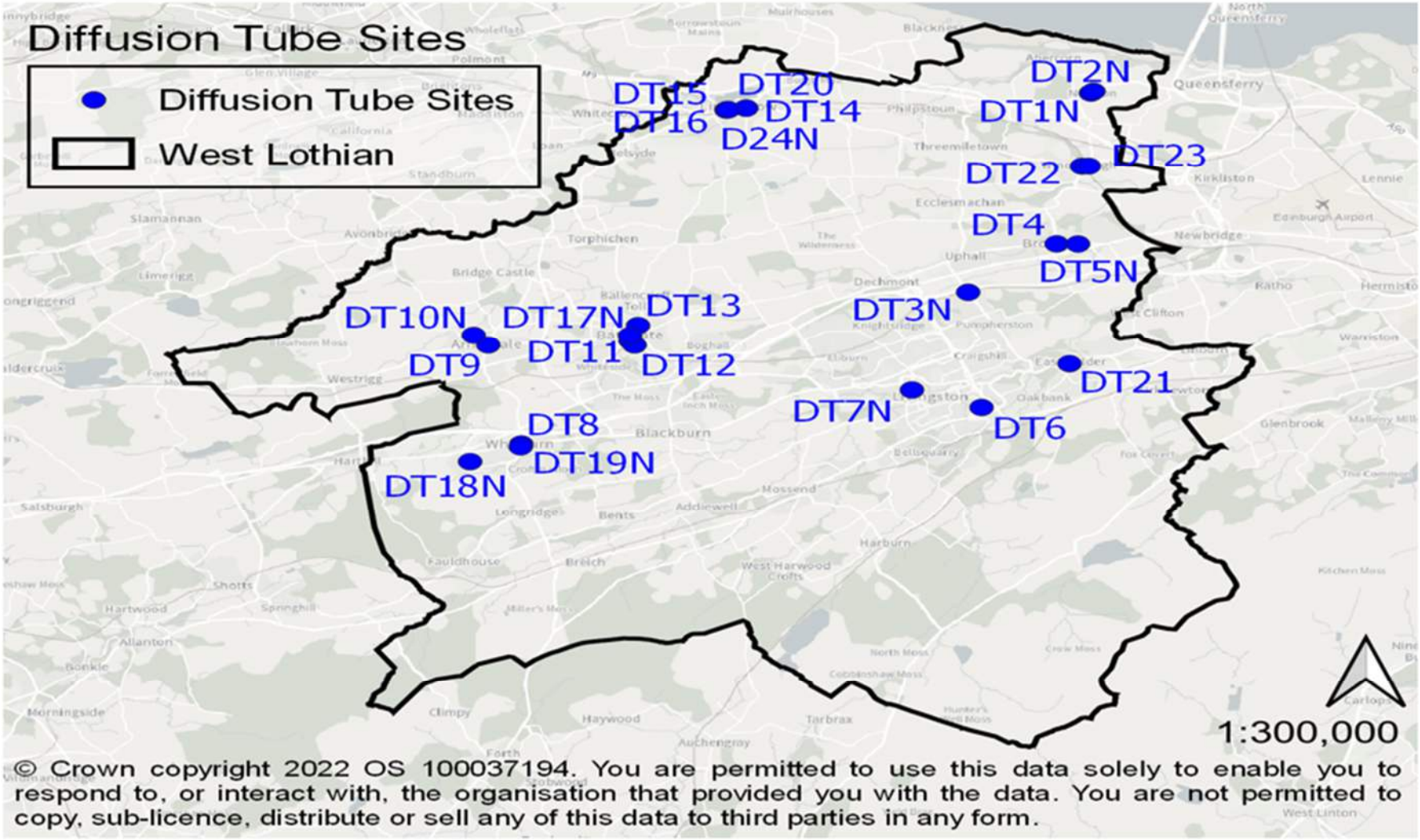


Figure 7 – Map of Continuous Monitoring Locations in West Lothian

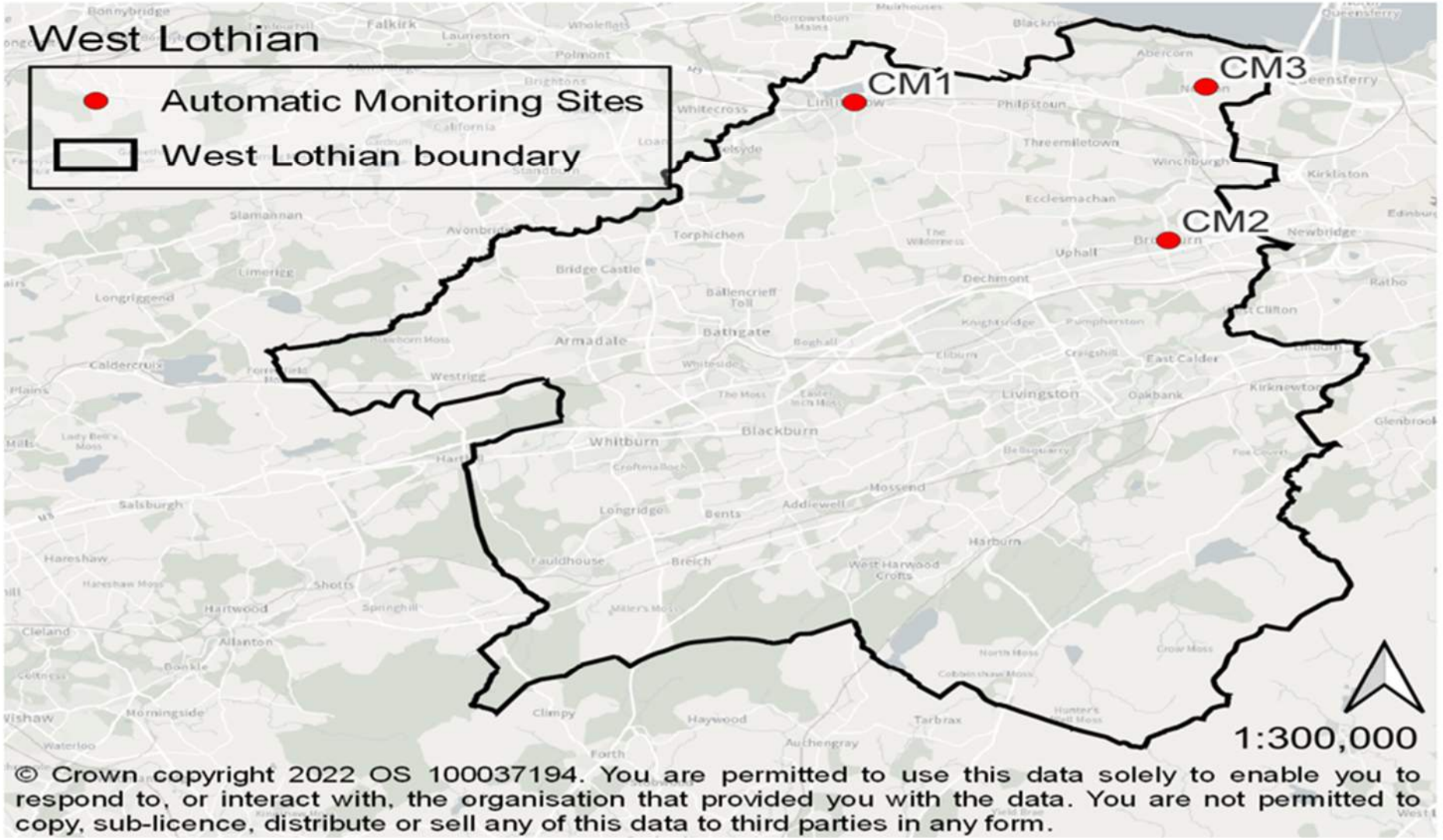
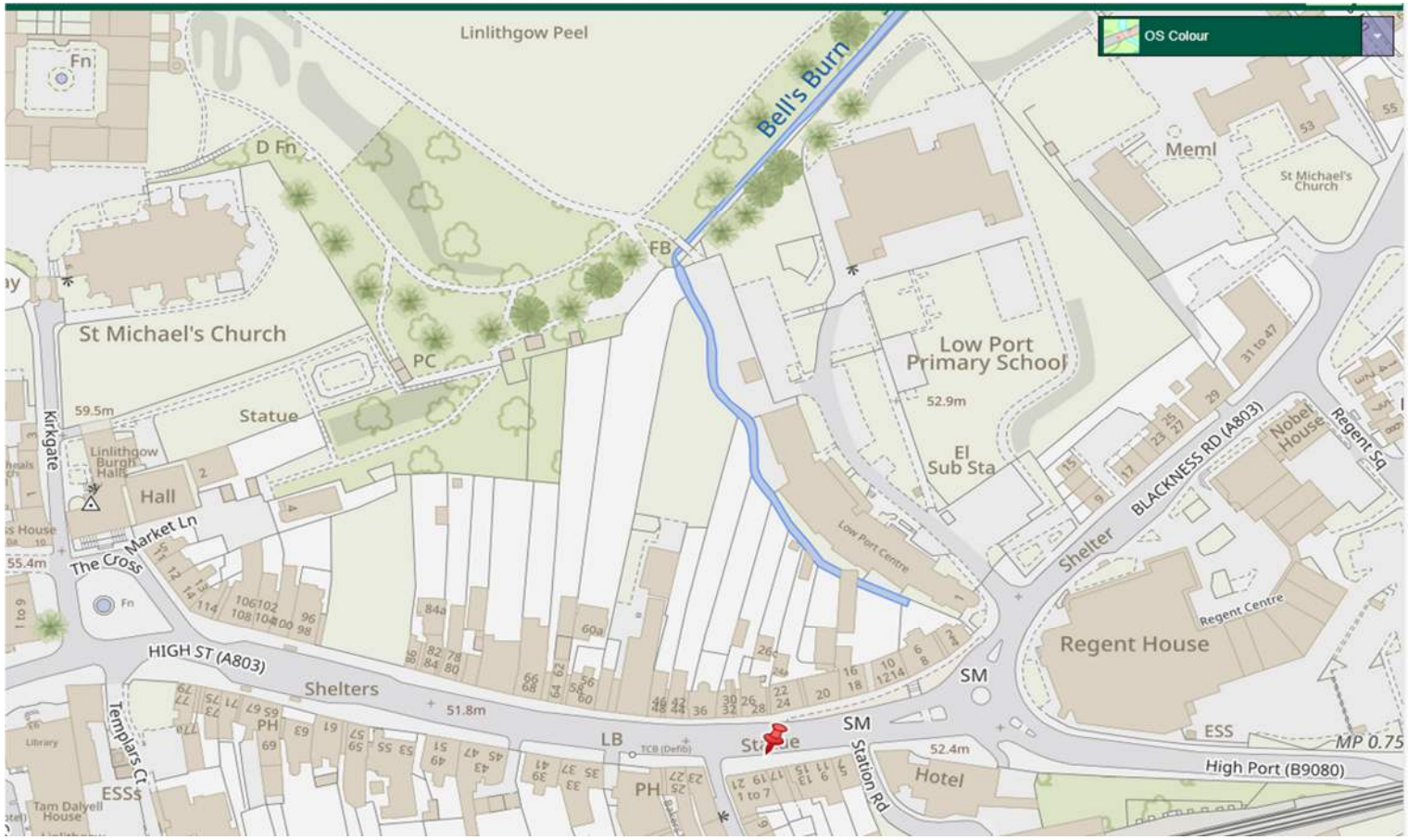


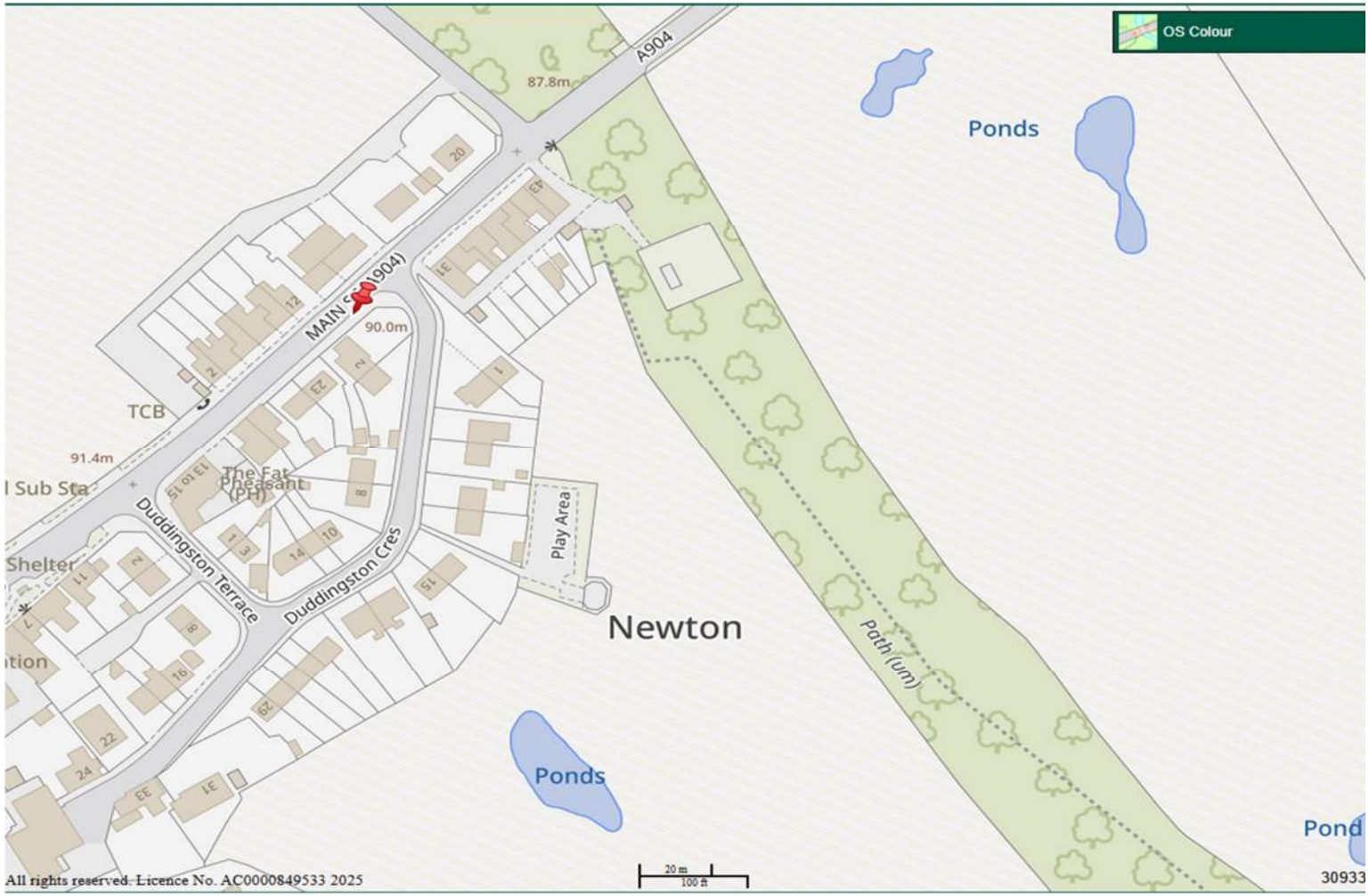
Figure 8 – Detailed maps of Continuous Monitoring Locations in West Lothian

CM1 – Linlithgow High Street



CM2 – East Main Street, Broxburn

CM3 - Main Street, Newton



Glossary of Terms

Abbreviation	Description
AQAP	Air Quality Action Plan - A detailed description of measures, outcomes, achievement dates and implementation methods, showing how the LA 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
APR	Annual Progress Report
AURN	Automatic Urban and Rural Network (UK air quality monitoring network)
Defra	Department for Environment, Food and Rural Affairs
DMRB	Design Manual for Roads and Bridges – Air quality screening tool produced by Highways England
DT	Diffusion Tube
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 (micrometres or microns) or less

$PM_{2.5}$	Airborne particulate matter with an aerodynamic diameter of 2.5µm or less
QA/QC	Quality Assurance and Quality Control
SO_2	Sulphur Dioxide

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