City of Lincoln Council

2025 Air Quality Annual Status Report

June 2025

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2025 Air Quality Annual Status Report (ASR)

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

Date: June 2025

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Local Responsibilities and Commitment

This ASR was prepared by Bureau Veritas on behalf of City of Lincoln Council, with the support and agreement of the following officers and departments:

- Rhianna Stephenson – Climate Change Manager;
- Mark Lancaster – Local Transport Plan Policy Team (Lincolnshire County Council); and
- Vanessa O'Brien – Sustainability Team (Lincolnshire County Council).

This ASR has been approved by:

- Cllr Rebecca Longbottom – Portfolio Holder for Remarkable Place

This ASR has been signed off by the Director of Public Health for Lincolnshire.

If you have any comments on this ASR, please send them to Ian Wicks at:

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Executive Summary: Air Quality in Our Area

Air Quality in Lincoln

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.

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

Table ES.1 provides a brief explanation of the key pollutants relevant to Local Air Quality Management 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.

Nitrogen Dioxide (NO_2):

During 2024, all passive and automatic monitoring sites reported NO_2 annual mean concentrations below 10% (36 µg/m^3) of the of the AQS objective of 40 µg/m^3. The maximum NO_2 annual mean concentration at a site in 2024 was 33.1 µg/m^3 (Site ID: 3), which is located within the former Lincoln AQMA. This concentration continues the trend

that has been observed over the past five years (2020 – 2024) of NO_2 annual mean concentrations consistently below 10% of the AQS objective and, as a result, City of Lincoln Council revoked the remaining Lincoln AQMA in April 2025. Outside of the now revoked Lincoln AQMA, the maximum NO_2 annual mean concentration in 2024 was 26.1 µg/m^3 (Site ID: 5, 6, 7), which is comparable to the maximum concentration reported in 2023 of 26.3 µg/m^3 (Site ID: 18b). This indicates that there continues to be no new hotspot areas of concern outside of the Lincoln AQMA.

As no diffusion tube site reported an NO_2 concentration in excess of 60 µg/m^3, it can be inferred that the 1-hour AQS objective of 200 µg/m^3 was not exceeded at any location during 2024. Likewise, at the automatic monitoring site on Canwick Road (Site ID: LCR), the maximum 1-hour mean concentration was 74.8 µg/m^3, reiterating that the 1-hour limit of 200 µg/m^3 was not exceeded on any occasion in 2024.

Particulate Matter (PM_{10}):

During 2024, PM_{10} concentrations monitored at automatic monitoring site on Broadgate (Site ID: B) reported an annual mean concentration (19.0 µg/m^3) significantly below the AQS objective of 40 µg/m^3. This is a decrease from the 20.4 µg/m^3 reported in 2023, indicating a slight improvement in PM_{10} concentrations in Lincoln during 2024. This improving trend is also evident in the number of exceedances of the 24-hour mean AQS objective of 50 µg/m^3, which was only breached on one occasion in 2024 (55.8 µg/m^3 on 3rd November) in comparison to three times in the previous reporting year. The number of exceedances of the 24-hour mean objective are however significantly below the 35 occasions that is permitted by the AQS objective.

Actions to Improve Air Quality

City of Lincoln Council and its partners are implementing a number of measures to further improve air quality across the city. These range of measures can be grouped into four key categories:

- **Public Information:** City of Lincoln council continue to raise awareness of air quality amongst the public and outline measures that individuals can take to improve air quality. The City of Lincoln Council website has recently been updated to signpost individuals to the Clean Air Lincolnshire Website where actions to improve air quality are outlined.

- **Traffic Management:** Lincolnshire County Council's highways department are working to improve the flow of traffic through the city. For example, major schemes such as the 'North Hykeham Relief Road' and the 'Lincoln Eastern Bypass' have been developed to improve the efficiency of vehicle movements across the city. Lincolnshire County Council are also working to improve the road signalling at major junctions to give priority to buses, which will reduce journey times and make public transport more desirable to residents of Lincoln. To date, there have been 15 bus priority technology signals installed across the city.
- **Low Emission Transport:** City of Lincoln Council continue to promote low emission transport by facilitating the uptake of electric vehicles (EVs). For example, a total of 81 EV charging points have been installed across the city, including one 50 KW super rapid charging point and 56 new rapid charging points for residents without access to off-road parking. During 2024, no additional EV charging points were installed, however a survey by City of Lincoln Council demonstrated that there is sufficient capacity for EV charging within car parks operated by Lincoln City Council.
- **Travel Alternatives:** Lincolnshire County Council are working with businesses and schools to develop workplace and school travel plans. An online website has been launched for businesses and organisations to develop travel plans; the planning department are signposting this if conditioned as part of a planning requirement. All local authority schools have an adopted travel plan. An updated travel plan is required as part of the planning process for school improvements. Sustainable Modes of Travel to School (SMOTS) strategy is available to schools to assist in developing a travel plan.

Conclusions and Priorities

In Lincoln, the air quality is generally good, and the reported concentrations continue to highlight a declining trend. In 2024, the maximum annual mean NO_2 concentration inside the former AQMA was 33.1 µg/m^3, which is a small increase on that reported in 2023 (31.6 µg/m^3), but remaining below 10% of the AQS Objective. The concentration within the former AQMA has been below 10% of the AQS objective for the last five years, demonstrating continual compliance with the annual mean NO_2 objective, for which the AQMA was originally declared. This resulted in the AQMA being revoked in April 2025. Outside of the now revoked AQMA, the concentration has remained relatively stable, with a maximum NO_2 annual mean concentration of 26.3 µg/m^3 and 26.1 µg/m^3 reported in

2023 and 2024, respectively. The concentration of PM_{10} also demonstrates an improving trend, with a lower annual mean concentration reported in 2024 (19.0 µg/m^3), than in the previous year (20.4 µg/m^3). Air quality in Lincoln is continuing to meet the national air quality objectives, highlighting the success of the measure that have been implemented within the city. These measures are to be further progressed to ensure that Lincoln continue to enjoy good air quality.

City of Lincoln Council's top three priorities during the upcoming year of 2025 are:

1. **Air Quality Strategy:** Following the revocation of the AQMA, City of Lincoln Council are to develop an Air Quality Strategy (AQS). The development of an AQS will ensure that measures continue to be implemented to improve air quality in replacement of the existing Air Quality Action Plan (AQAP). This will be progressed during 2025, with an update on the status of the AQS provided in the next update on this report.
2. **Clean Air Lincolnshire Project:** The Lincolnshire Clean Air Project was funded by a Defra Air Quality grant in 2023 and involved working with eight secondary schools across Lincolnshire. A website was developed which provides on overview of air quality in Lincolnshire, the health effects of poor air quality, and actions that can be taken to improve air quality. The engagement consisted of four sessions with an emphasis on local air quality data collection and health impacts. In 2024, the same eight schools completed air quality campaigns and attended an end of project event on Clean Air Day. The Clarity air quality monitors secured through the original Defra grant are to remain in place at the original eight secondary schools during 2025 and the data continues to be available for the schools to download. The project is to continue into 2025 and expand further if funding is secured.
3. **North Hykeham Relief Road:** Outline Business Case prepared and submitted to the Department for Transport (DfT) for funding support in July 2019, with £110 million being awarded from the Government's Large Local Majors Programme in November 2020. Planning approval was granted in May 2024, with constructed expected to start during 2025 (dependent on confirmation on funding).

How to Get Involved

City of Lincoln Council acknowledge that the main source of air pollution within the city is from road transport sources. Therefore, a key way in which the public can get involved with helping to improve air quality within the city is through sustainable travel alternatives. The

following are suggested alternatives to private vehicle usage that would help contribute to improving air quality within the City of Lincoln:

- **Public Transport:** The use of bus facilities, which in turn reduces the pollutant concentration by reducing congestion through less numbers of vehicles on the road (new Public Transport Hub);
- **Active Travel:** Walking or cycling where your journey allows. Choosing to walk or cycle instead of using a private vehicle reduces the number of vehicles on the road and also has a co-benefit of improvements to human health;
- **Car / Lift Sharing:** Where a number of individuals are making a similar journey, such as travelling to work or school, car sharing reduces the number of vehicles on the road and therefore the amount of emissions being released. This can be promoted via workplace and school travel plans; and
- **Fuel Efficient Vehicles:** Choosing a vehicle that meets the specific needs of the owner, fully electric, hybrid fuel and more fuel-efficient vehicles are available. These all have different levels of benefits by reducing the amount of emissions released.

Local policies relating to / influencing air quality are publicly available, and detailed below:

Lincolnshire County Council Polices:

- Local Transport Plan 5
- Lincolnshire Cycling Strategy
- Lincoln Electric Vehicle Strategy
- Lincolnshire Walking Strategy
- Sustainable Modes of Travel to School (SMoTS) Strategy
- Lincoln Transport Strategy
- Lincolnshire Bus Service Improvement Plan (BSIP)

City of Lincoln Council Policies:

- City of Lincoln Council's Environmental Policy
- Lincoln 2030 Climate Action Plan / Summary

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1 Local Air Quality Management

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

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

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

2 Actions to Improve Air Quality

2.1 Air Quality Management Areas

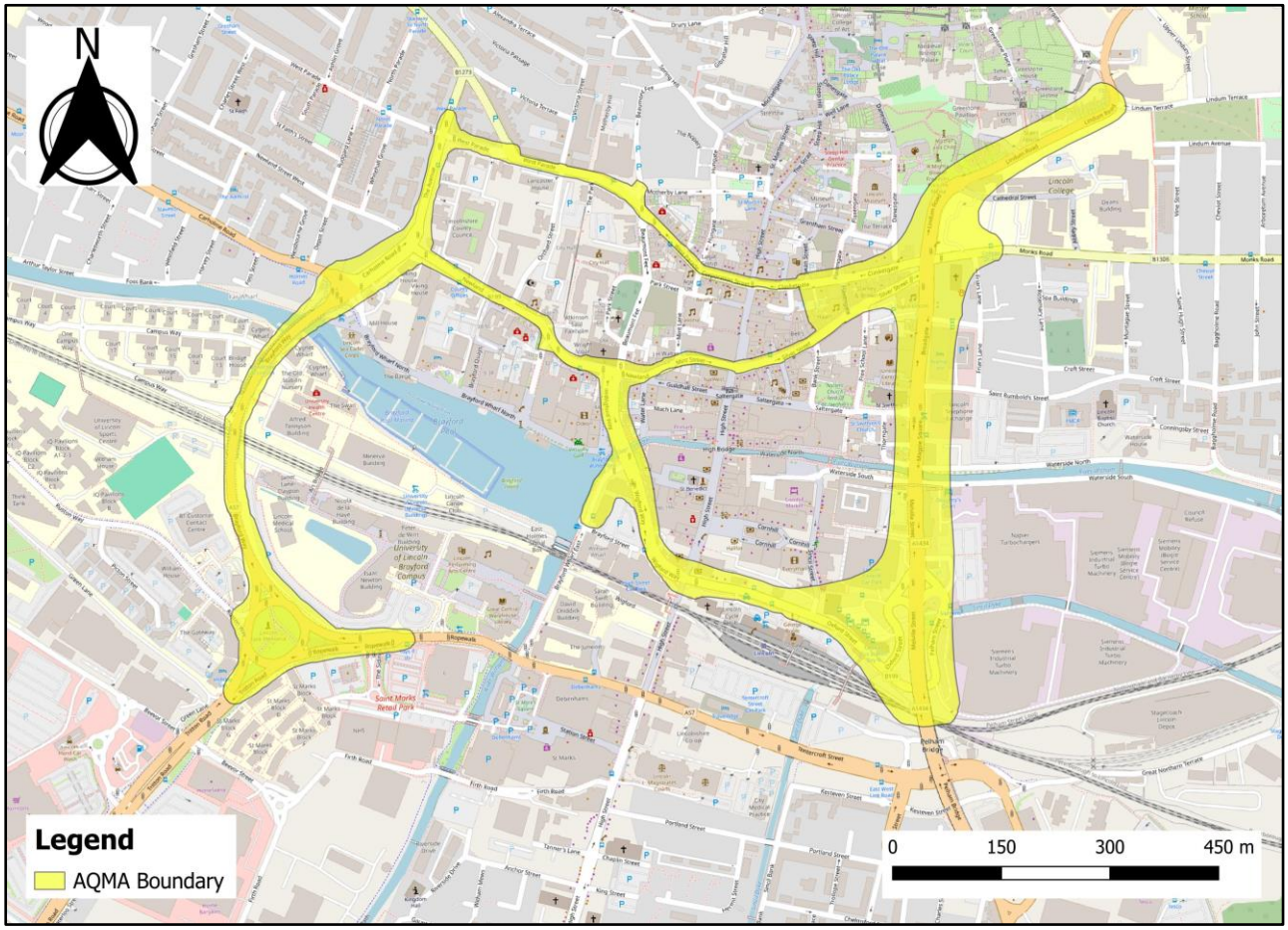
Air Quality Management Areas (AQMAs) are declared when there is an exceedance or likely exceedance of an air quality objective. After declaration, the authority should prepare an Air Quality Action Plan (AQAP) within 18 months. The AQAP should specify how air quality targets will be achieved and maintained,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

During 2024, City of Lincoln Council had one AQMA declared for exceedances of the NO_2 annual mean objective. The Lincoln AQMA, which was declared in 2001, is described as:

"An area generally following the major road network in the City Centre and arterial routes and is primarily due to road traffic emissions".

The extent of the AQMA is shown in Figure 2.1, with the details provided in Table 2.1.

Figure 2.1 – Extent of Lincoln AQMA



City of Lincoln Council revoked the Lincoln AQMA in April 2025, due to compliance with the AQS objective over the last five years (2020 – 2024). However, as the AQMA was still effective during the monitoring period that this report relates to (2024), reference to the former AQMA has still been included throughout. The Lincoln AQMA will no longer be acknowledged in the next update of this report in 2026.

Table 2.1 – Declared Air Quality Management Areas

AQMA Name	Date of Declaration	Pollutants and Air Quality Objectives	One Line Description	Is air quality in the AQMA influenced by roads controlled by Highways England?	Level of Exceedance: Declaration	Level of Exceedance: Current Year	Number of Years Compliant with Air Quality Objective	Name and Date of AQAP Publication	Web Link to AQAP
Lincoln AQMA	Declared 01/12/2001. Amended 03/02/2014, 03/08/2018. Revoked in April 2025	NO_2 Annual Mean	The area generally follows the major road network in the City Centre and arterial routes and is primarily due to road traffic emissions.	No	56.7 µg/m^3	33.1 µg/m^3	6 Years	Interim Action Plan for Lincoln NO_2 AQMA August 2019	Interim Action Plan for Lincoln NO_2 AQMA August 2019

☒ **City of Lincoln Council confirm the information on UK-Air regarding their AQMA is up to date.**

☒ **City of Lincoln Council confirm that all current AQAPs have been submitted to Defra.**

2.2 Progress and Impact of Measures to address Air Quality in Lincoln

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

1. **The Council have noted that they intend to revoke their current AQMA due to several years of full compliance. This decision is supported.**
   - City of Lincoln Council revoked the Lincoln AQMA in April 2025. The former AQMA has been referred to throughout this report, as it was still effective during the monitoring period that this report relates to (2024). The AQMA will not be acknowledged in future updates of this report.
2. **Clear maps have been presented to highlight the location of the AQMA and the monitoring sites. These should be included in future report.**
   - Maps included in this report are at varying scales to provide an overview of all the monitoring sites in Lincoln, and those inside and outside of the former AQMA.
3. **A good discussion on QA/QC procedures has been included. A national bias adjustment factor has been used which is higher than the factors used in previous years.**
   - The more conservative national bias adjustment factor has been applied to the 2024 monitoring data, due to the poor data capture of the automatic monitor at the co-location site.
4. **An estimation of $PM_{2.5}$ concentrations has been provided as no $PM_{2.5}$ monitoring is undertaken. This is commended.**
   - The concentration of $PM_{2.5}$ is estimated in this report from the PM_{coarse} split at a nearby monitoring site (Chesterfield Roadside).
5. **It is recommended, but not required, that ASRs are signed off by a Director of Public Health. This should be considered for the next ASR.**
   - The 2025 ASR has been signed off by the Director of Public Health for Lincolnshire.
6. **In Table A.3, the annual mean 2023 concentration has been provided to a different number of decimal places compared with other annual mean concentrations. The number of decimal places should be consistent throughout the report.**
   - All data within the 2025 ASR is reported to 1 decimal place.

City of Lincoln Council has taken forward a number of direct measures during the current reporting year of 2024 in pursuit of improving local air quality. Details of all measures completed, in progress or planned out are in Table 2.2. Fifteen measures are included within Table 2.2, with the type of measure and the progress City of Lincoln Council have made during the reporting year of 2024 presented. Where there have been, or continue to be, barriers restricting the implementation of the measure, these are also presented within Table 2.2. More detail on these measures can be found in the 2019 Interim AQAP.

City of Lincoln Council are however in the process of developing an Air Quality Strategy, to replace the AQAP, following the revocation of the AQMA. This is in accordance with the recommendation in Section 1.41 of TG(22) which states:

"From 2023, following revocation of all AQMAs in a local authority area, local authorities in England should put in place a local air quality strategy to ensure air quality remains a high profile issue and to ensure it is able to response quickly should there be any deterioration in condition. It is recommended that local authorities in England who have not had to designate AQMAs and produce AQAPs draw up a local Air Quality Strategy".

City of Lincoln Council are to progress with the development of the Air Quality Strategy during 2025. As well as the development of the Air Quality Strategy, City of Lincoln Council's priorities for the coming year are:

1. **Air Quality Strategy:** Following the revocation of the AQMA, City of Lincoln Council are to develop an AQS in replacement of the existing AQAP. This will ensure that measures continue to be implemented to improve air quality and so that concentrations remain compliant with the Air Quality Objectives.
2. **Clean Air Lincolnshire Project:** City of Lincoln Council are to continue to implement the Clean Air Lincolnshire Project, which was originally launched in 2024 with Defra funding. The project involved eight schools completing air quality campaigns in their schools, and attending an end of project event on Clean Air Day. A website has been developed for individuals to engage with and learn about the project. City of Lincoln Council are to continue to work with the eight schools to continue the project during 2025, and look for ways in which it can be expanded.
3. **North Hykeham Relief Road:** Following the approval of the planning application in May 2024, construction on the North Hykeham Relief Road is expected to start during 2025 (depending on confirmation on funding), with an anticipated completion of 2028. This is designed to improve the flow of traffic and increase the efficient movement of vehicles across Lincoln and North Hykeham.

City of Lincoln Council worked to implement these measures in partnership with the following stakeholders during 2024:

- Lincolnshire County Council;
- Other Lincolnshire District Councils;
- Selected schools;
- Bus operators (Stagecoach);
- Lincoln BIG (Business Improvement Group); and
- Local businesses (Waitrose).

City of Lincoln Council recognise that the measures previously outlined and in Table 2.2 have been effective in achieving compliance with the relevant AQS objective within the Lincoln AQMA for more than five years. As a result, City of Lincoln Council revoked the AQMA in April 2025. The measures outlined will however continue to be implemented and progressed further, to ensure that the concentrations remain below the objectives so that Lincoln continues to enjoy good air quality.

Table 2.2 – Progress on Measures to Improve Air Quality

Measure No.	Measure Title	Category	Classification	Year Measure Introduced in AQAP	Estimated / Actual Completion Date	Organisations Involved	Funding Source	Funding Status	Estimated Cost of Measure	Measure Status	Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Barriers to Implementation
1	Air Quality Strategy	Policy Guidance and Development Control	Other Policy	2025	2026	City of Lincoln Council	City of Lincoln Council	Not Funded	< £10k	Planning	N/A	Development of an Air Quality Action Plan	Revocation of the Lincoln AQMA in April 2025, therefore an Air Quality Strategy is to be developed in replacement of the existing Air Quality Action Plan.	-
2	Clean Air Lincolnshire Project	Public Information	Other	2022 – Planning Phase 2023 – Implementation Phase	Ongoing	Lincolnshire County Council City of Lincoln Council Other Lincolnshire District Councils Selected Schools	Defra Air Quality Grand	Fully Funded	£50k - £100k	Implementation	Not Known	None	Website has been developed and can be viewed at: https://cleanairlincs.org.uk/. During 2023. The project worked with eight secondary schools across Lincolnshire. The engagement consisted of four sessions with an emphasis on local air quality data collection and health impacts. In 2024, the same eight schools completed air quality campaigns in their schools and attended an end of project event on Clean Air Day. The Clarity air quality monitors secured through the original Defra grant remain in place at the original eight secondary schools and the data continues to be available for them to download. The Clean Air Lincs website continues to be maintained.	Expansion of the project is currently dependant on availability of funding through further Defra air quality grant schemes.
3	North Hykeham Relief Road	Traffic Management	Strategic Highways Improvements, Reprioritising road space away from cars, inc. Access Management, Selective Vehicle Priority, Bus Priority and High Vehicle Occupancy Lane.	2006 – Planning Phase Implementation Phase TBC	2028	Lincolnshire County Council	Lincolnshire County Council Central Government Third Party Developer Contributions	Partially Funded	> £10 Million	Planning	Not Known	None	Outline Business Case prepared and submitted to DfT for funding support in July 2019, with £110 million being awarded in Nov 2020 by the DfT coming from government's Large Local Majors programme. The remaining budget will be funded by Lincolnshire County Council and developer contributions, which the council will forward fund. Planning approval granted in May 2024 Legal orders and compulsory purchase and side road orders approved by Highways and Transport Scrutiny Committee Monday 10th June. Legal orders for North Hykeham Relief published October 2024. Funding from Central Government still not announced. A Public Enquiry has been scheduled for July 2025 following feedback from the DfT. TBC 2025: Construction starts, TBC 2028: Project complete - these dates are projected	-

Measure No.	Measure Title	Category	Classification	Year Measure Introduced in AQAP	Estimated / Actual Completion Date	Organisations Involved	Funding Source	Funding Status	Estimated Cost of Measure	Measure Status	Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Barriers to Implementation
													and subject to change dependent on external factors. The current scheme cost, included in the council's outline business case for funding, is £155 million.	
4	Provision of Electric Vehicle Recharge Points in City of Lincoln Council Car Parks	Promoting Low Emission Transport	Procuring Alternative Refuelling Infrastructure to Promote Low Emission Vehicles, EV Recharging, and Gas Fuel Recharging	2010 – Planning Phase 2012 – Current Implementation Phase	Ongoing	City of Lincoln Council	City of Lincoln Council	Not Funded	-	Implementation	Not Known	Number of EV recharge points available in City of Lincoln Council car parks.	Total of 81 recharge points installed. This includes a 50KW super rapid charge point and 56 new rapid charge points for residents without access to off road parking. No further EV points were installed in Council Car Parks during 2024. A usage survey was undertaken over three months early in 2025, which indicated that there is currently sufficient capacity within City of Lincoln Council operated car parks.	City of Lincoln Council was awarded a grant in February 2023 by the Office for Zero Emission Vehicles (OZEV) as part of their On Street Resident Chargepoint Scheme along with match funding from Connected Kerb.
5	Cycling Infrastructure	Transport Planning and Infrastructure	Cycle Network	Ongoing	Ongoing	Lincolnshire County Council	Lincolnshire County Council Department for Transport	Partially Funded	£1 million - £10 million	Implementation	Not Known	Length of new cycleway	Network continues to be developed as funding allows. Development of Local Cycling and Walking Network Plan ongoing to assist in identifying future schemes. Separate cycleway constructed along the entire LEB, with provision also included to replicate the same alone the NHRR. Also improvement for cyclists were made on Wigford Way and Brayford Wharf East as part of LCC's award from the Access Fund. Lincoln Sincil Bank rejuvenation - The Sincil Bank improvement project aims to revitalise the area for both local residents and businesses. Provision of a new green corridor for cyclists and pedestrians along Sincil Bank, between the entrance to Lincoln City Football Club's LNER Stadium and Kesteven Street. This includes the provision of a northbound cycleway; planted areas; and the resurfacing of several sections footway and carriageway along Sincil Bank. The 'highway' works are now complete as of 21st March 2025, although there are some landscaping and signage works to be completed during 2025 in order to complete the project the project.	With the reduction of budgets from DfT delivery of infrastructure enhancements has been limited. An options report for proposals for the development of Wigford Way in Lincoln has been completed as part of the Lincoln Town Deal. All four options include cycling infrastructure.
6	Real-Time Bus Passenger Information	Transport Planning and Infrastructure	Bus Route Improvements	2006 – 2010 – Planning Phase 2008 – 2010 – Implementation Phase	Ongoing	Lincolnshire County Council Principal Bus Operators	Lincolnshire County Council Department for Transport	Not Funded	-	Implementation	Not Known	Percentage of bus stops and routes with real-time information.	Real time information is now available for all services provided by the three main operators within Lincoln. Real-time feed now provided direct to Traveline. Information also displayed at new Transport Hub and	-

Measure No.	Measure Title	Category	Classification	Year Measure Introduced in AQAP	Estimated / Actual Completion Date	Organisations Involved	Funding Source	Funding Status	Estimated Cost of Measure	Measure Status	Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Barriers to Implementation
													available via commercial and operator-owned Apps. All vehicles operating in the City have now been fitted with tracking software to active bus priority access at signalised junctions. The Lincoln bus network during the day is very comprehensive with coverage across the whole city. At night though, services curtailed at 19:00, which for a city the size of Lincoln, could be considered early. BSIP funding has allowed services in the city to be extended up to 23:00 Monday to Thursday, and on Friday & Saturday to 00:00. Since its introduction in April 2024, over 30,000 passengers have made use of these extended evening services.	
7	Bus Priority Measures at Traffic Signals	Traffic Management	Strategic Highways Improvements, Reprioritising road space away from cars, inc. Access Management, Selective Vehicle Priority, Bus Priority and High Vehicle Occupancy Lane.	2013 – Planning Phase Implementation Phase Ongoing	Ongoing	Lincolnshire County Council	Lincolnshire County Council	Fully Funded	£500k - £1 million	Implementation	Not Known	Number of signals with bus priority.	A total of 15 signalised junctions across the City now incorporate bus priority technology. Additional junctions in the north of the City to now be upgraded following the award of the contact to LCC's provider for these works R2P and agreement with traffic signals.	-
8	Park and Ride	Alternatives to Private Vehicle Use	Bus Based Park and Ride	Ongoing	Ongoing	Lincoln BIG Stagecoach Waitrose	Lincolnshire County Council Lincoln BIG	Partially Funded	-	Implementation	Not Known	Number of passengers carried.	his is service is currently operating with a grant from Lincoln BIG, with discussions for a potential permanent location being considered as part of the development / consultation for the new Bus Strategy.	Lincolnshire County Council are currently investigating the possibility of developing a Mobility Hub at the A15 / A46 Nettleham roundabout in conjunction with potential highway improvements at this location. As part of policy LCC are also looking at hubs in other location in Lincoln and in the wider county area.
9	Business Travel Plans	Promoting Travel Alternatives	Workplace Travel Planning	Ongoing	Ongoing	Lincolnshire County Council	Lincolnshire County Council	-	-	-	Not Known	Number of businesses with adopted travel plans.	An online website has been launched for businesses and organisations to develop travel plans themselves. This is being signposted by planning if conditioned.	Modeshift STARS is the Centre of Excellence for the delivery of effective travel plans in Education, Business and Community settings. The scheme recognises schools, businesses and other organisations that have shown excellence in supporting cycling, walking and other forms of sustainable and active travel.

Measure No.	Measure Title	Category	Classification	Year Measure Introduced in AQAP	Estimated / Actual Completion Date	Organisations Involved	Funding Source	Funding Status	Estimated Cost of Measure	Measure Status	Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Barriers to Implementation
10	School Travel Plans	Promoting Travel Alternatives	Workplace Travel Planning	2005 – Planning Phase 2012 – Implementation Phase	Ongoing	Lincolnshire County Council	Lincolnshire County Council	-	-	-	Not Known	Number of schools with approved travel plans.	All local authority schools have an adopted travel plan. An updated travel plan is required as part of the planning process for school improvements. Sustainable Modes of Travel to School (SMOTS) strategy is available to schools to assist in developing a travel plan. Currently supporting 17 schools as they work towards Modeshare awards	-
11	Promotion of Sustainable Transport to Work for City of Lincoln Council Staff	Promoting Travel Alternatives	Workplace Travel Planning	2010 – Planning Phase Implementation Phase Ongoing	Ongoing	City of Lincoln Council	City of Lincoln Council	-	-	-	Not Known	Change in travel to work behaviour.	Mode of Travel Survey completed 2023, City of Lincoln Council employee survey results: Car single journey = 55% Cycling = 7% Walking = 18% Bus = 8% Train = 3% Working from home 3 days per week = 38%. Updated travel survey due to take place in 2025.	Employee travel surveys to take place every two years. 234 people completed the survey (38%).
12	Introduction of Electric Vehicles into City of Lincoln Council Fleet	Promoting Low Emission Transport	Public Vehicle Procurement – Promoting Uptake of Low Emission Vehicles	2011 – Planning Phase 2013 – Implementation Phase	Ongoing	City of Lincoln Council	City of Lincoln Council	-	-	-	Not Known	Number of Electric Vehicles in City of Lincoln Council fleet.	The City of Lincoln Council fleet includes two electric vehicles (Mayors Car and Parking Services Van) Review of new fleet vehicle lease completed in 2021 and five ULEVs replaced previous diesel vehicles. Review of next fleet vehicle lease due to start in 2025 and will consider options for increasing electric vehicles. Business case has been put forward to DMT to obtain funding for fleet consultancy services to support the transition. The proposal is to procure an experienced fleet consultant in a project management capacity to assist with the transition from the existing predominantly diesel/petrol fleet to a Council wide all-electric / predominantly electric / or majority electric fleet by 2030. Outcome tbc.	The availability of suitable electric vans and charging infrastructure limited the options to include more ULEVs in the current lease. A review of EV infrastructure requirements to support a full transition to ULEV in the next lease is currently underway.
13	Smarter Trip Planning for City of Lincoln Council Fleet	Vehicle Fleet Efficiency	Other	2010 – Planning Phase Implementation Phase Ongoing	-	City of Lincoln Council	City of Lincoln Council	-	-	-	Not Known	Percentage reduction in CO_2 equivalent emissions from City of Lincoln Council fleet.	Between 2022 and 2023 emissions from the City of Lincoln Council's fleet vehicles reduced by 27%.	-
14	Provision of Electric Vehicle Recharge Point for City of	Promoting Low Emission Transport	Procuring Alternative Refuelling Infrastructure to Promote Low	2012 – Planning Phase	-	City of Lincoln Council	Defra Air Quality Grant	-	-	-	Not Known	Number of recharge points available for City of Lincoln Council fleet.	Two chare points installed at City Hall.	The provision of further EVR points is subject to the outcome of the EV infrastructure review

Measure No.	Measure Title	Category	Classification	Year Measure Introduced in AQAP	Estimated / Actual Completion Date	Organisations Involved	Funding Source	Funding Status	Estimated Cost of Measure	Measure Status	Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Barriers to Implementation
	Lincoln Council Fleet		Emission Vehicles, EV Recharging, and Gas Fuel Recharging	2013 – Implementation Phase										and additional electric vehicles into the City of Lincoln Council fleet.
15	Energy Efficiency Measures to Reduce Natural Gas Consumption	Promoting Low Emission Plant	Other	2009	Ongoing	City of Lincoln Council	City of Lincoln Council	-	-	-	Not Known	Gas consumption.	The City of Lincoln's Domestic greenhouse gas emissions from gas consumption reduced by 35% since 2005. The City of Lincoln's total greenhouse gas emissions from gas consumption has reduced by 31% since 2005. The Home Upgrade Grant (HUG2) scheme concluded in March 2025. As part of HUG2, City of Lincoln Council delivered the following outputs: Properties improved: 17 Measures: 38 Average carbon savings: 3.97 Average savings per property annually: £894.41	Public Sector Decarbonisation programme is underway. A District Heat Network in the City Centre is due to commence in 2025. Domestic Home Energy Upgrade scheme to replace gas central heating and improve the efficiency of domestic properties has been underway since 2021. HUG2 has been replaced by Warm Homes Local Grant scheme. City of Lincoln Council are part of a consortium for the new scheme, with West Lindsey acting as the lead authority. Funding amounts for individual districts to be confirmed.

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

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

$PM_{2.5}$ Monitoring

City of Lincoln Council do not undertake any routine monitoring of $PM_{2.5}$. However, in accordance with the methodology outlined in Box 7.7 of LAQM TG(22), the concentration of $PM_{2.5}$ can be estimated using the PM_{coarse} split – the fraction of PM between 10 µ/m^3 and 2.5 µg/m^3 (i.e. PM_{10} minus $PM_{2.5}$). The PM_{coarse} split factor can either be locally or nationally[2] derived. The national factor for PM_{coarse} split was 6.0 for roadside sites in 2024.

Data from the Automatic Urban and Rural Network (AURN) monitoring station Chesterfield Roadside was used to calculate a local factor for PM_{coarse} split of 4.6. This site was used as it is the closest AURN site to the Broadgate site that measures both PM_{10} and $PM_{2.5}$, and is an Urban Traffic site so is likely to be representative of the Broadgate site, which is classified as a roadside site. The local factor of PM_{coarse} split (4.6) was applied to the Broadgate 2024 annual mean PM_{10} concentration (19.0 µ/m^3) as per the methodology outlined in Box 7.7 of LAQM TG(22). The local factor was chosen over the national factor due to it being a smaller value and, therefore, provides a more conservative approach. Section 3.2.3 provides further details on the calculation of the local factor.

Once the factor is applied, a $PM_{2.5}$ concentration of 14.4 µg/m^3 is estimated, which is below the $PM_{2.5}$ annual mean target (20 µ/m^3). Therefore, in the absence of $PM_{2.5}$ monitoring, it can be assumed (based on the PM_{coarse} split calculation) that the $PM_{2.5}$ annual mean objective was not exceeded in Lincoln during the 2024 monitoring period. This same observation was made in the previous reporting year of 2023.

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

[2] Defra. Estimating $PM_{2.5}$ from PM_{10} Measurements. Available at: https://laqm.defra.gov.uk/air-quality/air-quality-assessment/estimating-pm2-5-from-pm10-measurements/

$PM_{2.5}$ Background Concentrations

The current Defra background maps for Lincoln (2021 based)[3] show that all background concentrations of $PM_{2.5}$ for 2024 are significantly below the annual mean $PM_{2.5}$ limit value of 20 µ/m^3. The highest $PM_{2.5}$ concentration is predicted to be 7.0 µg/m^3 within the grid square (1 km x 1 km) with the centroid grid reference 497500, 370500. This is an area to the south of the city centre that contains a section of the A57 and A15. The background maps also provide a breakdown of sources, with the majority of the concentration for the grid square attributed to secondary $PM_{2.5}$ formation (4.0 µg/m^3), where $PM_{2.5}$ is formed from the chemical reactions of other gaseous pollutants such as sulphur dioxide (SO_2) and nitrogen oxides (NO_x, NO and NO_2).

Smoke Control Areas

Smoke Control Areas (SCAs) are designated zones in which it is an offence to emit smoke from a chimney of a building, from a furnace or from any fixed boiler. It is also an offence to acquire an unauthorised fuel for use within a SCA unless it is used within an exempt appliance (exempted from the controls which generally apply in SCAs). The entire area of City of Lincoln's administrative boundary has been declared as a SCA. Additional information on SCAs can be found on City of Lincoln Council's website.

Impact on Public Health

The Public Health Outcomes Framework data tool[4] (complied by Public Health England) quantifies the mortality burden of $PM_{2.5}$ within England on a county and local authority scale. The 2023 fraction of mortality attributable to $PM_{2.5}$ emissions within Lincoln is estimated to be 5.6%, which is comparable to the East Midlands region as a whole but slightly higher than the national average of 5.2%.

Measures to Address $PM_{2.5}$

Whilst the majority of measures outlined in Table 2.2 were introduced with the primary aim of reducing concentrations of NO_2, the measures are also likely to have a co-benefit of

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

[4] Public Health Outcomes Framework. Public Health England. Avaiable at: https://fingertips.phe.org.uk/profile/public-health-outcomes-framework/data#page/1/gid/1000043/pat/6/par/E12000004/ati/501/are/E07000138/yrr/3/cid/4/tbm/1

simultaneously reducing concentrations of $PM_{2.5}$. This is because these measures target a reduction in vehicle flow and private vehicle usage as well as the update of sustainable modes of transport. The measures which will help to address $PM_{2.5}$ include:

- The creation of the Lincolnshire Clean Air Project, which was funded by a Defra Air Quality Grant. The project has involved the creation of a website and working with eight secondary schools across Lincolnshire;
- Development of a cycle network and infrastructure, including the Local Cycling and Walking Network Plan;
- Incentive schemes to increase the number of ULEV or bicycles for City of Lincoln's vehicle fleet through salary sacrifice and car share; and
- Additional installations of EV charging points across the city and provision for more EV charging.

(Note: Whilst the switch to ULEVs will have some benefits in reducing emissions of road traffic related $PM_{2.5}$, the Council also recognises that the use of such vehicles will still give rise to emissions of $PM_{2.5}$ from tyre and brake pad wear, so efforts will still be made to reduce reliance on private vehicles by promoting more sustainable modes of transport).

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

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

3.1 Summary of Monitoring Undertaken

3.1.1 Automatic Monitoring Sites

City of Lincoln Council undertook automatic (continuous) monitoring at two sites during 2024. One site is located on Broadgate and measures PM_{10}, whilst the other site is located on Canwick Road and measures NO_2. The Canwick Road site is part of the AURN and is co-located with diffusion tubes to allow for a local bias adjustment factor to be calculated through a triplicate co-location study.

Table A.1 in Appendix A presents the details of the automatic monitoring sites. Maps of the location of each site 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.

3.1.2 Non-Automatic Monitoring Sites

City of Lincoln Council undertook non-automatic (i.e. passive) monitoring of NO_2 at 18 sites during 2024. This is the same number of monitoring sites as in the previous reporting year, with no sites being added or removed from the network in 2024. As the Canwick Road site is a triplicate, a total of 20 diffusion tubes make up the monitoring network, resulting in a total of 240 diffusion tubes being deployed throughout the monitoring year.

During 2024, the diffusion tube network was very well maintained with an average data capture of 99%. Of the 240 diffusion tubes deployed, data was received from 237. The three missing sets of data were from Site 15 (March and September) and Site 8 (June), and were the result of either a missing tube or water in the tube impacting the analysis of the data. There were no missing months of data at the triplicate co-location site, resulting in 100% data capture for the local bias adjustment factor to be calculated.

Table A.2 in Appendix A presents the details of the non-automatic monitoring sites. Maps of the location of each site 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.

3.2 Individual Pollutants

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

3.2.1 Nitrogen Dioxide (NO_2)

Table A.3 and Table A.4 in Appendix A compare the ratified and adjusted monitored NO_2 annual mean concentration for the past five years with the air quality objective of 40 µg/m^3. Note that the concentration data presented represents the concentration at the location of the monitoring site, following the application of bias adjustment and annualisation, as required (i.e. the values are exclusive of any consideration to fall-off with distance adjustment).

For diffusion tubes, the 2024 dataset of monthly mean values is provided in Appendix B. Note that the concentration data presented in Table B.1 includes distance corrected values, only where relevant. The 2024 monitoring results for NO_2 are split between those sites that are inside the AQMA and those sites that are outside of the AQMA.

All passive and automatic monitoring locations within Lincoln recorded NO_2 concentrations below the AQS annual mean objective of 40 µg/m^3 in 2024. Of the 18 sites in the diffusion tube network, the NO_2 annual mean concentration increased at eight and decreased at the remaining ten, relative to the previous reporting year (2023). However, the maximum increase and decrease were 1.7 µg/m^3 (Site ID: 14) and -2.6 µg/m^3 (Site ID: 15), respectively, indicating that there has been no significant change in the NO_2 annual mean concentration in Lincoln during the current reporting year of 2024. Similarly, at the automatic monitoring station on Canwick Road (Site ID: LCR), the NO_2 annual mean concentration (17.9 µg/m^3) was comparable to that reported in 2023 (17.8 µg/m^3), reiterating the trend that was observed across the diffusion tube network of no significant increase in the NO_2 concentration across Lincoln in 2024.

Inside the Lincoln AQMA:

During 2024, no site within the Lincoln AQMA reported an NO_2 annual mean concentration greater than 36 µg/m^3 (i.e. within 10% of the annual mean objective of 40 µg/m^3). The maximum NO_2 annual mean concentration within the AQMA was 33.1 µg/m^3 (Site ID: 3). This site has continually reported the highest concentration within the AQMA over the past five years. However, as no site has reported an NO_2 annual mean concentration within 10% of the objective over this period (2020 – 2024), City of Lincoln Council revoked the AQMA in April 2025.

Outside the Lincoln AQMA:

During 2024, the maximum NO_2 annual mean concentration at a site outside of the Lincoln AQMA was 26.1 µg/m^3 (Site ID: 5, 6, 7), which is similar to that observed in the previous reporting year (26.3 µg/m^3). This therefore indicates that there has not been a significant increase in the NO_2 annual mean concentration and that there are no new hotspot areas of concern outside of the former Lincoln AQMA.

Annual mean NO_2 concentrations have continually declined at the automatic monitoring site on Canwick Road (Site ID: LCR) between 2020 – 2023 and have remained stable between 2023 – 2024. This stable trend between the current and previous reporting year reiterates that observed across the diffusion tube network, indicating that there has been no increase in the NO_2 annual mean concentration outside of the former Lincoln AQMA in 2024.

Table A.5 in Appendix A compares the ratified continuous monitored NO_2 hourly mean concentrations for the past five years with the air quality objective of 200 µg/m^3, not to be exceeded more than 18 times per year. In 2024, this hourly objective was not exceeded on any occasion as the maximum hourly mean concentration recorded by the Canwick Road automatic monitoring site was 74.8 µg/m^3 (22nd April, 5pm). Additionally, as outlined in LAQM TG(22), a diffusion tube annual mean NO_2 concentration greater than 60 µg/m^3 can be used as a proxy for an exceedance of the 1-hour mean objective. However, as no single diffusion tube site recorded an annual mean NO_2 concentration above 60 µg/m^3 (maximum concentration 33.1 µg/m^3, Site ID: 3), it can be suggested that the NO_2 1-hour objective of 200 µg/m^3 was unlikely to have been breached at any site during 2024.

3.2.2 Particulate Matter (PM_{10})

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

The annual mean PM_{10} concentration reported at the automatic monitoring station on Broadgate (Site ID: B) was 19.0 µg/m^3 in 2024, which is significantly below the AQS annual mean objective of 40 µg/m^3. The reported concentration is a decrease from that of the previous reporting year (20.4 µg/m^3), continuing the trend of declining concentrations that have been observed at the site since 2022.

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

In 2024, there was one 24-hour mean concentration greater than 50 µg/m^3, with a concentration of 55.8 µg/m^3 being recorded on 3rd November 2024. This one exceedance is however lower than the three observed in the previous reporting year, and continues the trend of the AQS objective of 35 occasions not being exceeded at this site.

3.2.3 Particulate Matter ($PM_{2.5}$)

City of Lincoln Council do not undertake any automatic monitoring of $PM_{2.5}$. However, as outlined in Section 2.3, a $PM_{2.5}$ concentration has been estimated for the Broadgate site, by applying a local factor for PM_{coarse} split to the PM_{10} concentration.

The local PM_{coarse} factor was calculated using PM_{10} and $PM_{2.5}$ concentrations recorded at the Chesterfield Roadside Automatic Urban and Rural Network (AURN) monitoring station. This site had a data capture of 99.7% in 2024. The steps to calculate the local factor, in accordance with the methodology in Box 7.7 of LAQM TG(22), are set out in the following.

Step 1: Calculate the PM_{coarse} at the reference site (Chesterfield Roadside)

- Chesterfield Roadside PM_{10} annual mean concentration (2024): 12.0 µg/m^3.
- Chesterfield Roadside $PM_{2.5}$ annual mean concentration (2024): 7.4 µg/m^3.
    - PM_{coarse} split (locally derived): 12.0 – 7.4 = 4.6 µg/m^3.

Step 2: Subtract locally derived PM_{coarse} split from the PM_{10} concentration at Broadgate

- Broadgate PM_{10} annual mean concentration (2024): 19.0 µg/m^3.
    - 19.0 – 4.6 = 14.4 µg/m^3.

Step 3: Estimate annual mean $PM_{2.5}$ concentration at Broadgate

- Broadgate $PM_{2.5}$ annual mean concentration (2024): 14.4 µg/m^3.

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? (1)	Monitoring Technique	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Inlet Height (m)
LCR	Lincoln Canwick Road AURN (UKA00561)	Roadside	497962	370376	NO_2	No	N/A	Chemiluminescent	0 (3)	1.5	2.7
B	Broadgate	Roadside	497783	371282	PM_{10}	Yes (4)	Lincoln AQMA	Unheated BAM 1020 (5)	21	2	1.7

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

(3) The location of the Lincoln Canwick Road (LCR) site is on a street with residential properties on the opposite side of the street to the monitoring station. However, is has been assumed that the concentrations recorded by the monitoring station are representative of the opposite side of the street where the relevant exposure is located.

(4) The Broadgate (B) site is located within the revised Lincoln NO_2 AQMA Boundary, yet it is important to note that the AQMA has not been designated for exceedances of either of the PM_{10} objectives.

(5) The PM_{10} Unheated BAM 1020 is corrected for slope by dividing the data by 1.2, as per Section 7.168 of LAQM TG(22).

Table A.2 – Details of Non-Automatic Monitoring Sites

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube Co-located with a Continuous Analyser?	Tube Height (m)
1	The Avenue	Roadside	497107	371510	NO_2	Yes (Lincoln AQMA)	10.0	2.5	No	2.9
2	106 Yarborough Road	Roadside	496946	372027	NO_2	No	0.0	7.0	No	2.7
3	Drill Hall, Broadgate	Roadside	497785	371300	NO_2	Yes (Lincoln AQMA)	0.0	2.5	No	2.9
4	City Hall	Urban Background	497326	371421	NO_2	No	16.5	N/A	No	5.6
5, 6, 7	Canwick Road	Roadside	497962	370375	NO_2	No	0.0	1.5	Yes	2.6
8	Dixon Street	Roadside	497190	370080	NO_2	No	0.0	4.0	No	2.8
9	St Catherines	Roadside	497112	369351	NO_2	No	4.5	2.5	No	2.3
10	High Street	Roadside	497467	370956	NO_2	Yes (Lincoln AQMA)	N/A	0.5	No	2.9
11	Carholme Road	Roadside	496590	371571	NO_2	No	0.0	5.0	No	2.6
12	Monks Road	Roadside	497908	371421	NO_2	Yes (Lincoln AQMA)	1.5	0.5	No	2.8
14	Portland St / Archer St	Roadside	497835	370584	NO_2	No	0.3	2.0	No	2.8
15	Skellingthorpe Rd East	Roadside	495541	369272	NO_2	No	7.5	2.3	No	2.7
16	Skellingthorpe Rd Central	Roadside	494158	370303	NO_2	No	6.5	2.5	No	2.7
17	Skellingthorpe Rd West	Roadside	493543	370838	NO_2	No	13.0	2.0	No	2.7
18b	South Park / High St	Roadside	497195	369616	NO_2	No	3.5	1.0	No	2.8
19b	Newark Rd / Brant Rd	Roadside	496720	368181	NO_2	No	0.0	2.4	No	2.8
20	Newland / Wigford Way	Roadside	497383	371250	NO_2	Yes (Lincoln AQMA)	0.0	6.0	No	2.9
21b	78 Canwick Road	Roadside	498005	370245	NO_2	No	0.5	2.1	No	2.7

Notes:

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

(2) N/A if not applicable.

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

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2024 (%) (2)	2020	2021	2022	2023	2024
LCR	497962	370375	Roadside	78.6	78.6	21.4	20.8	19.1	17.8	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 NO_2 annual mean objective occur at locations not representative of relevant exposure, the fall-off with distance concentration has been calculated and reported concentration provided in brackets for 2024.**

Notes:

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

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

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

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

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

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

Figure A.1 – Annual Mean NO_2 Concentrations (Automatic)

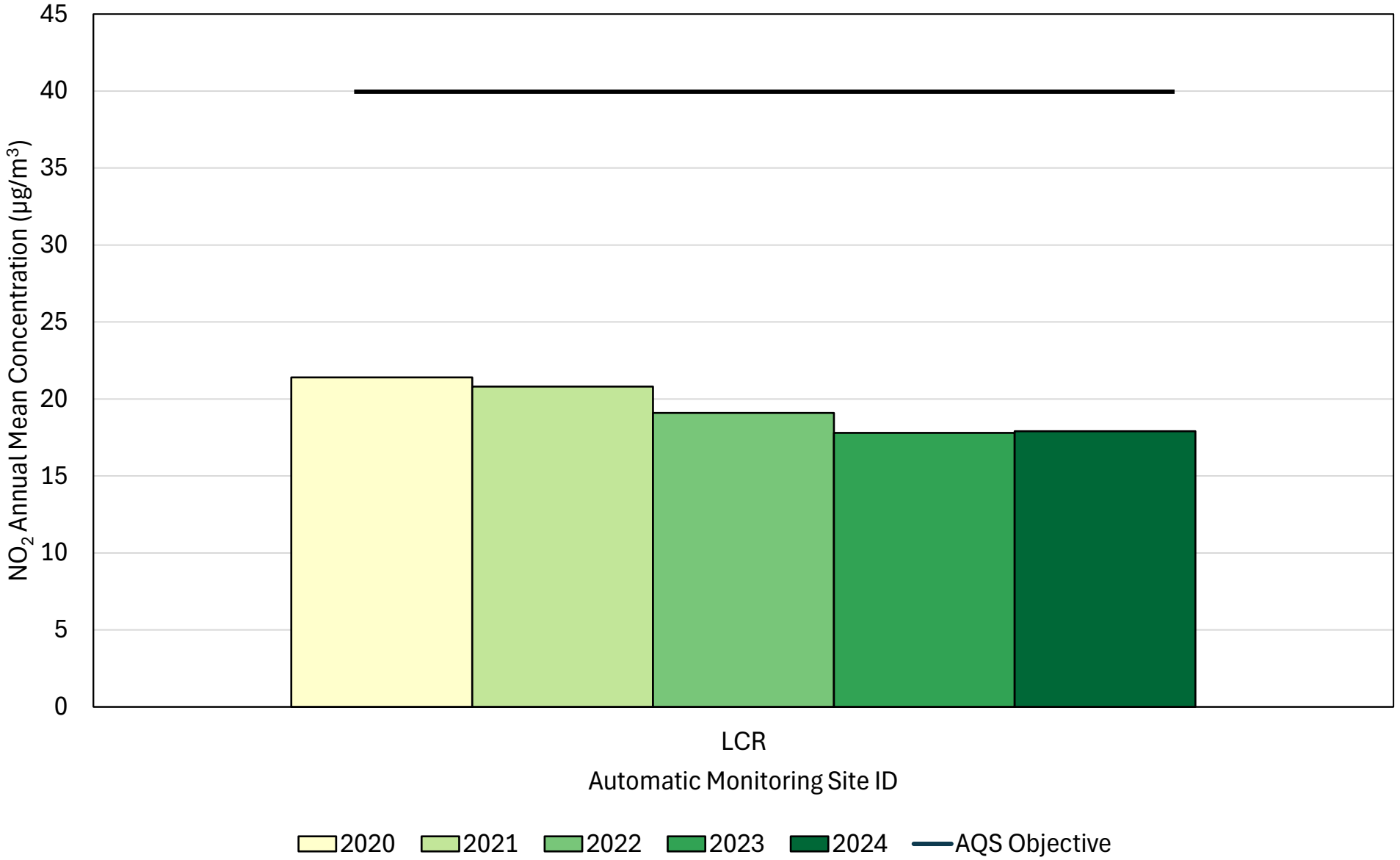


Table A.4 – Annual Mean NO_2 Monitoring Results: Non-Automatic Monitoring (µg/m^3)

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2024 (%) (2)	2020	2021	2022	2023	2024
1	497107	371510	Roadside	100	100	21.0	21.7	19.1	25.1	25.4
2	496946	372027	Roadside	100	100	20.1	19.4	18.1	22.3	21.9
3	497785	371300	Roadside	100	100	29.6	24.2	23.6	31.6	33.1
4	497326	371421	Urban Background	100	100	9.3	9.6	8.6	11.1	10.8
5, 6, 7	497962	370375	Roadside	100	100	22.2	21.3	19.3	25.5	26.1
8	497190	370080	Roadside	92.5	92.5	18.1	20.6	18.7	24.9	25.1
9	497112	369351	Roadside	100	100	18.4	17.4	15.2	20.6	20.9
10	497467	370956	Roadside	100	100	14.4	15.9	14.2	19.4	19.5
11	496590	371571	Roadside	100	100	13.7	13.5	12.9	17.0	15.5
12	497908	371421	Roadside	100	100	16.3	18.0	18.7	24.4	23.8
14	497835	370584	Roadside	100	100	18.8	18.8	17.7	23.7	25.4
15	495541	369272	Roadside	84.9	84.9	17.6	18.9	16.7	23.4	20.8
16	494158	370303	Roadside	100	100	12.8	14.0	12.4	17.2	16.3
17	493543	370838	Roadside	100	100	15.5	17.1	15.4	19.2	18.3
18b	497195	369616	Roadside	100	100	22.2	21.7	20.3	26.3	26.0
19b	496720	368181	Roadside	100	100	17.6	18.6	16.1	23.5	21.8
20	497383	371250	Roadside	100	100	14.5	16.1	13.8	18.3	18.2
21b	498005	370245	Roadside	100	100	21.9	17.9	17.9	23.3	24.0

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

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

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

Notes:

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

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

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

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

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

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

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

Figure A.2 – Annual Mean NO_2 Concentrations (Non-Automatic – Inside AQMA)

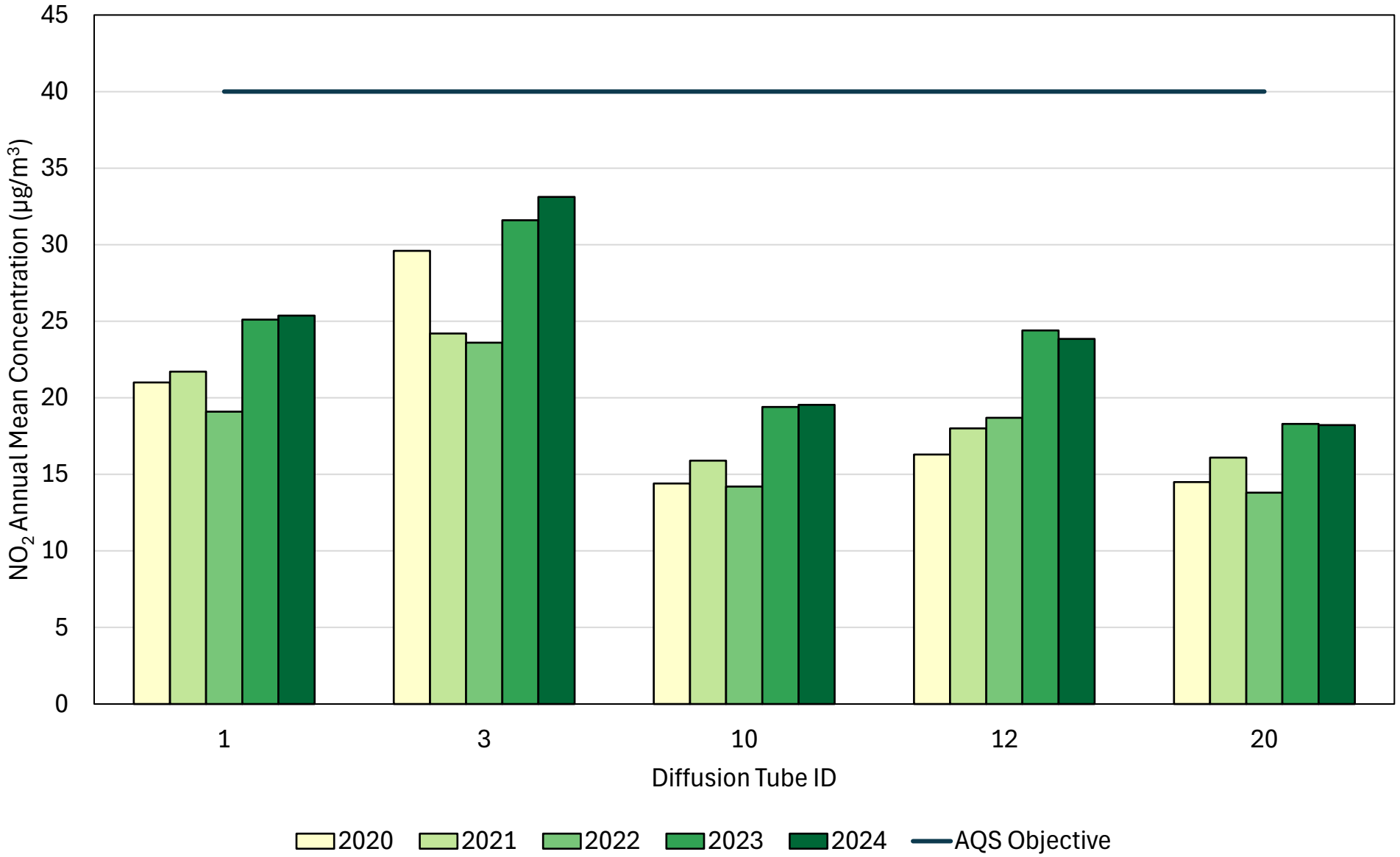


Figure A.3 – Annual Mean NO_2 Concentrations (Non-Automatic – Outside AQMA)

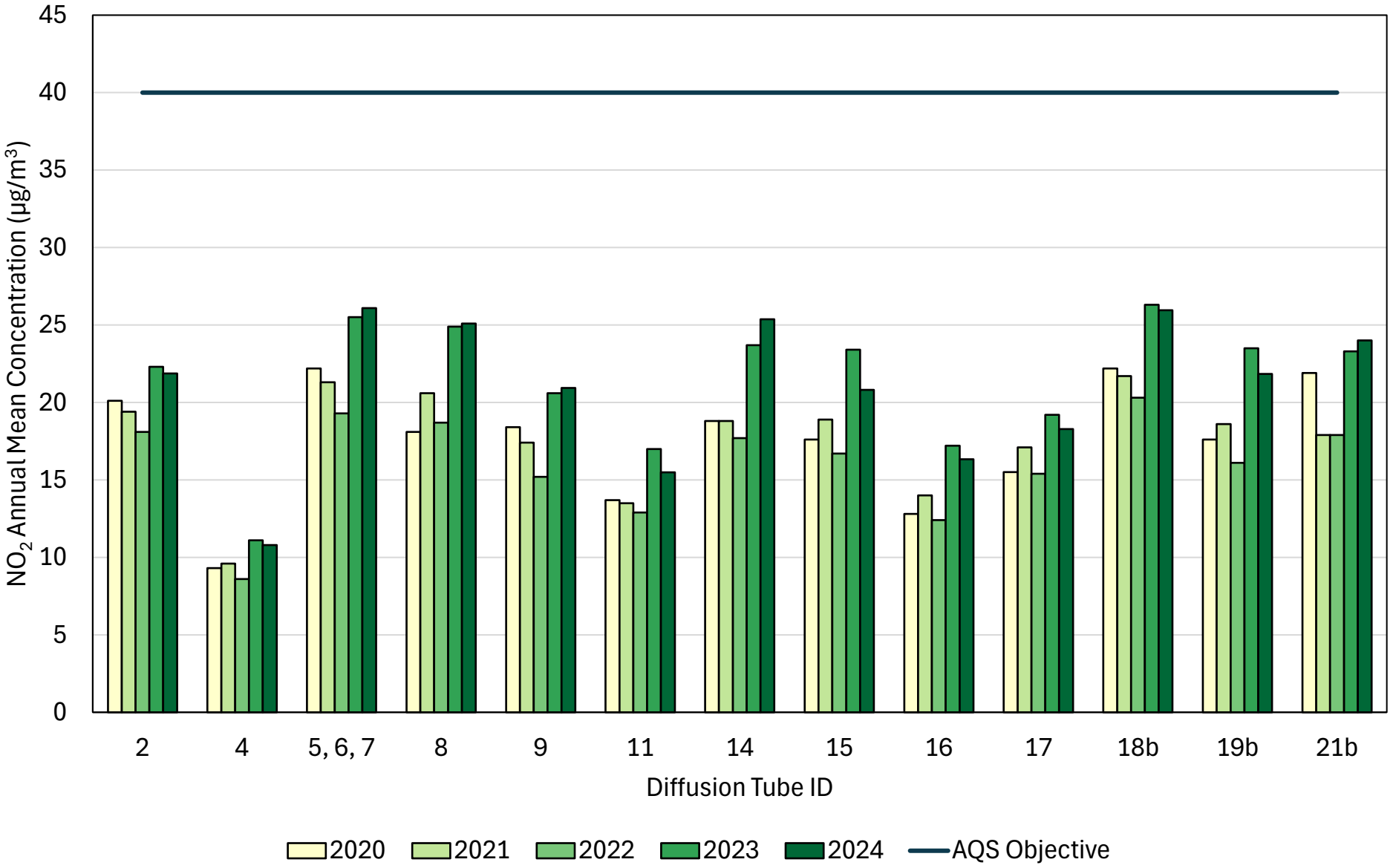


Table A.5 – 1-Hour Mean NO_2 Monitoring Results, 1-Hour Means > 200µg/m^3

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2024 (%) (2)	2020	2021	2022	2023	2024
LCR	497962	370375	Roadside	78.6	78.6	0	0	0	0	0 (69)

Notes:

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

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

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

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

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

Table A.6 – Annual Mean PM_{10} Monitoring Results (µg/m^3)

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2024 (%) (2)	2020	2021	2022	2023	2024
B	497783	371282	Roadside	98.8	98.8	24.6	22.4	24.5	20.4	19.0

☒ **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/m^3.

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

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

(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.4 – Annual Mean PM_{10} Concentrations

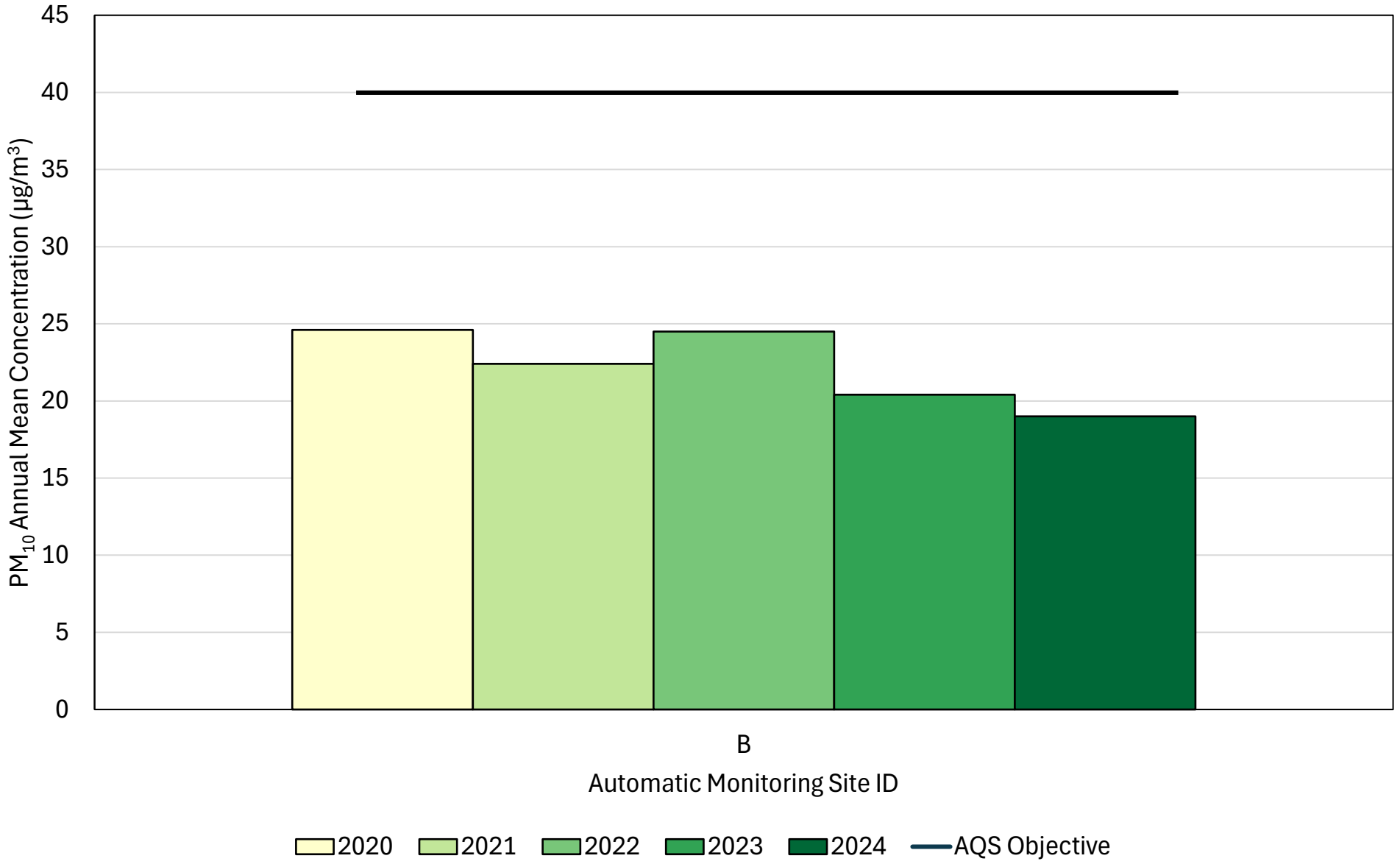


Table A.7 – 24-Hour Mean PM_{10} Monitoring Results, 24 Hour Means > 50µg/m^3

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2024 (%) (2)	2020	2021	2022	2023	2024
B	497783	371282	Roadside	98.8	98.8	7 (43.8)	1	9	3	1

Notes:

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

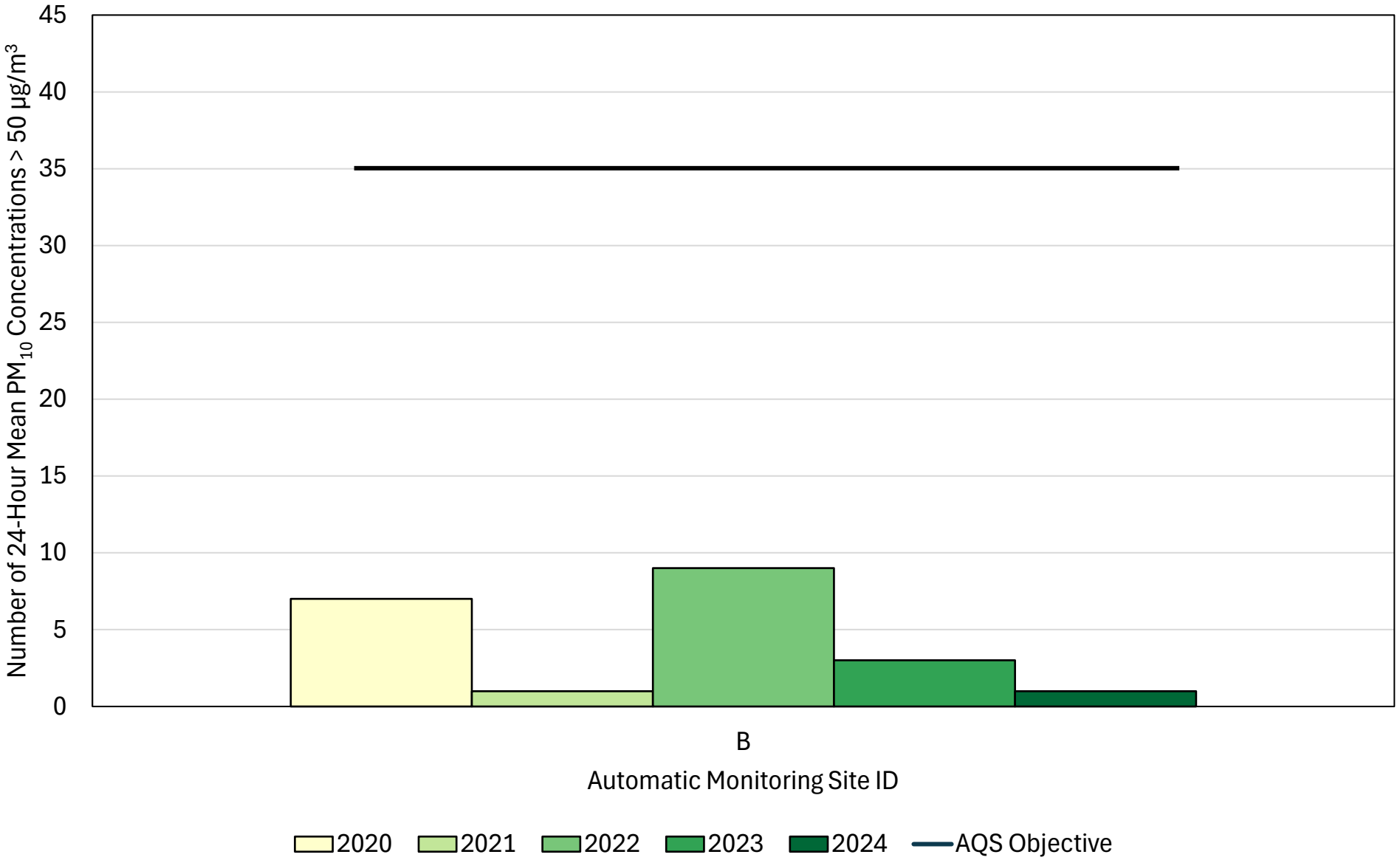
Exceedances of the PM_{10} 24-hour mean objective (50µg/m^3 not to be exceeded more than 35 times/year) are shown in **bold**.

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

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

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

Figure A.5 – Number of 24-Hour Mean PM_{10} Results > 50 µg/m³



Appendix B: Full Monthly Diffusion Tube Results for 2024

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

DT ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Annualised and Bias Adjusted (0.84)	Annual Mean: Distance Corrected to Nearest Exposure	Comment
1	497107	371510	37.3	35.9	30.7	27.6	26.1	21.7	26.5	25.2	28.7	32.4	38.0	32.4	30.2	25.4		
2	496946	372027	32.6	32.0	23.8	24.2	20.0	24.1	23.1	22.8	23.8	25.2	31.5	29.3	26.0	21.9		
3	497785	371300	46.6	42.7	36.0	39.3	37.8	40.4	40.9	33.4	35.0	39.2	44.1	37.9	39.4	33.1		
4	497326	371421	17.4	17.0	12.3	10.0	9.8	8.0	9.0	9.4	10.5	15.4	20.0	15.5	12.9	10.8		
5	497962	370375	37.9	31.6	25.1	32.0	33.9	27.2	28.6	23.1	37.7	30.2	41.5	28.0	-	-		Triplicate Site with 5, 6 and 7 - Annual data provided for 7 only
6	497962	370375	38.8	32.2	25.7	31.5	33.1	26.0	27.7	22.0	37.3	31.6	36.9	28.1	-	-		Triplicate Site with 5, 6 and 7 - Annual data provided for 7 only
7	497962	370375	37.9	29.8	25.6	29.7	33.7	26.7	27.3	20.1	38.1	32.0	39.3	30.8	31.1	26.1		Triplicate Site with 5, 6 and 7 - Annual data provided for 7 only
8	497190	370080	36.1	27.6	26.4	28.8	32.1		25.9	23.8	36.3	29.4	34.2	27.8	29.9	25.1		
9	497112	369351	33.3	28.9	24.8	24.2	22.1	18.8	19.2	19.8	25.2	25.7	31.2	25.8	24.9	20.9		
10	497467	370956	26.9	26.5	25.5	21.4	19.4	17.1	18.1	18.0	20.2	27.5	33.1	25.5	23.3	19.5		
11	496590	371571	24.6	23.6	18.9	15.9	14.7	12.8	13.0	15.3	13.9	21.7	26.0	20.7	18.4	15.5		
12	497908	371421	34.9	32.0	32.9	26.6	23.6	24.2	24.9	24.5	23.7	29.5	35.7	28.3	28.4	23.8		
14	497835	370584	36.0	29.3	23.6	29.9	33.8	27.5	26.5	22.0	35.3	31.2	38.2	29.1	30.2	25.4		
15	495541	369272	31.5	26.3		22.0	25.2	20.7	21.5	17.1		25.1	30.8	27.6	24.8	20.8		
16	494158	370303	28.3	22.8	20.0	15.9	18.3	16.8	18.1	14.6	17.9	20.8	22.8	17.1	19.4	16.3		
17	493543	370838	28.3	26.0	20.8	20.3	20.3	19.8	18.7	17.5	17.8	23.9	28.7	19.1	21.8	18.3		
18b	497195	369616	37.5	35.3	29.8	27.8	29.4	27.5	29.9	27.4	29.6	31.3	35.4	30.0	30.9	26.0		
19b	496720	368181	36.3	28.4	23.7	20.8	27.0	22.7	22.0	17.1	31.6	23.4	30.3	28.8	26.0	21.8		
20	497383	371250	28.5	25.4	21.6	18.8	18.1	16.6	17.1	16.9	19.1	25.1	29.8	23.3	21.7	18.2		
21b	498005	370245	34.4	31.4	26.1	28.3	24.7	25.1	25.7	24.4	25.8	29.4	37.7	30.1	28.6	24.0		

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

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

☐ **Local bias adjustment factor used.**

☒ **National bias adjustment factor used.**

☒ **Where applicable, data has been distance corrected for relevant exposure in the final column.**

☒ **City of Lincoln Council confirm that all 2024 diffusion tube data has been uploaded to the Diffusion Tube Data Entry System.**

Notes:

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

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

See Appendix C for details on bias adjustment and annualisation.

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

New or Changed Sources Identified Within Lincoln During 2024

During 2024, City of Lincoln Council received two planning applications with supporting air quality assessments:

- 2024/0688/FUL – Change of use from retail to industry and storage, Greetwell Road, Lincoln.
- 2024/0384/PSI – Erection of a new endoscopy unit, Lincoln Count Hospital, St Annes Road, Lincoln.

However, despite both developments requiring an air quality assessment, no significant adverse impacts to air quality were reported in either of the assessments. Therefore, there was no significant new pollution source introduced in Lincoln during 2024.

Additional Air Quality Works Undertaken by City of Lincoln Council During 2024

City of Lincoln Council has not undertaken any air quality works during the 2024 reporting year.

QA/QC of Diffusion Tube Monitoring

The diffusion tubes used for the 2024 reporting year were supplied and analysed by Gradko International, using the 20% Triethanolamine in water preparation method. Gradko International is a UKAS accredited laboratory which participates in the AIR-PT scheme for NO_2 diffusion tube analysis and Annual Field Intercomparison Exercise. These provide strict criteria relating to performance that participating laboratories must meet, ensuring that the reported NO_2 concentrations are of a high quality. For all AIR-PT rounds for diffusion tubes analysed during 2024, Gradko International received a score or 100% – the percentage score reflects the results deemed satisfactory based upon the z-score of ± 2.

Additionally, the precision of the NO_2 diffusion tubes (20% TEA in water) supplied by Gradko International was classified as 'good' for all 26 observations in 2024. This reflects the laboratory's performance and consistency in preparing and analysing the diffusion tubes, as well as the subsequent handling of the tubes in the field. Tube are considered to have 'good' precision where the coefficient of variation of duplicate or triplicate diffusion tubes for eight or more monitoring periods during the year is less than 20%. Further information on the precision results is available on the LAQM website.

During 2024, the diffusion tube monitoring was completed in adherence with the Defra monitoring calendar, with all changeovers completed on the specified date.

Diffusion Tube Annualisation

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

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

However, as the minimum data capture across all sites in the diffusion tube network in 2024 was 84.9 %, annualisation was not required.

Diffusion Tube Bias Adjustment Factors

The diffusion tube data presented within the 2025 ASR have been corrected for bias using an adjustment factor. Bias represents the overall tendency of the diffusion tubes to under or over-read relative to the reference chemiluminescence analyser. LAQM.TG22 provides guidance with regard to the application of a bias adjustment factor to correct diffusion tube monitoring. Triplicate co-location studies can be used to determine a local bias factor based on the comparison of diffusion tube results with data taken from NO_x/NO_2 continuous analysers. Alternatively, the national database of diffusion tube co-location surveys provides bias factors for the relevant laboratory and preparation method.

City of Lincoln Council have applied a national bias adjustment factor of 0.84 to the 2024 monitoring data. This has been derived from the national bias adjustment spreadsheet (version 04/25), as shown in Figure C.1.

A triplicate co-location study is carried out at the Lincoln Canwick Road AURN site, which has been used to calculate a local bias adjustment factor of 0.59 (as shown in Table C.1).

However, due to the poor data capture of the Lincoln Canwick Road AURN site during 2024 (78%) and the site having no data available for all of January and February, the national adjustment factor was instead applied to the 2024 monitoring data. This is because, box 7.13 of TG(22) states that the national bias adjustment factor may be more representative when:

"Data capture for the automatic analyser is less than 90%, or there have been problems with data quality".

A summary of bias adjustment factors used by City of Lincoln Council over the past five years is presented in Table C.2.

Figure C.1 – National Bias Adjustment Factor Spreadsheet (Version 04/25)

National Diffusion Tube Bias Adjustment Factor Spreadsheet — Spreadsheet Version Number: 04/25

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

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

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

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

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

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

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

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

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

Analysed By[1]	Method (To undo your selection, choose (All) from the pop-up list)	Year[5] (To undo your selection, choose (All))	Site Type	Local Authority	Length of Study (months)	Diffusion Tube Mean Conc. (Dm) (µg/m³)	Automatic Monitor Mean Conc. (Cm) (µg/m³)	Bias (B)	Tube Precision[6]	Bias Adjustment Factor (A) (Cm/Dm)
Gradko	20% TEA in water	2024	UV	Belfast City Council	10	24	20	19.9%	G	**0.83**
Gradko	20% TEA in water	2024	R	Belfast City Council	12	43	34	28.8%	G	**0.78**
Gradko	20% TEA in water	2024	R	Belfast City Council	12	24	21	13.9%	G	**0.88**
Gradko	20% TEA in water	2024	R	Belfast City Council	12	34	27	25.5%	G	**0.80**
Gradko	20% TEA in water	2024	R	Blackburn With Darwen Bc	12	22	17	32.9%	G	**0.75**
Gradko	20% TEA in water	2024	R	Bath & North East Somerset	12	25	20	22.6%	G	**0.82**
Gradko	20% TEA in water	2024	R	Cambridge City Council	12	19	15	28.5%	G	**0.78**
Gradko	20% TEA in water	2024	UB	Plymouth City Council	12	16	14	13.8%	G	**0.88**
Gradko	20% TEA in water	2024	R	Plymouth City Council	12	31	23	33.4%	S	**0.75**
Gradko	20% TEA in water	2024	R	Monmouthshire County Council	12	29	24	19.4%	G	**0.84**
Gradko	20% TEA in water	2024	KS	Marylebone Road Intercomparison	11	41	36	16.1%	G	**0.86**
Gradko	20% TEA in water	2024	R	Lisburn & Castlereagh City Council	12	24	19	27.8%	G	**0.78**
Gradko	20% TEA in water	2024	R	Ards And North Down Borough Council	11	28	20	44.5%	G	**0.69**
Gradko	20% TEA in water	2024	R	Eastleigh Borough Council	12	29	24	20.3%	G	**0.83**
Gradko	20% TEA in water	2024	UB	Eastleigh Borough Council	12	19	17	12.4%	G	**0.89**
Gradko	20% TEA in water	2024	R	Eastleigh Borough Council	12	19	17	12.0%	G	**0.89**
Gradko	20% TEA in water	2024	R	Gateshead Council	12	20	18	13.9%	G	**0.88**
Gradko	20% TEA in water	2024	R	Gateshead Council	11	20	17	19.7%	G	**0.84**
Gradko	20% TEA in water	2024	R	Gateshead Council	12	24	20	21.7%	G	**0.82**
Gradko	20% TEA in water	2024	R	Gateshead Council	12	27	23	19.0%	G	**0.84**
Gradko	20% TEA in water	2024	R	Gateshead Council	12	28	30	-6.0%	G	**1.06**
Gradko	20% TEA in water	2024	R	Brighton & Hove City Council	11	34	27	26.3%	G	**0.79**
Gradko	20% TEA in water	2024	R	Liverpool City Council	12	34	25	35.7%	G	**0.74**
Gradko	20% TEA in water	2024	KS	Liverpool City Council	10	52	47	10.2%	G	**0.91**
Gradko	20% TEA in water	2024	R	Nottingham City Council	10	29	26	12.2%	G	**0.89**
Gradko	20% TEA in water	2024	R	Wychavon District Council	10	29	26	14.7%	G	**0.87**
Gradko	20% TEA in water	2024	R	Worcestershire	12	12	12	-3.4%	G	**1.04**
Gradko	20% TEA in water	2024		**Overall Factor[3] (27 studies)**				Use		**0.84**

Table C.1 – Local Bias Adjustment Calculation

	Local Bias Adjustment Input 1
Periods used to calculate bias	10
Bias Factor A	0.59 (0.56 – 0.62)
Bias Factor B	69% (60% - 77%)
Diffusion Tube Mean (µg/m³)	30.3
Mean CV (Precision)	3.4%
Automatic Mean (µg/m³)	18.0
Data Capture	79%
Adjusted Tube Mean (µg/m³)	18 (17 – 19)

Table C.2 – Bias Adjustment Factor

Monitoring Year	Local or National	If National, Version of National Spreadsheet	Adjustment Factor
2024	National	04/25	0.84
2023	National	03/23	0.81
2022	Local	-	0.60
2021	Local	-	0.63
2020	Local	-	0.68

NO_2 Fall-off with Distance from the Road

Wherever possible, monitoring locations are representative of exposure. However, where this is not possible, the NO_2 concentration at the nearest location relevant for exposure has been estimated using the Diffusion Tube Data Processing Tool/NO_2 fall-off with distance calculator available on the LAQM Support website. Where appropriate, non-automatic annual mean NO_2 concentrations corrected for distance are shown in Table B.1.

During 2024, distance correction was not required for any diffusion tube monitoring site.

QA/QC of Automatic Monitoring

The Lincoln Canwick Road site is part of the AURN and therefore, the data and QA/QC procedures are managed to the AURN standards. City of Lincoln Council perform local site operator (LSO) duties for the site, whilst equipment support is the responsibility of Acoem.

It is important to note that the reason for the Lincoln Canwick Road AURN site having data missing from 1st January to 12th March is due to the QA/QC procedures determining that the rain funnel on the NO_2 analyser did not meet the siting criteria during the audit of the site. This is due to the rain funnel being reinstalled in the incorrect position following reports of it being damaged. Therefore, it was the decision of QA/QC of the AURN to delete the data for the period that the rain funnel was in the incorrect position.

The Broadgate site is run by City of Lincoln Council. LSO duties, data management and QA/QC procedures are undertaken in-house by City of Lincoln Council staff, in accordance with a written procedure. Service, maintenance and equipment support is provided by Enviro Technology (ET).

PM_{10} Monitoring Adjustment

Correction of the Beta Attenuation Monitor (BAM) at the Broadgate site is conducted in accordance with the methodology outlined in Section 7.168 of LAQM TG(22), which involves dividing the monitored concentrations by 1.2.

Automatic Monitoring Annualisation

The two automatic monitoring stations recorded data capture greater than 75% during 2024 (Lincoln Canwick Road – 78%, Broadgate, – 99%).

NO_2 Fall-off with Distance from the Road

Wherever possible, monitoring locations are representative of exposure. However, where this is not possible, the NO_2 concentration at the nearest location relevant for exposure has been estimated using the NO_2 fall-off with distance calculator available on the LAQM Support website. Where appropriate, automatic annual mean NO_2 concentrations corrected for distance are presented in Table A.3.

The Lincoln Canwick Road automatic monitoring site did not require fall-off with distance correction in 2024.

Appendix D: Maps of Monitoring Locations and AQMAs

Figure D.1 – Map of Monitoring Sites (Lincoln Boundary)

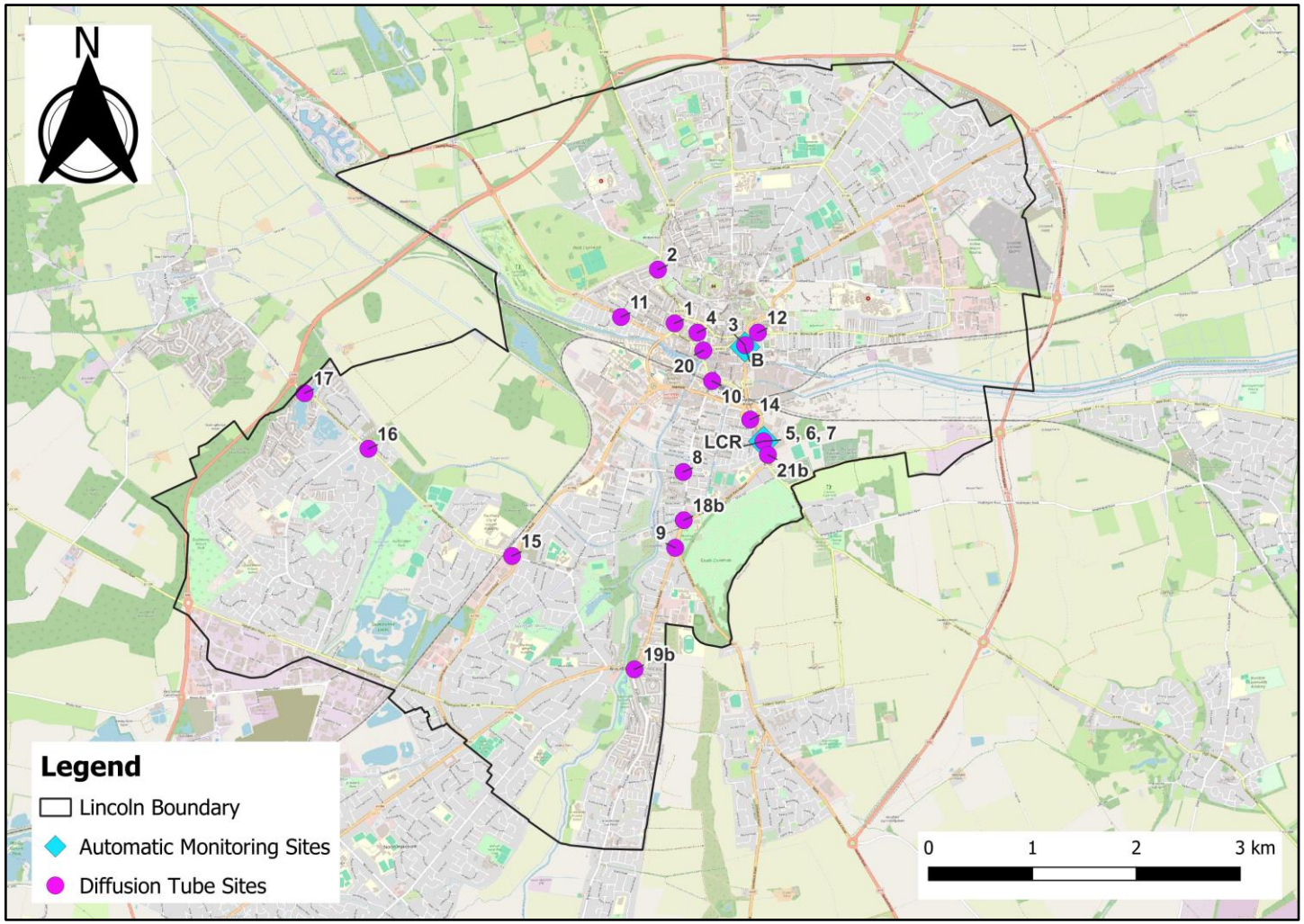


Figure D.2 – Map of Monitoring Sites (Lincoln AQMA)

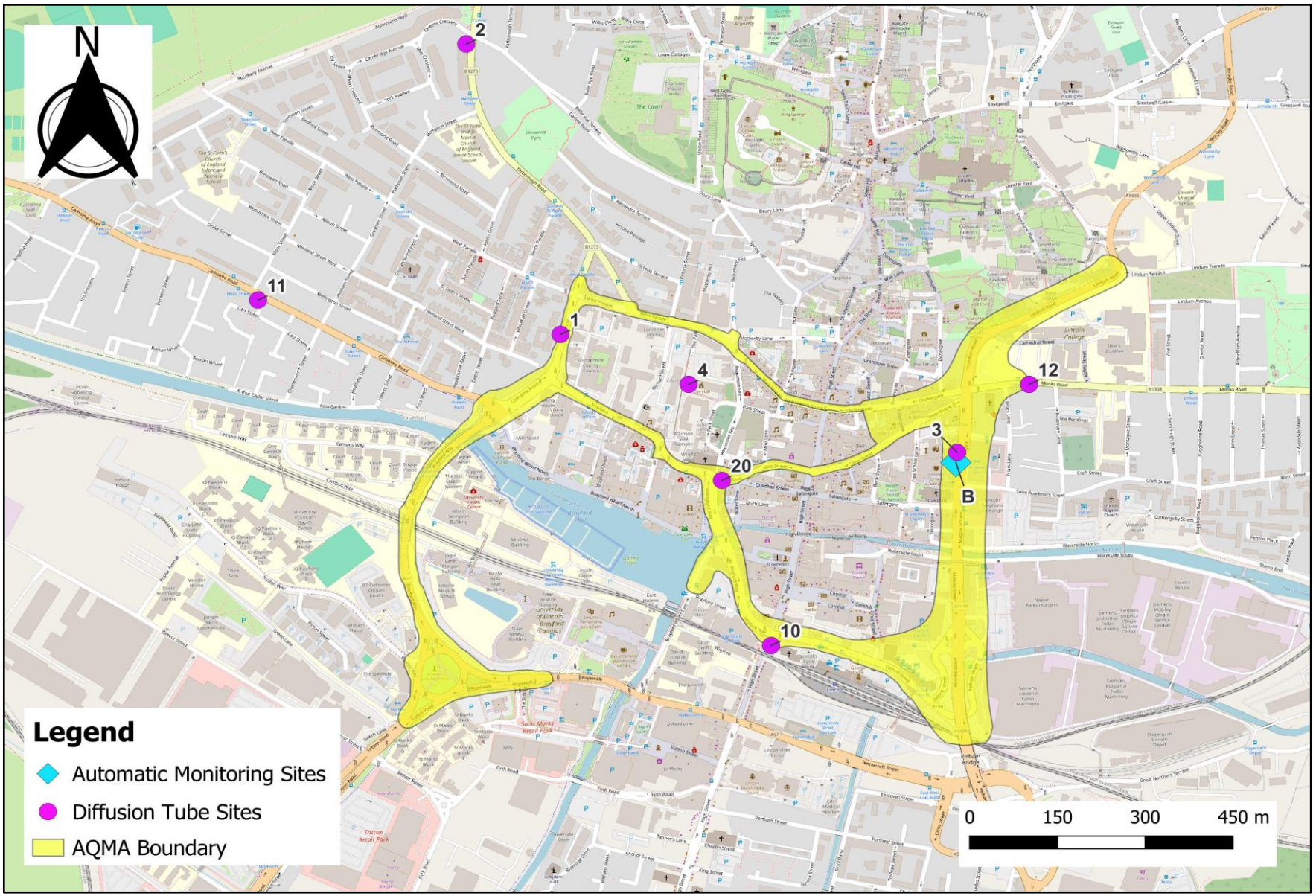


Figure D.3 – Map of Monitoring Sites (Portland Street, Canwick Road & Dixon Street)

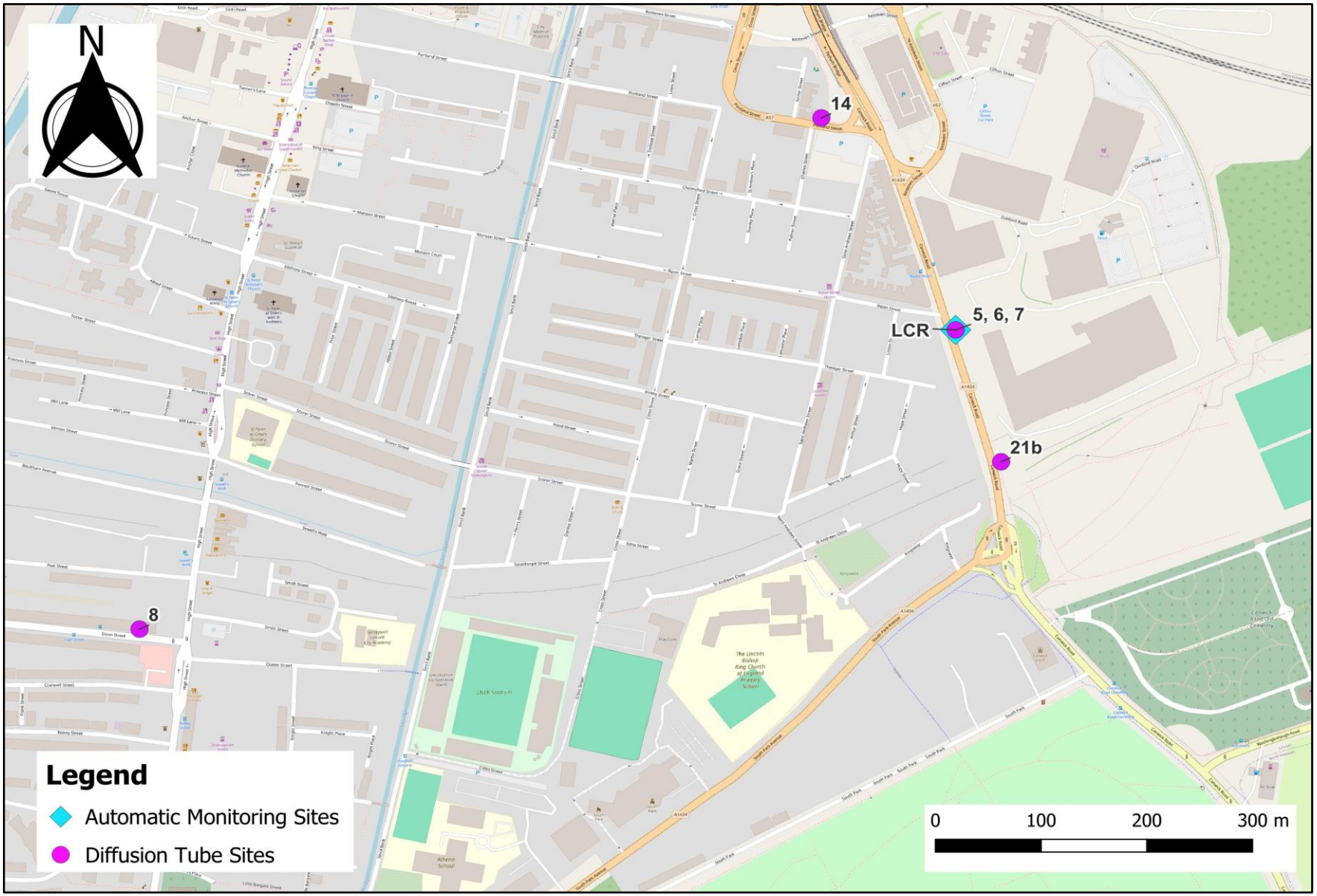


Figure D.4 – Map of Monitoring Sites (South Park, St Catherines & Newark Road)

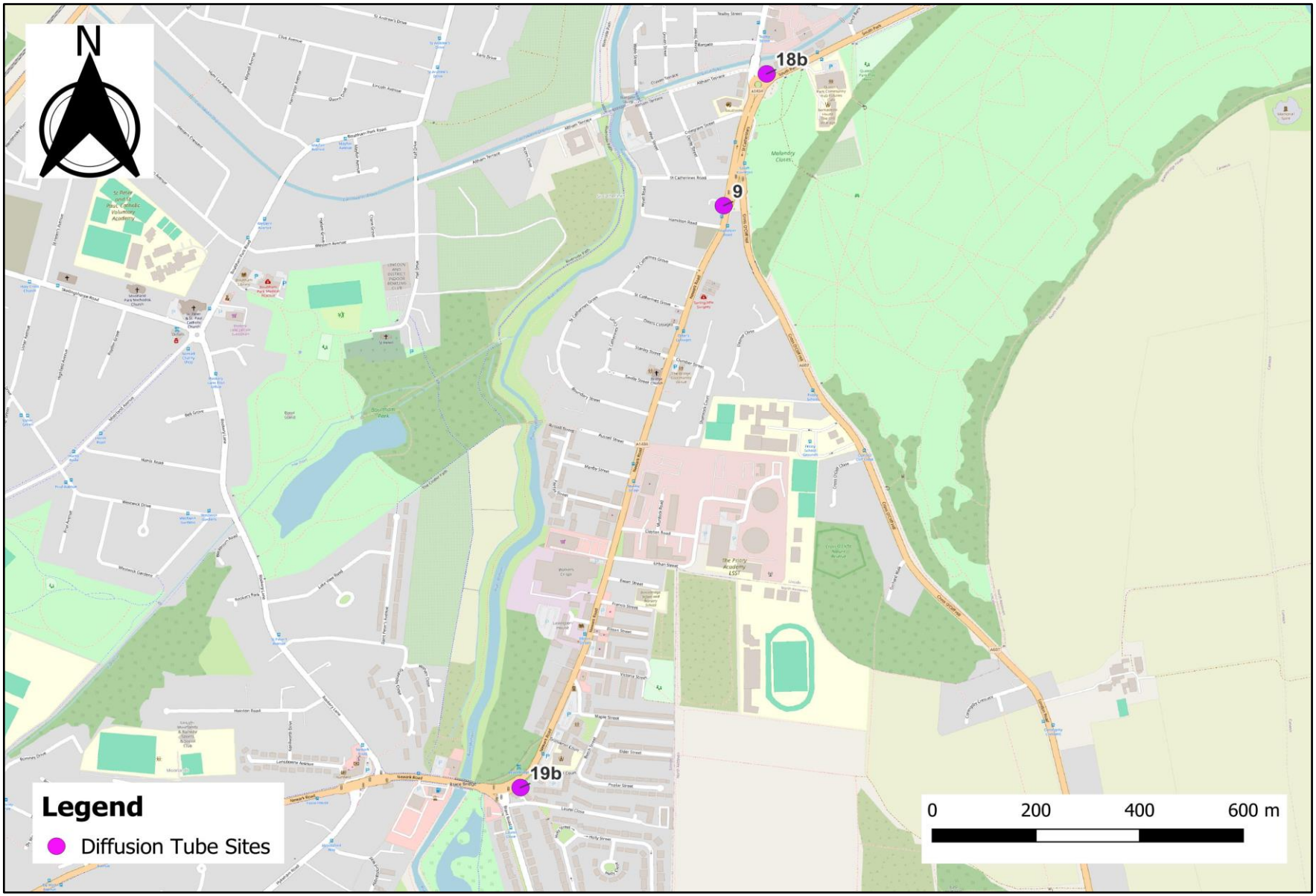
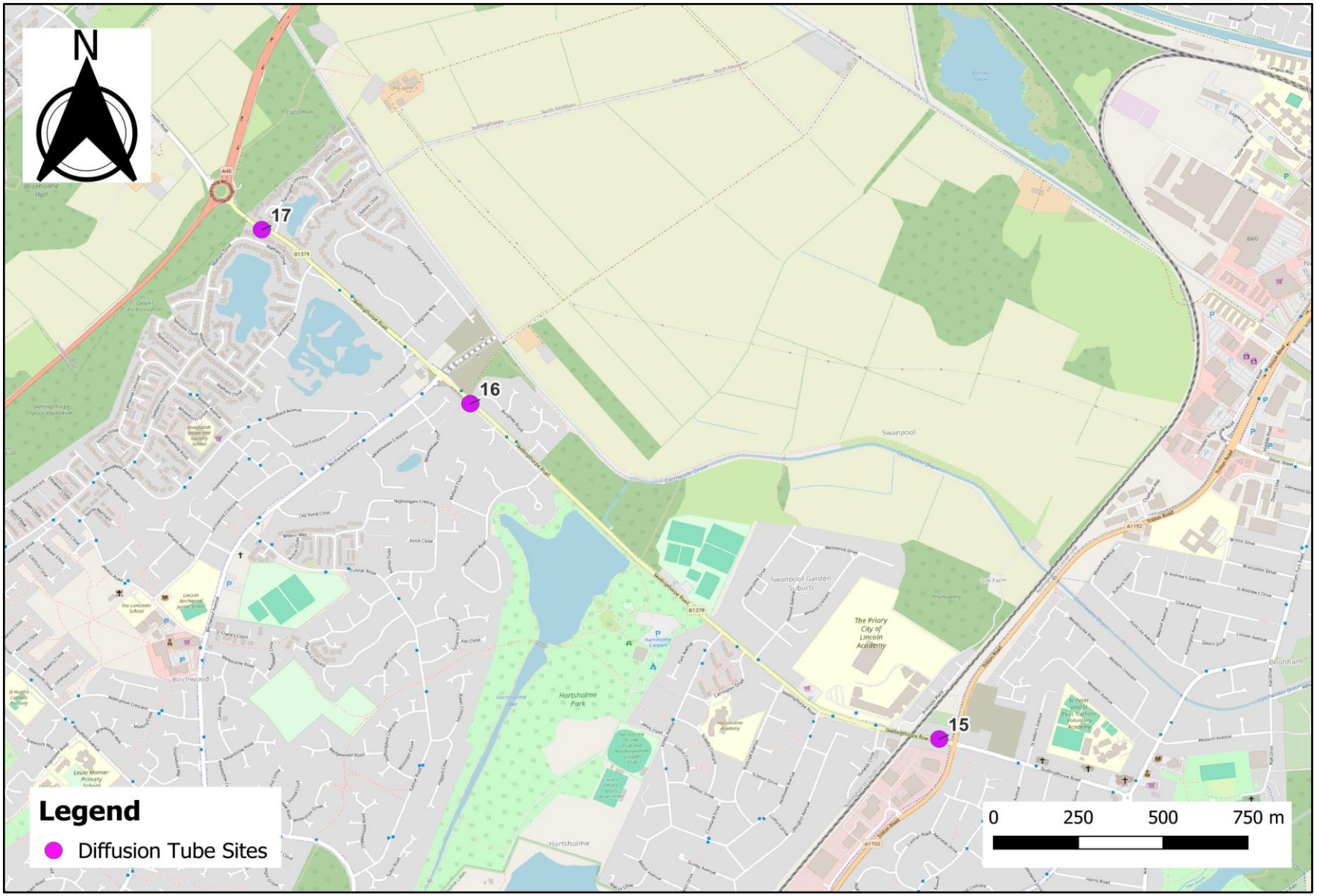


Figure D.5 – Map of Monitoring Sites (Skellingthorpe Road)



Appendix E: Summary of Air Quality Objectives in England

Table E.1 – Air Quality Objectives in England[5]

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

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

Glossary of Terms

Abbreviation	Description
AQAP	Air Quality Action Plan - A detailed description of measures, outcomes, achievement dates and implementation methods, showing how the local authority intends to achieve air quality limit values'
AQMA	Air Quality Management Area – An area where air pollutant concentrations exceed / are likely to exceed the relevant air quality objectives. AQMAs are declared for specific pollutants and objectives
ASR	Annual Status Report
Defra	Department for Environment, Food and Rural Affairs
DMRB	Design Manual for Roads and Bridges – Air quality screening tool produced by National Highways
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.
- Lincolnshire County Council – Local Transport Plan 5.
- Lincolnshire County Council – Lincolnshire Cycling Strategy.
- Lincolnshire Couty Council – Lincolnshire Electric Vehicle Strategy.
- Lincolnshire Couty Council – Lincolnshire Walking Strategy.
- Lincolnshire County Council – Sustainable Modes of Travel to School (SMoTS) Strategy.
- Lincolnshire Couty Council – Lincoln Transport Strategy.
- Lincolnshire Couty Council – Lincolnshire Bus Service Improvement Plan (BSIP).
- City of Lincoln Council – Environmental Policy.
- City of Lincoln Council – Climate Action Plan.