



North Tyneside Council

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

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Executive Summary: Air Quality in Our Area

Air Quality in North Tyneside

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})	<p>Particulate matter is everything in the air that is not a gas.</p> <p>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.</p> <p>PM₁₀ refers to particles under 10 micrometres. Fine particulate matter or PM_{2.5} are particles under 2.5 micrometres.</p>

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

North Tyneside is located to the east of the regional capital of Newcastle upon Tyne. It is one of the five metropolitan districts that makes up the Tyne and Wear conurbation. The Borough is made up of 20 wards and has a residential population of around 207,000 with approximately 99,000 households and covers an area of 84km². The Borough stretches from the eastern boundary of Newcastle upon Tyne to the North Sea and from the southern boundary of Northumberland to the River Tyne.

The northern fringe of the Borough is open countryside with the main urban areas, including the towns of Wallsend, North Shields, Tynemouth, and Whitley Bay located along the river and coastline. Additionally, there are three large settlements to the west of the Borough; Longbenton, Forest Hall and Killingworth and to the north of the Borough are the villages; Wideopen, Burradon, Annitsford, and Backworth.

The River Tyne is a commercial river with ship repair, offshore fabrication, fishing and port related industries. The riverside urban area has undergone major regeneration which has resulted in some diversification from ship building to offshore related construction work. Business parks were created along the main transport routes of the A19 and the coast road A1058 consisting of office developments including the Cobalt Business Park, Balliol Business Park and retail outlets including the Silverlink and Royal Quays. Residential areas were developed on former industrial land adjacent to the heavy engineering yard Smulders in Wallsend. Residential premises were built on the former Hayhole gas works at Wallsend and at The Limes, Great Lime Road, Palmersville and on greenfield land adjacent to the A19 at Backworth and Scaffold Hill.

North Tyneside Council has created 61 smoke control areas that cover the majority of North Tyneside. Within these areas it is an offence to create smoke from a chimney except during lighting up when kindling can be used. Smoke control enforcement remains a priority for the Council. A resident awareness campaign was carried out in a targeted area to highlight recent legislative changes aiming to improve emissions from solid fuel or wood. New smoke control legislation requires the supply of smokeless solid fuel and compliant wood. Coal can no longer be supplied, and shops may only sell smokeless solid fuel and all wood sold in volumes of less than 2 cubic metres must be certified as 'Ready to Burn'. Indicative air samplers will be used within residential areas to measure fine

particulate levels and will be located where there has been an increase in the use of wood burning stoves.

The main pollutants monitored within the Borough of North Tyneside, continue to be nitrogen dioxide (NO₂), and fine particulates of less than 2.5 microns (PM_{2.5}) or 10 microns in diameter (PM₁₀). These pollutants are predominantly attributed to traffic pollution. Monitoring carried out throughout the Borough in 2023 has shown that the pollutant levels for nitrogen dioxide have marginally increased when compared with 2020, but nitrogen dioxide levels are still lower than pre-covid emission levels. All monitoring locations show North Tyneside continues to achieve good air quality with nitrogen dioxide annual mean concentrations well below the UK air quality objectives, including at the automatic monitoring station located at NTC01 on the Coast Road A1058. There were 8 new sites introduced for the 2023 monitoring year. North Tyneside has not declared any Air Quality Management Areas (AQMAs) within the Borough and the latest monitoring data has shown no requirement to proceed to declare any AQMAs.

There were two major developments granted planning approval in 2023 that had the potential to affect air quality. Air quality assessments were required with the planning applications to consider the air quality impacts arising from the development. The air quality impact assessments determined that the developments would have negligible impact on air quality and that the air quality objectives would not be exceeded. Further information on the planning applications are provided in Appendix C. There were no new industrial processes granted an environmental permit in 2023.

There were no new major sources of nitrogen dioxide and particulate matter in the Borough in 2023. North Tyneside Council will continue to monitor for nitrogen dioxide using indicative passive monitors, and real time monitoring for nitrogen dioxide and particulates is carried out at the real time station located on the Coast Road A1058. Two new indicative continuous air emission monitors were purchased in 2023. The air emission monitors measure the pollutants NO₂, PM₁₀ and PM_{2.5}. Between May to August 2023, these indicative continuous monitors were located at the entrance of two schools, one with a car pick up ban and one without car pick up ban to review the air quality. The monitors were then relocated in September 2023 to review air quality emissions about Holystone bypass A191 over a two year period, annual monitoring data trends will be reported in the 2025 annual status report.

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

North Tyneside Borough Council's actions to improve air quality during 2023 continue to focus on transport related schemes. One scheme that was completed in 2023 was a new transport hub in North Shields town centre. The transport hub promotes cleaner travel by connecting bus, Metro, taxis and cycle routes. The transport hub is fully carbon-neutral, as part of the Council's net zero plan by 2030 and encourages residents to choose a cleaner form of travel. Another transport measure implemented in 2023 was the Seafront Sustainable Travel Route. This is a transport route consisting of a permanent, segregated, two-way, safe space along the seafront between the North Shields Fish Quay and St Mary's Lighthouse in Whitley Bay for people using sustainable and active forms of travel. The scheme was funded via a £11m grant from Active Travel England and consists of creating a separate space for people of all ages to travel along, using forms of sustainable and active transport, such as bikes, skateboards and scooters. It provides a dedicated area for cyclists and pedestrians. The scheme supports the Council's

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

commitment to encourage more people to take up active travel and adopt a healthier lifestyle. It makes it easier for people to safely access popular attractions within the borough like St Mary's Lighthouse, Spanish City and Tynemouth Priory, as well as the beaches. The two transport related schemes completed in 2023 are designed to improve access to public transport and provide alternative transport modes and shift the number of journeys by car, thereby improving air quality in the borough.

The Council is continuing to progress initiatives as part of the Net Zero 2030 Plan. The initiatives are climate change measures that bring about associated air quality improvements. The measures include improving EV charging infrastructure, replacement of all 20,000 street lights with energy efficient LED lighting, and planting of 10,000 trees over 15 hectares of land across the borough, as part of the North East Community Forest. The Council continues to encourage business to implement measures to reduce energy use and have developed and promoted a Climate Adaptation Toolkit to support North Tyneside businesses.

Environmental Health undertook a study into the effectiveness of the school streets scheme introduced in 2021 as part of the 'Go Smarter' campaign. The school streets programme carried out promotion of greener forms of transport and with the cooperation of schools, created pick up / drop off bans at schools by use of road closures for specific peak times. Such schemes promoted the use of alternative modes of travel for parents taking their children to school. The air quality study reviewed air quality with and without road closure orders. Nitrogen dioxide and particulates from two indicative continuous air samplers and passive NO₂ diffusion tubes were located at two schools to assess the benefits of the pick-up/ drop off ban. The streets with the ban are marshalled by school representatives and a physical barrier is used to close the road located outside of the school entrance to prevent vehicle access. Signage is displayed outside the school to promote the scheme. This is designed to make their journeys greener, cheaper and to provide positive health benefits. The study determined that during the period when the road was closed there were positive benefits to air quality, as the particulate levels were shown to drop. 11,552 school pupils received 'Go Smarter' sustainable travel promotion and /or road safety training. 2,407 school pupils received national standard 'Bikeability' training, and 878 received the Pedestrian Training course. These initiatives help to support children and their families to walk, wheel or cycling in place of car use, supporting cleaner air.

Environmental health completed a smoke awareness campaign on burning solid fuels and wood, and promoting legislation changes on coal ban, improving labelling for small packaging of wood for sale to show “Ready to Burn“. A smoke enforcement policy is to be introduced to allow a quicker more effective means to penalise offenders of smoke control offences using financial penalties. Further proactive promotion of smoke control rules will be carried out next year. The Council also supported the Clean Air Night campaign, that took place on 24 January 2024 to support a 'No Burn Night'. The first ever Clean Air Night highlighted the following:

- Wood burning harms your health. Lighting fires is the largest source of harmful small particulate air pollution in the UK.
- Wood burning harms the planet. Wood burning creates harmful CO₂ emissions, and we cannot grow trees fast enough to offset the CO₂ emitted from burning wood.
- Wood burning harms your wallet. It is almost more expensive than other forms of heating.

Conclusions and Priorities

North Tyneside Council has no AQMA's. The latest monitoring data for 2023 has confirmed that monitored pollutants are below the air quality objective levels and there have been no exceedances. In conclusion there is no requirement for any Air Quality Management Areas to be declared.

The long-term monitoring over the period 2019 and 2023 shows a slight increase in nitrogen dioxide levels at most of the sites in 2023 when compared to 2022. The increase in pollutant levels at most of the sites during 2023 is considered the result of increased traffic levels.

There are no new developments that are considered likely to adversely impact air quality and monitored pollutant levels continue to be below the National Air Quality Objectives.

North Tyneside Council's objectives identified during the year 2023 were met. These included monitoring NO₂ at 33 locations and monitoring of particulates and NO₂ at one real time monitoring station and implementation of the Air Quality Strategy.

North Tyneside Council aim for 2024 is to continue monitoring using indicative and real time continuous measurements, NO₂ and fine particulates in the borough. In 2024, there will be 29 passive NO₂ diffusion tube locations throughout the borough, one fixed real time continuous monitoring station for NO₂ and fine particulates located on the Coast Road

A1058 and at two indicative continuous monitors reviewing NO₂ and particulates on the Holystone Bypass.

Local Engagement and How to get Involved

Air quality status reports, including historic reports, are made available on the Council's website. The website provides details on how and where we monitor air quality. There is also information provided on the smoke control orders, advice on how to reduce emissions from burning of fuels, and links to the daily air pollution forecast. A further smoke control campaign is intended for the winter period and future reports will consider localised residential areas for particulates as three additional continuous indicative monitors are located specifically to consider burning of solid fuels and wood.

Public participation remains a high priority for the Council so that everyone can do their bit to improve air quality. Public information on Council Net Zero 2030 plan is detailed on the council's website, including details on the Action on Climate Change campaign. This details information on how the public can do their bit by choosing alternative sustainable ways to travel and reducing energy usage.

A cycling strategy and local transport strategy have been adopted by the Council. Further information about these strategies can be obtained from the following website:

- Cycling Strategy

Information on North Tyneside Council climate change and sustainability policies are available on the following websites:

- Sustainability Policies including Net Zero 2030 Plan
- Transport Strategy

Detailed information is also available on the government stance on air quality. Further information on Local Air Quality Management is available at the following web address:

<https://uk-air.defra.gov.uk/>.

Local Responsibilities and Commitment

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

- Integrated Transport Team
- Development Control
- Environmental Sustainability Officer
- Public Health

This ASR has been approved by:

Joanne Lee, Head of Public Protection



This ASR has been signed off by a Director of Public Health.

If you have any comments on this ASR please send them to Frances McClen or Claire Wilson at:

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1 Local Air Quality Management

This report provides an overview of air quality in North Tyneside 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 North Tyneside Council to improve air quality and any progress that has been made.

The statutory air quality objectives applicable to LAQM in England are presented in Table E.1.

2 Actions to Improve Air Quality

2.1 Air Quality Management Areas

Air Quality Management Areas (AQMAs) are declared when there is an exceedance or likely exceedance of an air quality objective. After declaration, the authority should prepare an Air Quality Action Plan (AQAP) within 18 months. The AQAP should specify how air quality targets will be achieved and maintained and provide dates by which measures will be carried out.

North Tyneside 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 on the council's website.

The aims and objectives of the air quality strategy are reviewed regularly through an air quality steering group, meeting twice yearly to discuss progress. This group is represented by Highways, Planning, Sustainability, Public Health and Environmental Health. The strategy specifies aims to be achieved.

Air quality information is made available on the Council's website. This information is reviewed annually and updated. Aim 1.4 and 1.5 of the Strategy focuses on smoke enforcement. During 2023 proactive measures were taken to promote updates to the smoke legislation. Smoke complaint data was analysed over a 5-year period to identify the area where the highest number of complaints have been received about smoke emissions from chimneys. Letters were sent to all properties within the targeted area to highlight recent updates to the smoke legislation. Indicative real time air samplers monitoring for NO₂ and particulates will be located in residential areas where concerns over smoke emissions have been highlighted. This will enable air pollution data to be analysed. The smoke enforcement policy is anticipated to be progressed in 2024-25.

The taxi licensing policy was implemented in 2023. This policy stipulates emission standards for taxis from the 1 April 2024; all new vehicle applications will require to meet Euro 6 for diesel vehicles and Euro 5 for petrol vehicles. The emission standard will apply to all existing licences from the 1 April 2026. From 1 April 2027 a wheelchair accessible

vehicle licence will not be renewed unless the vehicle meets the minimum emission standards of Euro 6 for diesel vehicles and Euro 5 for petrol vehicles.

The School Streets initiative is an ongoing programme that encourages schools to introduce a road closure during the morning and afternoon periods when children arrive and depart to and from the school. This initiative was on a trial basis but has been made permanent. School Streets create an attractive space for people to walk, wheel and cycle by restricting motor vehicle access to the street around the school gates at school start and finish times. Environmental Health carried out a project during 2023 to monitor the effect of the road closure during the 1 hour period in the morning and afternoon. The project compared the levels of air pollution between a school participating in the School Streets Initiative, Hadrian Park Primary School and one which was not participating, Cullercoats Primary School. The study also considered a questionnaire for parents and guardians of the schools to complete to obtain their perception of the school's streets initiative, the modes of transport that was used in their commutes, and if further promotion of the School Street initiative and its benefits would be valuable. The real time data from the air samplers was analysed for the 1 hour average PM_{2.5} levels for the period of the road closure. The air quality monitoring results in closure period for June 2023 were compared against pre and post closure hourly averages. It was concluded that the pollution levels from particulates during closure was lower for 55% of the time compared against pre and post closure levels. This would suggest that the road closure was giving positive benefits to the air pollution levels at the school as well as encouraging healthy modes of transport. The results are indicative only as other factors would influence the air pollution in the area during the road closure time period of 8am-9am period, as this is considered peak rush-hour for the surrounding roads and the results would also be influenced by wind direction.

Public Health measures are also detailed within the Strategy. A Joint Strategic Needs Assessment (JSNA) topic has been produced. This requires approval through the Health and Wellbeing Board, but once agreed it will form part of the North Tyneside Council JSNA. Analysis of national reviews highlighted evidence-based indicators which could be used to suggest the changing nature of air quality and the impact upon residents' health. There is ongoing work to ensure that health inequalities are considered in relation to strategic actions. A research study is being considered, in conjunction with a local University to improve the connection between poor air quality and self-care for those more at risk (i.e. those with asthma).

The Air Quality Strategy includes aims that are focused on the Net Zero 2030 plan. A key area of the plan focuses on transport with 19 measures specified to deliver reductions in carbon emissions which have a direct air quality benefit. Grant funding of £117k has been provided to improve EV infrastructure in the borough. During 2023, a roof top solar panel and solar car portal infrastructure was installed at the Councils Killingworth site. This provides for 40 EV charging points for council staff to access. Other measures of the plan include for engagement with bus operators to progress the objectives of the North East Bus Service Improvement Plan (e.g. targeted improvements to bus priority and traffic signal technology to support bus reliability); this will be actioned in 2024. Other measures implemented include cycling infrastructure improvements, public transport access improvements, bus fleet upgrades to EV, footpath upgrades, and an initiative to investigate the potential for borough wide ebike hire scheme and leasing options.

2.2 Progress and Impact of Measures to address Air Quality in North Tyneside

Defra's appraisal of last year's ASR concluded that:

- The 2023 report was well structured and detailed.
- It was recommended that an example calculation for annualisation using the national bias factor (0.83) would be beneficial. This is noted, although none of the monitoring data for 2022 required annualisation.
- That the Council should continue to Reference to the Public Health Outcomes Framework, following the positive work made in the 2023 submission.
- To continue the analysis of trends in the air quality data in comparison to the Air Quality Objectives.
- And to continue maintaining high standards of QA/QC procedures with sufficient supporting evidence being provided.

North Tyneside Council has taken forward a number of direct measures during the current reporting year of 2023 in pursuit of improving local air quality. Details of all measures completed, in progress or planned are set out in Table 2.. Eight measures are included within Table 2. with the type of measure and the progress North Tyneside Council have made during the reporting year of 2023 presented. Where there have been, or continue to be, barriers restricting the implementation of the measure, these are also presented within Table 2..

More detail on these measures can be found in their respective Action Plans, which include North Tyneside Councils Low Carbon Plan 2016-2027. This plan implements measures to reduce the Councils carbon footprint and improve air quality. Part of carbon footprint commitment the Council continues to support the cobalt car sharing scheme, which is managed by the Cobalt Travel Team, promoting the cycling strategy, transport strategy and the implementation of the Net Zero 2030 Action Plan.

Key completed measures are:

- Monitoring and ratification of NO₂ at 33 diffusion tube locations.
- Support of real time continuous air quality monitoring for NO₂ and Particulates, including PM_{2.5} at the real time air station located on the Coast Road A1058.

- Smoke Control Awareness campaign completed which involved a targeted leaflet drop in an area of Whitley Bay where there had been a concentration of smoke complaints over a 5-year period. The leaflet outlined the changes to the smoke legislation, promoted the correct use of wood burning appliances, storage of fuels and need to ensure appliances are operated in accordance with the manufacturer's instructions.
- Two real time indicative air samplers were installed on the Holystone Bypass. The equipment was purchased using Section 106 funding that was secured from the Scaffold Hill, Bellway and Taylor Wimpey development that consisted of the development of 410 residential dwellings that was granted planning consent in 2015. The Section 106 funding was for the developer to provide a funding contribution to the Local Authority to enable air quality monitoring to be carried out along Holystone Way Bypass. The purpose of this monitoring is to assess particulates and nitrogen dioxide levels resulting from any possible increased traffic levels on Holystone Bypass arising from the residential development at Holystone (Scaffold Hill) and ensure that the air quality in the area complies with national air quality standards. The equipment was installed in September 2023 and data is now being captured and reviewed on a monthly basis. As the air samplers are indicative only they provide a guide on the air quality in the area.
- Review of air quality at school entrances with or without road closure and impact on modal changes was carried out in 2023.
- North Tyneside Council continues to encourage and promote alternative clean transport modes such as cycling to improve air quality and promotes a cycle to work scheme via salary sacrifice. North Tyneside's [cycling strategy](#) is available on the councils website.
- A car sharing scheme is available for all employees located at the main Council offices at The Quadrant, which is managed by the Cobalt Travel Centre who coordinate drivers and passengers. The scheme supports employees to consider car sharing as a cost effective and more sustainable travel option.

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

- Monitoring of NO₂ at 29 diffusion tube locations
- First year review of indicative monitoring about Holystone bypass.

- Monitoring of real time continuous air quality monitoring for NO₂ and Particulates at one real time air station located on the Coast Road A1058.
- Installation of three real time indicative air samplers in residential areas of Whitley Bay, Tynemouth and Wallsend to assess air pollution associated with the use of domestic solid fuel appliances.

North Tyneside Council does not anticipate any challenges and barriers to the implementation of the above measures.

Table 2.1 – 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	Smoke Control Enforcement	Public Information	Via other mechanisms	2023	2025	Local Authority Environmental Health	Smoke Enforcement Grant	Yes	Funded	£11k	Planned	Reduced Smoke Emissions	Reduction of PM	Implementation on-going	NA
2	Net Zero Action Plan	Policy Guidance and Development Control	Other Policy	2019	2030	Local Authority	NA	NO	Not Funded	NA	Implementation	Reduced vehicle emissions	Reduction of NO ₂ , PM	Implementation on-going	NA
3	Go Smarter Scheme	Promoting Travel Alternatives	Schools Travel Plan		Ongoing	Local Authority Transport Dep.	NA	No	Not Funded	<10k	Implementation	Reduced vehicle emissions	Reduction of NO ₂ , PM	Implementation on-going	NA
4	Compliance Charge for Part B Processes	Environmental Permits	Other	N/A	Ongoing	Local Authority Environmental Health	NA	NO	Not Funded	N/A	Implementation	Reduced industrial emissions	Reduction of NO ₂ , PM	Implementation on-going	NA
5	School Road Closure	Promoting Travel Alternatives	Schools Travel Plans	2022	Ongoing	Local Authority Transport Dep.	NA	NO	Not Funded	N/A	Implementation	Reduced vehicle emissions	Reduction of NO ₂ , PM	Implementation on-going	NA
6	Taxi Licensing Scheme	Promoting Low Emission Transport	Taxi Licensing conditions	2020	Ongoing	Local Authority Licensing	NA	NO	Not Funded	N/A	Implementation	Reduced vehicle emissions	Reduction of NO ₂ , PM	Implementation on-going	NA
7	Cobalt Car Sharing Scheme	Promoting Travel Alternatives	Workplace Travel Planning	2015	N/A	Cobalt Travel Team	NA	NO	Not Funded	< £10k	Implementation	Reduced vehicle emissions	Reduction of NO ₂ and PM	Implementation on-going	NA
8	Car Lease Scheme	Promoting Low Emission Transport	Company Vehicle Procurement		Ongoing	NTC	NA	NO	Not Funded	NA	Implementation	Reduced Vehicle Emissions	Reduction of NO ₂ and PM	Implementation on-going	NA

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

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

North Tyneside Council is taking the following measures to address PM_{2.5}:

- North Tyneside Council currently monitors PM_{2.5} at one real time station within the borough, located on the Coast Road A1058. This PM_{2.5} pollutant levels at this location has shown a slight increase in the pollutant levels over the last two years, considered to be the result of increased traffic travelling along the main Coast Road. The Public Health Outcomes Framework D01 Fraction of mortality attributable to particulate air pollution for North Tyneside for the year 2022 has been calculated as 6.2%. The methodology for the calculation, which is based on modelling, was changed in 2022 and resulted in less than 1% increase to the 2021 figure. A location has been identified in North Shields for a AURN PM_{2.5} monitoring site, which will provide valuable monitoring data to support the local air quality monitoring currently carried out and allow real time data to be used within the calculation for the Public Health Outcomes Framework D01 Fraction of mortality attributable to particulate air pollution.
- Use of an Air Quality steering group to prioritise actions and measures to tackle PM_{2.5}. The membership consists of all relevant partners including Transport, Planners, Public Health, Planning, Sustainability and Environmental Health.
- An Air Quality Strategy has been adopted that sets effective goals to bring about air quality improvements.
- An ongoing commitment to bring about traffic management improvements to reduce congestion.

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

- Reduce emissions from new developments (during the construction phase and in subsequent use) and existing buildings by implementing energy efficiency measures and affordable warmth schemes to reduce heat loss and drive down fuel bills.
- Encouraging use of public transport and promoting alternative modes of transport. Thereby reducing emissions from vehicles on the road and encouraging the uptake of alternative 'low emission' vehicles. Other measures include the use of travel plans for new developments, introduction of electric charging points, parking charges, and reducing of engines idling etc.
- Promotion of a cycling strategy that was adopted in 2018. The council promotes and encourages cycling as a healthy and sustainable way of making everyday journeys. The cycling strategy outlines the Council's strategic approach to supporting cycling in the Borough.

North Tyneside Council will continue to provide information to residents on air pollution, promote advice to the public on measures that can be taken on an individual level, and health issues by maintaining an up-to-date Council [air quality](#) webpage.

The majority of North Tyneside is covered by smoke control areas. Grant funding from DEFRA was provided in 2023 to enable enforcement of the smoke control orders. The funding was used to carry out proactive work within areas where there has been a high uptake of wood burning stoves. Complaints were reviewed over a five year period to identify areas with the highest number of complaints. This identified an area of Whitley Lodge in the Whitley Bay ward. 251 addresses were written to in this area, providing advice on updated smoke legislation and the 'Ready to Burn' scheme. However, overall complaints about smoke from chimneys remain low, with 19 smoke complaints received in 2023, resulting in 14 warning letters being issued. Further promotional campaigns will be carried out during 2024. Three indicative air samplers have been purchased and installed in residential areas of Whitley Bay, Tynemouth, and Wallsend to monitor particulates arising from increased solid fuel use. Data will be obtained over 2024 and reviewed to understand the trends in particulates from their use during winter months.

One of the major sources of PM_{2.5} in the borough are road traffic emissions, comprising engine exhaust, road and tyre/brake abrasion. The council are focused on measures designed to either reduce vehicle use or congestion, and to encourage businesses and

residents to switch to alternative fuels, and such measures should assist in the reduction of PM_{2.5} emissions. As part of those measures an age standard as part of the Council's Taxi Policy was introduced. From 1 April 2024 no new vehicle licences will be granted for the vehicle unless it meets the minimum emission standards of Euro 6 for diesel vehicles and Euro 5 for petrol vehicles. From 1 April 2026 a vehicle licence will not be renewed unless the vehicle meets the minimum emission standards of Euro 6 for diesel vehicles and Euro 5 for petrol vehicles and from 1 April 2027 a wheelchair accessible vehicle licence will not be renewed unless the vehicle meets the minimum emission standards of Euro 6 for diesel vehicles and Euro 5 for petrol vehicles.

Construction dusts are considered for all major planning applications granted approval. The developer must have a Construction Environmental Management Plan (CEMP) in place to mitigate dust emissions that may arise during construction, as it is recognised that such sites will contribute to localised particulate emissions. Complaints about dust arisings from construction and demolition activities are fully investigated and the Environmental Health closely monitors dust emissions from industrial installations.

Industrial emissions are regulated through the Environmental Permitting Regulations 2016. Businesses that meet the threshold requirements must apply for a Part B or A2 permit which are regulated by North Tyneside Council. No new Part B or A2 processes have been granted a permit in 2023. All permitted processes are inspected in accordance with DEFRA guidance to ensure that national process guidance note emission limits are met and are minimised as far as is practically possible not exceeding excessive cost.

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

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

3.1 Summary of Monitoring Undertaken

3.1.1 Automatic Monitoring Sites

North Tyneside Council undertook automatic (continuous) monitoring at 1 site during 2023 for nitrogen dioxide and fine particulates located on Coast Road A1058 Wallsend. Table A.1 in Appendix A: Monitoring Results shows the details of the automatic monitoring site. 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. Historic monitoring for benzene did not determine any concerns over this pollutant level and monitoring is no longer carried out. The automatic monitoring results for North Tyneside Council real time monitoring station on the Coast Road can be viewed on the [Air Quality England Website](#) only monthly reports are ratified. The results of ratified adjusted data for NO₂, PM₁₀ and PM_{2.5} is provided in Appendix A tables A.2, A.3, A.7, and A.8, and the results are discussed in section 3.2. The site is owned and maintained by the Urban Observatory and located on the Coast Road in Wallsend.

The map showing the location of the automatic monitoring site is found in Appendix D on Figure D.4 South-West area of the borough. Details on the calibration and validation of the data and quality control is given in Appendix C, while details on how the data has been adjusted is also included in Appendix C.

3.1.2 Non-Automatic Monitoring Sites

North Tyneside Council undertook non- automatic (i.e. passive) monitoring of NO₂ at 33 sites during 2023. Table A.2 in Appendix A presents the details of the non-automatic sites.

Maps D1-D4 show the locations of the non-automatic monitoring sites attached in Appendix D. The results of NO₂ are provided in Appendix A tables A.2 and A.4. 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.

Closed sites:

CH5, HP1, LB1 and W17 – Sites no longer required as long term monitoring showing consistent NO₂ levels well below the annual objective mean level.

New sites

CPS1, CPS2, CPS3, CPS4, HPPS1, HPPS2, HPPS3 and HPPS4 introduced for a 1 year monitoring exercise for the schools streets project.

3.2 Individual Pollutants

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

3.2.1 Nitrogen Dioxide (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 for automatic continuous monitor site and non-automatic monitoring sites respectively. 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).

Table A.5 hourly mean NO₂ results in Appendix A shows over 5 year period, the number of exceedances per year of the ratified continuous monitored hourly mean concentrations against the air quality hourly NO₂ standard of 200µg/m³. The hourly objective is for hourly

mean NO₂ standard of 200µg/m³ per year, not to be exceeded more than 18 times per year. There have been no exceedances of the 1-hour objective at the real time analyser over the past five years.

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.

None of the diffusion tube sites in North Tyneside exceeded the annual mean objective in 2023 following bias adjustment. There was no requirement for distance correction or annualisation for any of the monitoring sites.

None of the diffusion tube monitoring locations have pollutant concentrations within 10% of the annual mean objective level and the annual mean NO₂ pollutant levels do not suggest any indication that concentrations will have exceedances of the 1-hour NO₂ mean objective level.

The automatic monitoring data gave an annual mean concentration of 32.2 µg/m³ which is below the annual mean objective level of 40 µg/m³. The 2023 concentration level is lower than the 2022 which recorded a level of 35.4 µg/m³. This is attributed to improvements in the traffic flowing along the Coast Road A1058.

The long-term 5 year Annual Mean NO₂ trend chart in Figure A.1 provides a comparison between 2019 and 2023 of the long-term NO₂ indicative monitoring sites in the borough of annual means. The chart shows a decrease in NO₂ during 2023 compared to 2022. The trend shows that all long-term monitoring sites are well below the annual mean objective level of 40 µg/m³. The monitoring data shows that the Coast Road real time station recorded the highest annual mean concentration at 32.3 µg/m³ shown in table A.3. The Coast Road roadside monitoring location is adjacent to one of the main arterial roads into the borough, with high traffic volumes. The next highest concentration was at monitoring location LH7 on Battlehill Drive, Wallsend. This site is roadside and is adjacent to a small local shopping complex, with bus operations travelling along this road. Monitoring location WB9 recorded the lowest concentration of 11.6. WB9 is located at Morrisons Petrol Station on Hillheads Road, Whitley Bay.

The results for 2023 suggest that there is no requirement to declare any AQMAs in North Tyneside.

3.2.2 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.

North Tyneside Council undertook particulate monitoring at one location in 2023 at the real time monitoring site located on the Coast Road 1058. Concentrations in 2023 were well below the objective, as they have been for the past five years.

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 objective was not exceeded at the real time monitoring site on the Coast Road 1058 with only nine days where the concentration level was above 50 µg/m³, in 2023.

3.2.3 Particulate Matter (PM_{2.5})

Table A.8 in Appendix A presents the ratified and adjusted monitored PM_{2.5} annual mean concentrations for the past five years at the automatic continuous monitoring site.

The concentration in 2023 was 8.5 µg/m³, which has seen a very slight rise in the concentration mean when compared to 2022.

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)
NTC01	Coast Road	Roadside	428352	566974	NO ₂ , PM ₁₀ , PM _{2.5}	NO	Chemiluminescent; Palas FIDAS (optical light scattering)	37	2	2

Notes:

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

(2) N/A if not applicable

Table A.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)
BM1	Park Lane, Shiremoor	Roadside	431743	570649	NO ₂	NO	4.0	2.0	NO	4
BR1	Burradon road, Annitsford	Roadside	427095	573616	NO ₂	NO	5.0	2.0	NO	4
CC1	John Street, Cullercoats	Kerbside	436246	571385	NO ₂	NO	8.0	<1	NO	4
CH1	Norham Road/ Rothbury Terrace	Kerbside	433580	567865	NO ₂	NO	N/A	<1	NO	4
CM1	Broadway, Cullercoats	Roadside	435803	571122	NO ₂	NO	15.0	<1	NO	4
CPS1	Marden Avenue, Cullercoats	Roadside	436131	571175	NO ₂	NO	N/A	2.0	NO	4
CPS2	Marden Avenue, Cullercoats	Roadside	436262	571212	NO ₂	NO	N/A	2.0	NO	4
CPS3	St Oswins Avenue, Cullercoats	Roadside	436182	571217	NO ₂	NO	N/A	2.0	NO	4
CPS4	Marden Avenue, Cullercoats	Roadside	436310	571222	NO ₂	NO	N/A	2.0	NO	4
FS1	Front Street, Monkseaton	Kerbside	434064	571727	NO ₂	NO	5.0	<1	NO	4
GH1	Lower Crane Street, Shiremoor	Kerbside	431751	571811	NO ₂	NO	5.0	2.0	NO	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)
HPPS1	Addington Drive, Wallsend	Roadside	431289	569039	NO ₂	NO	N/A	2.0	NO	4
HPPS2	Hadrian Wynd, Wallsend	Roadside	431290	568992	NO ₂	NO	N/A	2.0	NO	4
HPPS3	Blackhill Avenue, Wallsend	Roadside	431446	569042	NO ₂	NO	N/A	2.0	NO	4
HPPS4	Addington Drive, Wallsend	Roadside	431363	568951	NO ₂	NO	N/A	2.0	NO	4
HR1	Bewicke Road, Willington Quay	Suburban	432664	566413	NO ₂	NO	5.0	2.0	NO	4
HW3	Meldon Street, East Howdon	Roadside	433202	566428	NO ₂	NO	2.0	<1	NO	4
LB2	Front Street/Benton Road, Longbenton	Kerbside	427094	568383	NO ₂	NO	2.0	<1	NO	4
LH7	Battlehill Drive, Wallsend	Roadside	430735	567974	NO ₂	NO	4.0	4.0	NO	4
LP1	Dudley Lane, Seaton Burn	Kerbside	424237	573762	NO ₂	NO	10.0	<1	NO	4
MC1	White House Drive, Wide Open	Kerbside	426331	570973	NO ₂	NO	N/A	2.0	NO	4
MR1	Manor Road, Tynemouth	Roadside	436720	569437	NO ₂	NO	10.0	<1	NO	4
NS10	Queen Alexandra Road, North Shields	Kerbside	434103	569099	NO ₂	NO	N/A	<1	NO	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)
PG2	North Road, Preston Road, Preston Grange	Roadside	435069	569861	NO ₂	NO	1.0	2.0	NO	4
RV1	Monkseaton Drive, Whitley Bay	Roadside	435076	573325	NO ₂	NO	5.0	2.0	NO	4
SP1	Holystone Way, Holystone	Roadside	430444	570242	NO ₂	NO	5.0	2.0	NO	4
TR1	Tynemouth Road, Rosehill	Roadside	431831	566955	NO ₂	NO	3.0	2.0	NO	4
TY1	Front Street, Tynemouth	Roadside	437016	569377	NO ₂	NO	3.0	<1	NO	4
W10	Coast Road, Wallsend	Kerbside	429316	567388	NO ₂	NO	3.0	2.0	NO	4
W99	Frank Street, Wallsend	Kerbside	429934	566314	NO ₂	NO	30.0	2.0	NO	4
WB9	Morrison Petrol Station, Whitley Bay	Kerbside	435390	571977	NO ₂	NO	2.0	2.0	NO	4
WB20	Grosvenor Drive/Norham Road, Whitley Bay	Kerbside	435205	571823	NO ₂	NO	N/A	<1	NO	4
WR1	Whitley Road, Whitley Bay	Kerbside	435801	572022	NO ₂	NO	10.0	2.0	NO	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
NTC01	428352	566974	Roadside	99	99	46	35	35.9	35.4	32.3

☒ 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
BM1	431743	570649	Roadside	100	100.0	20.8	22.4	16.6	16.9	16.0
BR1	427095	573616	Roadside	100	100.0	18.1	16.7	11.0	13.2	12.2
CC1	436246	571385	Kerbside	100	100.0	NA	NA	NA	14.0	12.1
CH1	433580	567865	Kerbside	92.3	92.3	27.3	30.2	22.1	25.0	20.9
CM1	435803	571122	Roadside	100	100.0	16.5	17.8	12.2	13.5	11.8
CPS1	436131	571175	Roadside	92.3	92.3	NA	NA	NA	NA	11.7
CPS2	436262	571212	Roadside	92.3	92.3	NA	NA	NA	NA	12.1
CPS3	436182	571217	Roadside	84.6	84.6	NA	NA	NA	NA	10.2
CPS4	436310	571222	Roadside	76.9	76.9	NA	NA	NA	NA	9.9
FS1	434064	571727	Kerbside	100	100.0	19.8	21.6	16.4	16.6	15.9
GH1	431751	571811	Kerbside	100	100.0	21.7	24.6	17.5	18.5	16.3
HPPS1	431289	569039	Roadside	84.6	84.6	NA	NA	NA	NA	15.7
HPPS2	431290	568992	Roadside	75	75.0	NA	NA	NA	NA	12.8
HPPS3	431446	569042	Roadside	84.6	84.6	NA	NA	NA	NA	13.5
HPPS4	431363	568951	Roadside	84.6	84.6	NA	NA	NA	NA	14.6
HR1	432664	566413	Suburban	100	100.0	23.5	26.7	19.5	23.6	20.5
HW3	433202	566428	Roadside	100	100.0	18.1	20.7	16.7	18.4	16.1
LB2	427094	568383	Kerbside	100	100.0	23.6	26.5	18.8	20.5	21.6
LH7	430735	567974	Roadside	100	100.0	22.1	25.5	20.0	23.5	23.0
LP1	424237	573762	Kerbside	92.3	92.3	19.4	16.4	12.8	10.2	12.4
MC1	426331	570973	Kerbside	92.3	92.3	N/A	N/A	15.2	17.1	16.7
MR1	436720	569437	Roadside	100	100.0	N/A	18.1	12.3	13.2	11.8
NS10	434103	569099	Kerbside	92.3	92.3	22.1	22.9	19.2	20.0	17.1
PG2	435069	569861	Roadside	100	100.0	26.4	26.2	20.3	22.1	17.2
RV1	435076	573325	Roadside	100	100.0	NA	NA	NA	18.1	15.3
SP1	430444	570242	Roadside	100	100.0	25.3	29.2	21.5	23.0	21.1
TR1	431831	566955	Roadside	75	75.0	25.5	25.4	21.2	24.0	21.8

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2023 (%) ⁽²⁾	2019	2020	2021	2022	2023
TY1	437016	569377	Roadside	92.3	92.3	23.6	28.4	18.1	18.8	17.3
W10	429316	567388	Kerbside	90.4	90.4	28.3	31.6	23.1	26.1	22.2
W99	429934	566314	Kerbside	100	100.0	24.4	25.5	19.0	20.2	16.9
WB9	435390	571977	Kerbside	92.3	92.3	19.7	23.9	17.5	17.6	11.6
WB20	435205	571823	Kerbside	90.4	90.4	15.8	16.9	13.1	13.2	16.6
WR1	435801	572022	Kerbside	100	100.0	21.4	21.1	17.0	16.9	14.7

☒ 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%).

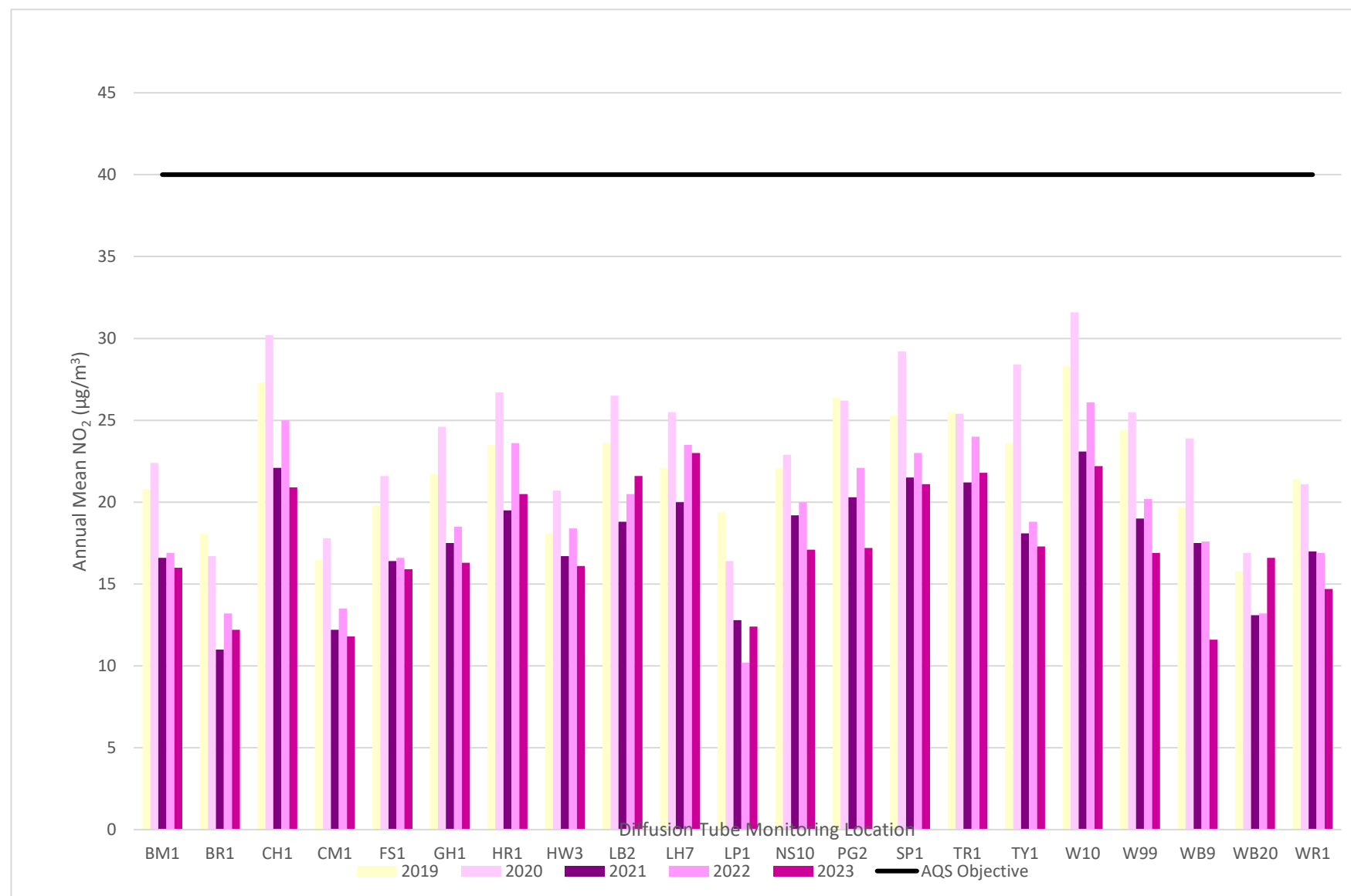
Figure A.1 – Trends in Annual Mean NO₂ Concentrations at Long Term Non-Automatic Monitoring Sites

Table A.5 – 1-Hour Mean NO₂ Monitoring Results, Number of 1-Hour Means > 200µg/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
NTC01	428352	566974	Roadside	99	99	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 (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
NTC01	428352	566974	Roadside	100	100	17	15.4	16.7	20.9	19.7

☒ 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%).

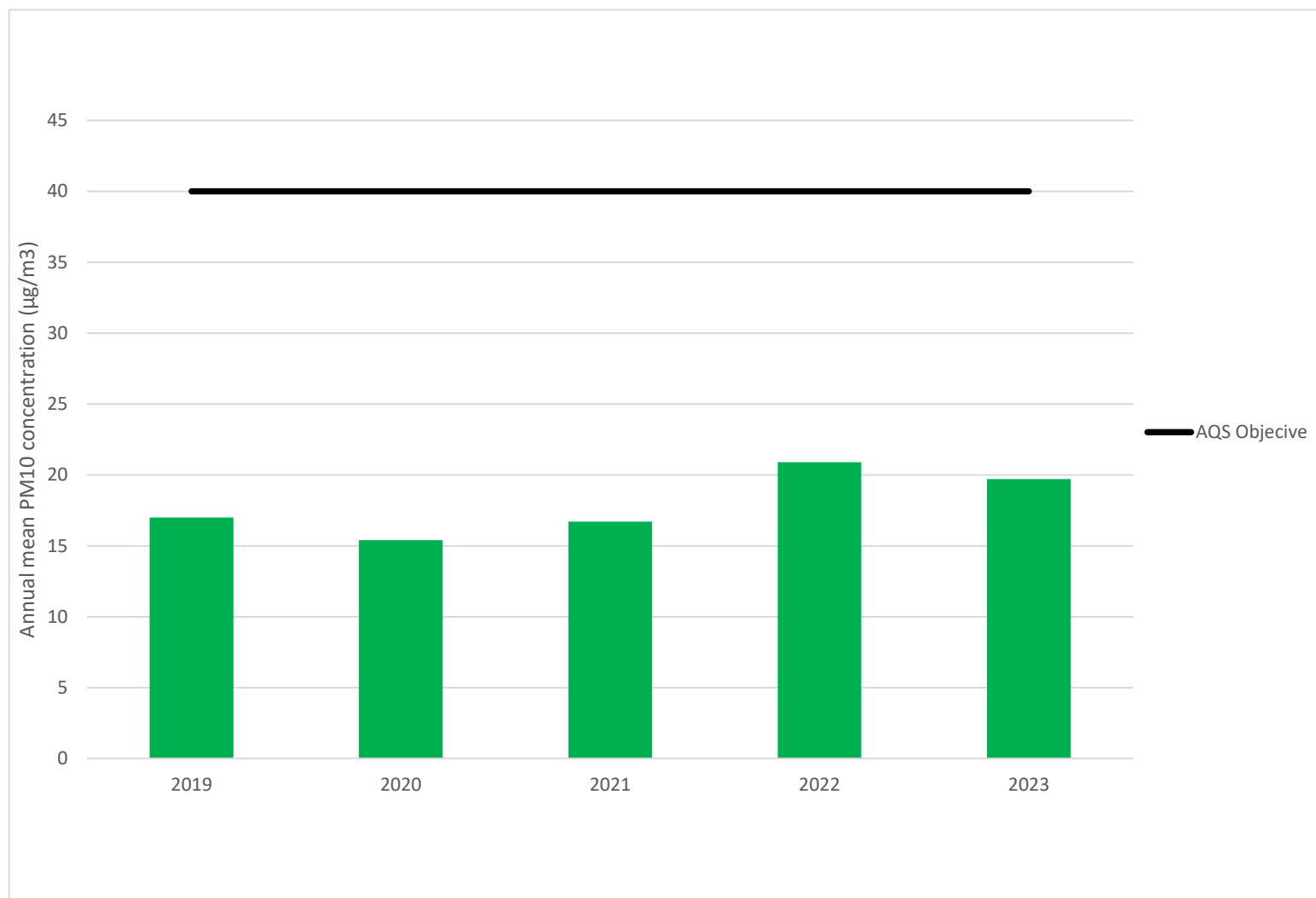
Figure A.2 – Trends in Annual Mean PM10 Concentrations at Automatic Monitoring Location NTC01

Table A.7 – 24-Hour Mean PM10 Monitoring Results, Number of PM10 24-Hour Means > 50µg/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
NTC01	428352	566974	Roadside	100	100	5	3	1	8	9

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 (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
NTC01	428352	566974	Roadside	100	100	5	3	1	8	8.5

 **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.

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 (Northing)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Annualised and Bias Adjusted <(0.81)>	Annual Mean: Distance Corrected to Nearest Exposure	Comment
BM1	431743	570649	26.8	22.2	23.5	17.1	17.2	14.1	15.0	15.2	21.1	17.8	24.5	23.0	19.8	16.0	-	
BR1	427095	573616	15.4	14.7	18.1	18.8	14.2	11.8	12.7	11.2	15.1	15.3	18.1	16.0	15.1	12.2	-	
CC1	436246	571385	21.3	17.2	16.6	12.1	12.6	10.7	11.6	11.9	12.6	14.0	20.7	18.8	15.0	12.1	-	
CH1	433580	567865	N/S	25.9	31.1	16.6	27.8	26.3	22.3	23.1	27.1	25.9	29.6	27.6	25.8	20.9	-	
CM1	435803	571122	18.1	15.3	16.7	14.3	13.2	10.7	11.5	11.7	14.7	13.8	18.7	16.8	14.6	11.8	-	
CPS1	436131	571175		22.3	17.0	11.7	11.4	10.2	10.1	10.5	12.9	13.6	21.0	18.0	14.4	11.7	-	
CPS2	436262	571212		17.4	16.7	12.0	12.2	10.5	11.1	11.3	15.0	14.5	24.1	18.9	14.9	12.1	-	
CPS3	436182	571217			15.5	11.1	9.4	8.4	9.3	9.4	13.7	12.0	20.4	16.7	12.6	10.2	-	
CPS4	436310	571222			15.0	10.0	10.1	0.5		10.5	13.7	13.8	19.8	16.6	12.2	9.9	-	
FS1	434064	571727	24.2	22.2	22.0	17.5	17.7	17.1	15.7	15.0	18.1	19.3	24.8	22.1	19.6	15.9	-	
GH1	431751	571811	25.4	22.4	22.5	15.3	17.5	15.5	17.3	17.0	21.3	17.9	26.9	22.4	20.1	16.3	-	
HPPS1	431289	569039		20.0	21.5	27.6		24.6	13.4	17.2	16.5	14.0	20.5	18.3	19.4	15.7	-	
HPPS2	431290	568992		13.4	15.5	27.9	13.1		11.3	10.9	13.5		18.8	18.3	15.9	12.8	-	
HPPS3	431446	569042			17.2	27.2	14.8	11.7	12.8	12.1	15.3	15.4	21.5	18.6	16.7	13.5	-	
HPPS4	431363	568951			21.4	20.9	15.5	12.6	14.3	15.0	18.8	16.3	23.1	21.8	18.0	14.6	-	
HR1	432664	566413	26.4	24.6	24.8	32.5	25.2	23.5	20.9	21.5	25.1	26.5	28.1	24.1	25.3	20.5	-	
HW3	433202	566428	26.0	21.1	19.6	25.3	16.7	13.9	15.1	16.2	17.9	19.8	24.9	21.9	19.9	16.1	-	
LB2	427094	568383	30.1	30.0	28.4	17.3	25.0	24.4	24.2	23.6	27.3	29.2	32.1	28.7	26.7	21.6	-	
LH7	430735	567974	35.4	35.1	30.8	17.8	27.3	23.8	26.1	25.7	29.0	28.0	30.9	30.0	28.3	23.0	-	
LP1	424237	573762		14.3	15.5	20.4	11.6	12.1	12.4	12.2	15.5	16.3	22.0	16.4	15.3	12.4	-	
MC1	426331	570973		23.5	23.2	30.0	16.7	14.1	15.9	15.9	20.9	17.8	26.7	21.5	20.6	16.7	-	
MR1	436720	569437	20.7	15.9	15.9	12.4	12.3	9.6	11.2	11.3	14.8	13.4	20.1	16.9	14.5	11.8	-	
NS10	434103	569099	33.9	27.4	22.3	0.6		14.6	18.3	17.3	20.7	21.8	27.2	27.5	21.1	17.1	-	
PG2	435069	569861	32.2	26.4	25.2	18.6	18.6	15.9	16.5	17.0	22.0	19.5	22.5	20.9	21.3	17.2	-	
RV1	435076	573325	25.0	22.7	20.2	17.5	16.2	16.1	15.4	17.0	17.2	15.0	24.1	20.8	18.9	15.3	-	
SP1	430444	570242	26.7	28.3	29.3	19.2	26.2	25.5	24.2	21.6	28.4	25.7	28.5	28.3	26.0	21.1	-	
TR1	431831	566955		28.2	29.0	14.9	27.2	23.0	19.3			46.3	30.4	23.8	26.9	21.8	-	

DT ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Annualised and Bias Adjusted <(0.81)>	Annual Mean: Distance Corrected to Nearest Exposure	Comment
TY1	437016	569377	30.2	25.7	22.2	18.0	17.4	14.1	16.1	18.7	22.4		27.0	22.8	21.3	17.3	-	
W10	429316	567388	36.2	33.0	31.0	15.0	28.2	24.2	26.0	24.5	30.8	28.6		23.2	27.4	22.2	-	
W99	429934	566314	24.3	22.5	21.4	26.3	18.5	16.2	17.3	17.2	20.1	20.9	25.3	20.9	20.9	16.9	-	
WB9	435390	571977	20.2	17.5	15.9	11.5	11.1	8.1		10.6	12.6	13.2	19.8	16.4	14.3	11.6	-	
WB20	435205	571823	25.7	24.3		22.0	19.0	16.3	15.9	16.1	19.1	18.0	25.0	24.0	20.5	16.6	-	
WR1	435801	572022	24.6	21.0	19.3	16.2	15.1	12.1	15.2	13.6	17.7	16.8	24.2	21.5	18.1	14.7	-	

- ☒ 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.
- ☒ North Tyneside 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.

Appendix C: Supporting Technical Information / Air Quality Monitoring Data Quality Assurance and Quality Control (QA/QC)

New or Changed Sources Identified Within North Tyneside During 2023

There were two new sources relating to air quality within the reporting year of 2023, where air quality has been considered. Details of the new sources are provided below.

Planning:

Two planning applications were considered in 2023 that were identified as having a potential to impact air quality. Two of the planning applications were granted planning permission, planning reference 19/01095/FULES Killingworth Lane North and 20/01435/FULES Killingworth Lane South.

19/01095/FULES: The development site at Killingworth Moor North was for 432 residential dwellings that was approved on 11 January 2024. An air quality report was provided to demonstrate impact on air quality from proposed development. The principal pollutants of concern are nitrogen dioxide and particulates, arising from road traffic vehicles. The air quality modelling carried out considered the potential changes to the NO₂ and particulates resulting from the development for existing sensitive receptors. The level of change in NO₂ level was assessed and was found to result in a maximum increase in pollution of 2% for existing sensitive receptors with the development; and a <0.5% change for PM₁₀ and PM_{2.5}. It was concluded that there will be a negligible increase in both nitrogen dioxide and particulates as the overall air pollutant levels will be below the air quality objective and limit levels for NO₂, PM₁₀ and PM_{2.5} if the development was to occur. It was recognised that any new development will contribute to the overall air quality levels within an area, and therefore mitigation measures are required of the developer to be

incorporated within the scheme to address air pollutants, e.g. such as the provision of electric car charging points, travel plans and use of low NO_x boilers.

20/01435/FULES

This planning application was for 534 residential dwellings within the Killingworth area of North Tyneside and was approved on 11 January 2024. An air quality assessment was provided as part of the application to consider the potential increase in air pollutants resulting from an increase in road traffic resulting from the development. The air quality assessment modelled air quality impacts using a base year of 2019 and an opening year of 2032. The principal pollutants of concern were identified as nitrogen dioxide and particulates, arising from road traffic vehicles. The Air Quality Assessment has concluded that there will be a negligible increase in both nitrogen dioxide and particulates and overall air pollutant levels will be below the air quality objective levels for NO₂ and particulates if the development was to occur. Mitigation measures were recommended within the Air Quality Assessment that includes for transport related measures such as electric vehicle charging infrastructure and travel plans. Construction dusts were considered, and a condition was recommended to be attached to the planning consent to ensure the dust mitigation measures recommended within the air quality report are implemented, as the construction risk for dust being tracked out of the site was assessed as medium.

There were no new industrial sources relating to air quality identified within the reporting year 2023.

Additional Air Quality Works Undertaken by North Tyneside Council During 2023

North Tyneside Council has not completed any additional works within the reporting year of 2023.

QA/QC of Diffusion Tube Monitoring

Diffusion Tube Annualisation

All diffusion tube monitoring locations within North Tyneside recorded data capture of 75% therefore it was not required to annualise any monitoring data. In addition, any sites with a data capture below 25% do not require annualisation.

Diffusion Tube Bias Adjustment Factors

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

North Tyneside Council have applied a national bias adjustment factor of 0.81 to the 2023 monitoring data based on the national database spreadsheet version number 03/24 for Gradko laboratory which utilised 23 studies. A summary of bias adjustment factors used by North Tyneside Council over the past five years is presented in Table C.1.

North Tyneside Council operates a continuous NO₂ monitoring station on the Coast Road Site. There are no co-location tubes available at the site to derive a local bias factor, thus the national bias adjustment factor spreadsheet has been used.

Table C.1 – Bias Adjustment Factor for Non-Automatic NO₂ Diffusion Tube Data

Monitoring Year	Local or National	If National, Version of National Spreadsheet	Adjustment Factor
2023	National	03/24	0.81
2022	National	03/23	0.83
2021	National	03/22	0.84
2020	National	03/21	0.81
2019	National	03/20	0.93

Diffusion tubes for North Tyneside Council are supplied and analysed by Gradko International Ltd who are UKAS accredited testing laboratory (No. 2187) to ISO:17025:2017. The laboratory also participates in the AIR PT analysis proficiency testing scheme, with their performance considered satisfactory for each round of the assessment period during 2023, achieving 100% during each round. The tubes were prepared using the 20% TEA in water preparation method. The national bias adjustment factor for Gradko 20% TEA in water is 0.81 for the year 2023 (based on twenty three studies) as derived from the national bias adjustment factor spreadsheet as presented in Table C.1

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. Distance correction would be considered at any monitoring site where the annual mean concentration is greater than 36µg/m³ and the monitoring site is not located at a point of relevant exposure.

No diffusion tube NO₂ monitoring locations within North Tyneside required distance correction during 2023.

QA/QC of Automatic Monitoring

North Tyneside utilities data from an automatic monitoring site operated and owned by the Urban Observatory at Newcastle University. The Urban Observatory carries out routine manual calibrations fortnightly. The supplier, Air Monitors, carries out maintenance and independent calibration on the equipment every six months. North Tyneside Council uses Ricardo to ratify the data. The https://www.airqualityengland.co.uk/local-authority/reports?la_id=255 page presents automatic monitoring results for North Tyneside, with automatic monitoring results also available through the UK-Air website

PM10 and PM2.5 Monitoring Adjustment

The type of PM₁₀/PM_{2.5} monitor(s) utilised within North Tyneside do not require the application of a correction factor.

Automatic Monitoring Annualisation

All automatic monitoring locations within North Tyneside 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.

No automatic NO₂ monitoring locations within North Tyneside required distance correction during 2023.

Appendix D: Maps of Monitoring Locations

Figure D.1 – Non-Automatic Monitoring Site (North East)

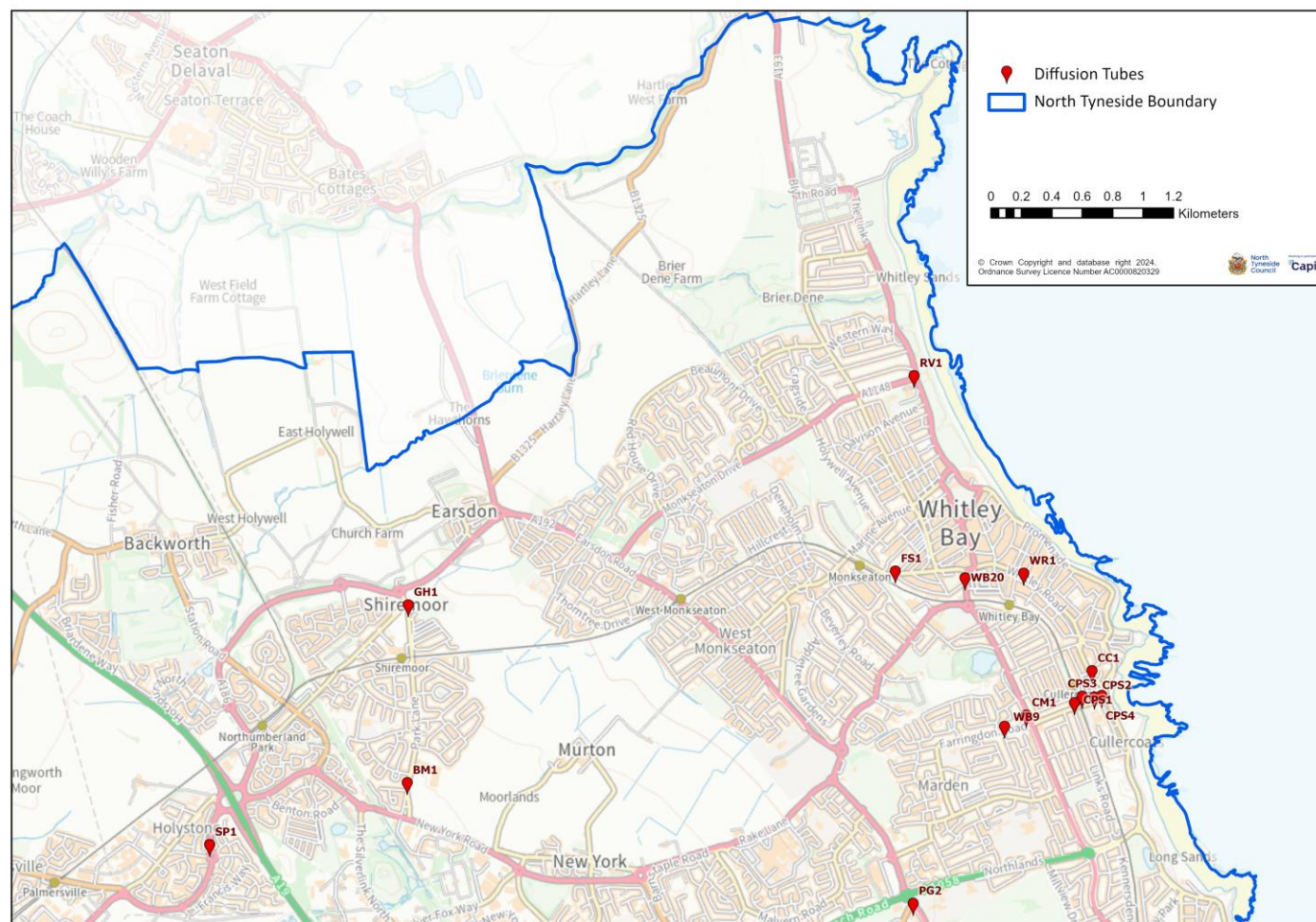


Figure D.2 – Non-Automatic Monitoring Site (North West)

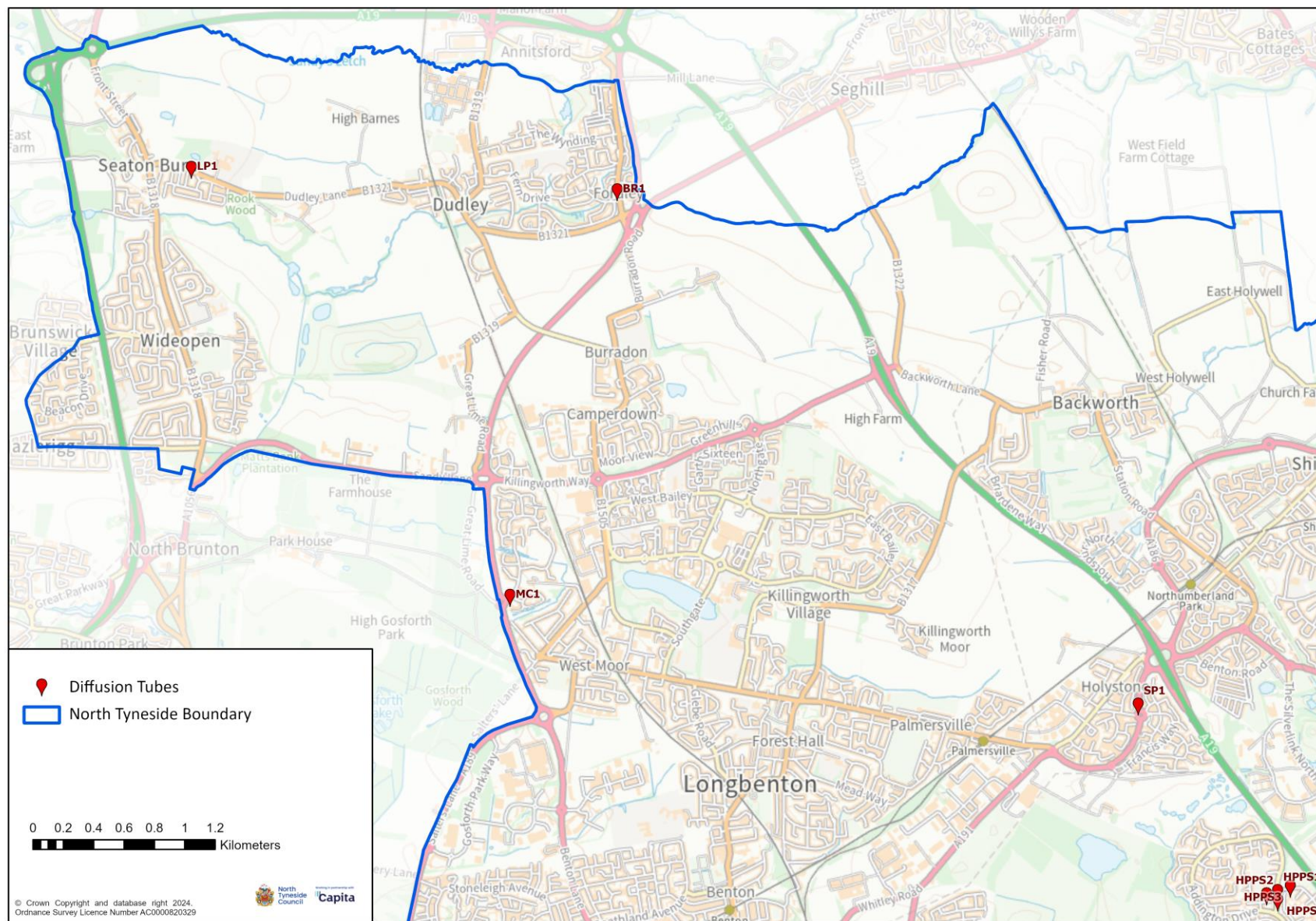


Figure D.3 – Non-Automatic Monitoring Site (South East)

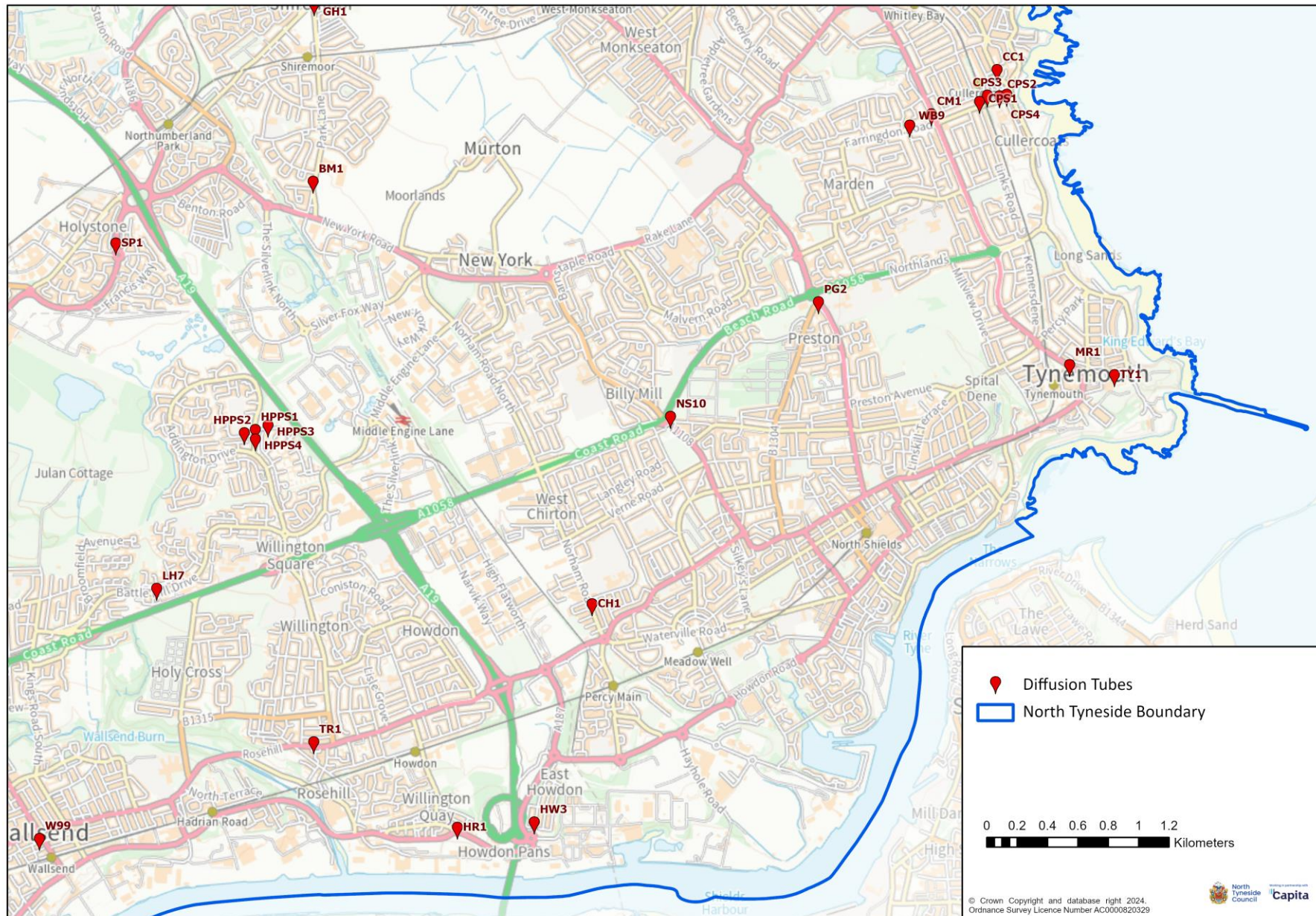
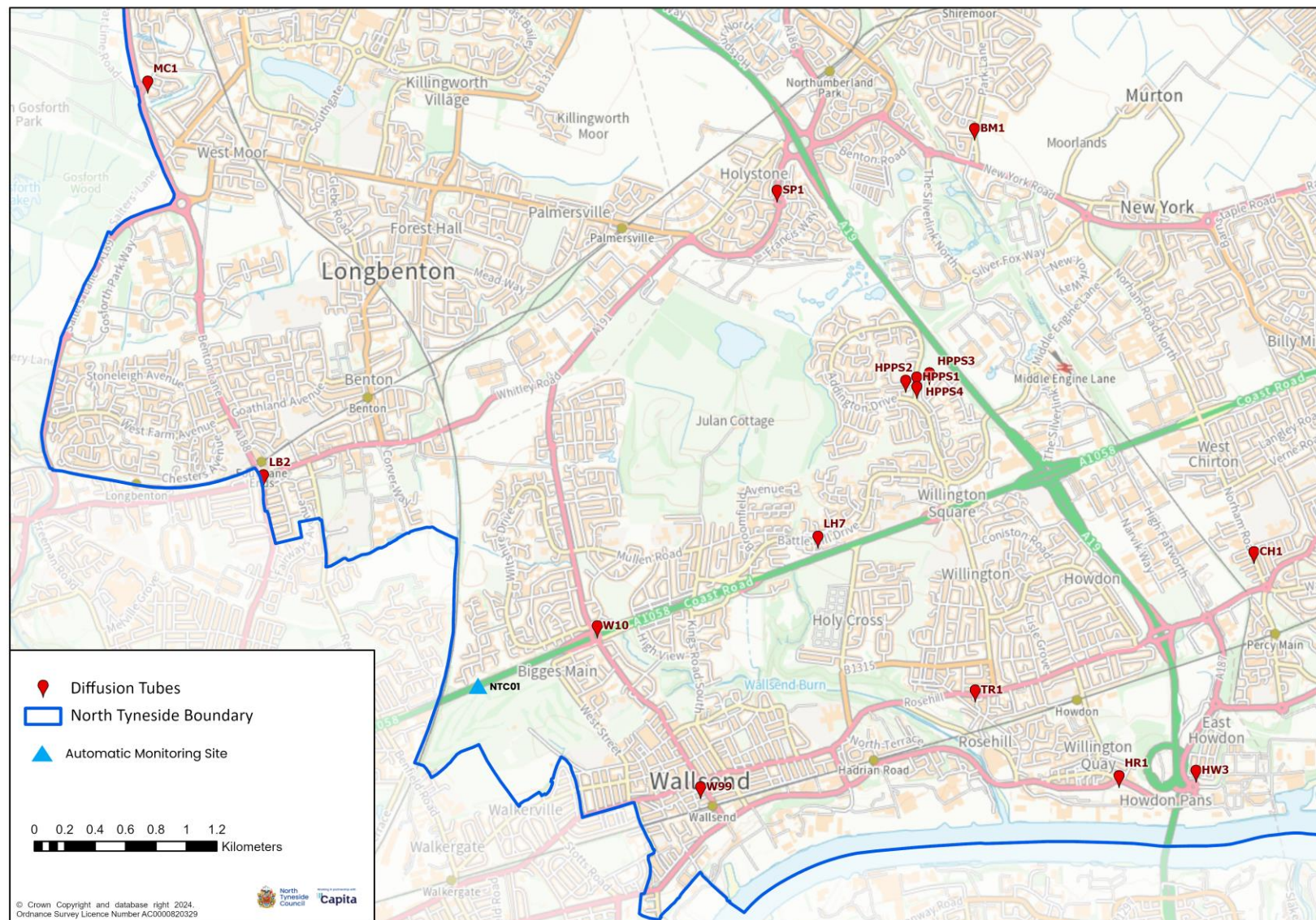


Figure D.4 – Map of Automatic and Non-Automatic Monitoring Site (South West)



Appendix E: Summary of Air Quality Objectives in England

Table E.1 – Air Quality Objectives in England

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

Glossary of Terms

Abbreviation	Description
AQAP	Air Quality Action Plan - A detailed description of measures, outcomes, achievement dates and implementation methods, showing how the local authority intends to achieve air quality limit values'
AQMA	Air Quality Management Area – An area where air pollutant concentrations exceed / are likely to exceed the relevant air quality objectives. AQMAs are declared for specific pollutants and objectives
ASR	Annual Status Report
Defra	Department for Environment, Food and Rural Affairs
DMRB	Design Manual for Roads and Bridges – Air quality screening tool produced by National Highways
EU	European Union
FDMS	Filter Dynamics Measurement System
LAQM	Local Air Quality Management
NO ₂	Nitrogen Dioxide
NO _x	Nitrogen Oxides
PM ₁₀	Airborne particulate matter with an aerodynamic diameter of 10µm or less
PM _{2.5}	Airborne particulate matter with an aerodynamic diameter of 2.5µm or less
QA/QC	Quality Assurance and Quality Control
SO ₂	Sulphur Dioxide

References

- Local Air Quality Management Technical Guidance LAQM.TG22. August 2022.
Published by Defra in partnership with the Scottish Government, Welsh Assembly Government and Department of the Environment Northern Ireland.
- 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.
- North Tyneside Air Quality Strategy 2023-2028