



1 2024 Air Quality Annual Status Report (ASR)

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

Date: June, 2024

Information	Wirral Council Details
Local Authority Officer(s)	Victoria Chadderton. Air Quality Manager Jennifer McKeown. Environmental Health Officer
Department	Environmental Health
Address	Wirral Council, Environmental Health Division, PO Box 290, Brighton Street, Wallasey, CH27 9FQ
Telephone	0151 691 8254
E-mail	victoriachadderton@wirral.gov.uk jennifermckeown1@wirral.gov.uk
Report Reference Number	ASR 2024
Date	June 2024

Executive Summary: Air Quality in Our Area

Air Quality in Wirral

Breathing in polluted air affects our health and costs the NHS and our society billions of pounds each year. Air pollution is recognised as a contributing factor in the onset of heart disease and cancer and can cause a range of health impacts, including effects on lung function, exacerbation of asthma, increases in hospital admissions and mortality. In the UK, it is estimated that the reduction in healthy life expectancy caused by air pollution is equivalent to 29,000 to 43,000 deaths a year¹.

Air pollution particularly affects the most vulnerable in society, children, the elderly, and those with existing heart and lung conditions. Additionally, people living in less affluent areas are most exposed to dangerous levels of air pollution².

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

Table ES 1 - Description of Key Pollutants

Pollutant	Description
Nitrogen Dioxide (NO ₂)	Nitrogen dioxide is a gas which is generally emitted from high-temperature combustion processes such as road transport or energy generation.
Sulphur Dioxide (SO ₂)	Sulphur dioxide (SO ₂) is a corrosive gas which is predominantly produced from the combustion of coal or crude oil.
Particulate Matter (PM ₁₀ and PM _{2.5})	Particulate matter is everything in the air that is not a gas. Particles can come from natural sources such as pollen, as well as human made sources such as smoke from fires, emissions from industry and dust from tyres and brakes. PM ₁₀ refers to particles under 10 micrometres. Fine particulate matter or PM _{2.5} are particles under 2.5 micrometres.

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

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

Wirral Council undertakes monitoring and reporting of air quality across the borough. This monitoring is in the form of real time monitoring from the two Automatic Urban Rural Network (AURN) stations in the borough, operated by the Department of Environment, Farming and Rural Affairs' (DEFRA), five 'indicative' real time monitors and fifty-six passive monitoring locations across the borough. As part of the reporting process, the Authority must assess what actions they are taking now and what planned action, if any should be taken in the future.

Wirral Council has not declared any Air Quality Management Areas (AQMA) in the borough, as monitoring results have not indicated any breaches of the UK Air Quality Objective levels for air pollution. The main pollutants of concern in Wirral are Nitrogen Dioxide and Particulate Matter.

Nitrogen Dioxide

Within Wirral, Nitrogen Dioxide is monitored in real time at the two DEFRA AURN stations and the five 'indicative' real time sensors. In addition, Nitrogen Dioxide is also monitored using passive diffusion tubes. During 2023, monitoring was undertaken at fifty-six sites across Wirral. There were no identified exceedances of the annual mean Nitrogen Dioxide national objective of 40µg/m³ at these fifty-six passive diffusion monitoring sites. There were also no exceedances of the annual mean National Objective for Nitrogen Dioxide levels, or the hourly mean National Objective of 200µg/m³ not to be exceeded more than 18 times a year for Nitrogen Dioxide levels monitored at the two AURN real time air pollution monitoring stations. Fifty-seven results are available for 2023, as site W09 was relocated mid-way through 2023 and replaced with W09/23. Both annualised results have been reported. The results from the five 'indicative' real time sensors show that no exceedances of the annual mean Nitrogen Dioxide national objective were identified at these monitoring stations.

Further details on the results for 2023 are provided in Appendix A and Appendix C. The monitoring during 2023 has not identified locations where a detailed assessment or the declaration of an air quality management area will be required.

Wirral's Local Air Quality Management programme has tailored monitoring locations to include those areas identified as traffic 'hot spots.' Areas that may be affected by housing

and / or commercial developments have also been considered. This focus is determined using DEFRA's Nitrogen Dioxide modelling data, local intelligence, including an air quality modelling report, commissioned as part of the production of the Local Plan, historical data, information obtained from the Authority's sustainable transport team and the Merseyside Atmospheric Emissions Inventory.

A monitoring location review was undertaken at the end of 2022, to determine whether monitoring was still being undertaken in the most relevant locations. Several information sources were fed into the review including those listed above. Areas that may be impacted by future developments were also considered.

Following this review, during 2023, forty-eight existing monitoring sites were retained, eight existing sites were removed, and six new monitoring locations were added (NB one new site has three monitoring stations (triplicate) as part of a co-location study). The sites that were removed are W22, W23, W26, W30, W32, W40, W44 and W58. The new monitoring sites are W22/23, W23/23 W32/23, W44/23, W58/23 and W66 (comprising W66A, W66B and W66C). Site W09 was relocated half way through the year, due to withdrawn consent to monitor at the existing site and was replaced by monitoring site W09/23. Annualised results for both sites for 2023 are available.

A further passive diffusion tube monitoring review was carried out in December 2023. Following this review, all existing fifty-six passive diffusion tube monitoring sites were maintained for use for monitoring during 2024.

Particulate Matter

The AURN located in Tranmere monitors for background levels of Particulate Matter (PM10) and Particulate Matter (PM2.5).

The AURN data for PM10 has demonstrated that there have been no exceedances of the annual mean PM10 objective or PM10 daily mean concentrations air quality objective of 50µg/m³, not to be exceeded more than 35 times per year.

The AURN data for PM2.5 has demonstrated that in the five years between 2019 and 2023 Wirral has seen a small reduction in PM2.5 levels. The PM2.5 concentration for 2023 was an annual mean of 6.5µg/m³. This is above the current World Health Organisation Air Quality Guideline level of 5µg/m³ but below the new annual Mean Concentration Target 10µg/m³, set out in The Environmental Targets (Fine Particulate Matter) (England) Regulations 2023, which is to be met across England by 2040.

There were five real time 'indicative' real time sensors monitoring PM10 and PM2.5 during 2023. These sensors are located in:

Birkenhead

Eastham

Liscard

Poulton

Upton

The results from this indicative monitoring show that no exceedances of the annual mean PM10 objective were identified, but all five indicative monitors measured levels of PM2.5 over the current World Health Organisation Air Quality Guideline level of 5µg/m³ and also above the new annual Mean Concentration Target of 10µg/m³ (to be met by 2040). The highest annual mean figure was 11.6µg/m³ (Liscard and Poulton) and the lowest was 10.5µg/m³ (Upton). It must be noted that these results are indicative only. They are not approved for use by local authorities for compliance monitoring according to TG22, however they can provide indicative air quality data to support our work in reducing air pollution.

The Environmental Targets (Fine Particulate Matter) (England) Regulations 2023 has implemented new legally binding PM2.5 targets, each with an interim target:

10 µg/m³ annual mean concentration PM2.5 nationwide by 2040, with an interim target of 12 µg/m³ by January 2028.

35% reduction in average population exposure by 2040, with an interim target of a 22% reduction by January 2028, both compared to a 2018 baseline.

NB this is a single figure for England, calculated using data from all relevant AURN monitoring sites.

The Regeneration of Wirral

Wirral Council's comprehensive regeneration vision sets out to deliver more than 17,000 new homes and 6,000 new jobs over the next 20 years. It is based on the Birkenhead 2040 Framework (BRF), a 20-year plan which outlines the vision and ambition for the transformational regeneration of Birkenhead. The council has secured substantial government funding in the last few years to transform Birkenhead plus parts of Wallasey, New Brighton and New Ferry through regeneration to support and enhance local communities. The work will support infrastructure improvements and town centre intervention, creating new neighbourhoods and homes and encouraging inward investment and job creation, with the aim of driving up economic growth and delivering improved prospects and prosperity for Wirral residents. Key projects include the docks area in Birkenhead and Wallasey, known as [Wirral Waters](#), the proposed £150 million regeneration of [Birkenhead town centre](#) and [Hind Street Urban Village](#).

The emerging Local Plan designates eleven Regeneration Areas across the Settlement Areas of the borough. The Regeneration Areas will deliver a significant proportion of planned growth over the plan period. Eight of these Regeneration Areas are in the BRF area. The three remaining are designated at Liscard, New Brighton and New Ferry.

A series of Masterplans and Neighbourhood Frameworks have been produced and published for public consultation and can be viewed via the council's 'Have your say' consultation portal: <https://haveyoursay.wirral.gov.uk/>

Regeneration Projects

The Left Bank

There is a regeneration programme along the Left Bank of the River Mersey stretching from New Brighton to Rock Ferry. This regeneration includes projects such as:

[Hind Street Urban Village](#)

This project will see the development of a substantial brownfield site of approximately 12 hectares, with the intention to bring 1,400 new homes to Birkenhead, supporting Wirral Council's 2021-2037 Local Plan.

Wirral Council, Ion and other stakeholders will deliver a low-carbon urban village that will deliver a sustainable residential-led neighbourhood, close to both the town centre and the two railway stations.

The phased development, to span over a decade, will create a new vibrant neighbourhood that will directly connect to and support the resurgence of the town centre.

Birkenhead

There is a significant regeneration project being undertaken around the docks area in Birkenhead, known as [Wirral Waters](#). Birkenhead town centre is also being regenerated, including the provision of two Grade A commercial buildings, one of which Wirral Council staff relocated to in April 2024.

Liscard

Liscard is now one of fifty-five projects across the country to have been selected to receive cash from the Round three of Levelling Up grants which total £1,105 million.

Wirral Council had bid for Levelling Up Funding in July 2022 and was initially unsuccessful, but the Government has looked again at the plans submitted by the local authority for the town centre.

Liscard is now in line to receive £10.7 million Levelling Up funding as part of what will be a major boost for the town and local traders.

New Ferry

There is a regeneration plan for New Ferry, following a gas explosion in March 2017, which caused significant damage to the town centre. The master plan incorporates a combination of residential and retail developments over three separate areas of land in the area.

Planning permission has now been granted for the development of the second part of the regeneration programme on Woodhead Street and part of New Chester Road. A further forty-three new homes will be constructed in Phase two, with construction work on site expected to begin next year.

By being involved in local planning policy formulation, proposed developments and in the decision-making process on formal planning applications, Environmental Health, along with other colleagues from across the council, can help scrutinise plans to enable them to provide advice on how future developments should help to address the Local Air Quality Management Objectives.

Actions to Improve Air Quality

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

The Environmental Improvement Plan³ sets out actions that will drive continued improvements to air quality and to meet the new national interim and long-term targets for fine particulate matter (PM_{2.5}), the pollutant of most harmful to human health. The Air Quality Strategy⁴ provides more information on local authorities' responsibilities to work towards these new targets and reduce fine particulate matter in their areas.

The Road to Zero⁵ details the Government's approach to reduce exhaust emissions from road transport through a number of mechanisms, in balance with the needs of the local community. This is extremely important given that cars are the most popular mode of

³ Defra. Environmental Improvement Plan 2023, January 2023

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

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

personal travel, and the majority of Air Quality Management Areas (AQMAs) are designated due to elevated concentrations heavily influenced by transport emissions.

Summary of Core Actions

Below is a brief summary of the core actions that have been or are being undertaken, to improve air quality in Wirral.

Management of Local Air Quality

Wirral Council carries out its local air quality management duties by monitoring for pollution, assessing pollution levels and taking action to improve local air quality. We are currently working in partnership with Liverpool John Moores University to undertake research into indoor air quality.

Air Quality Strategy

Wirral Council has implemented an Air Quality Strategy 2024 – 28. This Strategy has been developed following wide consultation with the public and key external stakeholders including housing associations, community, voluntary and faith sectors, local businesses, the National Health Service, schools, Chamber of Commerce, and transport sector, to ensure that it represents the priorities of the local community and outlines how local partners will work effectively together to achieve the collectively agreed vision, aims, and objectives.

The development of this Strategy provides a framework for future action to improve air quality within Wirral. It is consistent with national guidelines and will assist the council to achieve its objective of improving the air quality within Wirral to help to better the environment and the health and well-being of all residents and visitors to the area.

This strategy identifies five key areas for action, which are:

Reduce emissions from transport

Improve indoor air quality

Reduce the impact from housing development and regeneration

Reduce domestic, commercial, industrial and agricultural emissions

Raise public awareness and encourage behaviour change

An implementation plan has been produced to drive forward actions to target the five key priority areas. This plan will be a live document and will be updated accordingly, during the lifetime of the strategy.

Wirral Council Air Quality Steering Group

The Wirral Air Quality Group has representatives from several departments including Environmental Health, Public Health, Transport, Licensing and Forward Planning. The group aims to meet four times per year and co-ordinate the Council's obligation to manage air quality. The group oversaw the development of Wirral's Air Quality Strategy and will monitor progress with the strategy implementation plan.

Project to Reduce Particulate Emissions from Domestic Burning.

[The National Clean Air Strategy 2019](#), states that wood-burning stove emissions are now the biggest source of PM pollution in the UK, making up 38% of UK air pollution.

Wirral Council obtained funding from DEFRA in 2023, to support a project to improve air quality by reducing particulate emissions from domestic burning at source, targeted mainly at wood burning stoves but also considering other domestic burning. This project is enabling Wirral to work towards meeting the targets for PM_{2.5} set out in The Environmental Targets (Fine Particulate Matter) (England) Regulations 2023.

The project aims to reduce emissions of particulate matter at source, through a variety of initiatives and interventions aimed at suppliers and installers of solid fuel appliances, maintenance professionals, solid fuel, wood and biomass suppliers, households, and allotment holders.

The project has two main objectives, the first is to reduce particulate matter from domestic burning at source, through an information and education campaign alongside a review of legislation and enforcement options. The second is to provide residents, particularly those more vulnerable to the health effects of air pollution, with the knowledge to protect themselves from air pollution through delivery of an information and awareness campaign delivered in community and public health settings. Work on the ['Breathe Better'](#) project

commenced in August 2023, with an initial poster and video campaign launched in February 2024, which focused mainly on domestic wood burning.



In March 2024, a further campaign was launched with four key messages that featured in a campaign animation and accompanying assets:

At home, only burn when necessary, use non-toxic cleaning products and keep your home well ventilated.

Where you can, avoid peak traffic times and walk along quieter routes, away from the kerb.

When stationary in your car, turn your engine off, if safe to do so. Everyone is affected by idling engine fumes.

Where you can, walk, wheel, or take public transport as an alternative to driving.

Further engagement, using seasonal messaging when appropriate and linking in with key awareness days such as Clean Air Day, will run from May – October 2024 and the domestic burning campaign will be relaunched for winter 2024. An evaluation of the campaigns will be undertaken early in 2025.

Wirral Joint Strategic Needs Assessment (JSNA) on Air Quality

[The Wirral Intelligence Service Joint Strategic Needs Assessment \(JSNA\) on outdoor air quality](#) provides a summary of key pollutants, the impact on health and priority actions in Wirral. The JSNA on Air Quality was updated in 2022.

Wirral Climate Change Strategy

Climate change has become an even more urgent priority since the latest evidence was presented to the United Nations (UN) by the Intergovernmental Panel on Climate Change. Wirral Council declared an environment and [climate emergency](#) in July 2019. A new climate change strategy, [Cool 2](#), was agreed by the Cool Wirral Partnership in December 2019 and subsequently endorsed by Council. The strategy seeks to keep within a local carbon budget, compliant with the United Nations' Paris Agreement and anticipates reaching net-zero carbon emissions in Wirral by 2041. The strategy should provide positive benefits for local air quality, as local objectives are met. The strategy includes an objective for a “complete transition to fossil fuel free local travel by around 2030”. The council also has an Environment and Climate Emergency Policy and an Environment and Climate Emergency Action Plan (ECEAP), which set the ambitious but achievable target of the council and its entity being ‘net carbon neutral’ by 2030. The ECEAP was developed in 2020 and is designed to drive fundamental change to the way the council operates, makes decisions, and provides services. The action plan has recently been reviewed and aligned to complement, but not duplicate, the developing Air Quality Strategy Implementation Plan, which will deliver on three of the thirteen ECE policies;

Supporting an increase in the use of walking, wheeling, and cycling.

Working to support an increase in public transport use.

Securing investment to support the necessary shift to ultra-low carbon vehicles.

Conclusions and Priorities

Wirral has no AQMA's and no exceedances of the national objectives for Nitrogen Dioxide were identified during 2023, at any monitoring location. Forty-eight passive diffusion monitoring sites were in place for both 2022 and 2023 and therefore have comparable data. Eight of these sites showed increased concentrations of Nitrogen Dioxide from 2022 to 2023, three sites showed no change in concentrations and thirty-seven sites showed a reduction in concentrations. It is noted that some of these reductions are very small.

The data obtained from the two AURN's located in Wirral shows that there have been no exceedances of the national objectives for Nitrogen Dioxide. The data obtained from the five real time indicative monitors show that there have been no exceedances of the national objectives for Nitrogen Dioxide.

The AURN data for PM10 and PM2.5 has demonstrated that there have been no exceedances of the annual mean PM10 objective or the PM10 daily mean concentrations air quality objective of 50µg/m³, not to be exceeded more than 35 times per year. It also shows no exceedances of the PM2.5 annual mean objective.

The results of the five indicative real time sensors show that there have been no exceedances of the Nitrogen Dioxide annual mean or hourly objectives. They also show no exceedances of the annual mean PM10 objective were identified. All five indicative monitors measured levels of PM2.5 over the current World Health Organisation Air Quality Guideline level and also above the new annual Mean Concentration Target (to be met by 2040). It must be noted that these results are indicative only. They are not approved for use by local authorities for compliance monitoring according to TG22, however they can provide indicative air quality data to support our work in reducing air pollution.

The results of approved monitoring methods have not identified any exceedances of the National Objectives, which would require the declaration of an Air Quality Management Area. It is still recognised that there is a need to closely monitor air quality in the borough and utilise all opportunities to improve air quality.

The Air Quality priorities for the council are as follows:

To drive forward an implementation plan for the new Wirral Air Quality Strategy, which was implemented in December 2023. This will detail the work that is planned and the work that is underway to address the identified priority areas for action.

To continue the DEFRA funded 'Breathe Better' campaign project to Reduce Particulate Emissions from Domestic Burning and provide residents with the knowledge to protect themselves from air pollution through delivery of an information and awareness campaign.

To fully utilise the planning system, in accordance with guidance, to effectively promote air quality.

To continue to robustly monitor air quality in the borough, to ensure the concentrations are within the National objectives.

To regularly review its air pollution monitoring locations, to reflect the most up to date information e.g. traffic levels and emission sources, to provide a broad understanding of air quality across the borough and meaningful air quality data that can be used as part of the planning application process (e.g. baseline data for air quality impact assessments submitted as part of planning applications).

To continue to monitor the impact of air quality on the health of Wirral residents, by regularly reviewing the Joint Strategic Needs Assessment Air Quality chapter.

To continue to work with our partners to encourage and enable increased number of journeys to be undertaken by walking, wheeling, and cycling and to make public transport cleaner and easier to use.

To encourage active travel and to make public transport cleaner and easier to use.

To build up public participation and public engagement through Wirral's Clean Air campaign, 'Breathe Better' which aims to raise awareness of air pollution and inform Wirral's residents about best burning practices.

To refresh and relaunch Wirral's 'You're the key' campaign, to target idling vehicle engines and help improve local air quality. It highlights small changes in behaviour that can improve air quality and informs drivers in Wirral that they may be fined if they do not switch off their engine when parked.

To capitalise and support new and changed behaviours e.g. increased numbers of journeys being undertaken by active modes and public transport, which may positively influence better air quality.

The main challenge is making best use of available resources.

Local Engagement and How to get Involved

The council engaged with our local communities and key external stakeholders during the co-development of the Air Quality Strategy 2024 – 28, and we are keen to maintain engagement regarding air pollution and the actions that can be taken to reduce exposure and improve air quality.

The council has also engaged with the local communities through the ‘Breathe Better’ campaign.

The council’s website provides information in relation to air quality and signposts local residents to information on air quality, including the main governing legislation. It also provides the latest monitoring results for the borough, in addition to links to further information and data. [The Wirral Intelligence Service Joint Strategic Needs Assessment \(JSNA\) on outdoor air quality](#) provides a summary of key pollutants, the impact on health and priority actions in Wirral. The JSNA was updated in 2022.

Residents can access advice on Wirral Council’s website about how they can help improve air quality by implementing small changes to their daily life. This could include car sharing (e.g. when driving to and from work), walking or cycling rather than driving, particularly for short journeys and reducing vehicle emissions by not letting vehicle engines idle (i.e. switching off a vehicle engine when it is stationary / parked). Residents can contact the council directly for further information on air quality.

Residents can obtain further information on air pollution from websites such as the [Clean Air Hub](#). They can also join local community groups such as, but not limited to, Wirral Environmental Network.

Clean Air Day 2024

Environmental Health will be hosting an engagement event on Clean Air Day 2024, to provide information to our residents on:

wood burning and its impact on air quality

indoor air quality

the impact of idling engines on air quality

our 'Breathe Better' campaign, and

general information on the air quality in Wirral.

The stall will be located at West Kirby Concourse in the morning, and Birkenhead Market in the afternoon. Feedback on the event will be provided in ASR 2025.

Local Responsibilities and Commitment

This ASR was prepared by the Environmental Health Department of Wirral Council with the support and agreement of the following officers and departments:

John Entwistle, Principal Forward Planning Officer

Colin Irlam, Strategic Transport Project Manager

Lucy Northey, Climate Emergency Manager

Margaret O'Donnell, Licensing Manager

Steve Atkins, Senior Network Operations Manager

James Gibbins, Senior Network Manager

Ann Rice, Principal Officer

Rhian Hughes, Interim Road Safety Strategy Manager

Amanda Keenan, Programme Manager, Highways and Infrastructure.

This ASR has been approved by:

Jackie Davidson, Public Health Consultant and

Deeta Cooper, Environmental Health Senior Manager

This ASR has been signed off by Dave Bradburn, Director of Public Health.

If you have any comments on this ASR please send them to Victoria Chadderton

victoriachadderton@wirral.gov.uk / Jennifer McKeown jennifermckeown1@wirral.gov.uk

Or contact Wirral Council, Environmental Health Division, PO Box 290, Brighton Street,
Wallasey, CH27 9FQ

0151 691 8173

environmentalhealth@wirral.gov.uk

Table of Contents

Executive Summary: Air Quality in Our Area	ii
Air Quality in Wirral	ii
Actions to Improve Air Quality	viii
Summary of Core Actions	ix
Conclusions and Priorities	xiii
Local Engagement and How to get Involved	xv
Local Responsibilities and Commitment	xvi
1 Local Air Quality Management	1
2 Actions to Improve Air Quality	2
2.1 Air Quality Management Areas	2
2.2 Progress and Impact of Measures to address Air Quality in Wirral Council	3
2.3 PM2.5 – Local Authority Approach to Reducing Emissions and/or Concentrations	51
3 Air Quality Monitoring Data and Comparison with Air Quality Objectives and National Compliance	55
3.1 Summary of Monitoring Undertaken	55
3.2 Individual Pollutants	55
Nitrogen Dioxide (NO ₂)	56
Table 3.1 – Changes in Nitrogen Dioxide Levels at Passive Monitoring Sites Between 2022 – 23	57
Table 3.2 – Changes in Nitrogen Dioxide Levels at Passive Monitoring Sites Between 2019 – 23	60
Particulate Matter (PM ₁₀)	62
Particulate Matter (PM _{2.5})	63
Appendix A: Monitoring Results	65
Appendix B: Full Monthly Diffusion Tube Results for 2023	90
Appendix C: Supporting Technical Information / Air Quality Monitoring Data QA/QC	95
New or Changed Sources Identified Within Wirral Council During 2023	95

Table C1. Changes to Site Locations for 2023 96

QA/QC of Diffusion Tube Monitoring 99

QA/QC of Automatic Monitoring 103

Non-LAQM monitoring results 104

Table C.5 Annual Mean Results For Indicative Real Time Sensors 105

Appendix D: Map(s) of Monitoring Locations and AQMAs 107

Figure D.1 – Map of Non-Automatic Monitoring Site 107

Figure D.2 – Map of Automatic Monitoring Site 108

Figure D.3 – Map of Non-Automatic Monitoring Site 110

Figure D.4 – Map of Non-Automatic Monitoring Site 112

Figure D.5 – Map of Non-Automatic Monitoring Site 113

Figure D.6 – Map of Non-Automatic Monitoring Site 116

Figure D.7 – Map of Non-Automatic Monitoring Site 120

Figure D.8 – Map of Non-Automatic Monitoring Site 120

Figure D.9 – Map of Non-Automatic Monitoring Site 122

Figure D.10 – Map of Non-Automatic Monitoring Site 124

Figure D.11– Map of Non-Automatic Monitoring Site 126

Figure D.12 – Map of Non-Automatic Monitoring Site 128

Figure D.13 – Map of Non-Automatic Monitoring Site 130

Figure D.14 – Map of Non-Automatic Monitoring Site 132

Figure D.15 – Map of Non-Automatic Monitoring Site 136

Figure D.16 – Map of Non-Automatic Monitoring Site 138

Figure D.17 – Map of Non-Automatic Monitoring Site 140

Figure D.18 – Map of Non-Automatic Monitoring Site 140

Figure D.19 – Map of Non-Automatic Monitoring Site 142

Appendix E: Summary of Air Quality Objectives in 145

England	145
Glossary of Terms	146
References	149

Figures

Figure A.1 – Trends in Annual Mean NO ₂ Concentrations	85
---	----

Tables

Table 2.2 – Progress on Measures to Improve Air Quality	25
Table 3.1 – Changes in Nitrogen Dioxide Levels at Passive Monitoring Sites Between 2022 – 23	57
Table 3.2 – Changes in Nitrogen Dioxide Levels at Passive Monitoring Sites Between 2019 – 23	60
Table A.1 – Details of Automatic Monitoring Sites	65
Table A.2 – Details of Non-Automatic Monitoring Sites	66
Table A.3 – Annual Mean NO ₂ Monitoring Results: Automatic Monitoring (µg/m ³)	77
Table A.4 – Annual Mean NO ₂ Monitoring Results: Non-Automatic Monitoring (µg/m ³)	79
Table A.5 – 1-Hour Mean NO ₂ Monitoring Results, Number of 1-Hour Means > 200µg/m ³	86
Table A.6 – Annual Mean PM ₁₀ Monitoring Results (µg/m ³)	87
Table A.7 – 24-Hour Mean PM ₁₀ Monitoring Results, Number of PM ₁₀ 24-Hour Means > 50µg/m ³	88
Table A.8 – Annual Mean PM _{2.5} Monitoring Results (µg/m ³)	87
Table B.1 – NO ₂ 2023 Diffusion Tube Results (µg/m ³)	90
Table C.1 – Changes to Site Locations for 2023	68

Table C.2 – Annualisation Summary (concentrations presented in $\mu\text{g}/\text{m}^3$)	100
Table C.3 – Bias Adjustment Factor	101
Table C.4 – Local Bias Adjustment Calculation	102
Table C.5 Annual Mean Results For Indicative Real Time Sensors	74
Table E.1 – Air Quality Objectives in England	145

Local Air Quality Management

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

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

Actions to Improve Air Quality

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.

Wirral Council currently does not have any declared AQMAs. A local Air Quality Strategy is in place to prevent and reduce polluting activities. The Local Air Quality Strategy is available at <https://www.wirral.gov.uk/environmental-problems/pollution-control/wirral-air-quality-strategy-2024-2028>

Progress and Impact of Measures to address Air Quality in Wirral Council

Defra's appraisal of last year's ASR concluded

This is generally a very good ASR containing a lot of detail about measures being undertaken by Wirral Metropolitan Borough Council to address air quality including the measures being undertaken to address PM2.5.

Action: None required.

In Table C.1, the names of the automatic monitoring sites used to calculate annualisation factors should be included.

Action: Site names are included in the 2024 report.

WMBC included the comments from the 2022 ASR, additionally they responded to and acted upon these comments which is encouraging to see and has led to a generally high quality 2023 ASR.

Action: None required.

The inclusion of tables showing the percentage changes in NO2 concentrations from 2021 to 2022 as well as the changes in concentrations from 2018 to 2022 is welcomed. These tables help to show the trends observed at these monitoring sites clearly.

Action: None required.

In the maps showing the monitoring site locations, it is still difficult to see where the sites are located as the new colour chosen is still very similar to the map background colour. Additionally, the base mapping appears to be slightly distorted in a few of the figures.

Action: A new colour has been used to identify the site locations this year. The sites were highlighted in orange in the 2023 report, they are now red. The maps have been amended to remove distortions.

A clear statement has been provided that the monitoring has been undertaken in line with the 2022 diffusion tube monitoring calendar published by Defra. This is appreciated for clarity.

Action: None required.

The Council may consider undertaking a co-location study in future in order to calculate a local bias adjustment factor.

Action: A co-location study was implemented in 2023 and the results have been shared with the Air Quality & Aerosol Metrology Group to support the production of the national bias adjustment factors.

Progress with Measures

Wirral Council has taken forward a number of direct measures during the current reporting year of 2023 in pursuit of improving local air quality. Details of all measures completed, in progress or planned are set out in Table 1.1. Forty-four measures are included within Table 1.1, with the type of measure and the progress Wirral Council have made during the reporting year of 2023 presented. Where there have been, or continue to be, barriers restricting the implementation of the measure, these are also presented within Table 1.1.

More detail on these measures can be found in their respective Action Plans and Strategies.

City Region Sustainable Transport Settlement (CRSTS) 2022/23 to 2026/27

Combined Authority Transport Plan (CATP) programme for 2024/25

Cool2 Climate Change Strategy 2019

Liverpool City Region Road Safety Strategy 2022

Wirral Community Safety Strategy 2021- 2026

Wirral working together - A Council Plan for 2023 - 2027

Places for People Strategy 2023

Core Active Travel Network (in development)

Environment and Climate Emergency Action Plan 2022-23

Development and Regeneration Strategy for Wirral 2021-37

Parking Strategy 2023

The Draft Local Plan 2025-2040

Electric Vehicle Infrastructure Strategy (in development)

Key completed measures are:

Hybrid Buses and Retro Fitted Emissions Reduction Technology

There are currently forty-four hybrid buses in operation in Wirral, which are operated by Arriva. There are also twenty-two buses operating for Arriva Wirral from Laird Street, Birkenhead that have been retrofitted to Euro 6 standard: the most rigorous European standard for emissions. Stagecoach (Rock Ferry) have seven vehicles manufactured from new to Euro 6 standards and six vehicles that have retrofitted to Euro 6 standards. This is for a peak vehicle requirement of forty-seven.

Bus Franchising

On 6 October 2023, the Liverpool City Region Combined Authority (LCRCA) took the decision to franchise the bus network in the Liverpool City Region, following a large-scale public consultation and an independent audit of the bus franchising assessment. Under a franchised system the LCRCA will specify the routes, timetables, and fares, with bus services operated by private companies following a competitive tendering process. This is the model currently in operation in London and introduced in Manchester in 2023.

Under a franchised network, bus services will be divided into geographical tender rounds inviting operators to run bus services under contract. Current plans see the first franchised service go live in September 2026 with the transition to franchising to be complete by end November 2028.

Bus Service Improvement Plan (BSIP) delivery

Liverpool City Region Combined Authority (LCRCA) was informed on 07 December 2023 that an indicative amount of £8,825,000 of revenue funding had been allocated from BSIP Phase three to support the delivery of our local Bus Service Delivery Plan. This funding is in addition to existing Phase one BSIP funding allocation of £12,294,398 and Phase two (BSIP+) funding allocation of £6,238,236.

Originally introduced with BSIP funding, the £2 fare remains available for bus users across the Liverpool City Region.

The Bus Alliance

The LCRCA formed the Bus Alliance in 2016. It is a formal partnership between Merseytravel and the area's two biggest operators, Stagecoach and Arriva. This alliance addressed several challenges and reversed the national trend of falling bus use. Since its

introduction, the number of bus journeys young people made across the LCR rose by 168%, due, in part, to the day ticket, “MyTicket”, which allowed unlimited day travel across Merseyside for those aged five to eighteen. In addition, there was half-priced bus travel for apprentices aged nineteen – twenty-four, which removed one of the key barriers identified as prohibiting young people from undertaking vocational training. The decision to franchise a Bus Alliance Transition Agreement is under development.

Park and Ride

Wirral Council, in partnership with Merseytravel, has provided a network of rail based free park and ride schemes at most train stations in Wirral. Further details regarding parking facilities are available by visiting [Merseyrail's website](#).

Planning

Planning Policy

The Unitary Development Plan (UDP) as saved by a direction issued by the Secretary of State on 18 September 2007, along with the Joint Waste Plan for Merseyside & Halton (adopted 18 June 2013) and Neighbourhood Plans for Hoylake and Devonshire Park forms the statutory development plan for Wirral, which is used for determining planning applications in accordance with planning law. When applicable UDP Policy TRT3 ‘Transport and the Environment’ and UDP Policy PO1 ‘Potentially Polluting Development’ and Waste Local Plan Policy WM12 ‘Waste Management Development’ make provision for assessing the impacts from new development on air quality in the determination of planning applications. The UDP can be viewed via the following link:

<https://www.wirral.gov.uk/planning-and-building/local-plans-and-planning-policy/local-plans/unitary-development-plan/written>

Planning for both residential and industrial developments have a significant impact in air quality. By being involved at the pre-application planning stages of development, Environmental Health Officers along with other colleagues from across the Council can scrutinise plans to ensure that the impact of development on Local Air Quality Management Objectives is considered.

The National Planning Policy Framework (NPPF) provides guidance to local planning authorities on how to assess the impact of proposed developments.

The NPPF also states in paragraph 180 that the planning system should “contribute to and enhance the natural and local environment”, it goes on to state that planning authorities should do this by: “preventing both new and existing development from contributing to or being put at unacceptable risk from, or being adversely affected by unacceptable levels of soil, air, water or noise pollution or land instability”.

The NPPF also reiterates in paragraph 192 the importance of planning policies and decisions sustaining and contributing towards compliance with the relevant limit values or national objectives for pollutants and the cumulative impacts on air quality from individual sites in local areas. Opportunities to improve air quality or mitigate impacts should be identified, such as through traffic and travel management, and green infrastructure provision and enhancement. So far as possible these opportunities should be considered at the plan-making stage, to ensure a strategic approach and limit the need for issues to be reconsidered when determining individual applications.

To assist on the implementation of the NPPF, National Planning Policy Guidance provides additional guidance on how planning can take account of the impact of new development on air quality.

Emerging Wirral Local Plan 2025-2040

The Wirral Local Plan 2025-2040 will, once adopted, replace the Unitary Development Plan and will provide the framework for planning decisions in the Borough for a fifteen-year period. The Submission Draft Local Plan is currently undergoing Examination in Public. The next stage will be consultation on Main Modifications in summer of 2024 following which it is hoped to adopt the Local Plan by the end of 2024/early 2025. The Submission Draft Local Plan can be viewed at the following link: <https://www.wirral.gov.uk/planning-and-building/local-plans-and-planning-policy/wirral-new-local-plan/new-local-plan>

An [Air Quality Modelling Study](#) was commissioned to help in the preparation of the final stages for the new Local Plan before submission to the Secretary of State for public examination. This assessment considered nitrogen dioxide (NO₂) and particulate matter (PM₁₀ and PM_{2.5}) and concluded that there are no predicted exceedances of the relevant

national air quality objectives for England at any development allocation receptors, in the future assessment year.

The air quality modelling study made recommendations regarding implementing air quality monitoring in several locations. Based on these recommendations, in 2021, four passive diffusion sites were installed and in 2022, five real time monitors were installed. It must be noted that these real time monitors are providing indicative data only, as the technologies used have not been approved by DEFRA, as being equivalent to reference methods of monitoring. The results obtained will therefore not be included in ASR reports but will be used to inform future monitoring requirements / actions.

Within the emerging Local Plan there are several policies, which refer directly to air quality, and others such as encouraging active travel, carbon emissions reduction and development design principles, that are identified as beneficial to local air quality. Air Quality Assessments for proposed developments will be required where appropriate and mitigation measures against any impact on air quality agreed through the planning application process. Air Quality clauses within Local Plan policies are included to adequately address any air quality issues arising from development or neighbouring uses.

These clauses prevent uses which would cause an Air Quality Management Area to be declared and ensures practical measures have been taken to minimise pollution levels and mitigate the impacts of the pollution, including exposure to air pollution. Air Quality provides a justification for other policies including [WS1.1](#) (Development and Regeneration Strategy – Homes) and [WS9](#) (Strategy for Transport) to reduce the need to travel and support active travel to reduce the impact of traffic flows on local communities.

Provision of Active Travel Infrastructure

In Wirral, to date, there are approximately ninety-five miles of cycle lanes, approximately 4 miles of segregated cycle lanes on highways and approximately twenty-three miles of traffic free cycle routes away from the highway.

In recent years several new schemes have been installed including segregated routes on Old Chester Road in Rock Ferry/New Ferry and Fender Lane between Bidston and Moreton which were both installed using DfT Active Travel Funding (Tranche one) scheme. The Harrison Drive / Bayswater Rd scheme in New Brighton has also recently been completed in January 2024 supported by DfT Active Travel Fund Tranche 2.

Two further active travel schemes are currently on site in Birkenhead Town Centre, Conway Street/Europa Boulevard and Grange Road/Charing Cross/Grange Road West. These schemes are both supported by Future High Street Funding as well as Active Travel Funding and will provide high quality pedestrian and cycle links in the town centre linking to the rail and bus stations as well as the key retail areas.

Public Rail Transport Improvements

Fully-electric battery-power trains are now in use on the Wirral line and within the Liverpool City Region. Using sliding step-technology, these trains are some of the most accessible and sophisticated trains on the UK rail network and are the latest step towards the Mayor's commitment to deliver a London-style integrated transport network for our city region.

Combined Authority Transport Plan Programme (CATP)

In 2022, the City Region Sustainable Transport Settlement (CRSTS) awarded funding to Wirral Council. All the proposed programme of works set out in the 2024/25 CRSTS CATP programme generally have environmental benefits and are aligned with regional and Wirral emission targets and support for active transport, as set out in the Liverpool City Region's Pathway to Net Zero Strategy and the Cool2 Climate Change Strategy for Wirral. Many of the Local Journey and Network Management projects are aimed at improving access to the highway network which will help to support better air quality across the borough and enable a greater number of journeys to be undertaken by sustainable modes, therefore reducing residents' reliance on the private car and reducing carbon emissions. Other projects will improve environmental safety for highway users.

Increasing cycling and walking will help combat climate change. Harmful emissions can be reduced, by encouraging and enabling people to travel more on foot and by cycle, instead of by private car. Promoting active travel can result in reduced emissions of Nitrogen Dioxide (NO₂), particulate matter (PM) and Carbon Dioxide (CO₂), helping to tackle climate change and improve air quality.

Network Management Plan

The vision of this Network Management Plan is to encourage:

More people walking and cycling to become fitter and healthier;

More people using public transport to reduce air pollution and congestion;

More people using technology to make journeys easier e.g. journey planning, smart ticketing;

More people being able to access local centres by bus or by walking and cycling;

More public transport, cycle facilities and pedestrian facilities provided across the borough;

Fewer people using their cars, especially for short journeys;

Fewer accidents and injuries on our roads;

Fewer cars on our roads;

Fewer emissions from cars, buses and lorries; and

Less congestion and delay.

This will be achieved by the following:

Residents, businesses and visitors will be engaged through consultations, forums and user groups and we will work in partnership;

We will use engineering to improve our road networks, to build new cycle routes, improve pedestrian facilities and take advantage of new technology to make it easier to travel efficiently, safely and sustainably;

People will have greater confidence to change their travel habits and try healthy, environmentally friendly ways of getting around;

Residents, business and visitors will be enabled to know how to get around and where to find information; and

Enforcement will be required where people do not comply with the driving laws, or do not consider other road users in their driving or parking habits.

Places for People - Wirral Active Travel Strategy

The Places for People Wirral Active Travel Strategy has been approved by Committee in January 2024. The strategy sets out our ambition to put walking, cycling and beautiful places at the heart of our communities, through smarter investment in better active travel infrastructure in order to create places where people and communities can flourish. To support the delivery of the strategy we are developing a Core Active Travel Network (CATN) which will guide where infrastructure will be delivered and how that delivery will be prioritised.

Wirral Active Travel Forum

The Wirral Active Travel Forum is a formally constituted group, which meets quarterly with interested public and private organisations, and individuals. The group supports active travel as a simple, low cost and effective way for people to access life opportunities, whilst increasing levels of physical activity in their day-to-day life. Membership of this group is open to all, and the forum will continue to be engaged as these programmes develop.

Cycle Training for Schools

The Council's Road Safety Team support schools with safe sustainable travel and active travel initiatives. Cycle Training is offered to all Wirral Schools. Bikeability level one and two combined sessions, are aimed at year five and six pupils and are provided by the Bikeability provider selected by the Liverpool City Region (LCR). The road safety team actively advertise and signpost these sessions to all Wirral schools by several means, including the use of a school road safety newsletter. There is also "Learn to Ride" sessions which are for early primary school ages, and "Own the Ride" sessions for late secondary/6th form, also run by Bike Right and funded by LCR. These provisions promote safe active travel for pupils on the journey to and from school.

Modeshift Stars

Modeshift STARS is a nationally accredited initiative, supported by the Department for Transport (DfT). The STARS Education scheme recognises schools and other educational establishments that have shown excellence in supporting cycling, walking and other forms of sustainable and active travel. The Junior Travel Ambassador initiative runs concurrently in these schools by elected pupils to take the message of safe, active and sustainable transport to their peers. Surveying the school community helps us to understand the

barriers to safe active travel and an action plan to address the issues is implemented through capital measures, active travel weeks, park and stride sites as a few of the potential solutions.

Two Active Travel Officers have been employed utilising external grant funding provided via the Liverpool City Region to work with schools delivering the School Street initiative and Modeshift. This aims to reduce cars travelling in and around school locations to reduce emissions and air pollution. Schools who have achieved Modeshift accreditation currently include thirteen at green status and one at bronze. A number of other schools have been submitted and are awaiting accreditation status.

School Streets

Wirral Council has implemented School Streets initiatives that involve closing streets immediately outside school gates at drop-off and pick-up times to most vehicle traffic (there are exemptions for residents, blue badge holders, emergency services etc). It aims to create safer and more pleasant environment for everyone around the school by encouraging walking, cycling and scooting or parking further away from the school and walk the last part of the journey and by preventing vehicles from entering specific roads around the vicinity of the school. Wirral Council have delivered six School Street pilots across Wirral. Three schemes have been made permanent.

Wirral Road Safety Plan

A Wirral Road Safety Plan, has been developed, which sits under the Liverpool City Region Road Safety Strategy and aims to develop and deliver further improvements to road safety in Wirral, creating safer and vibrant communities so more people choose to walk and cycle. Safe Systems approach is utilised considering Safe Vehicles, Safe Speeds, Safe Streets and Safe Behaviours as the core components. For the full programme delivery, please refer to the Road Safety Plan where we set out our engagement for all road users. Examples of some of the projects that are running include Mind Your Business, Park and Stride, a visibility campaign, Active Travel Week, and educational activities within schools.

Wirral Council Vehicle Fleet

General Fleet

Unleaded petrol or bio diesel is used to fuel the Council vehicle fleet and Adblue (a non-toxic, non-flammable, odourless and biodegradable solution designed to help diesel vehicles meet the latest [Euro 6 exhaust emission regulations](#)) is available on site for drivers to refill their vehicles when necessary. In addition, regular emissions tests of vehicles are undertaken during routine servicing.

A review of the council fleet has taken place with the aim of consolidating the fleet and introducing electric vehicles across the various services. The Mayor has a fully electric car, and an electric van is now in use at Birkenhead park.

Several E-cargo bikes are now also used in parks, and they have covered a total of 359.9 miles in the last financial year 2023/24.

Gritter Trucks

All of the gritter fleet is fitted with diesel particulate filters and exhaust systems to reduce emissions.

Biffa

Biffa are contractors for the Council, providing waste collection services. Biffa use a total of thirty-four refuse collection vehicles in Wirral, all of which all are Euro 6 specification (the most rigorous European Standard for emissions). Biffa have recently complete a three-month hydro-treated vegetable oil (HVO) trial using three of their vehicles.

Permitted Processes

Environmental Health and the Environment Agency (EA) play a significant role in controlling point sources of pollution nationally. Certain industrial processes whose activities emit pollutants into the environment are required to operate under an Environment Permit. Under the Environmental Permitting (England and Wales) Regulations 2016, Wirral Council has issued and monitors forty-eight permits for industrial activities across the borough. These span over nine different sectors: storage terminals, cement and lime, other minerals, combustion and incineration, tar and bitumen, coating, animal and plant treatment, petroleum and solvents sector. Environmental Health and the EA ensure that the operators of the permitted processes carry out their undertakings in

accordance with the conditions as described in their Environmental Permit. This includes permitted levels of certain pollutants

Electric Vehicle Charging Infrastructure (EVCI)

The Liverpool City Region Combined Authority (LCRCA) has successfully obtained £9,647,000 Local Electric Vehicle Infrastructure (LEVI) Capital funding to invest into EVCI via a regional contract. Wirral Council are working with Local Authorities across the LCR to provide a sustainable electric vehicle charging infrastructure across the Liverpool City Region, which is easy to use, inclusive and accessible to use. The funding will be used to leverage private investment and is planned to deliver 600-800 standard chargers and 1000-1300 fast chargers within the LCR. To date in Wirral, there are fifty three publicly owned electric vehicle charging points available to the public.

Wirral Climate Change Strategy

Climate change has become an even more urgent priority since the latest evidence was presented to the United Nations (UN) by the Intergovernmental Panel on Climate Change. Wirral Council declared an environment and [climate emergency](#) in July 2019. A new climate change strategy, [Cool 2](#), was agreed by the Cool Wirral Partnership in December 2019 and subsequently endorsed by Council. The strategy seeks to keep within a local carbon budget, compliant with the UN's Paris Agreement and anticipates reaching net-zero carbon emissions in Wirral by 2041. The strategy should provide positive benefits for local air quality, as local objectives are met. The strategy includes an objective for a "complete transition to fossil fuel free local travel by around 2030". The Council also has an Environment and Climate Emergency Policy and Environment and Climate Emergency Action Plan (ECEAP), which set the ambitious but achievable target of the Council and its entity being 'net carbon neutral' by 2030. The ECEAP was developed in 2020 and is designed to drive fundamental change to the way the Council operates, makes decisions, and provides services. The action plan has recently been reviewed and aligned to complement, but not duplicate, the developing Air Quality Implementation Plan which will deliver on three of the thirteen ECE policies;

Supporting an increase in the use of 'active travel'

Working to support an increase in public transport use

Securing investment to support the necessary shift to ultra-low carbon vehicles.

Wirral Public Health Activities

Wirral Joint Strategic Needs Assessment (JSNA) on Air Quality

A chapter on Air Quality is included as part of the JSNA. This is reviewed annually and provides a summary of key pollutants, the impact on health and priority actions in Wirral. The most recent JSNA for air quality was published in September 2022. This included a review of the impact of the pandemic and any ongoing behaviour change for example, increased active travel and reduced road and car use.

Secure Cycle Storage

Secure [cycle storage](#) is offered at the majority of train stations in Wirral and aims to encourage people to cycle to their nearest train station for the next stage of their journey by train, by providing secure bike storage facilities, as well as bike racks.

The council are working with the CA to develop a pipeline of cycle storage requests across the region which can be used to support the roll out of new infrastructure when funding is available and as part of new infrastructure schemes. In addition though the planning process will also ensure the provision of high quality storage infrastructure in all new developments.

Highway Maintenance

Road surface wear can result in the release of particulate matter. A team of fifteen council inspectors routinely check every road in Wirral on an annual basis, with some roads being inspected more frequently due to their location. The Council's maintenance programme invests in our roads to fix problems with pot holes and other surface issues. Roads in the programme are chosen for repair after surveys have been completed and put together with reports from highways inspectors, councillors and residents.

In March 2024, a total budget of £7.2 million was agreed over the next financial year to tackle potholes and other issues with the road in Wirral. This budget includes a £1.3 million UK government pothole fund.

Parking Controls

The Council's Civil Enforcement Officers and CCTV vehicle enforce illegal parking whilst Merseyside Police enforce dangerous parking in the vicinity of schools and support the safe, active travel education initiatives.

School Crossing Patrols

The School Crossing Patrol Service enables families to walk, cycle and scoot to and from school. Wirral Council manages over sixty crossing patrol sites.

Anti-idling Actions and Wirral Clean Air Campaign

Wirral Council formally adopted the Road Traffic (Vehicle Emissions) (Fixed Penalty) (England) Regulations 2002, to address localised air pollution hot spots. Enforcement officers speak to any drivers found idling their vehicles, ask them to turn off the engine where possible and give them an information leaflet to educate drivers on the dangers of idling.

Wirral's Clean Air Campaign was launched in June 2019 and aims to help the Council to engage with the public to increase awareness of air pollution and the small changes in behaviour that people can make to improve air quality. The main message of the campaign is 'You're the key'. It will also be used to inform the public that drivers in Wirral may be issued with a fine if they do not switch off their engine when asked by an authorised officer, following adoption of the anti-idling regulation in 2018. Wirral Council intend to refresh and relaunch this campaign during 2024.

Road Safety - 20 mph Roads

The introduction of 20mph speed limits is most beneficial in residential, shopping and school areas and therefore each of the zones has been chosen based on the type of area as well as collision data. Main roads (also known as A and B roads) are suggested to keep their current speed limit and not be changed to 20mph unless it (or parts of it) run through local centres, such as residential areas, schools and shopping places or leisure facilities, hospitals and public transport routes.

Phase one and two of the implementation of the borough wide 20mph speed limit project are now complete. Plans to move ahead with phases three and four have been approved by committee. The Council expects the roll out to be complete by 2025.

"By Ours" Bebington Project

Sustrans and local stakeholders have been working to develop a community-based project in Bebington. The aims of the project are to:

Create high-quality public spaces that prioritise people over cars.

Encourage more people to take journeys on foot, cycle or other active transport modes, reducing their carbon footprint.

Create low-traffic areas and remove 'rat running'.

Provide opportunities for better social connections, thriving local economies and more sustainable living; and

Give people the say in the design of their streets and foster more active and empowered communities.

A series of recommendations has been made by Sustans which will be reported to committee during Summer 2024.

Mersey Ferries

One new-build ferry, which will be greener and more energy efficient, has been ordered by the LCRCA from Cammell Laird / Damen. Extensive refurbishment has been undertaken at Seacombe Ferry Terminal and refurbishment is planned to the landing stages at Woodside Ferry Terminal.

Project to Reduce Particulate Emissions from Domestic Burning.

Wirral Council obtained funding from DEFRA in 2023, to support a project to improve air quality by reducing particulate emissions from domestic burning at source, targeted mainly at wood burning stoves but also considering other domestic burning. This project is enabling Wirral to work towards meeting the targets for PM2.5 set out in The Environmental Targets (Fine Particulate Matter) (England) Regulations 2023.

The project aims to reduce emissions of particulate matter at source, through a variety of initiatives and interventions aimed at suppliers and installers of solid fuel appliances, maintenance professionals, solid fuel, wood and biomass suppliers, households and allotment holders.

The projects objectives are to

reduce particulate matter from domestic burning at source, through an information and education campaign alongside a review of legislation and enforcement options.

provide residents, particularly those more vulnerable to the health effects of air pollution, with the knowledge to protect themselves from air pollution through delivery of an information and awareness campaign.

Work on the '[Breathe Better](#)' project commenced in 2023, with a campaign, which focussed mainly on domestic wood burning. Following this, a further campaign was launched with messages about indoor air quality at home, avoiding peak traffic times and walk along quieter routes, away from the kerb, turning your engine off when you are stationary in your car, and where you can, walk, wheel, or take public transport as an alternative to driving.

Air Quality Monitoring

Wirral Council will continue to monitor air quality in Wirral, to identify any possible exceedance of the national air quality objectives and to continue to contribute to the wider regional air quality improvements, through co-operation with Liverpool City Region.

A monitoring location review was undertaken at the end of 2022, and 2023, to assessed whether monitoring was still being undertaken in the most relevant locations.

Regional Air Quality Meetings

Wirral Council is represented on the Liverpool City Region and Cheshire Air Quality Group (AQTECH), which considers relevant local and regional matters relating to air quality. This group meets once every three months to share best practice, knowledge and legislation updates.

Wirral Council Air Quality Steering Group

The Wirral Air Quality Steering Group has representatives from several departments including Environmental Health, Public Health, Transport, Licensing and Forward Planning. The group aims to meet three times per year and co-ordinate the Council's obligation to manage air quality.

Taxi Licensing

Wirral Council has a Policy relating to the age of licensed vehicles. Once private hire vehicles reach six years old, they are only issued with a six-month licence which means an MOT and Compliance Test is required every six months should the vehicle owner wish for the vehicle to remain licensed. As part of the MOT a vehicle emissions test must be satisfied. If a private hire vehicle fails to pass the MOT or Compliance Test a licence will not be granted. Once a private hire vehicle reaches ten years old it would not normally be granted a further licence.

Once hackney carriage vehicles reach ten years old, they are only issued with a six-month licence which means an MOT and Compliance Test is required every six-months. As part of the MOT a vehicle emissions test must be satisfied. If a hackney carriage vehicle fails to pass the MOT or Compliance Test a licence will not be granted. A review of licensing criteria is currently in progress.

The Air Quality (Taxis and Private Hire Vehicles Database) (England and Wales) Regulations 2019 came into force on 1 May 2019. [The 2019 Order](#) requires all licensing authorities in England and Wales to send to a central portal monthly, certain information about the taxis and private hire vehicles that they have licensed. This includes the Vehicle Registration Mark, the start and expiry date of the vehicle licence, whether the vehicle is a taxi or private hire vehicles, the name of the licensing authority, the licence plate number and an indication of whether it is a wheelchair accessible vehicle. Wirral Council sends this information in accordance with the Regulations.

Living Streets WOW walk to school project.

The objective of the Walk To School Outreach (WTSO) project is to support the government to reach its target of fifty-five percent of children walking to school by 2025.

WOW in Wirral is encouraging more children and families to think about how they travel, reducing congestion outside school gates, increasing walking rates and instilling healthy habits. The aim is to achieve an eight percentage point modal shift to 'walk all the way' journeys with the participating schools through WOW, the walk to school challenge.

Pupils self-report how they get to school every day using the interactive Travel Tracker. If they travel sustainably at least one day a week for a month, they get rewarded with a collectable WOW badge. Eight schools in Wirral (twenty eight in the whole of Liverpool City Region) were fully funded in 2023 - 2024 and had support from a dedicated Living Streets coordinator to guide them through set up, launch and continued engagement.

Participating in WOW saw these eight schools increase walking/wheeling all the way to school by nine percentage points (and a decrease in being driven all the way of twenty-seven percentage points).

Newer schools see the biggest impact in positive modal shift towards active journeys. Schools that were no longer eligible for full funding in 2023 - 24 were offered free use of Travel Tracker so they could continue logging their journeys. A further five Wirral schools that took part last year made use of this offer and were well engaged all year.

Further information on support for schools and families please is available by visiting the following website www.LivingStreets.org.uk.

Wirral Council expects the following measures to be completed over the course of the next reporting year:

Town Centre and Council Workplace and Residential Travel Planning

As part of the planning process for the development of the town centre workplace and residential travel plans will be required, including on behalf of the council for the new 'Mallory' Council building, to ensure the Council leads by example and encourage and enable a transition to more sustainable modes of travel where possible, to reduce reliance on cars, and single car occupancy use.

Participations in National Clean Air Day 2024

Environmental Health will be hosting an engagement event on Clean Air Day 2024, to provide information to our residents on wood burning and its impact on air quality, indoor air quality, the impact of idling engines on air quality, our 'Breathe Better' campaign, and

general information on the air quality in Wirral. The stall will be located at West Kirby Concourse in the morning, and Birkenhead Market in the afternoon. Feedback on the event will be provided in ASR 2025.

Air Quality Implementation Plan Working Groups

Five working groups have now been set up to drive forward the implementation plan. These groups will meet quarterly to ensure that actions outlined in the plan are being progressed and completed and to identify any issues that may impact progress.

Transport Planning

The Council is developing a strategy, which sets out how transport, movement and connectivity will play a key role in supporting Wirral's future.

This strategy will support the delivery of the wider Regeneration Framework with a focus on facilitating active travel and public transport. The focus of the strategy will be to ensure that we are working towards creating a sustainable and inclusive borough which supports our residents to have access to opportunities and to live healthy lives.

Combined Authority Local Transport Plan

The LCRCA is currently developing the Local Transport Plan (LTP) 4 for the region which will set out plans, policies and ambitions for transport services and investment in the Liverpool City Region until 2040. It is planned to consult on the LTP4 Preferred Strategy in Summer 2024 before finalising and adopting the new Local Transport Plan 4 for Liverpool City Region by end of 2024.

Core Active Travel Network

A Core Active Travel Network (CATN), is currently in development and will be the delivery part of the Places for People Strategy. It will show where infrastructure is needed, what type of infrastructure and priorities for delivering it. The CATN will be a flexible, evolving document that responds to changes in policy, opportunities and demand. Together, the Places for People Strategy and CATN will provide the framework for investment decisions. The CATN will be the subject of public and stakeholder consultation in Summer 2024.

Walking and Cycling Infrastructure

In 2017 the LCRCA developed a Local Journeys Strategy. This strategy (2017) set out the evidence base for increasing sustainable travel in the LCR. Following the development of that strategy the LCRCA also developed an Local Cycling Walking Infrastructure Plan (LCWIP) which is overarching implementation plan to support the Local

Journeys Strategy. It demonstrates the LCR plan to build a network of cycling and walking routes with the aim of making it more feasible and desirable for people to walk or cycle journeys instead of using unsustainable modes.

The LCRCA LCWIP identified several routes within Wirral which will be required to go through the development of a business case to access funds which will require optioneering and stages of design including public consultation.

The first route 'Birkenhead to Liscard' is a 3.5 mile active travel route which is at outline design stage and has undergone public consultation in Autumn/Winter 2023, the outcome of which will be reported to committee in July 2024.

The development of a business case to access funds which will require optioneering and stages of design including public consultation.

The first route 'Birkenhead to Liscard' is a 3.5 mile active travel route which is at outline design stage and has undergone public consultation in Autumn/Winter 2023, the outcome of which will be reported to committee in July 2024.

Wirral Councils's priorities for the coming year are:

To continue to robustly monitor air quality in the borough, to ensure the concentrations are within the EU objectives.

To drive forward an implementation plan for the new Wirral Air Quality Strategy, which was implemented in December 2023. This will detail the work that is planned and the work that is underway to address the identified priority areas for action.

To continue the DEFRA funded 'Breathe Better' campaign project to Reduce Particulate Emissions from Domestic Burning and provide residents with the knowledge to protect themselves from air pollution through delivery of an information and awareness campaign.

To fully utilise the planning system, in accordance with guidance, to effectively promote air quality.

To continue to robustly monitor air quality in the borough, to ensure the concentrations are within the National objectives.

To regularly review its air pollution monitoring locations, to reflect the most up to date information e.g. traffic levels and emission sources, to provide a broad understanding of air quality across the borough and meaningful air quality data that can be used as part of

the planning application process (e.g. baseline data for air quality impact assessments submitted as part of planning applications).

To continue to monitor the impact of air quality on the health of Wirral residents, by regularly reviewing the Joint Strategic Needs Assessment Air Quality chapter.

To continue to work with our partners to encourage and enable increased number of journeys to be undertaken by walking, wheeling and cycling and to make public transport cleaner and easier to use.

To encourage active travel and to make public transport cleaner and easier to use.

To build up public participation and public engagement through Wirral's Clean Air campaign, 'Breathe Better' which aims to raise awareness of air pollution and inform Wirral's residents about best burning practices.

To refresh and relaunch Wirral's 'You're the key' campaign, to target idling vehicle engines and help improve local air quality. It highlights small changes in behaviour that can improve air quality and informs drivers in Wirral that they may be fined if they do not switch off their engine when parked.

To capitalise and support new and changed behaviours e.g. increased numbers of journeys being undertaken by active modes and public transport, which may positively influence better air quality.

Wirral Council worked to implement these measures in partnership with the following stakeholders during 2023:

Liverpool City Region Combined Authority

Members of the Health and Wellbeing Board, including Wirral Community Health and Care NHS Foundation Trust, Wirral University Teaching Hospital, Healthwatch Wirral, Community Action Wirral, Wirral CCG, Clatterbridge Cancer Centre NHS Foundation Trust, Jobcentre plus, Merseyside Fire and Rescue).

Cheshire East and Cheshire West Councils

Sustrans

Living Streets

Biffa

Merseytravel

Green Bus Fund

Merseyside Police

The principal challenges and barriers to implementation that Wirral Council anticipates facing are making the best use of the available resources.

Table 1.1 – Progress on Measures to Improve Air Quality

Measure No.	Measure Title	Category	Classification	Year Measure Introduced in AQAP	Estimated / Actual Completion Date	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Barriers to Implementation
1	Hybrid buses and Retro fitted emissions reduction technology	Promoting Low Emission Transport	Public Vehicle Procurement - Prioritising uptake of low emission vehicles	2017		Merseytravel, Arriva, Green Bus fund		NO			Completed	Reduced vehicle emissions, public engagement, behaviour change		Arriva buses operate 44 hybrid buses cross water from Liverpool to Wirral	
2	Bus Franchising	Promoting Travel Alternatives	Other			Merseytravel		NO			Implementation	Reduced vehicle emissions	First franchise service live in 2026	Decision made to franchise bus network in 2023. With current plans, the first franchised service go live in September 2026 with the transition to franchising	

Measure No.	Measure Title	Category	Classification	Year Measure Introduced in AQAP	Estimated / Actual Completion Date	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Barriers to Implementation
														to be complete by end November 2028	
3	Bus Alliance	Promoting Travel Alternatives	Other	2016		Merseytravel		NO			Implementation	Reduced vehicle emissions	Alliance Formed	The number of bus journeys by young people in LCR rose by 168%, due, in part, to the day ticket, "MyTicket" - unlimited day travel across Merseyside for 5 - 18 year olds. Also, half-priced bus travel for apprentices aged 19-24.	

Measure No.	Measure Title	Category	Classification	Year Measure Introduced in AQAP	Estimated / Actual Completion Date	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Barriers to Implementation
4	Bus Service Improvement Plan Delivery	Public Information	Other	2023		LCRCA		NO	Funded		Implementation	Reduced vehicle emissions	Completed Improvements	LCRCA informed Dec 23 that an indicative amount of £8,8 mill revenue funding allocated from BSIP Phase three for delivery of our local Bus Service Delivery Plan. £2 fare remains available for bus users across LCR	
5	Park and ride	Alternatives to private vehicle use	Rail based Park & Ride	2018		Wirral Council and Merseytravel	Merseytravel and DFT	NO			Completed	Reduce exposure to relevant emissions		Park and ride places provided at the majority of Wirral's train stations.	

Measure No.	Measure Title	Category	Classification	Year Measure Introduced in AQAP	Estimated / Actual Completion Date	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Barriers to Implementation
6	Planning Policy	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	2021	2037	Wirral Council	Wirral Council	NO	Not Funded		Implementation	Reduce exposure to relevant emissions		Application of relevant planning guidance during the planning application process for New Developments and Regeneration Projects. UDP adopted 2000, Submission Draft Local plan currently at Examination.	A public examination to test the legal compliance and soundness of the Submission Draft Local Plan is currently being held by independent Planning Inspectors appointed by the Secretary of State
7	Emerging Wirral Local Plan	Local Plan, Policy, Guidance and	Other		2025	Wirral Council	Wirral Council	NO			Implementation	Reduce exposure to relevant emissions		The Submission Draft Local Plan is currently	A public examination to test the legal compliance

Measure No.	Measure Title	Category	Classification	Year Measure Introduced in AQAP	Estimated / Actual Completion Date	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Barriers to Implementation
		Development Control												undergoing Examination in Public. The next stage will be consultation on Main Modifications in summer of 2024 following which it is hoped to adopt the Local Plan by the end of 2024/early 2025	and soundness of the Submission Draft Local Plan is currently being held by independent Planning Inspectors appointed by the Secretary of State
8	Provision of Active Travel Routes (Various)	Promoting Travel Alternatives	Promotion of cycling	2017	2027	Wirral Council / LCRCA	Dept of Transport, SUD (EU), Transforming Cities, DLUHC	NO	Partially Funded		Completed	Reduce exposure to vehicle emissions		Tranche 1 schemes completed (Fender lane and Old Chester road) Tranche 2	Resources support of Active Travel Schemes can be mixed.

Measure No.	Measure Title	Category	Classification	Year Measure Introduced in AQAP	Estimated / Actual Completion Date	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Barriers to Implementation	
															Harrison Drive / Bayswater Rd ATF2 scheme was completed in Jan 24, Beaufort Road SUD scheme was completed in Apr 23	
9	Public Rail Transport Improvements	Transport Planning and Infrastructure	Other		2023	Mersey Travel		NO			Implementation	Reduce Vehicle Emissions		Full electric battery operated trains now in use on Wirral line		
10	Combined Authority Transport Plan Programme	Transport Planning and Infrastructure	Other	2024	2025	Wirral Council	Dept for Transport	NO			Implementation			In 2022 CRSTS awarded funding to Wirral Council. Programme of works for 2024/25		

Measure No.	Measure Title	Category	Classification	Year Measure Introduced in AQAP	Estimated / Actual Completion Date	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Barriers to Implementation
11	Local Transport Planning	Promoting Low Emission Transport	Other	2021	2025	Wirral Council	Wirral Council / LCRCA	NO			Implementation	Reduce Vehicle Emissions	The council is developing a strategy for Wirral.	The Council is developing a Framework for Birkenhead 2040 which sets out how transport, movement and connectivity will play a key role in supporting Wirral's future.	
12	Combined Authority Local Transport Plan	Promoting Low Emission Transport	Other	2021		LCRCA	LCRCA	NO						The LCRCA is currently developing the Local Transport Plan (LTP) 4 for the region up to 2040. It is planned to	

Measure No.	Measure Title	Category	Classification	Year Measure Introduced in AQAP	Estimated / Actual Completion Date	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Barriers to Implementation
														consult on the LTP4 Preferred Strategy in Summer 2024 before finalising and adopting LTP4 by end of 2024	
13	Network Management Plan	Traffic Management	Other					NO						UTC, Congestion management, traffic reduction, encourages active travel and use of public transport.	
14	Places for People- Wirral Active Travel Strategy	Promoting Travel Alternatives	Promotion of cycling		2024	Wirral Council	LCRCA	NO	Funded		Implementation	Public Engagement / Behaviour change		The places for People Active Travel Strategy has been	Resources- Public support of Active Travel Schemes can be mixed.

Measure No.	Measure Title	Category	Classification	Year Measure Introduced in AQAP	Estimated / Actual Completion Date	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Barriers to Implementation
														presented to committee and has been approved, the next stage will be to develop the Core Active Travel Network (CATN).	
15	Active Travel Forum	Promoting Travel Alternatives	Promotion of cycling			Wirral Council		NO			Implementation	Public Engagement / Behaviour change		Promoting active travel with various stakeholders across the borough.	
16	Cycle Training for Schools	Promoting Travel Alternatives	Promotion of cycling			LCRCA / Wirral Council / Bike Right	LCRCA	NO	Funded		Implementation	Public Engagement / Behaviour change	Number of children/adults receiving cycle training in the borough. Number of schools	All schools offered cycle training. Training available for all Wirral residents. Impact on	

Measure No.	Measure Title	Category	Classification	Year Measure Introduced in AQAP	Estimated / Actual Completion Date	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Barriers to Implementation
													taking up the free offer. Numbers of children/adults involved in casualty stats.	delivery due to availability of cycle instructors to deliver within schools, access to bikes and the take up of the free cycle training by adults	
17	Modeshift Stars	Promoting Travel Alternatives	Promotion of walking	2021	2026	LCRCA/ Wirral Council	LCRCA	NO	Funded	< £10k	Implementation	Public Engagement / Behaviour change	Number of schools accredited, and level of accreditation submitted.	2 Active Travel Officers works with schools delivering the School Street initiative and Modeshift. Accreditation: 13 green	Scheme progressing well, Active travel Officers in post funded until January 2026

Measure No.	Measure Title	Category	Classification	Year Measure Introduced in AQAP	Estimated / Actual Completion Date	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Barriers to Implementation
														and 1 bronze.	
18	School Streets	Promoting Travel Alternatives	Promotion of walking, cycling or scooting on the journey to/from school.	2021		Wirral Council, DfT and LCR		NO			Implementation	Reduced vehicle emissions, public engagement, behaviour change	Reduction in cars accessing the road outside the school. Ongoing monitoring of pilot schemes, modeshift from private car to alternative modes. Initiatives being completed by schools.	Total of 6 School Street complete. Christchurch, Liscard & Greenleas Primary School Street schemes have all been made permanent following successful experimental trial. Junior travel ambassadors scheme also focus' on active	

Measure No.	Measure Title	Category	Classification	Year Measure Introduced in AQAP	Estimated / Actual Completion Date	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Barriers to Implementation
														travel information from students to parents.	
19	Wirral Road Safety Plan	Other	Other	2022	Sep-23	Wirral Council	N/A	NO	Not Funded		Implementation	Strategy / Policy	Strategy published and updated annually.	Wirral Road safety plan adopted Sept 2023	
20	Wirral Council Fleet	Promoting Low Emission Transport	Company Vehicle Procurement - Prioritising uptake of low emission vehicles			Wirral Council / Biffa	Merseytravel, OLEV	N/A				Reduced vehicle emissions		Green transport review completed for Council fleet. Refuse vehicles in use are all Euro 6 standard	

Measure No.	Measure Title	Category	Classification	Year Measure Introduced in AQAP	Estimated / Actual Completion Date	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Barriers to Implementation
21	Permitted Processes	Permitted processes	Environmental Permits	Other	2014		Wirral Council	NO	Not Funded				Reduced emissions		Env Health has issued and monitors 48 permits
22	Electric Vehicle Charging Network	Promoting Low Emission Transport	Other	2023		Wirral Council / LCRCA	LCRCA	NO	Funded	£1 million - £10 million	Implementation	Reduce vehicle emissions	Implementation of EVI plan. Installation of EVCI.	EVI plan introduced.	£9,6 million LEVI Capital funding to invest into EVCI. Currently 53 public charging points.
23	Wirral Climate Change Strategy	Policy Guidance and Development Control	Other policy	2019		Wirral Council	DFT, Energy Saving trust	NO				Reduced vehicle emissions		Developed in 2020, to drive fundamental change to the way the Council operates, makes decisions, and provides services. The action	

Measure No.	Measure Title	Category	Classification	Year Measure Introduced in AQAP	Estimated / Actual Completion Date	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Barriers to Implementation	
															plan has recently been reviewed and aligned to complement , but not duplicate, the developing Air Quality Implementation Plan	
24	JSNA	Public Information	Via the Internet	2019		Wirral Public Health	N/A	NO			Completed	Public engagement		Updated in 2022		
25	Secure Cycle Storage	Promoting Travel Alternatives	Promotion of cycling			Wirral Council / LCRCA	LCRCA	NO	Funded		Implementation	Reduced vehicle emissions		Secure cycle storage offered at most train stations in Wirral.	Availability of Funding	

Measure No.	Measure Title	Category	Classification	Year Measure Introduced in AQAP	Estimated / Actual Completion Date	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Barriers to Implementation
26	Highway maintenance	Transport Planning and Infrastructure	Other	N/A		Wirral Council	Dept of Transport	NO			Implementation	Reduced vehicle emissions		In March 2024, a total budget of £7.2m was agreed over the next financial year to tackle potholes and other issues with the road in Wirral. This budget includes a £1.3m UK government pothole fund.	
27	Parking Controls	Traffic Management	Other			Wirral Council / Merseyside Police		NO			Implementation			Council Enforcement Officers and CCTV vehicle enforce illegal	

Measure No.	Measure Title	Category	Classification	Year Measure Introduced in AQAP	Estimated / Actual Completion Date	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Barriers to Implementation
														parking, police enforce dangerous parking around schools to support active travel.	
28	School Crossing Patrols	Promoting Travel Alternatives	Promotion of walking			Wirral Council	Wirral Council	NO			Implementation	Public Engagement/ Behaviour Change	Number of sites operating	SCP services is delivered across the borough and assists school/local communities to walk and scoot to school.	
29	Anti idling and Clean Air Campaign	Transport Planning and Infrastructure	Other	2017		Wirral Council	Wirral Council	NO	Not Funded	< £10k		Reduced vehicle emissions		Adoption of powers to issue FPN's. Educational campaign launched June 2019	Soft enforcement of anti-idling.

Measure No.	Measure Title	Category	Classification	Year Measure Introduced in AQAP	Estimated / Actual Completion Date	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Barriers to Implementation
														Wirral Council intend to refresh and relaunch this campaign during 2024.	
30	20 MPH Roads	Traffic Management	Reduction of speed limits, 20mph zones	2022	2025	Wirral Council	LCRCA	NO	Funded	£100k - £500k	Implementation			Phase 1 and 2 of the implementation of the borough wide 20mph speed limit project are now complete. Plans to move ahead with phases 3 and 4 have been approved by committee. The Council expects the roll out to be	

Measure No.	Measure Title	Category	Classification	Year Measure Introduced in AQAP	Estimated / Actual Completion Date	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Barriers to Implementation
														complete by 2025.	
31	"By Ours" Bebington Project	Promoting Travel Alternatives	Other	2021	2023	Wirral Council / Sustrans / Freshfield Foundation	Freshfield Foundation	NO	Partially Funded	£1 million - £10 million	Implementation	Public engagement, behaviour change		Community initiative progressing, schools have been consulted and community engagement. Suggestions are currently being considered before going to committee.	Resources for delivery would be subject to further business case development.
32	Mersey Ferries	Promoting Low Emission Transport	Other	2023	2024	LCRCA / Cammel Lairds	LCRCA	NO	FUND ED		Implementation	Reduce vehicle emissions		One new-build ferry, which will be greener and more energy efficient, has been ordered by	

Measure No.	Measure Title	Category	Classification	Year Measure Introduced in AQAP	Estimated / Actual Completion Date	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Barriers to Implementation	
															the LCRCA from Cammell Laird / Damen. Extensive refurbishment has been undertaken at Seacombe Ferry Terminal and refurbishment is planned to the landing stages at Woodside Ferry Terminal	
33	Domestic Burning Project	Public Information	Via the Internet	2023	2025	Wirral Council / Hitch	Defra Air Quality Grant	YES	FUND ED	£50k-100k	Implementation	Public Engagement/ Behaviour Change	Number of website visits; Social media engagement	Campaign materials created and used in winter 2023.		

Measure No.	Measure Title	Category	Classification	Year Measure Introduced in AQAP	Estimated / Actual Completion Date	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Barriers to Implementation
													insights; number of burning related complaints; number of residents engaged in survey, Number attending evaluation workshops, % of indoor and outdoor burners, % following best burning practices	Will be used again for the re-launch winter 2024. Digital evaluations completed for the domestic burning and breathe better campaign. Insights will be included in final evaluation. Draft outdoor burning digital plan awaiting approval for spring / summer 2024.	

Measure No.	Measure Title	Category	Classification	Year Measure Introduced in AQAP	Estimated / Actual Completion Date	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Barriers to Implementation
34	Air Quality Monitoring	Other	Other	2023	2024	Wirral Council	N/A	NO	Not Funded	< £10k	Completed	Monitoring		Total 56 passive diffusion tube monitoring sites, 2 AURN's, 5 indicative monitors located in Wirral for 2023.	
35	Regional AQ meetings	Other	Other	2002		LCRCA and Cheshire East and Cheshire west	N/A	N/A	Not Funded		Implementation	Reduced emissions		Ongoing	
36	Air Quality Steering Group	Other	Other	2017		Wirral Council	NO	NO				Reduced emissions		Ongoing	
37	Taxi Licencing	Promoting Low Emission Transport	Taxi Licencing conditions	N/A		Wirral Council	N/A	NO				Reduced vehicle emissions		Taxi licencing requires 6 monthly MOT's implemented	

Measure No.	Measure Title	Category	Classification	Year Measure Introduced in AQAP	Estimated / Actual Completion Date	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Barriers to Implementation
														d for older vehicles	
38	WOW walk to school scheme	Promoting Travel Alternatives	Promotion of walking	2019		Living streets/Wirral Council	DFT	NO	Funded		Implementation	Public engagement. Behaviour change	Increase in numbers of children walking, cycling, scooting to school.	Support schools in Wirral to encourage active travel	Dependant on funding.
39	Town Centre and Council Workplace and Residential Travel Planning	Promoting Travel Alternatives	Workplace Travel Planning	2023	2024	Wirral Council		NO	Partially Funded	£50k - £100k	Implementation	Reduce vehicle emissions	Plan adopted	Encourages working from home, encourages bike loan scheme and use of transport pass loan scheme. Free cycle training available for all staff. A travel plan will be developed for the new	Temporary funding identified for member of staff to oversee elements of this work

Measure No.	Measure Title	Category	Classification	Year Measure Introduced in AQAP	Estimated / Actual Completion Date	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Barriers to Implementation
														office in central Birkenhead, which opening in 2024.	
40	National Clean Air Day 2024	Public Information	Other		2024	Wirral Council	N/A	NO	Not Funded		Planning	Public engagement, behaviour change		Public engagement via an information stall at 2 locations	
41	Implementation Plan Working Groups	Other	Other		2028	Wirral Council		NO	Not Funded		Implementation				
42	Transport Planning	Transport Planning and Infrastructure	Other	2021	2024/25	LCRCA	LCRCA	NO				Reduced vehicle emissions		In 2022, the City Region Sustainable Transport Settlement (CRSTS) awarded funding to Wirral Council. All	

Measure No.	Measure Title	Category	Classification	Year Measure Introduced in AQAP	Estimated / Actual Completion Date	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Barriers to Implementation	
															the proposed programme of works set out in the 2024/25 CRSTS CATP programme generally have environmental benefits	
43	Combined Authority Local Transport Plan	Transport Planning and Infrastructure	Other	2024	2024	LCRCA		NO			Implementation		Adoption of plan	LCRCA currently developing LTP 4 for the region. It is planned to consult on the LTP4 Preferred Strategy in Summer 2024 . Adoption		

Measure No.	Measure Title	Category	Classification	Year Measure Introduced in AQAP	Estimated / Actual Completion Date	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Barriers to Implementation
														planned by end of 2024.	
44	Core Active Travel Network	Promoting Travel Alternatives	Other			Wirral Council	Wirral Council	NO	Not Funded		Planning	Reduce Vehicle Emissions	Plan Implemented	In development. Will deliver the places for people strategy it will provide framework for investment decisions.	
45	Local Cycling and Walking Infrastructure Plan (LCWIP)	Promoting Travel Alternatives	Promotion of cycling			Wirral Council /LCRCA	Dept for Transport / Active Travel England	NO	Partially Funded		Planning			The initial route identified is Birkenhead to Liscard. Outline design completed, and public consultation undertaken in	Funding not yet secured as subject to business case. Resources- Public resource for active travel schemes can be mixed.

Measure No.	Measure Title	Category	Classification	Year Measure Introduced in AQAP	Estimated / Actual Completion Date	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Barriers to Implementation
														autumn/winter 2023. To be reported to committee in July 2024.	

PM2.5 – Local Authority Approach to Reducing Emissions and/or Concentrations

As detailed in Policy Guidance LAQM.PG22 (Chapter 8) and the Air Quality Strategy⁶, local authorities are expected to work towards reducing emissions and/or concentrations of fine particulate matter (PM2.5). There is clear evidence that PM2.5 (particulate matter smaller than 2.5 micrometres) has a significant impact on human health, including premature mortality, allergic reactions, and cardiovascular diseases.

[The Public Health Outcome Framework \(PHOF\)](#) identifies the life expectancy within Wirral to be worse than the benchmark for England, however when using the PHOF to refer to the average fraction of mortality attributable to particulate air pollution, Wirral is below the England average and the North West average. The most up to date figures (2022) show that the England average is 5.8%, the Northwest being 5.6% and Wirral's average is 5%.

The data obtained from the Tranmere AURN in relation to PM2.5 demonstrates that the 2023 concentration of PM2.5 was 6.6µg/m³, below the Target Value of 10µg/m³. It is above the World Health Organisation guideline level of 5µg/m³.

The Environmental Targets (Fine Particulate Matter) (England) Regulations 2023 has implemented new legally binding PM2.5 targets, each with an interim target

10 µg/m³ annual mean concentration PM2.5 nationwide by 2040, with an interim target of 12 µg/m³ by January 2028

35% reduction in average population exposure by 2040, with an interim target of a 22% reduction by January 2028, both compared to a 2018 baseline

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

Wirral Council is taking the following measures to address PM2.5:

New Measures

Air Quality Strategy. The Council has implemented an Air Quality Strategy 2024 - 28 for Wirral.

Air Quality Implementation Plan. This will detail the work that is planned and the work that is underway to address the identified priority areas for action.

Reducing Particulate Emissions from Domestic Burning. Wirral Council has obtained funding from DEFRA to support a project to improve air quality by reducing particulate emissions from domestic burning at source, targeted mainly at wood burning stoves but also considering other domestic burning. It will ensure we are working towards meeting the targets for PM2.5 set out in The Environmental Targets (Fine Particulate Matter) (England) Regulations 2023.

The project has two main objectives, to reduce particulate matter from domestic burning at source through an information and education campaign and to provide residents with the knowledge to protect themselves from air pollution through delivery of an information and awareness campaign delivered in community and public health settings.

Smoke Control Areas. These are designated areas where smoke must not be emitted from a chimney unless an authorised fuel or 'exempt appliances' is being used. The burning of coal or wood in an ordinary residential fireplace, in these areas is not permitted. As the emissions from the combustion of coal and wood include PM2.5's, the designation of these smoke control areas helps to reduce the release of PM2.5's. Environmental Health ensure that relevant environmental legislation is enforced including the enforcement of smoke control areas. Following the changes to the Clean Air Act 1993, implemented by the Environment Act 2021, Local Authorities are now able to issue fixed penalty notices for the emission of smoke in smoke control areas in England. Wirral Council provide advice to members of the public regarding smoke control areas and emissions of smoke from chimneys. Enforcement of the laws covering smoke emissions in a smoke control area is taken where it is deemed appropriate.

Wirral Council intends to revoke all existing smoke control areas and implementing one smoke control area that covers the whole of Wirral. The action has been approved by committee and public consultation is currently in process. It is envisaged that the new smoke control area will be implemented late 2024 / early 2025.

Highway improvement

[Two major highway improvement schemes](#) that complement the wider Birkenhead regeneration are planned for 2024 - 2025.

The first scheme covers the area close to Conway Park railway station and Birkenhead bus station. The second scheme is taking place around Charing Cross and the junction with Grange Road and Grange Road West

Both schemes are designed to make the areas more attractive and improve accessibility and safety for all road users, including cyclists and pedestrians.

The funding for these works comes from the UK government's Future High Streets Fund, part of a £25m award to Wirral, Liverpool City Region Combined Authority and Wirral Growth Company.

Existing measures

Permitted Processes. Environmental Health ensure that relevant environmental legislation is enforced including the enforcement of smoke control areas, Environmental Permitting legislation and statutory nuisance legislation (i.e. smoke from bonfires).

Planning Processes. Environmental Health will continue to advise on planning applications to help limit any adverse effect on air quality from proposed developments. Environmental Health, in which the main function of Local Air Quality Management sits, works closely with the Public Health Team and is represented at the Wirral Health Protection Board by the Environmental Health Senior Manager. Local Air Quality Management also forms part of the Joint Strategic Needs Assessment, which aims to describe the health implications of poor air quality in Wirral.

Monitoring health outcomes. This is important to assess the health impact of air quality, particularly amongst individuals with pre-existing cardiovascular or respiratory illness, those living and working near main roads and those living in more deprived areas. Local Air Quality Management also forms part of the Joint Strategic Needs Assessment (JSNA), which aims to describe the health implications of poor air quality in Wirral. [Wirral Council's JSNA on outdoor air quality](#) provides a summary of key pollutants, the impact on health and priority actions in Wirral. The Air Quality JSNA was updated in 2022.

Air Quality Monitoring. The Council will undertake proactive air quality management, as part of the development of the Local Plan. An air quality assessment of particulate matter

(PM10 and PM2.5) and nitrogen dioxide (NO2) from the transport network, has previously been undertaken to support the Local Plan.

Working with External Partners. The Council will also continue to work with UKHSA, neighbouring councils, John Moores University and other key stakeholders to optimise opportunities, and develop interventions, to improve air quality.

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

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

Summary of Monitoring Undertaken

Automatic Monitoring Sites

Wirral Council undertook automatic (continuous) monitoring at two sites during 2023. Table A.1 in [Appendix A](#) shows the details of the automatic monitoring sites. NB Local authorities do not have to report annually on the following pollutants: 1,3 butadiene, benzene, carbon monoxide and lead, unless local circumstances indicate there is a problem. The automatic monitoring results are available through the [UK-Air website](#).

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

Wirral Council undertook automatic monitoring (continuous) monitoring using 'indicative' real time sensors at five sites during 2023. These monitors were updated to MCERT standard at the beginning of 2024.

Non-Automatic Monitoring Sites

Wirral Council undertook non-automatic (i.e. passive) monitoring of NO₂ at 56 sites during 2023. Table A.2 in [Appendix A](#) presents the details of the non-automatic sites.

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

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](#).

Nitrogen Dioxide (NO₂)

Table A.3 and Table A.4 in [Appendix A](#) compare the ratified and adjusted monitored NO₂ annual mean concentrations for the past five years with the air quality objective of 40µg/m³. Note that the concentration data presented represents the concentration at the location of the monitoring site, following the application of bias adjustment and annualisation, as required (i.e. the values are exclusive of any consideration to fall-off with distance adjustment).

For diffusion tubes, the full 2023 dataset of monthly mean values is provided in [Appendix B](#). Note that the concentration data presented in Table B.1 includes distance corrected values, only where relevant.

Table A.5 in [Appendix A](#) compares the ratified continuous monitored NO₂ hourly mean concentrations for the past five years with the air quality objective of 200µg/m³, not to be exceeded more than 18 times per year.

The conclusion drawn from the monitoring results for Wirral for 2023 are that no exceedances of the air quality objectives, relating to both the annual mean and 1-hour objectives have been identified. The results of passive tube monitoring have been taken into consideration for the 1-hour objectives and as no sites have annual means greater than 60µg/m³ it is likely that there are no exceedances of the 1-hour objective at these sites. There are currently no AQMA's declared in Wirral and no AQMA's will be declared this year.

A review of monitoring locations was undertaken in 2022. Following this review, forty-eight existing sites were retained for 2023, eight existing sites were removed for 2023, and six new monitoring locations were added for 2023 (NB one site has three monitoring station (triplicate) as part of a co-location study). The sites that were removed are W22, W23, W26, W30, W32, W40, W44 and W58. The new monitoring sites are W22/23, W23/23, W32/23, W44/23, W58/23 and W66 (comprising W66A, W66B and W66C). NB fifty-seven results are available for 2023, as site W09 was relocated mid way through 2023 and replaced with W09/23. Both annualised results have been reported.

Following a review of monitoring location during 2023, all fifty-six existing monitoring sites insitu in 2023 were retained for 2024. It is recognised that there is a need to closely monitor air quality in the borough and utilise all opportunities to improve air quality. A further review will be undertaken in 2024.

There are forty-eight passive monitoring sites that have been in use between 2022 and 2023. Eight sites (17%) showed increased concentrations of Nitrogen Dioxide. Three sites (6%) have shown no change in levels. Thirty-seven sites (77%) have shown a reduction in concentrations, although it is noted that some of these reductions are very small. The site with the smallest increase in concentrations is W35, with 0.2µg/m³ increase. The site with the largest increase is site W9 (Woodchurch Road, Prenton) with 12.4 µg/m³ increase. The site with the smallest increase is site W35 with 0.2 µg/m³ increase. The site with the smallest reduction in concentrations is W52 with a 0.1µg/m³ decrease in Nitrogen Dioxide concentrations. The site with the largest reduction is W39/21 with a 2.9µg/m³ decrease.

Consent to monitor at W9 was withdrawn in July 2023, and a new monitoring site (W9/23) has been located nearby the original site, on Woodchurch Road, Prenton, to ensure we can continue to monitor at this location, particularly in light of the increase in levels detected.

There have been no exceedances of the national objective for 1-hour mean or annual mean Nitrogen Dioxide indicated by this passive monitoring during 2023. This is because no site has measures an annual mean greater than 60µg/m³, which indicates that an exceedance of the 1-hour mean objective is not likely at these sites.

Table 3.1 – Changes in Nitrogen Dioxide Levels at Passive Monitoring Sites Between 2022 – 23

Site	2022 NO2 Monitoring Result	2023 NO2 Monitoring Results	Increase / Decrease between 2022-23	Difference (µg/m3)
W2	14.7	12.9	Decrease	-1.8
W3/19	21.4	22.1	Increase	+ 0.7
W4	24.3	23.8	Decrease	-0.5
W5	28.3	27.2	Decrease	-1.1
W8	25.3	23.1	Decrease	-2.2
W9	19.2	31.6	Increase	+ 12.4
W12	35.6	35.1	Decrease	-0.5
W13	17.3	17.1	Decrease	-0.2
W14/21	21.3	20.4	Decrease	-0.9
W15	24.5	24.3	Decrease	-0.2
W17	27.2	26.9	Decrease	-0.3
W18/19	28.5	27.5	Decrease	-1.0
W21	24.0	25.2	Increase	+1.2
W24	24.2	23.8	Decrease	-0.4
W25	22.5	21.2	Decrease	-1.3
W27	20.2	20.2	No change	0.0
W28	21.2	19.9	Decrease	-1.3
W29/20	18.8	17.4	Decrease	-1.4
W31	30.7	31.2	Increase	+0.5

W33/19	23.3	23.1	Decrease	-0.2
W34/19	20.8	19.7	Decrease	-1.1
W35	19.1	19.3	Increase	+0.2
W36/21	23.1	22.4	Decrease	-0.7
W37	22.9	22.0	Decrease	-0.9
W38/19	22.1	20.8	Decrease	-1.3
W39/21	25.0	22.1	Decrease	-2.9
W41	15.2	14.0	Decrease	-1.2
W42	19.9	18.9	Decrease	-1.0
W43	21.8	20.6	Decrease	-1.2
W45	32.4	31.3	Decrease	-1.1
W47/22	13.5	13.5	No change	0.0
W48	27.4	24.8	Decrease	-2.6
W49	20.4	20.1	Decrease	-0.3
W50	25.6	23.0	Decrease	-2.6
W51	13.3	11.6	Decrease	-1.7
W52	13.0	12.9	Decrease	-0.1
W53	11.0	10.0	Decrease	-1.0
W54	8.2	8.9	Increase	+0.7
W55	11.8	11.3	Decrease	-0.5
W56	11.7	11.5	Decrease	-0.2

W57	10.7	11.6	Increase	+0.9
W59	13.0	11.9	Decrease	-1.1
W60	12.9	15.6	Increase	+2.7
W61	13.9	12.8	Decrease	-1.1
W62	14.1	13.2	Decrease	-0.9
W63	16.6	14.4	Decrease	-2.2
W64	15.6	14.5	Decrease	-1.1
W65	22.6	22.6	No change	0.0

When looking at longer term trends, there are twenty-two passive monitoring sites where long-term monitoring data is available. The latest 2023 monitoring results indicate that there has been a reduction in Nitrogen Dioxide concentrations in the last five years (2019 and 2023) at twenty-one sites where long-term data is available and an increase at one site. Long term data comparison is not available at all other sites, as these sites were either newly introduced after 2019 or deleted prior to 2023. Site W17, located at St Albans Road, Liscard has seen the highest reduction in Nitrogen Dioxide concentrations, with a decrease of 7.1µg/m³, whilst site W15, Arrowe Park Road, Woodchurch has seen the lowest reduction in concentrations. Only one site, W09, has shown an increase in Nitrogen Dioxide levels between 2019 and 2023, with an increase of 11.6µg/m³. Consent to monitor at site W09 was withdrawn mid-2023, and a new monitoring site has been located near by to ensure we can continue to monitor at this location.

Table 3.2 – Changes in Nitrogen Dioxide Levels at Passive Monitoring Sites Between 2019 – 23

Site	2019 NO2 Result	2023 NO2 Result	Increase / Decrease between 2019-2023	Difference (µg/m ³)
W2	18.0	12.9	Decrease	-5.1
W3/19	26.0	22.1	Decrease	-3.9
W4	29.0	23.8	Decrease	-5.2
W5	33.0	27.2	Decrease	-5.8
W8	29.0	23.1	Decrease	-5.9
W9	20.0	31.6	Increase	+11.6
W12	39.0	35.1	Decrease	-3.9
W13	21.0	17.1	Decrease	-3.9
W15	27.0	24.3	Decrease	-2.7
W17	34.0	26.9	Decrease	-7.1
W18/19	33.0	27.5	Decrease	-5.5
W21	29.0	25.2	Decrease	-3.8
W24	28.0	23.8	Decrease	-4.2
W25	27.0	21.2	Decrease	-5.8
W27	26.0	20.2	Decrease	-5.8
W28	25.0	19.9	Decrease	-5.1
W31	35.0	31.2	Decrease	-3.8
W33/19	28.0	23.1	Decrease	-4.9
W34/19	24.0	19.7	Decrease	-4.3

W35	26.0	19.3	Decrease	-6.7
W37	25.0	22.0	Decrease	-3.0
W38/19	26.0	20.8	Decrease	-5.2

The data obtained from the two AURN's located in Wirral shows that there has been an decrease in Nitrogen Dioxide levels from 2022 to 2023 at Tranmere AURN (0.6 µg/m³ decrease) and a longer-term reduction in annual mean concentrations of Nitrogen Dioxide in the last 5 years (2019 to 2023) of 3.2 µg/m³ decrease. The data shows that there has been an increase in Nitrogen Dioxide levels from 2022 to 2023 at Birkenhead AURN (0.9 µg/m³ increase) but a longer-term reduction in annual mean concentrations of Nitrogen Dioxide in the last 5 years (2019 to 2023) of 3.1µg/m³ decrease.

Five indicative real time sensors were used to monitor Nitrogen Dioxide Levels in locations in Birkenhead, Eastham, Liscard, Poulton, Upton during 2023. No exceedance of the annual mean Nitrogen Dioxide national objective were identified at these monitoring stations. The highest annual mean concentration was measured on Wallasey Road in Liscard (26.5µg/m³). The lowest annual mean concentration was measured on New Chester Road in Eastham (16.8µg/m³). A table with the monitoring results can be found in Appendix C.

Particulate Matter (PM10)

Table A.6 in Appendix A: Monitoring Results compares the ratified and adjusted monitored PM10 annual mean concentrations for the past five years with the air quality objective of 40µg/m³.

Table A.7 in [Appendix A](#) compares the ratified continuous monitored PM10 daily mean concentrations for the past five years with the air quality objective of 50µg/m³, not to be exceeded more than 35 times per year.

The AURN data for PM10 has demonstrated that there has been no exceedances of the annual mean PM10 objective of 40µg/m³ between 2020 and 2023. There has been a reduction of levels between 2022 and 2023 of 2µg/m³, with monitoring levels in 2022 of 12.8µg/m³ and levels in 2023 of 10.8µg/m³.

There has been a reduction in levels between in 2020 and 2023, with monitoring levels of 11.5µg/m3 in 2020 and monitoring levels of 10.9µg/m3 in 2023.

There has been no exceedances of PM10 daily mean concentrations air quality objective of 50µg/m3, not to be exceeded more than 35 times per year. The number of days where exceedances occurred has reduced from 2022 to 2023, with five days with exceedances in 2022, to zero days with exceedances in 2023.

Monitoring for PM10 was also undertaken using five indicative real time sensors located in Birkenhead, Eastham, Liscard, Poulton, Upton during 2023. The results from the indicative monitoring show that no exceedances of the annual mean PM10 objective were identified

No air quality management areas have been introduced for exceedance of national objective related to PM10.

Particulate Matter (PM2.5)

Table A.6 – Annual Mean PM10 Monitoring Results (µg/m3)

Site ID	X OS Grid Ref (Eastin g)	Y OS Grid Ref (Northin g)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2023 (%) (2)	2019	2020
CM1	332395	433175	Urban Background	99.09	99.09%	x	11.5

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

Notes:

The annual mean concentrations are presented as µg/m3.

Exceedances of the PM10 annual mean objective of 40µg/m3 are shown in bold.

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

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

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

Table A.7 – 24-Hour Mean PM10 Monitoring Results, Number of PM10 24-Hour Means > 50µg/m3

Site ID	X OS Grid Ref (Eastin g)	Y OS Grid Ref (Northin g)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2023 (%) (2)	2019	2020
CM1	332054	386711	Urban Background	99.09	99.09%	x	1

Notes:

Results are presented as the number of 24-hour periods where daily mean concentrations greater than 50µg/m3 have been recorded.

Exceedances of the PM10 24-hour mean objective (50µg/m3 not to be exceeded more than 35 times/year) are shown in bold.

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

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

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

Table A.8 in [Appendix A](#) presents the ratified and adjusted monitored PM2.5 annual mean concentrations for the past five years.

PM2.5 is monitored by the AURN station located in Tranmere. This AURN is used to monitor background levels. Throughout 2023 there was an exposure reduction approach for PM2.5, with a national objective annual mean of 10µg/m³. The AURN results show that the annual mean result for 2023 of 6.6µg/m³, which is below the National Objective level of 10µg/m³. The results however show that PM2.5 levels are above the new World Health Organisation Air Quality Guideline level of 5µg/m³.

The AURN data for PM2.5 has demonstrated that background levels have had a small reduction between 2019 and 2023, with levels in 2019 of 8.2µg/m³ and levels in 2023 of 6.6µg/m³.

Monitoring for PM2.5 was also undertaken using five indicative real time sensors located in Birkenhead, Eastham, Liscard, Poulton, Upton during 2023. The results from this indicative monitoring show that all five indicative monitors measured levels of PM2.5 over the current World Health Organisation Air Quality Guideline level of 5µg/m³ and also above the new annual Mean Concentration Target 10µg/m³. The highest annual mean figure was 11.6µg/m³ (Liscard and Poulton) and the lowest was 10.5µg/m³ (Upton). It must be noted that these results are indicative only. They are not approved for use by local authorities for compliance monitoring according to TG22, however they can provide indicative air quality data to support our work in reducing air pollution.

Appendix A: Monitoring Results

Table A.1 – Details of Automatic Monitoring Sites

Site ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Monitoring Technique	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Inlet Height (m)
CM1	Wirral Tranmere	Urban Background	332054	386711	O3; NO2; PM10; PM2.5	NO	Chemiluminescent; FDMS	68.6	50	3
CM2	Wirral Birkenhead	Urban Centre	331931	388466	NO2	NO	Chemiluminescent	14	13.4	1.5

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 – 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)
W02	New Chester Road, Eastham	Roadside	335887	379797	NO2	NO	0	12.8	No	2.0
W03/19	Leasowe Road, Wallasey	Kerbside	329070	392309	NO2	NO	5.5	0.5	No	2.3
W04	Borough Road, Tranmere	Roadside	331322	387414	NO2	NO	9.6	2.6	No	2.5
W05	Bolton Road East	Roadside	334128	384634	NO2	NO	12.5	4.3	No	2.2
W08	Moreton Cross	Kerbside	326243	389946	NO2	NO	1.5	0.5	No	2.2

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)
W09	Woodchurch Road	Roadside	329257	386448	NO2	NO	0	18.0	No	2.0
W09/23	Woodchurch Road	Kerbside	329261	386449	NO2	NO	11.4	0.5	No	2.4
W12	New Chester Road, Port sunlight	Roadside	334061	384617	NO2	NO	9.4	1.0	No	2.2
W13	New Chester Road, Port Sunlight	Kerbside	334113	384588	NO2	NO	0	9.3	No	2.0
W14/21	Wallasey Rd, Liscard	Roadside	330462	391907	NO2	NO	2.1	1.0	No	2.7

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)
W15	Arrowe Park Road, Woodchurch	Kerbside	327625	386340	NO2	NO	1.5	2.1	No	2.4
W17	St Albans Rd Liscard	Roadside	330646	391805	NO2	NO	30.0	0.3	No	2.1
W18/19	New Chester Road, Port Sunlight	Roadside	334097	384546	NO2	NO	5.0	4.9	No	2.4
W21	Singleton Ave, Tranmere	Roadside	331034	387019	NO2	NO	3.6	1.7	No	2.6
W22/23	Birkenhead Road, Seacombe	Roadside	332294	390429	NO2	NO	2.5	0.4	No	2.5

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube Co-located with a Continuous Analyser?	Tube Height (m)
W23/23	Argyle Street South, B/head	Kerbside	332150	388372	NO2	NO	3.6	0.6	No	2.3
W24	Conway Street Birkenhead	Roadside	332231	388723	NO2	NO	N/A	2.0	No	2.3
W25	Dock Road, Seacombe	Roadside	331756	390332	NO2	NO	13.3	1.8	No	2.3
W27	New Chester Road, Port Sunlight	Roadside	334194	384348	NO2	NO	7.6	3.5	No	2.1
W28	Church Road, Bebington	Roadside	333223	383277	NO2	NO	6.4	2.6	No	2.1
W29/20	Mill Lane, Poulton	Kerbside	330209	391139	NO2	NO	0	11.8	No	1.7

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)
W31	Canning St, Birkenhead	Roadside	332423	389398	NO2	NO	7.5	1.9	No	2.2
W32/23	Telegraph Road, Heswall	Roadside	327096	381691	NO2	NO	9.6	2.9	No	2.3
W33/19	Storeton Road, Bebington	Roadside	330921	386652	NO2	NO	7.8	0.7	No	2.4
W34/19	New Chester Road, Port Sunlight	Kerbside	334096	384535	NO2	NO	0	9.5	No	2.0
W35	Vernon Road, Seacombe	Roadside	331716	390696	NO2	NO	5.5	0.5	No	2.5
W36/21	Geneva Road, Seacombe	Kerbside	331843	390812	NO2	NO	4.7	0.5	No	2.7

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)
W37	Corporation Road, Birkenhead	Kerbside	331529	389762	NO2	NO	N/A	1.8	No	2.1
W38/19	Mount Road, Higher Bebington	Roadside	331481	384564	NO2	NO	0	6.0	No	2.0
W39/21	Chester St, Birkenhead	Kerbside	332711	388856	NO2	NO	3.7	0.5	No	2.5
W41	St Georges Road, Wallasey	Kerbside	329487	392312	NO2	NO	6.7	4.4	No	2.7
W42	New Chester Rd, Bromborough	Roadside	334888	382627	NO2	NO	8.3	2.5	No	2.7

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)
W43	Whetstone Lane, Birkenhead	Roadside	331607	388353	NO2	NO	2.6	1.8	No	2.7
W44/23	Meols Drive, West Kirby	Roadside	321238	387034	NO2	NO	7.9	3.5	No	2.4
W45	Arrowe Park Rd, Upton	Kerbside	327155	387140	NO2	NO	2.6	0.8	No	2.4
W47/22	Bridle Road, Eastham	Roadside	335784	380076	NO2	NO	0	15.9	No	2.0
W48	Wheatland Lane, Seacombe	Roadside	331878	390822	NO2	NO	5.8	2.7	No	2.4

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube Co-located with a Continuous Analyser?	Tube Height (m)
W49	Cross Street, Birkenhead	Kerbside	332627	388749	NO2	NO	1.7	0.4	No	2.4
W50	Parry Street, Seacombe	Roadside	331928	390767	NO2	NO	4.3	1.5	No	2.2
W51	Mount Grove, Birkenhead	Roadside	331301	388040	NO2	NO	30.2	2.6	No	2.4
W52	Batten Road, Birkenhead	Roadside	331337	387973	NO2	NO	4.2	2.9	No	2.1
W53	Morland Avenue, Bromborough	Roadside	334697	380863	NO2	NO	14.3	4.9	No	2.3

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube Co-located with a Continuous Analyser?	Tube Height (m)
W54	Morland Avenue, Bromborough	Roadside	334794	380852	NO2	NO	14.3	4.9	No	2.1
W55	Norbury Avenue, Higher Bebington	Roadside	332488	384189	NO2	NO	8.0	1.6	No	2.1
W56	Norbury Avenue, Higher Bebington	Roadside	332471	384120	NO2	NO	8.4	1.7	No	1.9
W57	Pulford Road, Bebington	Kerbside	332620	384345	NO2	NO	50.0	0.6	No	2.1
W58/23	Seabank Road, New Brighton	Kerbside	330940	393447	NO2	NO	5.8	0.7	No	2.6

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)
W59	Lees Ave, Rock Ferry	Roadside	332854	386834	NO2	NO	23.2	0.3	No	2.3
W60	Ionic Street, Rock Ferry	Roadside	332894	386792	NO2	NO	0	1.7	No	2.3
W61	Green Lane, Wallasey Village	Kerbside	328527	392568	NO2	NO	23.8	0.8	No	2.2
W62	Greenleas Road, Wallasey Village	Kerbside	328587	392536	NO2	NO	9.7	0.7	No	2.2
W63	Manor Lane, Liscard	Kerbside	331202	392366	NO2	NO	7.7	0.5	No	2.3

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube Co-located with a Continuous Analyser?	Tube Height (m)
W64	Withens Lane, Liscard	Roadside	331031	392396	NO2	NO	109.2	2.1	No	2.2
W65	Tower Road, Birkenhead	Roadside	332170	389843	NO2	NO	14.2	1.9	No	2.4

Notes:

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

(2) N/A if not applicable.

Table A.3 – Annual Mean NO₂ Monitoring Results: Automatic Monitoring (µg/m³)

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2023 (%) (2)	2019	2020	2021	2022	2023
CM1	332054	386711	Urban Background	92.8	92.8	16	9.6	12.6	13.4	12.8
CM2	331931	388466	Urban Centre	90.6	90.6	23	13.1	18.3	16.8	17.9

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

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

Where exceedances of the NO₂ annual mean objective occur at locations not representative of relevant exposure, the fall-off with distance concentration has been calculated and reported concentration provided in brackets for 2023

Notes:

The annual mean concentrations are presented as µg/m³.

Exceedances of the NO₂ annual mean objective of 40µg/m³ are shown in bold.

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

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

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

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

Table A.4 – Annual Mean NO₂ Monitoring Results: Non-Automatic Monitoring (µg/m³)

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2023 (%) (2)	2019	2020	2021	2022	2023
W02	335887	379797	Roadside	100	100.0	18.0	14.3	15.1	14.7	12.9
W03/19	329070	392309	Kerbside	100	100.0	26.0	22.7	24.0	21.4	22.1
W04	331322	387414	Roadside	100	100.0	29.0	25.3	25.1	24.3	23.8
W05	334128	384634	Roadside	100	100.0	33.0	26.8	27.5	28.3	27.2
W08	326243	389946	Kerbside	100	100.0	29.0	23.5	23.7	25.3	23.1
W09	329257	386448	Roadside	100	50.0	20.0	19.0	18.8	19.2	31.6
W09/23	329261	386449	Kerbside	83.3	42.3	x	x	x	x	24.1
W12	334061	384617	Roadside	100	100.0	39.0	32.7	36.5	35.6	35.1
W13	334113	384588	Kerbside	100	100.0	21.0	17.1	17.8	17.3	17.1
W14/21	330462	391907	Roadside	92.3	92.3	x	x	20.5	21.3	20.4

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2023 (%) (2)	2019	2020	2021	2022	2023
W15	327625	386340	Kerbside	100.0	100.0	27.0	22.5	24.6	24.5	24.3
W17	330646	391805	Roadside	84.6	84.6	34.0	26.4	28.8	27.2	26.9
W18/19	334097	384546	Roadside	92.3	92.3	33.0	26.6	29.2	28.5	27.5
W21	331034	387019	Roadside	92.3	92.3	29.0	22.8	27.2	24.0	25.2
W22/23	332294	390429	Roadside	100.0	100.0	x	x	x	x	22.8
W23/23	332150	388372	Kerbside	92.3	92.3	x	x	x	x	21.8
W24	332231	388723	Roadside	92.3	92.3	28.0	23.0	26.3	24.2	23.8
W25	331756	390332	Roadside	92.3	92.3	27.0	18.8	23.1	22.5	21.2
W27	334194	384348	Roadside	100.0	100.0	26.0	17.2	23.4	20.2	20.2
W28	333223	383277	Roadside	100.0	100.0	25.0	20.5	21.8	21.2	19.9
W29/20	330209	391139	Kerbside	100.0	100.0	x	15.4	18.3	18.8	17.4

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2023 (%) (2)	2019	2020	2021	2022	2023
W31	332423	389398	Roadside	84.6	84.6	35.0	27.7	31.5	30.7	31.2
W32/23	327096	381691	Roadside	84.6	84.6	x	x	x	x	15.3
W33/19	330921	386652	Roadside	92.3	92.3	28.0	23.5	23.4	23.3	23.1
W34/19	334096	384535	Kerbside	100.0	100.0	24.0	20.9	20.9	20.8	19.7
W35	331716	390696	Roadside	100.0	100.0	26.0	21.4	20.3	19.1	19.3
W36/21	331843	390812	Kerbside	92.3	92.3	x	x	21.4	23.1	22.4
W37	331529	389762	Kerbside	100.0	100.0	25.0	24.2	23.5	22.9	22.0
W38/19	331481	384564	Roadside	100.0	100.0	26.0	14.0	21.7	22.1	20.8
W39/21	332711	388856	Kerbside	92.3	92.3	x	x	24.2	25.0	22.1
W41	329487	392312	Kerbside	90.4	90.4	x	11.5	14.3	15.2	14.0
W42	334888	382627	Roadside	84.6	84.6	x	19.1	20.6	19.9	18.9

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2023 (%) (2)	2019	2020	2021	2022	2023
W43	331607	388353	Roadside	82.7	82.7	x	21.5	22.3	21.8	20.6
W44/23	321238	387034	Roadside	92.3	92.3	x	x	x	x	15.7
W45	327155	387140	Kerbside	100.0	100.0	x	34.0	36.8	32.4	31.3
W47/22	335784	380076	Roadside	82.7	82.7	x	x	22.9	13.5	13.5
W48	331878	390822	Roadside	100.0	100.0	x	x	23.1	27.4	24.8
W49	332627	388749	Kerbside	100.0	100.0	x	x	17.9	20.4	20.1
W50	331928	390767	Roadside	92.3	92.3	x	x	26.0	25.6	23.0
W51	331301	388040	Roadside	69.2	69.2	x	x	x	13.3	11.6
W52	331337	387973	Roadside	92.3	92.3	x	x	x	13.0	12.9
W53	334697	380863	Roadside	100.0	100.0	x	x	x	11.0	10.0
W54	334794	380852	Roadside	65.4	65.4	x	x	10.0	8.2	8.9

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2023 (%) (2)	2019	2020	2021	2022	2023
W55	332488	384189	Roadside	92.3	92.3	x	x	x	11.8	11.3
W56	332471	384120	Roadside	82.7	82.7	x	x	10.6	11.7	11.5
W57	332620	384345	Kerbside	90.4	90.4	x	x	10.1	10.7	11.6
W58/23	330940	393447	Kerbside	82.7	82.7	x	x	x	x	22.4
W59	332854	386834	Roadside	75.0	75.0	x	x	x	13.0	11.9
W60	332894	386792	Roadside	59.6	59.6	x	x	x	12.9	15.6
W61	328527	392568	Kerbside	100.0	100.0	x	x	11.9	13.9	12.8
W62	328587	392536	Kerbside	84.6	84.6	x	x	x	14.1	13.2
W63	331202	392366	Kerbside	90.4	90.4	x	x	x	16.6	14.4
W64	331031	392396	Roadside	90.4	90.4	x	x	x	15.6	14.5
W65	332170	389843	Roadside	82.7	82.7	x	x	x	22.6	22.6

- ☒ 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 $\mu\text{g}/\text{m}^3$.

Exceedances of the NO₂ annual mean objective of 40 $\mu\text{g}/\text{m}^3$ are shown in bold.

NO₂ annual means exceeding 60 $\mu\text{g}/\text{m}^3$, indicating a potential exceedance of the NO₂ 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 NO2 Concentrations

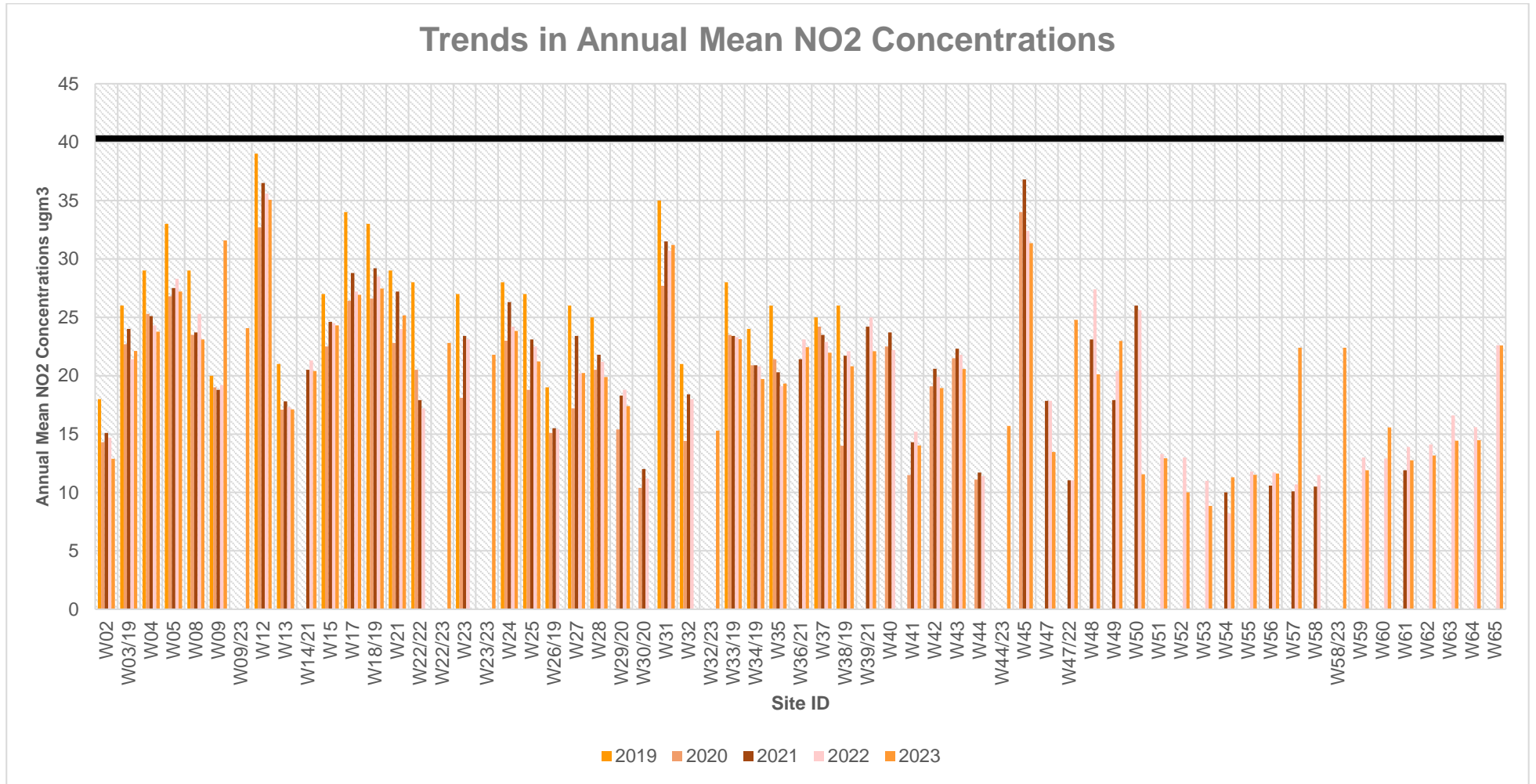


Table A.5 – 1-Hour Mean NO₂ Monitoring Results, Number of 1-Hour Means > 200µg/m³

Site ID	X OS Grid Ref (Eastin g)	Y OS Grid Ref (Northin g)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2023 (%) (2)	2019	2020	2021	2022	2023
CM1	332054	386711	Urban Background	92.8	92.8	0	0	0	0	0
CM2	331931	388466	Urban Centre	90.6	90.6	0	0	0	0	0

Notes:

Results are presented as the number of 1-hour periods where concentrations greater than 200µg/m³ have been recorded.

Exceedances of the NO₂ 1-hour mean objective (200µg/m³ 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 PM10 Monitoring Results (µg/m3)

Site ID	X OS Grid Ref (Eastin g)	Y OS Grid Ref (Northin g)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2023 (%) (2)	2019	2020	2021	2022	2023
CM1	332395	433175	Urban Background	99.09	99.09%	x	11.5	11.3	12.8	10.9

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

Notes:

The annual mean concentrations are presented as µg/m3.

Exceedances of the PM10 annual mean objective of 40µg/m3 are shown in bold.

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

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

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

Table A.7 – 24-Hour Mean PM10 Monitoring Results, Number of PM10 24-Hour Means > 50µg/m3

Site ID	X OS Grid Ref (Eastin g)	Y OS Grid Ref (Northin g)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2023 (%) (2)	2019	2020	2021	2022	2023
CM1	332054	386711	Urban Background	99.09	99.09%	x	1	1	5	0

Notes:

Results are presented as the number of 24-hour periods where daily mean concentrations greater than 50µg/m3 have been recorded.

Exceedances of the PM10 24-hour mean objective (50µg/m3 not to be exceeded more than 35 times/year) are shown in bold.

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

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

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

Table A.8 – Annual Mean PM2.5 Monitoring Results (µg/m3)

Site ID	X OS Grid Ref (Eastin g)	Y OS Grid Ref (Northin g)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2023 (%) (2)	2019	2020	2021	2022	2023
CM1	332395	433175	Urban Background	99.1	99.1	8.2	7.1	7.0	7.8	6.6

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

Notes:

The annual mean concentrations are presented as µg/m3.

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%).

Appendix B: Full Monthly Diffusion Tube Results for 2023

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

DT ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northin g)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Annualised and Bias Adjusted (0.77)	Annual Mean: Distance Corrected to Nearest Exposure	Comment
W02	335887	379797	19.0	20.7	21.4	21.9	17.4	17.6	10.9	14.6	13.3	26.5	13.8	3.8	16.7	12.9		
W03/ 19	329070	392309	36.0	35.8	31.2	31.8	25.3	23.8	18.9	22.2	24.8	35.0	34.8	25.1	28.7	22.1		
W04	331322	387414	40.1	34.2	27.1	32.3	26.2	23.9	21.6	25.2	34.1	38.8	42.3	24.8	30.9	23.8		
W05	334128	384634	46.0	37.7	35.8	35.1	33.4	28.1	28.7	32.7	38.1	35.4	43.4	29.6	35.3	27.2		
W08	326243	389946	35.3	28.1	31.6	32.6	20.6	27.4	27.2	26.9	33.0	35.9	36.8	24.6	30.0	23.1		
W09	329257	386448	74.0	58.3	39.7	36.1	22.2	19.2	*	*	*	*	*	*	41.6	31.6		
W09/ 23	329261	386449	*	*	*	*	*	*	*	23.9	33.5	39.1	43.9	24.5	33.0	24.1		
W12	334061	384617	47.6	46.4	43.3	51.1	35.7	46.5	40.1	41.0	48.2	56.9	51.7	37.9	45.5	35.1		
W13	334113	384588	24.7	25.0	22.5	23.9	21.2	21.2	15.0	20.0	22.4	26.2	28.0	16.7	22.2	17.1		
W14/ 21	330462	391907	29.3	34.1	27.0	27.9	20.7	19.4	15.8	20.1	28.4	32.3	36.5	x	26.5	20.4		
W15	327625	386340	30.2	40.2	31.0	35.3	29.8	39.0	26.1	30.2	31.0	33.9	28.7	23.3	31.6	24.3		
W17	330646	391805	38.0	41.9	38.9	41.5	29.1	34.5	20.4	29.5	29.7	x	46.1	x	35.0	26.9		
W18/ 19	334097	384546	42.5	41.0	38.2	40.3	32.7	31.9	25.2	28.4	34.1	40.1	37.8	x	35.7	27.5		

DT ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northin g)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Annualised and Bias Adjusted (0.77)	Annual Mean: Distance Corrected to Nearest Exposure	Comment
W21	331034	387019	41.4	36.4	33.8	32.0	21.8	13.1	26.7	28.9	37.9	44.3	43.1	x	32.7	25.2		
W22/ 23	332294	390429	36.5	37.1	32.5	30.5	26.8	15.0	21.9	24.7	33.2	34.9	32.7	29.6	29.6	22.8		
W23/ 23	332150	388372	x	32.9	31.1	31.8	25.5	23.4	19.4	24.2	29.1	36.1	38.8	19.2	28.3	21.8		
W24	332231	388723	x	35.6	28.6	34.9	29.6	26.8	19.7	30.3	32.5	40.4	36.8	25.2	30.9	23.8		
W25	331756	390332	30.6	28.9	28.9	28.7	21.0	24.7	18.4	20.9	27.8	37.2	35.9	x	27.5	21.2		
W66 B	332055	386714	17.4	19.0	14.9	16.0	10.4	11.5	9.0	10.9	x	21.7	24.6	13.8	15	11.8		Triplicate Site
W27	334194	384348	27.8	29.8	30.4	32.6	25.3	24.0	20.2	19.6	24.9	35.8	26.6	18.1	26.3	20.2		
W28	333223	383277	29.4	32.8	24.8	27.0	22.1	25.1	15.6	21.3	27.9	29.3	33.2	21.3	25.8	19.9		
W29/ 20	330209	391139	24.2	27.8	22.3	25.8	18.4	22.4	15.0	19.2	24.7	28.4	28.1	15.2	22.6	17.4		
W66 C	332055	386714	17.4	19.0	14.9	16.0	10.4	11.5	9.0	10.9	x	21.7	24.6	13.8	15	11.3		Triplicate Site
W31	332423	389398	40.5	47.0	38.6	42.5	39.6	35.9	28.4	36.5	44.0	x	52.2	x	40.5	31.2		
W32/ 23	327096	381691	x	19.8	22.2	21.5	15.6	16.8	14.6	14.5	21.9	27.6	24.8	x	19.9	15.3		
W33/ 19	330921	386652	34.5	35.6	28.0	31.4	20.9	25.2	x	22.2	29.4	33.8	39.0	30.4	30.0	23.1		

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 (0.77)	Annual Mean: Distance Corrected to Nearest Exposure	Comment
W34/19	334096	384535	29.1	32.5	22.1	26.5	22.9	22.1	18.5	23.1	26.9	28.4	31.7	23.4	25.6	19.7		
W35	331716	390696	29.6	31.2	25.6	29.4	21.1	21.7	16.6	20.8	26.2	28.5	34.2	16.3	25.1	19.3		
W36/21	331843	390812	28.8	28.3	29.2	32.4	x	29.8	20.7	24.4	30.5	38.1	33.9	24.4	29.1	22.4		
W37	331529	389762	32.5	31.8	26.4	28.9	21.9	24.5	20.3	25.6	28.2	39.5	38.8	23.9	28.5	22.0		
W38/19	331481	384564	28.7	28.4	27.8	30.7	25.4	28.1	20.9	21.7	27.7	32.4	31.5	21.0	27.0	20.8		
W39/21	332711	388856	34.6	35.7	24.1	31.3	24.7	20.5	20.9	25.2	35.1	38.0	26.2	x	28.8	22.1		
W66 A	332055	386714	17.4	19.0	14.9	16.0	10.4	11.5	9.0	10.9	x	21.7	24.6	13.8	14	11.1		Triplicate Site
W41	329487	392312	20.1	21.3	18.0	19.7	11.4	12.8	9.1	x	18.0	29.0	28.0	12.8	18.2	14.0		
W42	334888	382627	27.1	31.8	24.9	x	21.6	22.5	13.4	17.9	23.5	29.4	33.8	x	24.6	18.9		
W43	331607	388353	32.0	32.7	27.2	28.0	21.4	22.8	20.6	22.6	27.4	32.4	x	x	26.7	20.6		
W44/23	321238	387034	x	22.0	23.3	23.4	19.0	19.4	19.4	16.4	18.2	24.2	25.1	14.3	20.4	15.7		
W45	327155	387140	45.2	44.2	29.5	45.6	37.8	39.8	32.6	33.9	50.1	45.0	51.4	33.4	40.7	31.3		
W47/22	335784	380076	19.2	19.1	17.0	21.9	12.3	x	17.5	12.1	17.6	x	24.0	14.1	17.5	13.5		

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 (0.77)	Annual Mean: Distance Corrected to Nearest Exposure	Comment
W48	331878	390822	33.3	37.3	35.4	38.5	23.4	33.7	24.7	29.0	33.9	36.3	34.6	26.2	32.2	24.8		
W49	332627	388749	25.3	27.5	24.5	34.5	16.8	18.5	18.9	24.0	28.2	39.3	31.7	24.2	26.1	20.1		
W50	331928	390767	33.0	34.1	27.0	32.6	40.1	25.5	24.6	28.2	19.4	33.2	30.5	x	29.8	23.0		
W51	331301	388040	x	5.3	18.9	19.4	x	11.2	x	12.2	16.3	x	26.2	12.4	15.2	11.6		
W52	331337	387973	19.9	19.7	17.0	18.7	10.2	13.4	9.5	12.6	x	24.1	26.7	12.9	16.8	12.9		
W53	334697	380863	16.9	13.8	11.3	14.4	10.6	11.6	7.7	11.3	13.0	18.2	17.0	10.1	13.0	10.0		
W54	334794	380852	15.2	13.2	12.0	10.9	8.5	x	x	x	x	17.6	19.4	7.3	13.0	8.9		
W55	332488	384189	19.0	18.6	17.0	15.6	10.8	10.6	9.7	11.5	13.3	x	24.5	10.7	14.7	11.3		
W56	332471	384120	17.2	17.8	14.7	13.8	x	x	7.6	9.3	20.9	18.7	21.1	8.3	14.9	11.5		
W57	332620	384345	11.5	17.4	14.3	16.2	9.7	x	18.2	11.5	15.0	18.9	22.7	10.7	15.1	11.6		
W58/ 23	330940	393447	x	29.1	x	32.9	24.8	22.8	20.9	23.2	31.8	37.8	39.2	28.4	29.1	22.4		
W59	332854	386834	20.6	21.0	x	x	x	10.2	7.5	11.3	13.8	18.7	24.3	11.3	15.4	11.9		
W60	332894	386792	43.0	x	16.8	x	11.6	x	x	12.6	15.2	24.7	27.0	x	21.6	15.6		
W61	328527	392568	16.2	19.0	18.9	18.5	11.6	12.8	8.9	13.0	16.5	25.2	27.8	10.4	16.6	12.8		
W62	328587	392536	x	17.9	18.1	17.4	12.0	10.5	9.0	14.0	17.5	29.6	24.9	x	17.1	13.2		
W63	331202	392366	22.3	21.5	17.9	18.0	12.5	x	9.5	15.9	19.2	26.0	25.5	17.9	18.7	14.4		
W64	331031	392396	20.2	15.3	23.2	22.6	14.8	x	12.5	14.0	21.0	28.2	27.7	7.4	18.8	14.5		

DT ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northin g)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Annualised and Bias Adjusted (0.77)	Annual Mean: Distance Corrected to Nearest Exposure	Comment
W65	332170	389843	33.4	35.4	35.3	36.7	17.3	25.7	21.9	23.7	33.9	30.2	x	x	29.4	22.6		

- All erroneous data has been removed from the NO2 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.
- Wirral Council confirm that all 2023 diffusion tube data has been uploaded to the Diffusion Tube Data Entry System.

Notes:

Exceedances of the NO2 annual mean objective of 40µg/m3 are shown in bold.

NO2 annual means exceeding 60µg/m3, indicating a potential exceedance of the NO2 1-hour mean objective are shown in bold and underlined.

See [Appendix C](#) for details on bias adjustment and annualisation.

X indicates data missing, due to unauthorised removal of tube from the site or removal of erroneous data

* indicates site not in use during this period.

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

New or Changed Sources Identified Within Wirral Council During 2023

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

Additional Air Quality Works Undertaken by Wirral Council During 2023

Wirral Council has implemented an Air Quality Strategy 2024 – 2028 and has produced a supporting implementation plan to drive the Strategy forward.

Wirral Council has not completed any additional works within the reporting year of 2023 relating to the development of action plan measures or the declaration, amendment, or revocation of an AQMA. Although further work regarding air quality monitoring locations has been undertaken for 2023, including a co-location study.

Review of Passive Diffusion Tube Monitoring Locations

A review of the monitoring locations of the existing passive diffusion tubes used to monitor nitrogen dioxide levels was undertaken in December 2022. This review was carried out to ensure that monitoring was being undertaken in the most appropriate location. Several information sources were fed into the review including traffic information from the sustainable transport team, the Air Quality Monitoring Study, previous monitoring results at each site and information about the school streets initiative. Areas that may be impacted by future developments were also considered.

Following this review, in 2023, forty-eight sites were retained, eight sites were removed, and six new monitoring locations were added (NB one site has three monitoring station (triplicate) as part of a co-location study). The sites that were removed are W22, W23, W26, W30, W32, W40, W44 and W58. The new monitoring sites are W22/23, W23/23, W32/23, W44/23, W58/23 and W66 (comprising W66A, W66B and W66C). NB fifty-seven results are available for 2023, as site W09 was relocated mid way through 2023 and replaced with W09/23. Both annualised results have been reported.

A further passive diffusion tube monitoring review was carried out in December 2023. Following this review, all existing fifty-six passive diffusion tube monitoring sites were maintained. The table below summarises the changes to the site locations for 2023.

Table C1. Changes to Site Locations for 2023

Site Ref Number	Address	Eastings	Northings	2023 Status
W2	New Chester Road, Eastham	335887	379797	Current
W3/19	Leasowe Road, Wallasey	329070	392309	Current
W4	Borough Road, Tranmere	331322	387414	Current
W5	Bolton Road East, New Ferry	334128	384634	Current
W8	Hoylake Road, Moreton	326243	389946	Current
W9	Woodchurch Road	329257	386448	Current*
W09/23	Woodchurch Road	329261	386449	New
W12	New Chester Road, New Ferry	334061	384617	Current
W13	New Chester Road, New Ferry	334113	384588	Current
W14/21	Wallasey Road, Liscard	330462	391907	Current
W15	Arrowe Park Road, Woodchurch	327625	386340	Current
W17	St Albans Road, Liscard	330646	391805	Current
W18/19	New Chester Road, New Ferry	334097	384546	Current
W21	Singleton Avenue, Tranmere	331034	387019	Current
W22/22	Norwood Road, Poulton	330729	390758	Deleted
W22/23	Birkenhead Road	332294	390429	New
W23	Cleveland street, Birkenhead	332385	389154	Deleted
W23/23	Argyle Street South	332150	388372	New
W24	Conway Street, Birkenhead	332231	388723	Current

W25	Dock Road, Seacombe	331756	390332	Current
W26/19	Allport Lane, Bromborough	335053	381295	Deleted
W66B	Tranmere AURN MIDDLE	332055	386714	New
W27	New Chester Road, New Ferry	334194	384348	Current
W28	Church Road, Bebington	333223	383277	Current
W29/20	Mill Lane, Poulton	330209	391139	Current
W30/20	Meols Drive, Hoylake	321560	388824	Deleted
W66C	Tranmere AURN RIGHT	332055	386714	New
W31	Canning St, Birkenhead	332423	389398	Current
W32	Telegraph Rd, Heswall	327174	381630	Deleted
W32/23	Car Park, Telegraph Road	327096	381691	New
W33/19	Storeton road, Prenton	330921	386652	Current
W34/19	New Chester Road, New Ferry	334096	384535	Current
W35	Vernon Road, Poulton	331716	390696	Current
W36/21	Geneva Road, Poulton	331843	390812	Current
W37	Corporation Rd, Birkenhead	331529	389762	Current
W38/19	Mount Road, Higher Bebington	331481	384564	Current
W39/21	Chester Street, Birkenhead	332711	388856	Current
W40	Barnston Rd, Pensby	328040	383300	Deleted
W66A	Tranmere AURN LEFT	332055	386714	New
W41	St Georges Road, Wallasey Village.	329487	392312	Current

W42	New Chester Rd, Bromborough	334888	382627	Current
W43	Whetstone Lane, B/head	331607	388353	Current
W44	Banks Rd, West Kirby	321311	386666	Deleted
W44/23	Meols Drive, West Kirby	321238	387034	New
W45	Arrowe Park Rd, Upton	327155	387140	Current
W46	Travel blank			N/A
W47/22	Bridle Road, Eastham	335767	380068	Current
W48	Wheatland Lane, Seacombe	331878	390822	Current
W49	Cross Street, Birkenhead	332627	388749	Current
W50	Parry Street, Seacombe	331928	390767	Current
W51	Christchurch Primary School Mount Grove	331301	388040	Current
W52	Christchurch Primary School Batten Road	331337	387973	Current
W53	Raeburn Primary School Moreland Avenue	334697	380863	Current
W54	Raeburn Primary School Moreland Avenue	334794	380852	Current
W55	Brackenwood Junior School Norbury Ave	332488	384189	Current
W56	Brackenwood Junior School Norbury Ave	332471	384120	Current
W57	Brackenwood Infants School	332620	384345	Current

W58	Brackenwood Infants School Acreville Road	332689	384332	Deleted
W58/23	Seabank Road	330940	393447	New
W59	Rockferry Primary School Lees Ave	332854	386834	Current
W60	Rockferry Primary School Ionic Street	332894	386792	Current
W61	Greenleas Primary School Green Lane	328527	392568	Current
W62	Greenleas Primary School Greenleas Road	328587	392536	Current
W63	Liscard Primary School Manor Lane	331202	392366	Current
W64	Liscard Primary School Withens Lane	331031	392396	Current
W65	Tower Road, Birkenhead	332170	389843	Current

*W09 relocated to new location in July
2023

QA/QC of Diffusion Tube Monitoring

Wirral Council uses SOCOTEC – Didcot, using a 50% TEA method of preparation for the analysis of its NO₂ diffusion tubes. Monitoring during 2023 was completed in adherence with the 2023 Diffusion Tube Monitoring Calendar. The Local Air Quality Management Help Desk has provided information on the precision data for each laboratory based on the results of duplicate or triplicate diffusion tubes being submitted for analysis. The data shows that Socotec – Didcot is determined to have good precision. You can find this

information at the following link <https://laqm.defra.gov.uk/air-quality/air-quality-assessment/precision-and-accuracy/#SummaryPrecision>

In the [AIR PT intercomparison scheme](#) for comparing spiked Nitrogen Dioxide diffusion tubes, SOCOTEC currently holds the highest rank of a Satisfactory laboratory.

Table 1: Laboratory summary performance for AIR NO₂ PT rounds AR046, 49, 50, 52, 53, 55, 56, 58 and 59

The following table lists those UK laboratories undertaking LAQM activities that have participated in recent AIR NO₂ PT rounds and the percentage (%) of results submitted which were subsequently determined to be **satisfactory** based upon a z-score of $\leq \pm 2$ as defined above.

AIR PT Round	AIR PT AR046	AIR PT AR049	AIR PT AR050	AIR PT AR052	AIR PT AR053	AIR PT AR055	AIR PT AR056	AIR PT AR058	AIR PT AR059
Round conducted in the period	September – October 2021	January – February 2022	May – June 2022	July – August 2022	September – October 2022	January – February 2023	May – June 2023	July – August 2023	September – October 2023
Aberdeen Scientific Services	100 %	100 %	100 %	100 %	100 %	0 %	100 %	100 %	75 %
Cardiff Scientific Services	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]
Edinburgh Scientific Services	75 %	NR [2]	50 %	100 %	100 %	100 %	75 %	100 %	50 %
SOCOTEC	100 % [1]	100 % [1]	100 % [1]	100 % [1]	100 % [1]	100 % [1]	100 % [1]	100 % [1]	100 % [1]

Diffusion Tube Annualisation

If annualisation was required for any non-automatic monitoring sites, the sites requiring annualisation should be clearly defined along with details of the calculation method undertaken provided in Table C.2. Annualisation is required for any site with data capture less than 75% but greater than 25%.

Table C.2 – Annualisation Summary (concentrations presented in $\mu\text{g}/\text{m}^3$)

Site ID	Annualisation Factor Birkenhead Borough Road	Annualisation Factor Tranmere	Annualisation Factor Wigan Central	Annualisation Factor Preston	Average Annualisation Factor	Raw Data Annual Mean	Annualised Annual Mean
W09	0.9387	1.0307	0.9953	0.9795	0.9861	41.6	41.0
W09/23	0.9661	0.9414	0.9316	0.9533	0.9481	33.0	31.3
W51	0.9647	1.0028	0.9853	0.9865	0.9848	15.2	15.0
W54	0.8955	0.9037	0.8670	0.8688	0.8838	13.0	11.5
W60	0.9495	0.9354	0.9364	0.9303	0.9379	21.6	20.2

Diffusion Tube Bias Adjustment Factors

The diffusion tube data presented within the 2023 ASR have been corrected for bias using an adjustment factor. Bias represents the overall tendency of the diffusion tubes to under or over-read relative to the reference chemiluminescence analyser. LAQM.TG22 provides guidance with regard to the application of a bias adjustment factor to correct diffusion tube monitoring. Triplicate co-location studies can be used to determine a local bias factor based on the comparison of diffusion tube results with data taken from NOx/NO2 continuous analysers. Alternatively, the national database of diffusion tube co-location surveys provides bias factors for the relevant laboratory and preparation method.

Wirral Council have applied a national bias adjustment factor of 0.77 to the 2023 monitoring data. A summary of bias adjustment factors used by Wirral Council over the past five years is presented in Table C.3.

For 2023, the data from the diffusion tubes has been bias adjusted using National Diffusion tube bias adjustment factor spreadsheet March 2023 for Socotec Didcot, using a 50% TEA preparation, 28 studies, that can be seen below.

National Diffusion Tube Bias Adjustment Factor Spreadsheet				Spreadsheet Version Number: 03/24						
Follow the steps below in the correct order to show the results of relevant co-location studies								This spreadsheet will be updated at the end of June 2024		
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.								LAQM Helpdesk Website		
The LAQM Helpdesk is operated on behalf of Defra and the Devolved Administrations by Bureau Veritas, in conjunction with contract partners AECOM and the National Physical Laboratory.					Spreadsheet maintained by the National Physical Laboratory. Original compiled by Air Quality Consultants Ltd.					
Step 1:		Step 2:		Step 3:		Step 4:				
Select the Laboratory that Analyses Your Tubes from the Drop-Down List		Select a Preparation Method from the Drop-Down List		Select a Year from the Drop-Down List		Where there is only one study for a chosen combination, you should use the adjustment factor shown with caution. Where there is more than one study, use the overall factor shown in blue at the foot of the final column.				
If a laboratory is not shown, we have no data for this laboratory.		If a preparation method is not shown, we have no data for this method at this laboratory.		If a year is not shown, we have no data.		If you have your own co-location study then see footnote. If uncertain what to do then contact the Local Air Quality Management Helpdesk at LAQMHelpdesk@bureauveritas.com or 0800 0327953				
Analysed By	Method	Year	Site Type	Local Authority	Length of Study (months)	Diffusion Tube Mean Conc. (Dm) (µg/m ³)	Automatic Monitor Mean Conc. (Cm) (µg/m ³)	Bias (B)	Tube Precision	Bias Adjustment Factor (A) (Cm/Dm)
SOCOTEC Didcot	50% TEA in acetone	2023	R	Cardiff Council / Shared Regulatory Services	11	41	34	22.2%	G	0.82
SOCOTEC Didcot	50% TEA in acetone	2023	UB	Torfaen County Borough Council	11	12	9	43.9%	G	0.70
SOCOTEC Didcot	50% TEA in Acetone	2023	R	East Suffolk Council	12	29	21	38.9%	G	0.72
SOCOTEC Didcot	50% TEA in Acetone	2023	R	Wrexham County Borough Council	11	17	14	25.2%	G	0.80
SOCOTEC Didcot	50% TEA in Acetone	2023	R	Horsham District Council	12	21	17	23.5%	G	0.81
SOCOTEC Didcot	50% TEA in Acetone	2023	R	Horsham District Council	10	25	17	43.5%	G	0.70
SOCOTEC Didcot	50% TEA in Acetone	2023	R	Horsham District Council	10	23	24	-5.4%	G	1.06
SOCOTEC Didcot	50% TEA in Acetone	2023	UI	North Lincolnshire Council	10	14	11	28.2%	G	0.79
SOCOTEC Didcot	50% TEA in acetone	2023	R	Bridgend Council	11	32	27	20.8%	G	0.83
SOCOTEC Didcot	50% TEA in acetone	2023	R	Cambridge City Council	12	22	18	24.8%	G	0.80
SOCOTEC Didcot	50% TEA in acetone	2023	R	Leeds City Council	10	39	29	32.3%	G	0.76
SOCOTEC Didcot	50% TEA in acetone	2023	KS	Leeds City Council	10	30	20	48.9%	G	0.67
SOCOTEC Didcot	50% TEA in acetone	2023	R	Leeds City Council	12	25	19	30.0%	G	0.77
SOCOTEC Didcot	50% TEA in acetone	2023	UC	Leeds City Council	11	28	19	40.0%	G	0.71
SOCOTEC Didcot	50% TEA in acetone	2023	KS	Manylebone Road intercomparison	11	53	38	41.4%	G	0.71
SOCOTEC Didcot	50% TEA in acetone	2023	R	Vale Of White Horse District Council	10	22	18	21.2%	G	0.83
SOCOTEC Didcot	50% TEA in acetone	2023	UB	Wirral Council	11	15	13	18.7%	G	0.86
SOCOTEC Didcot	50% TEA in acetone	2023		Overall Factor* (28 studies)				Use		0.77

Table C.3 – Bias Adjustment Factor

Monitoring Year	Local or National	If National, Version of National Spreadsheet	Adjustment Factor
2023	National	03/24	0.77
2022	National	03/23	0.76
2021	National	03/22	0.78
2020	National	03/21	0.77
2019	National	03/20	0.76

Table C.4 – Local Bias Adjustment Calculation

	Local Bias Adjustment Input 1	Local Bias Adjustment Input 2	Local Bias Adjustment Input 3	Local Bias Adjustment Input 4	Local Bias Adjustment Input 5
Periods used to calculate bias	12				
Bias Factor A	0.85 (0.81 - 0.9)				
Bias Factor B	17% (11% - 24%)				
Diffusion Tube Mean ($\mu\text{g}/\text{m}^3$)	14.8				
Mean CV (Precision)	4.9%				

	Local Bias Adjustment Input 1	Local Bias Adjustment Input 2	Local Bias Adjustment Input 3	Local Bias Adjustment Input 4	Local Bias Adjustment Input 5
Automatic Mean ($\mu\text{g}/\text{m}^3$)	12.6				
Data Capture	100%				
Adjusted Tube Mean ($\mu\text{g}/\text{m}^3$)	13 (12 - 13)				

Notes:

The national combined bias adjustment factor has been used to bias adjust the 2023 diffusion tube results, this is because, as per TG22, Wirral's monitoring programme consists of road side and kerb side monitoring sites, which differ from the urban background location of the co-location study.

NO2 Fall-off with Distance from the Road

Wherever possible, monitoring locations are representative of exposure. However, where this is not possible, the NO2 concentration at the nearest location relevant for exposure has been estimated using the Diffusion Tube Data Processing Tool/NO2 fall-off with distance calculator available on the LAQM Support website. Where appropriate, non-automatic annual mean NO2 concentrations corrected for distance are presented in Table B.1.

No diffusion tube NO2 monitoring locations within Wirral Council required distance correction during 2023.

QA/QC of Automatic Monitoring

The real time air pollution monitoring network consists of an automatic monitoring station located in Tranmere and an automatic monitoring station located in Birkenhead. Both monitoring stations are part of the national survey and results can be found on the UK Air website at the following link; https://uk-air.defra.gov.uk/data/data_selector_service#mid

Tranmere AURN

The site is managed by Bureau Veritas and is classified as an urban background site.

Full audits of all analysers are carried out at six-monthly intervals in the winter (January-March) and summer (July-September). In addition, audits of ozone analysers are also carried out in spring (April) and autumn (October).

Data is ratified on a three-monthly basis, and instances of suspected poor-quality data are investigated as required.

LSO duties are contracted to Ricardo who undertake 4 weekly routine calibration of the equipment.

Birkenhead Borough Road AURN

The site is managed by Bureau Veritas and is classified as an Urban Traffic site.

Full audits of all analysers are carried out at six-monthly intervals in the winter (January-March) and summer (July-September).

Data is ratified on a three-monthly basis, and instances of suspected poor-quality data are investigated as required.

The LSO duties are contracted to Ricardo who conduct fortnightly calibration checks on the gaseous equipment.

PM10 and PM2.5 Monitoring Adjustment

The type of PM10 and PM2.5 monitor(s) utilised within Wirral Council do not required the application of a correction factor.

Non-LAQM monitoring results

Wirral Council conducted air quality monitoring using five Earthsense Zephyrs sensors in 2023. These sensors are not approved for use by local authorities for compliance monitoring according to TG22, however they can provide indicative air quality data to support our work in reducing air pollution. The results for 2023 are shown in the table below.

Table C.5 Annual Mean Results For Indicative Real Time Sensors

Site reference number	Data Capture %	Eastings	Northings	NO2	PM2.5	PM10
700037 Arrowe Park Road	99.9	327021	387618	17.5	10.5	11.6
700058 New Chester Road	99.9	335801	379987	16.8	11.0	12.1
700067 Wallasey Road	100	330635	392005	26.5	11.6	12.8
700073 Poulton Bridge Road	95.7	330211	391108	18.8	11.6	12.8
700088 Ivy Street	78.3	332685	388736	18.9	11.0	12.0

Automatic Monitoring Annualisation

All automatic monitoring locations within Wirral 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.

NO2 Fall-off with Distance from the Road

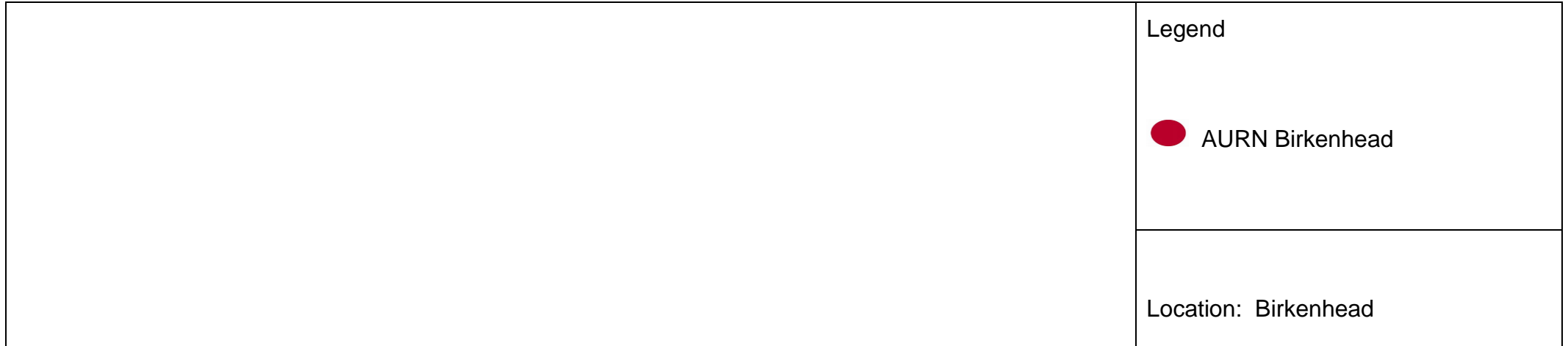
Wherever possible, monitoring locations are representative of exposure. However, where this is not possible, the NO2 concentration at the nearest location relevant for exposure

has been estimated using the NO₂ fall-off with distance calculator available on the LAQM Support website. Where appropriate, automatic annual mean NO₂ concentrations corrected for distance are presented in Table A.3.

No automatic NO₂ monitoring locations within Wirral Council required distance correction during 2023.

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

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



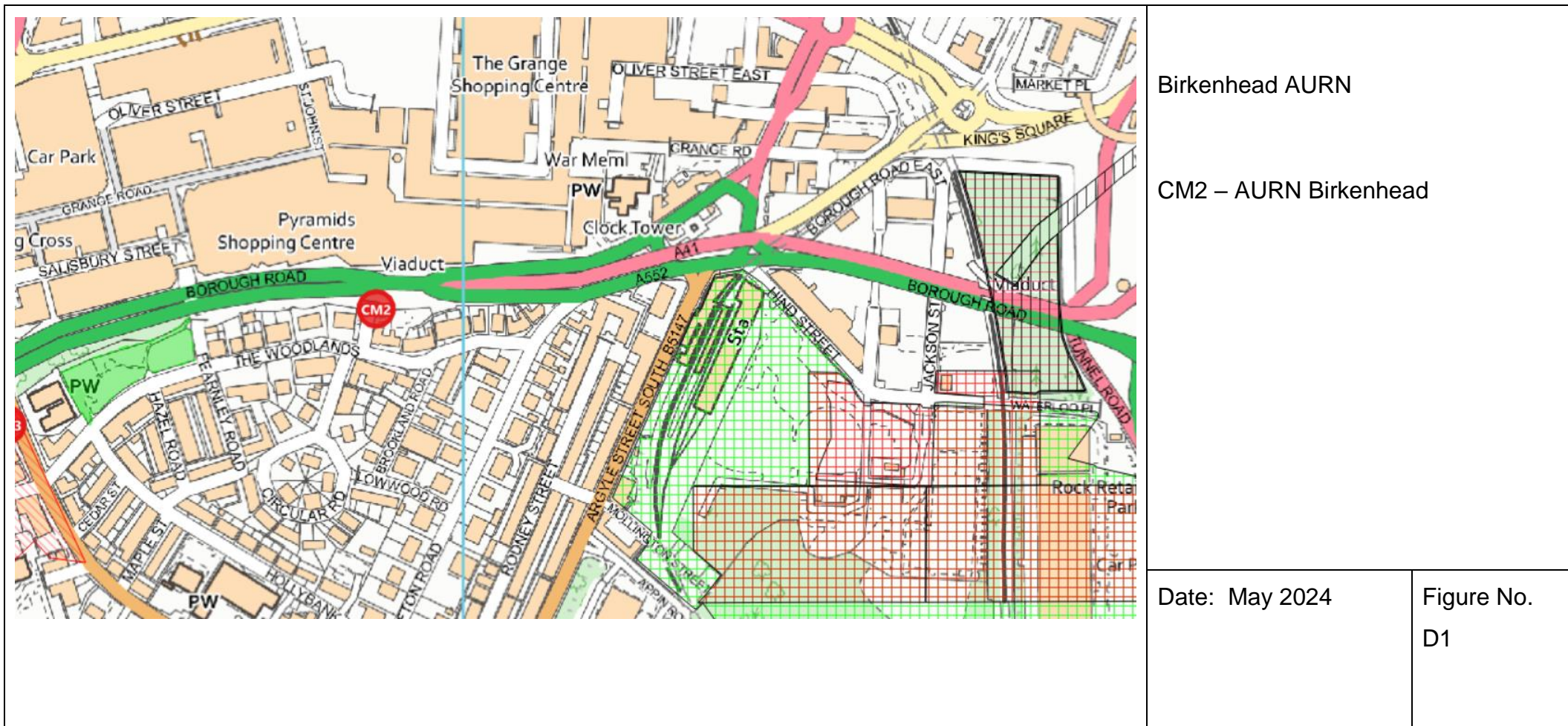
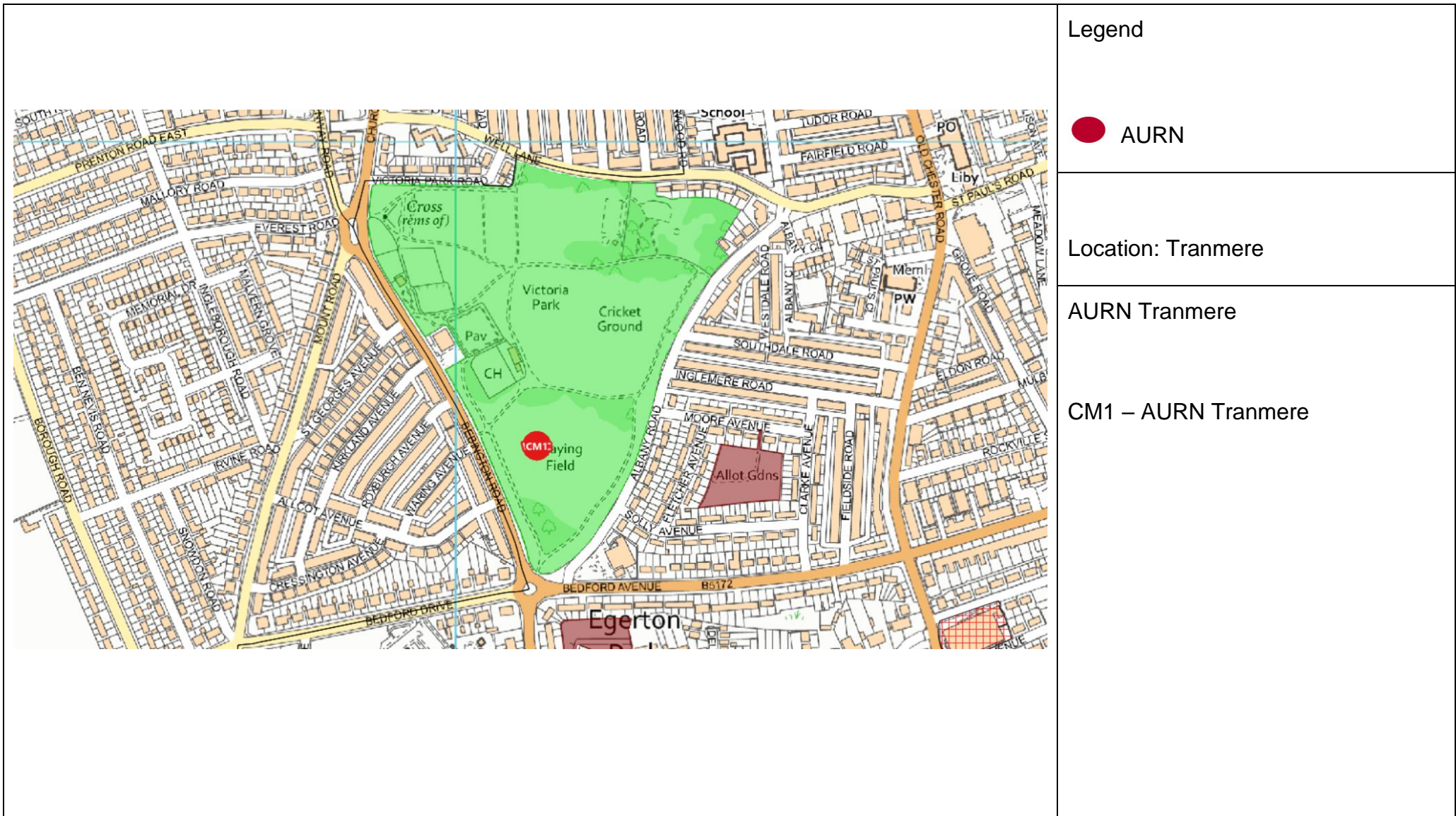
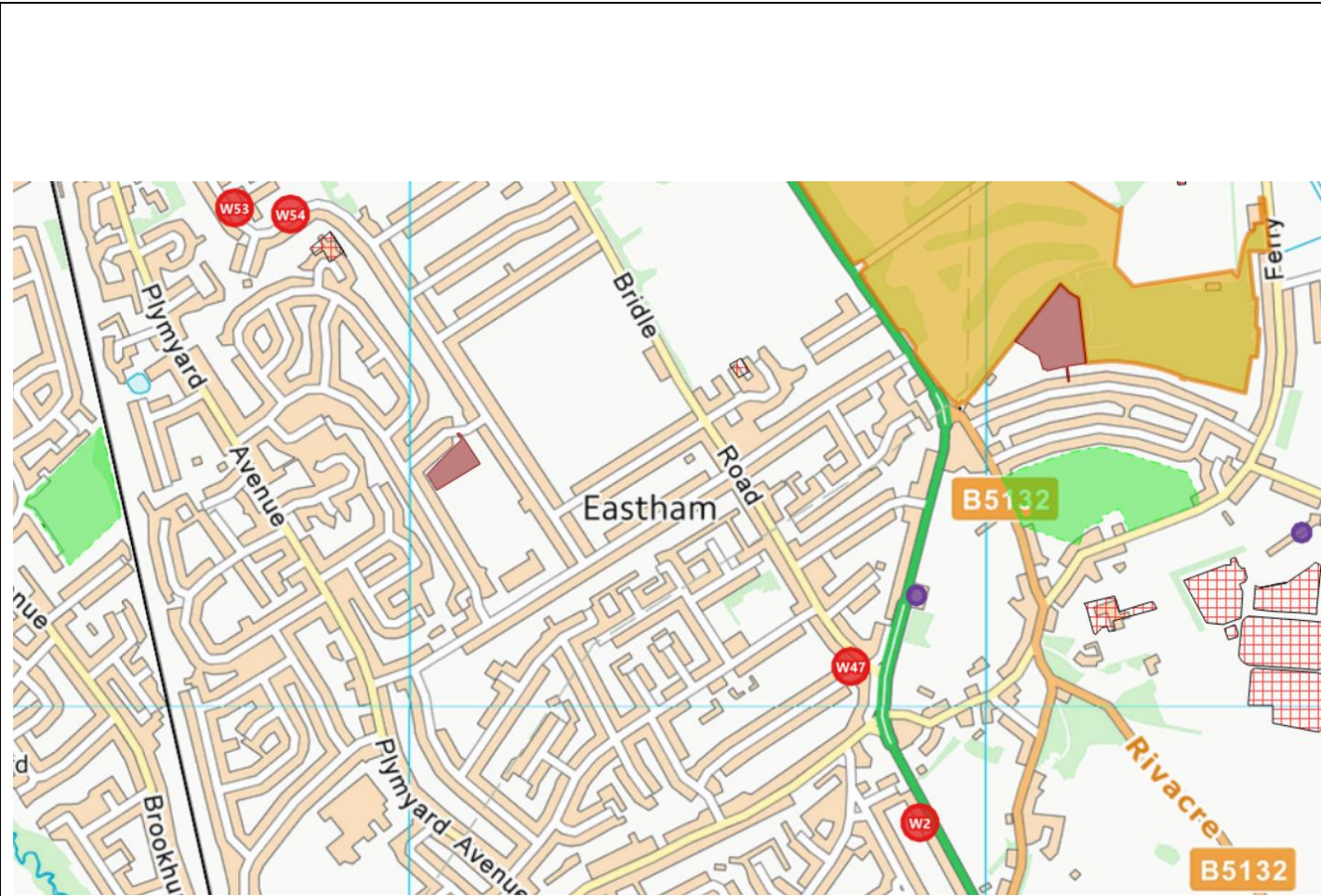


Figure D.2 – Map of Automatic Monitoring Site



	Date: May 2024	Figure No. D2
--	----------------	------------------

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



Legend

● Diffusion tube location

Location: Bromborough and Eastham

Diffusion Tube Locations

- W2 – New Chester Road, Eastham
- W47 – Bridle Road, Eastham
- W53 – Moorland Avenue, Raeburn Entrance
- W54 – Moorland Avenue

	Date: May 2024	Figure No. D3
--	----------------	------------------

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

	<p>Legend</p> <p>● Diffusion tube location</p>
	<p>Location: Birkenhead</p>

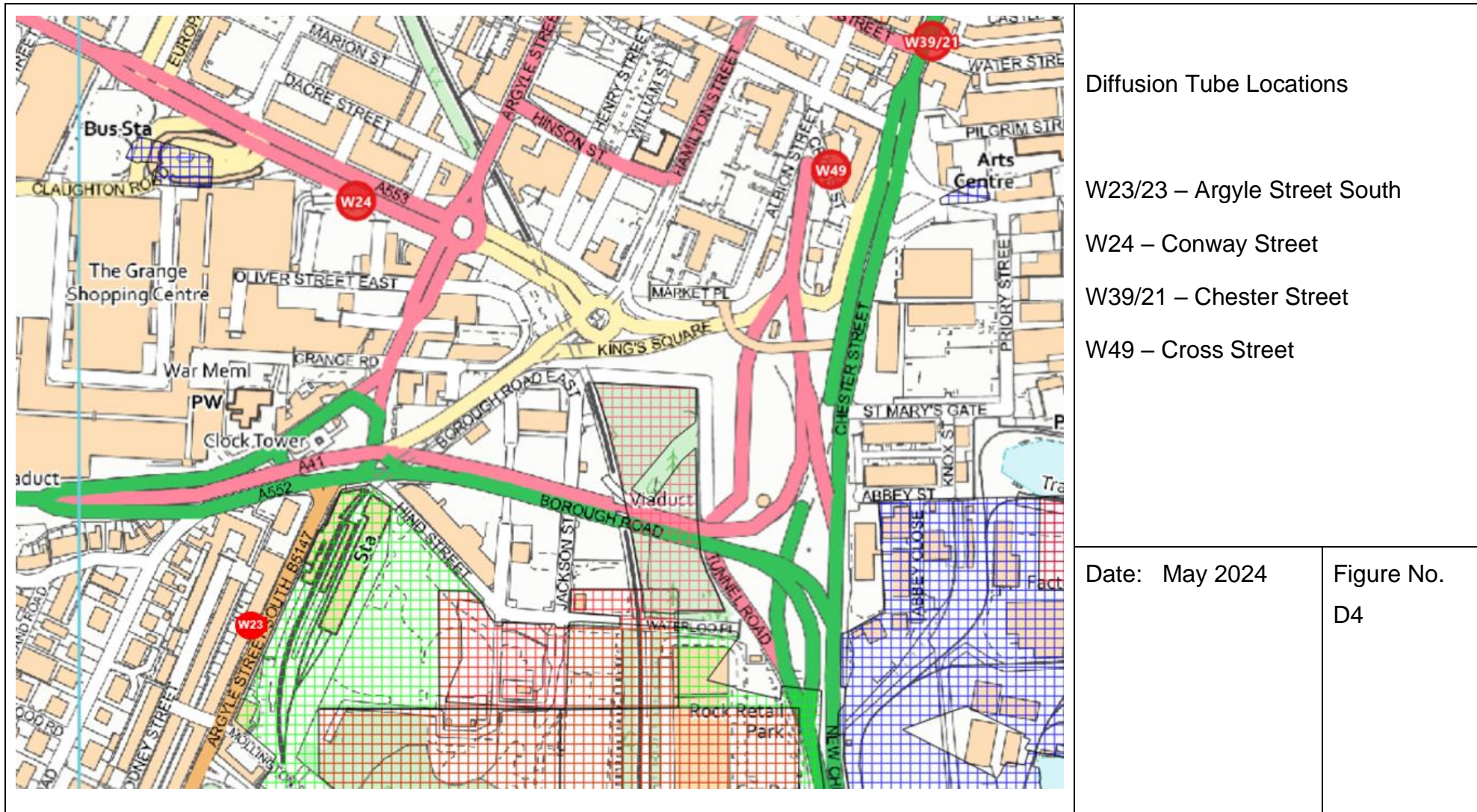
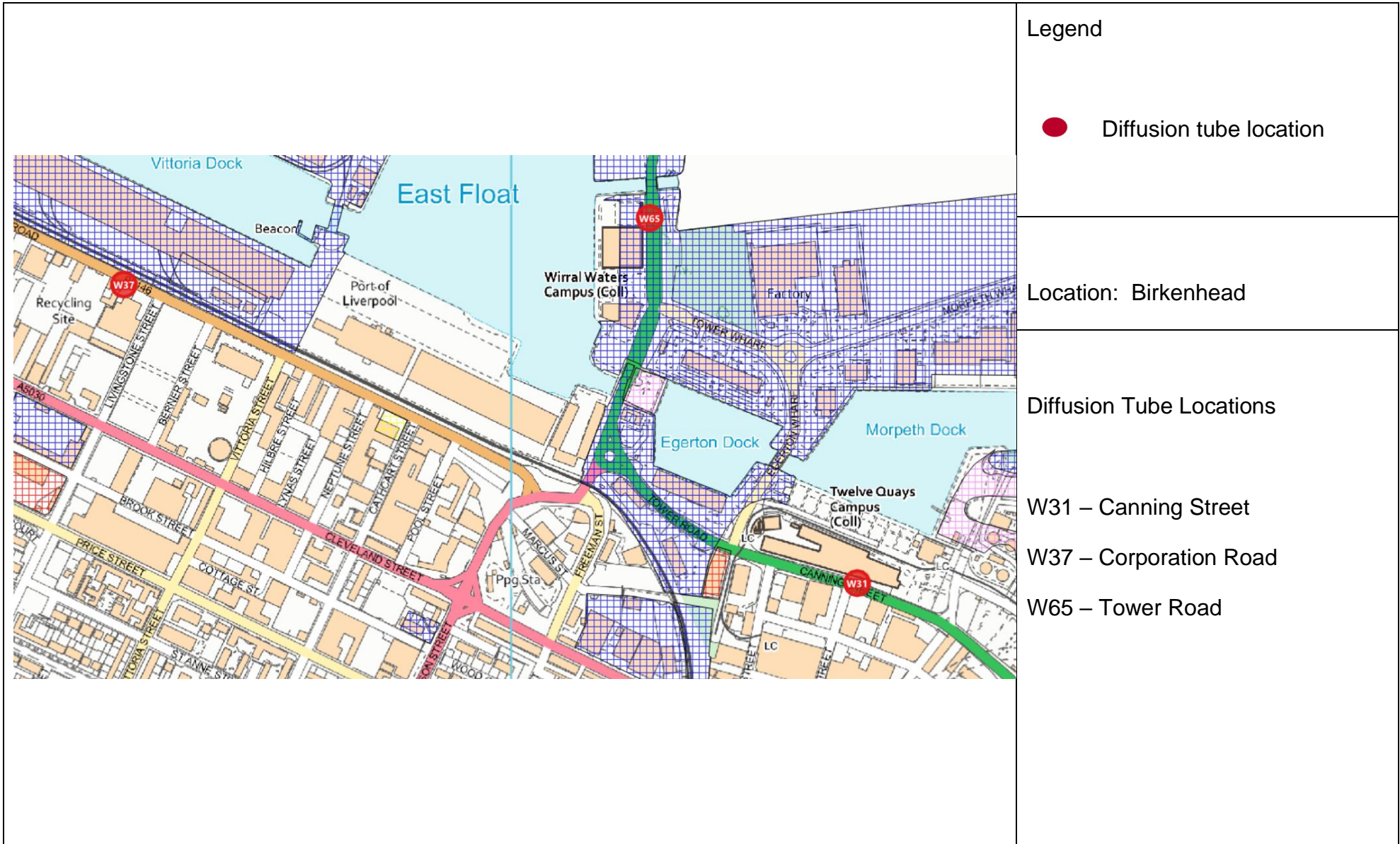


Figure D.5 – Map of Non-Automatic Monitoring Site



Legend

● Diffusion tube location

Location: Birkenhead

Diffusion Tube Locations

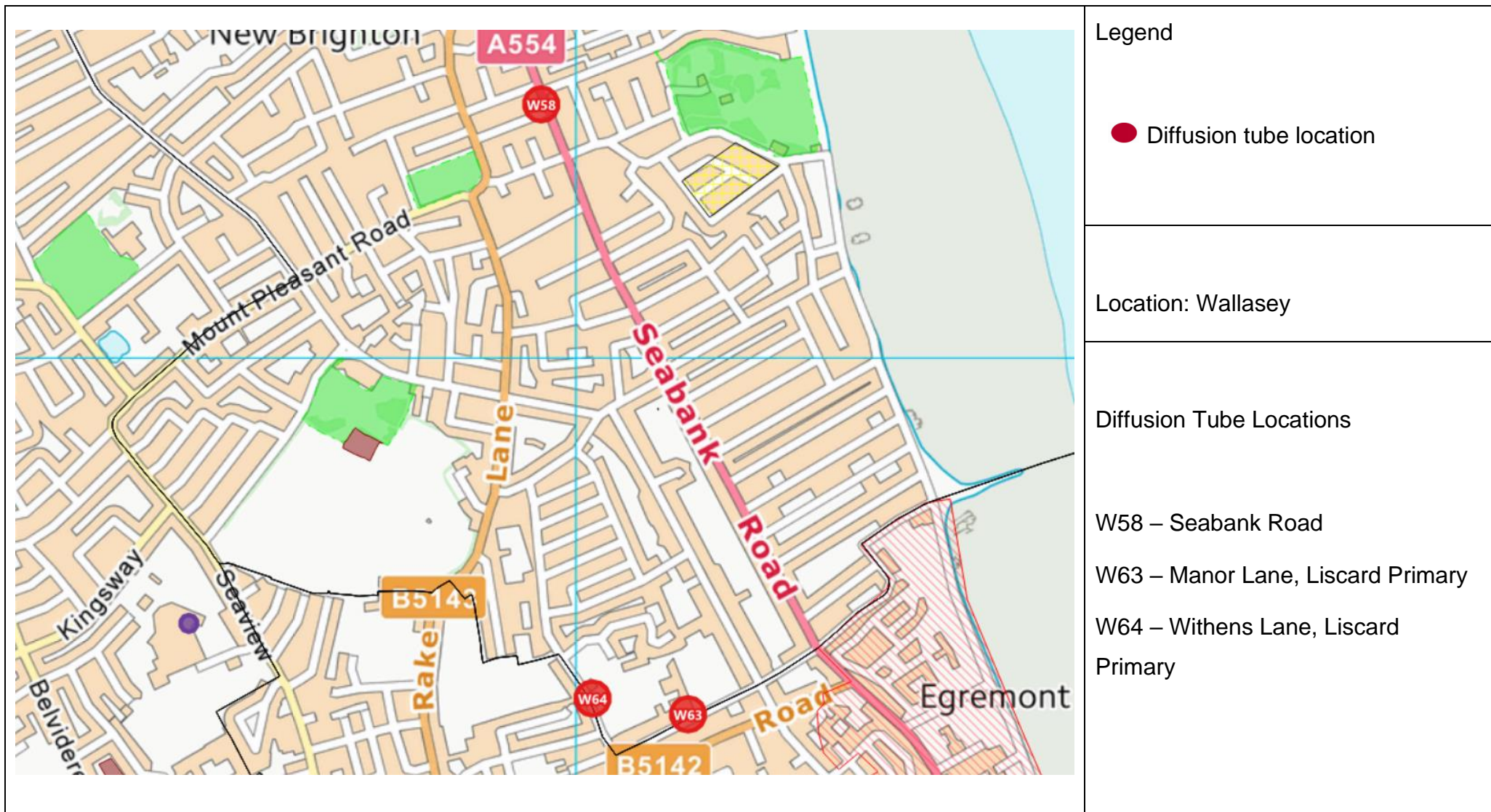
- W31 – Canning Street
- W37 – Corporation Road
- W65 – Tower Road

	Date: May 2024	Figure No. D5
--	----------------	------------------

Figure D.6 – Map of Non-Automatic Monitoring Site

<p>The map displays the Wallasey area with several roads highlighted in pink. Red circular markers indicate the locations of diffusion tubes: W3/19 on Leasowe Road, W14/21 on Wallasey Road, W17 on St Albans Road, W41 on St Georges Road, W61 on Green Lane, and W62 on Greenleas Road. Other roads shown include Leasowe Road, Wallasey Road, Kingsway, Vyner Road, Belvidere Road, Marlowe Road, and Lane. The map also shows Wallasey Village and the B5143 road.</p>	<p>Legend</p> <p>● Diffusion tube location</p>
	<p>Location: Wallasey</p>
	<p>Diffusion Tube Locations</p> <p>W3/19 – Leasowe Road</p> <p>W14/21 – Wallasey Road</p> <p>W17 – St Albans Road</p> <p>W41 - St Georges Road</p> <p>W61 – Green Lane, Greenleas Primary</p> <p>W62 – Greenleas Road</p>

	Date: May 2024	Figure No. D6



	Date: May 2024	Figure No. D7
--	----------------	------------------

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

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

	Legend
	● Diffusion tube location
	Location: Woodchurch/ Upton

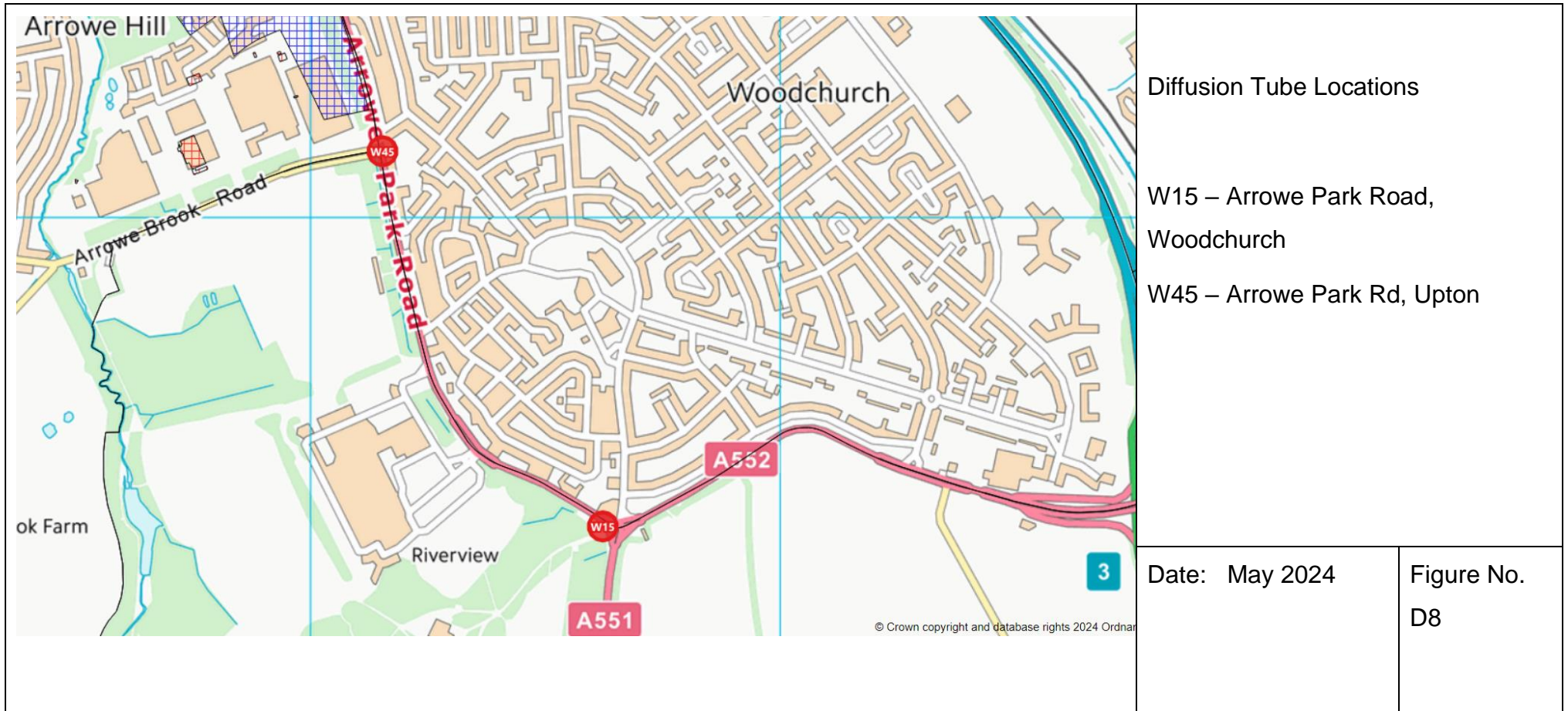


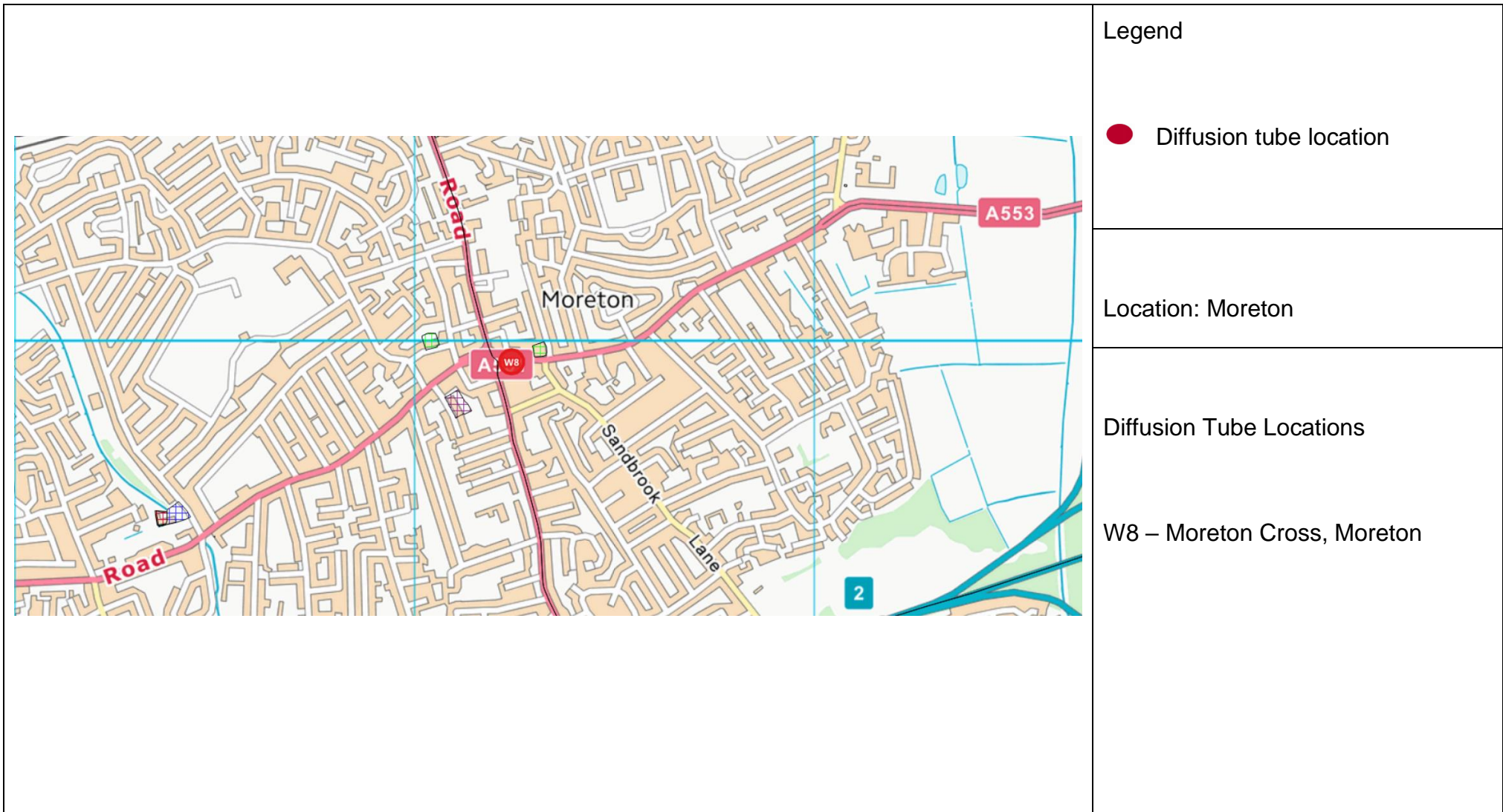
Figure D.9 – Map of Non-Automatic Monitoring Site



Legend
● Diffusion tube location
Location: Seacombe / Poulton
Diffusion Tube Locations
W22 – Birkenhead Road
W25 – Dock Road
W35 – Vernon Avenue
W36/21 – Geneva Road
W48 – Wheatland Lane
W50 – Parry Street

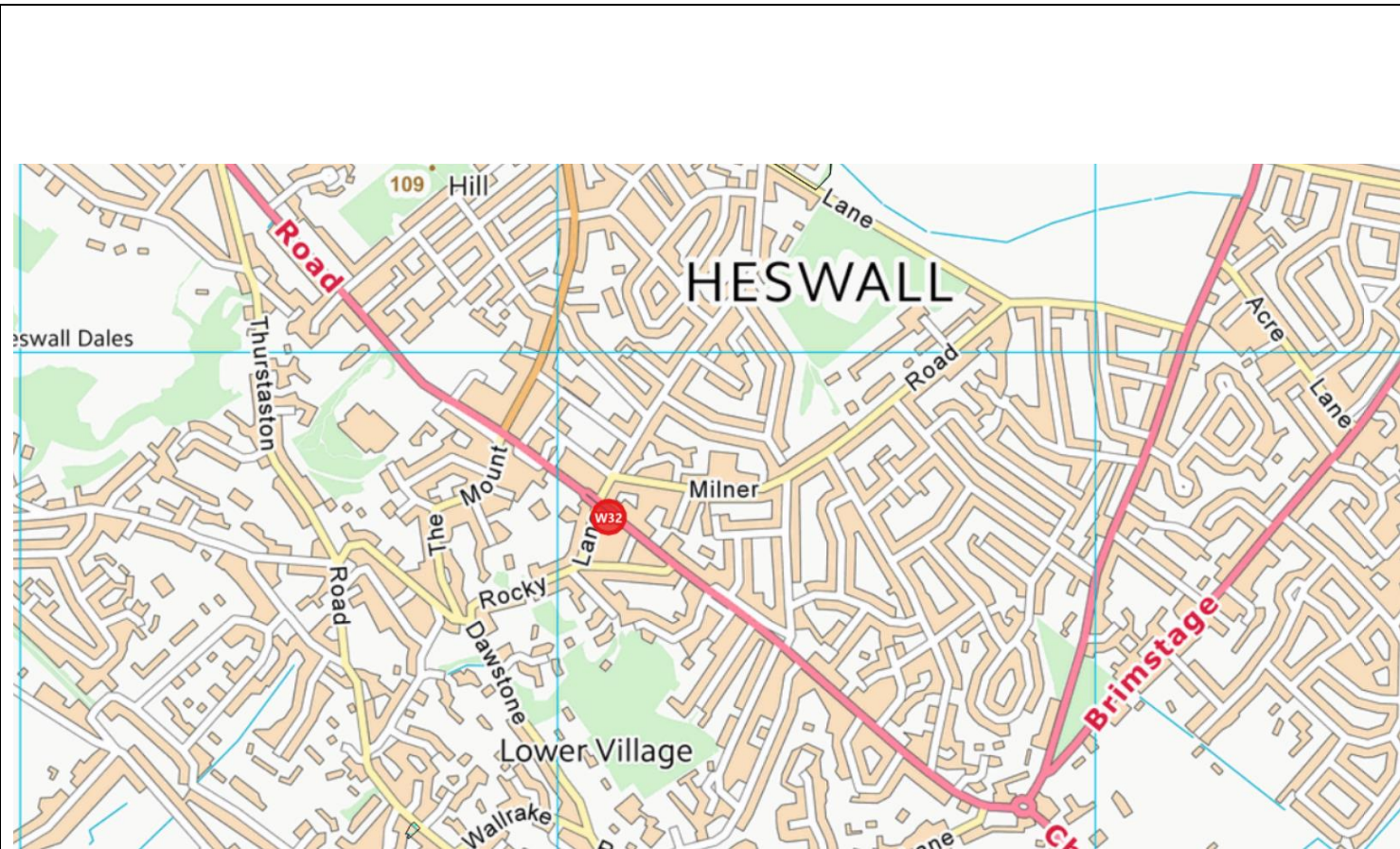
	Date: May 2024	Figure No. D9

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



	Date: May 2024	Figure No. D10
--	----------------	-------------------

Figure D.11– Map of Non-Automatic Monitoring Site



Legend

● Diffusion tube location

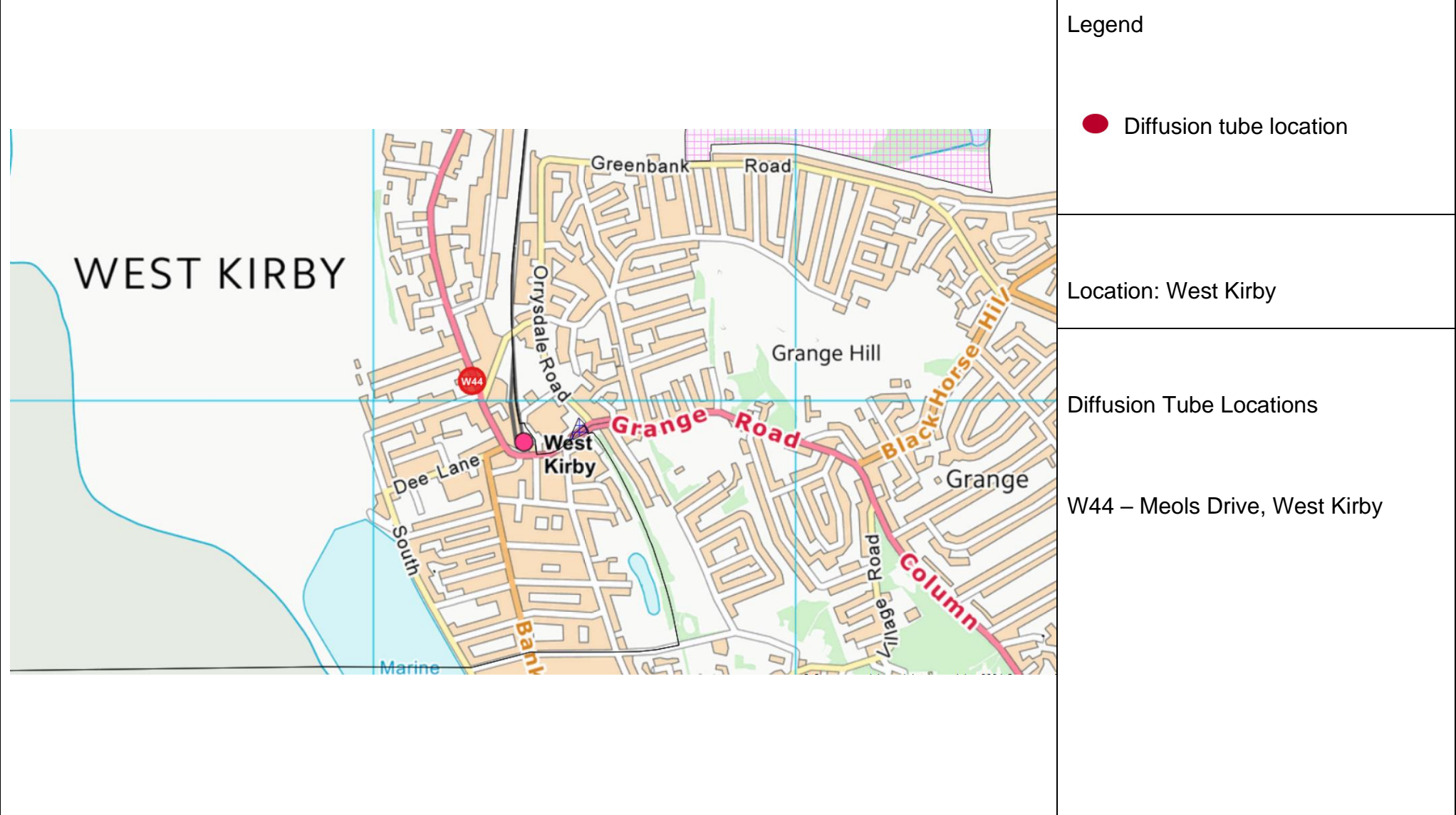
Location: Heswall

Diffusion Tube Locations

W32 – Telegraph Road, Heswall

	Date: May 2024	Figure No. D11
--	----------------	-------------------

Figure D.12 – Map of Non-Automatic Monitoring Site



	Date: May 2024	Figure No. D12

Figure D.13 – Map of Non-Automatic Monitoring Site



Legend

● Diffusion tube location

Location: Prenton

Diffusion Tube Locations

W4 – Borough Road

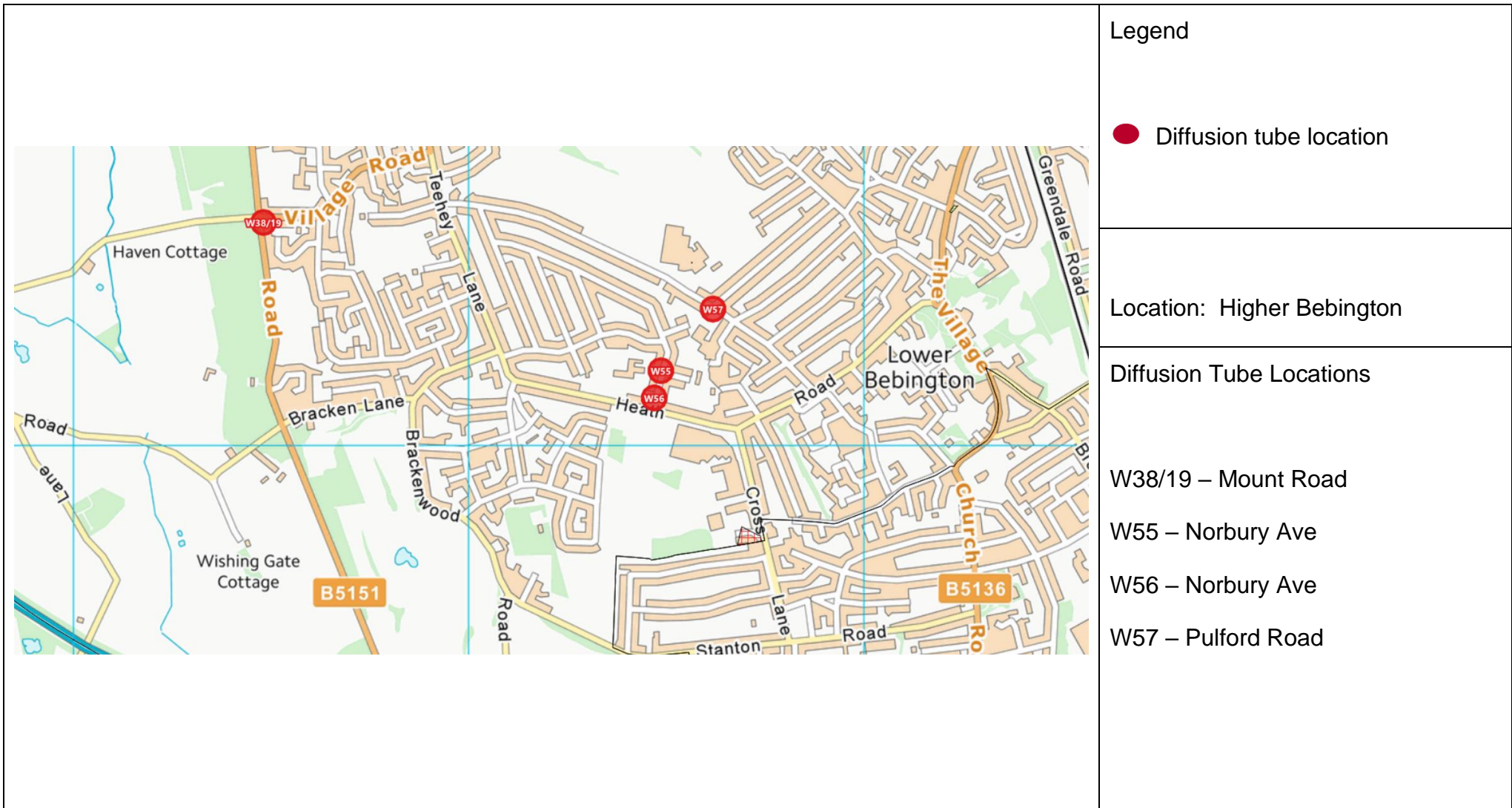
W9 – Woodchurch Road

W21 – Singleton Avenue

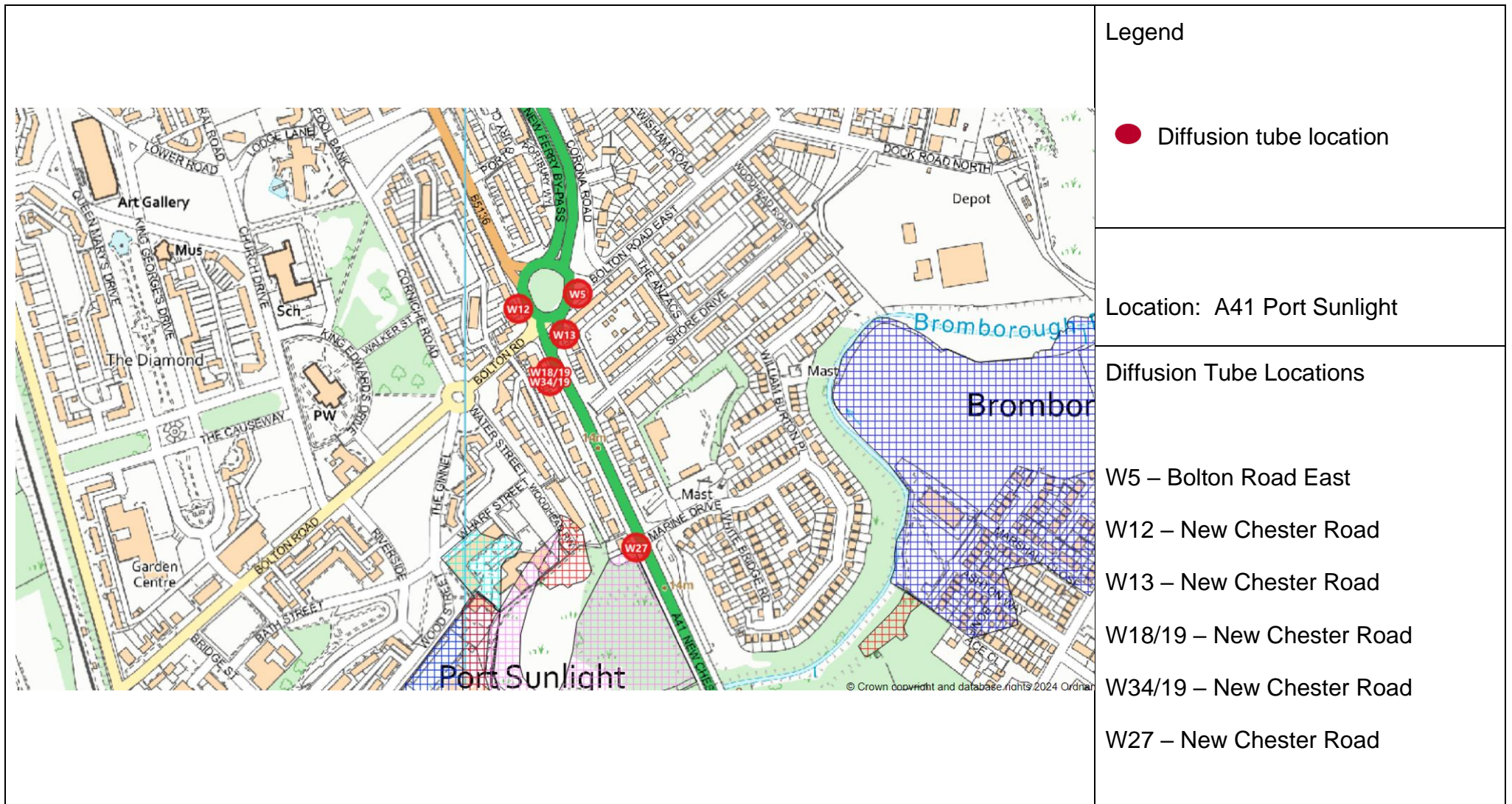
W33/19 – Storeton Road

	Date: May 2024	Figure No. D13

Figure D.14 – Map of Non-Automatic Monitoring Site



	Date: May 2024	Figure No. D14
--	----------------	-------------------



Legend

● Diffusion tube location

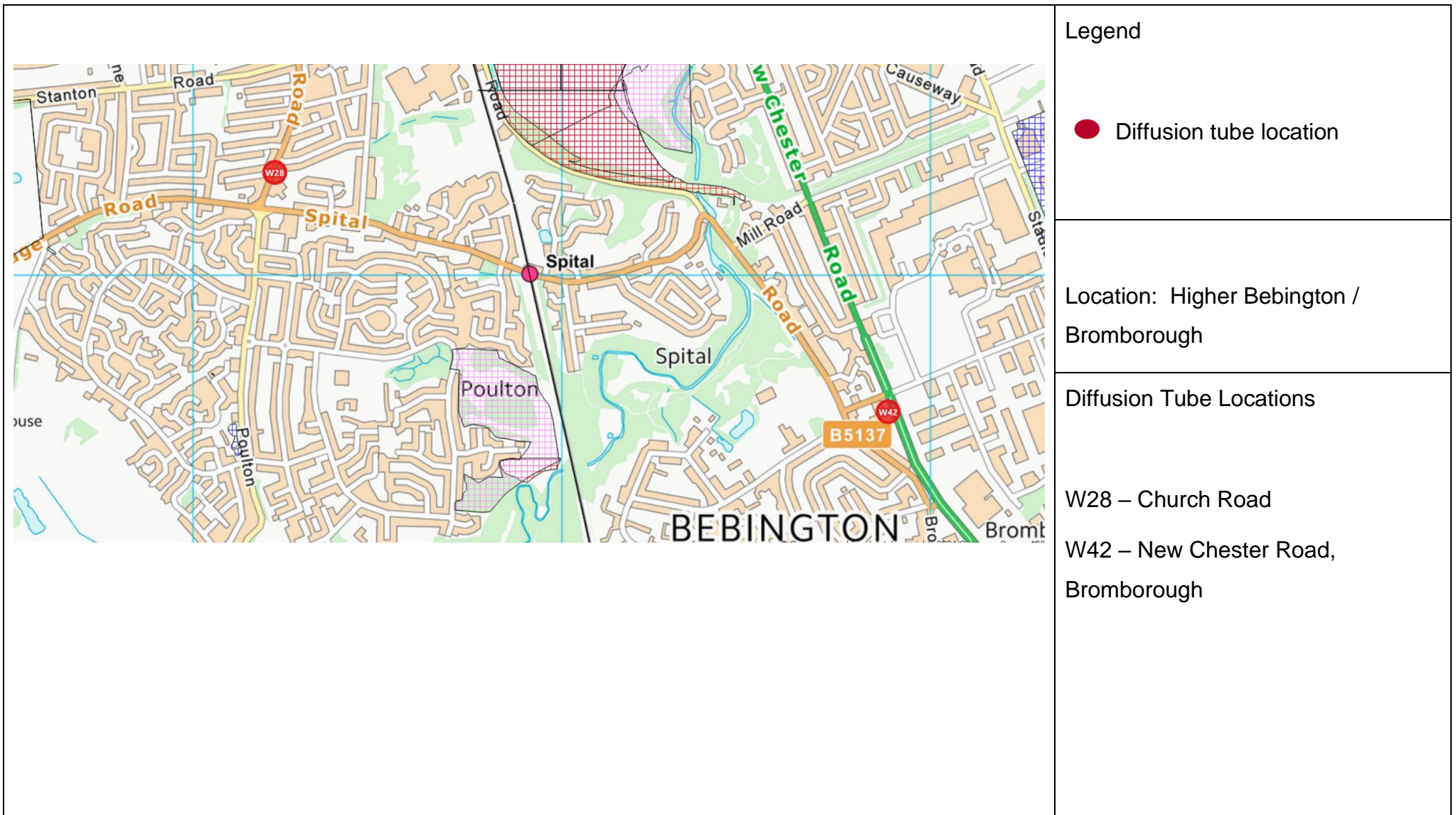
Location: A41 Port Sunlight

Diffusion Tube Locations

- W5 – Bolton Road East
- W12 – New Chester Road
- W13 – New Chester Road
- W18/19 – New Chester Road
- W34/19 – New Chester Road
- W27 – New Chester Road

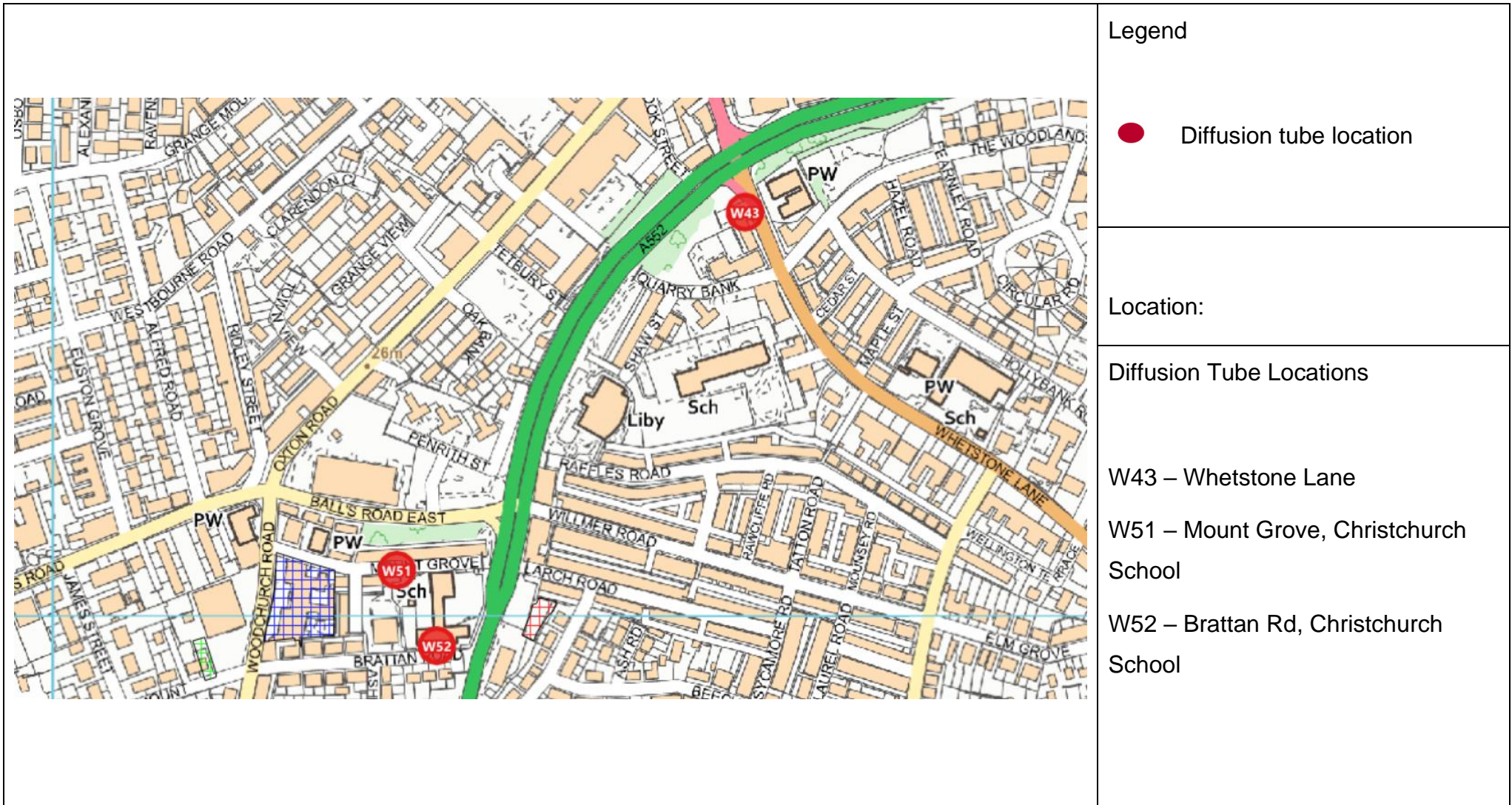
	Date: May 2024	Figure No. D15
--	----------------	-------------------

Figure D.15 – Map of Non-Automatic Monitoring Site



	Date: May 2024	Figure No. D16
--	----------------	-------------------

Figure D.16 – Map of Non-Automatic Monitoring Site

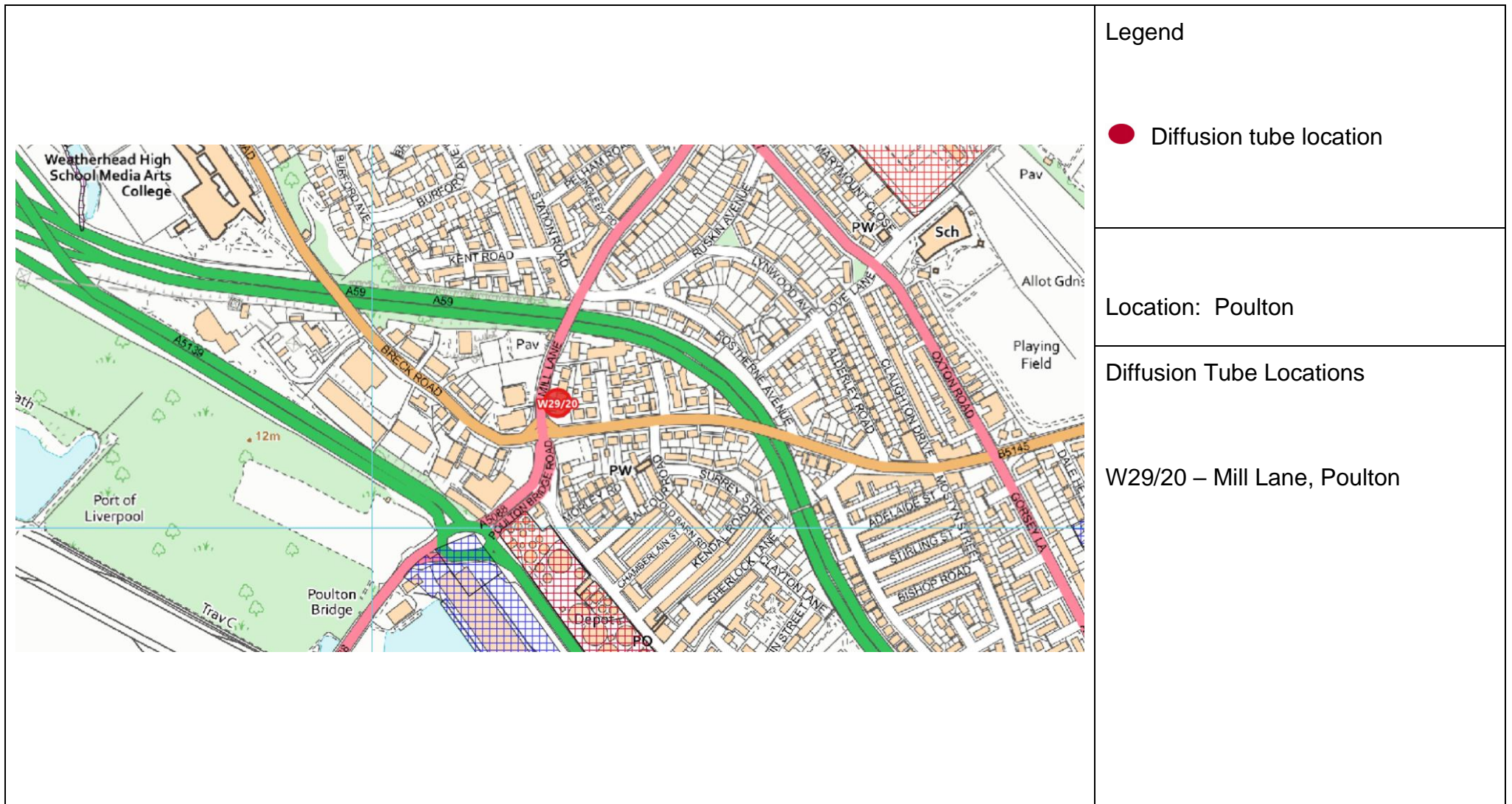


	Date: May 2024	Figure No. D17
--	----------------	-------------------

Figure D.17 – Map of Non-Automatic Monitoring Site

“

Figure D.18 – Map of Non-Automatic Monitoring Site



Legend

● Diffusion tube location

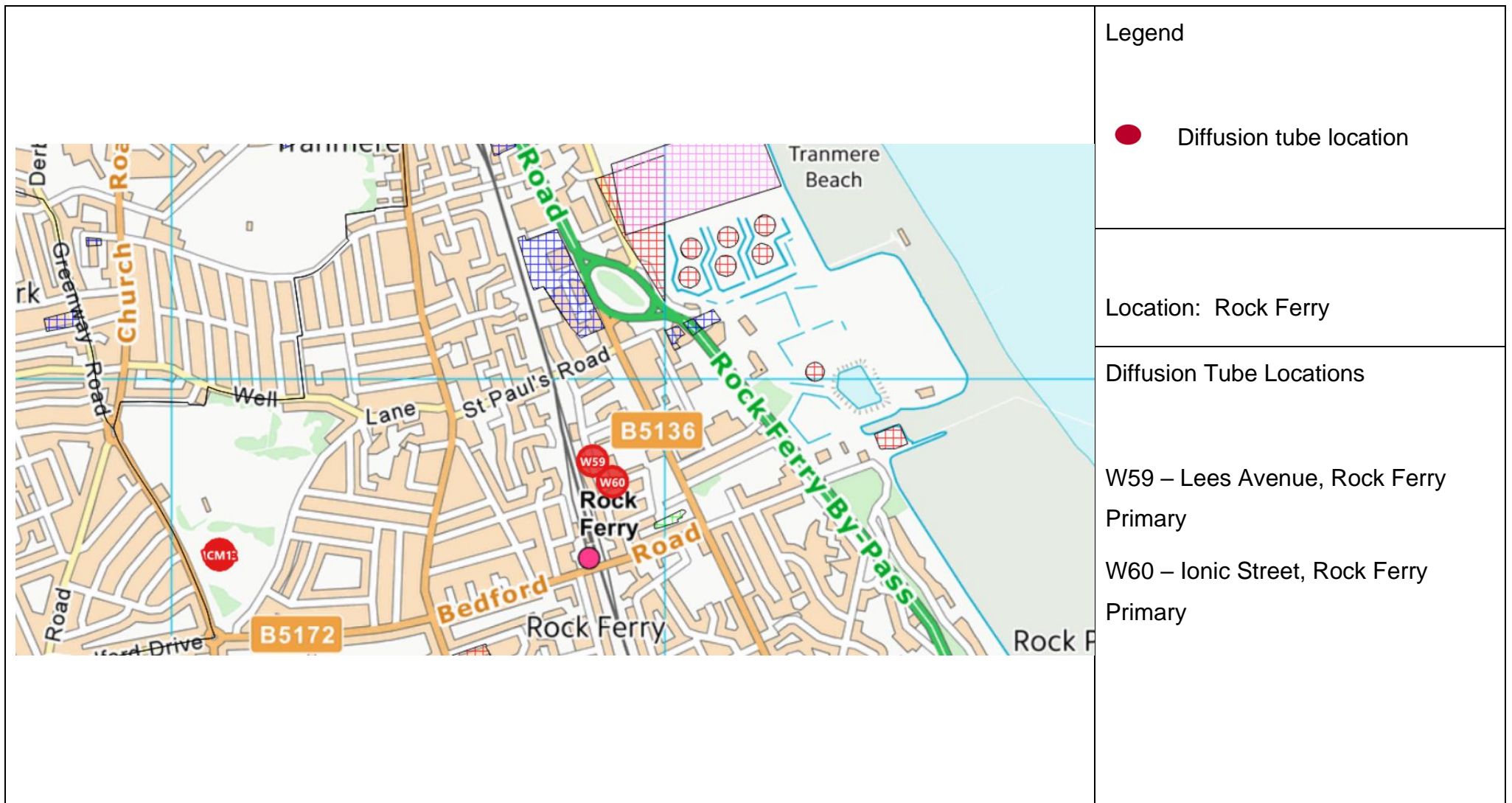
Location: Poulton

Diffusion Tube Locations

W29/20 – Mill Lane, Poulton

	Date: May 2024	Figure No. D18
--	----------------	-------------------

Figure D.19 – Map of Non-Automatic Monitoring Site



	Date: May 2024	Figure No. D19
--	----------------	-------------------

Appendix E: Summary of Air Quality Objectives in
England

Table E.1 – Air Quality Objectives in England⁷

Pollutant	Air Quality Objective: Concentration	Air Quality Objective: Measured as
Nitrogen Dioxide (NO ₂)	200µg/m ³ not to be exceeded more than 18 times a year	1-hour mean
Nitrogen Dioxide (NO ₂)	40µg/m ³	Annual mean
Particulate Matter (PM ₁₀)	50µg/m ³ , not to be exceeded more than 35 times a year	24-hour mean
Particulate Matter (PM ₁₀)	40µg/m ³	Annual mean
Sulphur Dioxide (SO ₂)	350µg/m ³ , not to be exceeded more than 24 times a year	1-hour mean
Sulphur Dioxide (SO ₂)	125µg/m ³ , not to be exceeded more than 3 times a year	24-hour mean
Sulphur Dioxide (SO ₂)	266µg/m ³ , not to be exceeded more than 35 times a year	15-minute mean

⁷ The units are in microgrammes of pollutant per cubic metre of air (µg/m³).

Glossary of Terms

Abbreviation	Description
AQAP	Air Quality Action Plan - A detailed description of measures, outcomes, achievement dates and implementation methods, showing how the local authority intends to achieve air quality limit values'
AQMA	Air Quality Management Area – An area where air pollutant concentrations exceed / are likely to exceed the relevant air quality objectives. AQMAs are declared for specific pollutants and objectives
AQTECH	Air Quality Technical Group
ASR	Annual Status Report
AURN	Automatic Urban Rural Network
BSIP	Bus Service Improvement Plan
CA	Combined Authority
CMCU	Central Management and Co-ordination Unit
CATN	Core Active Travel Network
CATP	Combined Authority Transport Plan
CRSTS	City Region Sustainable Transport Settlement
Defra	Department for Environment, Food and Rural Affairs
DMRB	Design Manual for Roads and Bridges – Air quality screening tool produced by National Highways
DfT	Department for Transport
EA	Environment Agency

ECEAP	Environment and Climate Emergency Action Plan
EU	European Union
FDMS	Filter Dynamics Measurement System
HVO	Hydro-treated vegetable oil
HSL	Health and Safety Laboratory
ITB	Integrated Transport Block
JSNA	Joint Strategic Needs Assessment
LAQM	Local Air Quality Management
LCR	Liverpool City Region
LCRCAQ	Liverpool City Region and Cheshire Air Quality Group
LCWIP	Local Cycling and Walking Infrastructure
LSO	Local Site Operator
NO ₂	Nitrogen Dioxide
NO _x	Nitrogen Oxides
NPPF	National Policy Planning Framework
OLEV	Office for Low Emission Vehicles
OZEV	Office for Zero Emission Vehicles
PHE	Public Health England
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

PHOF	Public Health Outcome Framework
PT	Proficiency Testing
QA/QC	Quality Assurance and Quality Control
SO2	Sulphur Dioxide
STEP	Sustainable Transport Enhancement Programme
SUD	Sustainable Urban Development
UKHSA	UK Health Security Agency
UDP	Unitary Development Plan
UN	United Nations
WHO	World Health Organisation
WTSO	Walk To School Outreach

References

Local Air Quality Management Technical Guidance LAQM.TG22. August 2022. Published by Defra in partnership with the Scottish Government, Welsh Assembly Government and Department of the Environment Northern Ireland.

Local Air Quality Management Policy Guidance LAQM.PG22. August 2022. Published by Defra in partnership with the Scottish Government, Welsh Assembly Government and Department of the Environment Northern Ireland.

Chemical hazards and poisons report: Issue 28. June 2022. Published by UK Health Security Agency

Air Quality Strategy – Framework for Local Authority Delivery. August 2023. Published by Defra.