APPENDIX THREE

South Kesteven District Council

2025 Annual Status Report

June 2025

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SOUTH KESTEVEN DISTRICT COUNCIL

2025 Air Quality Annual Status Report (ASR)

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

Date: June 2025

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Report Reference Number	25221856
Date	June 2025

Local Responsibilities and Commitment

This ASR was prepared by Bureau Veritas on behalf of South Kesteven District Council, with the support of the following officers and departments:

- Tom Amblin-Lightowler, Environmental Health Manager

This ASR has been approved by:

- Tom Amblin-Lightowler, Environmental Health Manager

This ASR has been signed off by a Director of Public Health at Lincolnshire County Council.

If you have any comments on this ASR please send them to Tom Amblin-Lightowler: South Kesteven District Council, The Picture House, St Catherine's Rd, Grantham, Lincolnshire, NG31 6TT.

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Executive Summary: Air Quality in Our Area

Air Quality in South Kesteven

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.

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

The Road to Zero[1] details the Government's approach to reducing exhaust emissions from road transport whilst balancing 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.

As part of the South Kesteven District Council's commitment to reduce the impacts of climate change, and specifically air pollution, the Council declared a climate emergency on 26th September 2019. It is the Councils aim to hit 30% carbon emission reduction by 2030 for Council activities and across the District, as reported in the South Kesteven Climate Action Strategy. The Climate Action Strategy sets out various actions to reduce Carbon Dioxide (CO_2) emissions, of which also have shared benefits in improving air quality through reducing both NO_2 and Particulate Matter (PM) emissions. Examples include supporting projects that boost biodiversity and tree planting across the district, using renewable energy sources to power buildings, installing and maintaining a high-quality network of electric vehicle (EV) charging on residential streets and rural areas, adopting Light Emitting Diode (LED) lighting, and further improve public transportation infrastructure and active travel provision across the district, particularly for urban journeys. Furthermore, charge points have been installed to assist residents in South Kesteven convert from internal combustion vehicles to EVs.

The Council have been committed to improving the energy efficiency of district's social housing stock as well as broader accommodation in South Lincolnshire via the Green Homes Grant (GHG) and Local Authority Delivery Phase 2 (LAD2), the Council has upgraded 164 properties with owner-occupiers and social housing tenants. These properties, with no connection to the gas supply grid, were previously heated with

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

inefficient storage heaters or solid fuel systems resulting in expensive running costs and an above average carbon footprint. Works included installing energy saving measures such as solid wall insulation Air Source Heat Pumps (ASHPs) and Solar PV. The scheme funding did not cover the cost of gas boiler replacements. Eligible properties were those with a low Energy Performance Certificate (EPC) rating of D, E, F or G, as well as households with a combined income of ≤£30,000 and savings <£16,000. The overall initiative has improved property thermal efficiency across South Kesteven with EPC ratings updated to minimum of Band C, as well as reducing carbon footprint. More information can be found at on the council's website.

South Kesteven District secured £1.2 million in funding through the Home Upgrade Grant (HUG), currently in phase two (HUG2), and the Local Authority Delivery Phase 3 (LAD3) scheme to deliver energy efficiency upgrades to homes within the district. In collaboration with energy experts YES Energy Solutions, the Council has upgraded 49 properties in the district. The core aims of the schemes are to alleviate fuel poverty alongside reducing carbon emissions associated with energy used in domestic properties. Works include internally insulating and rendering the building, loft and floor voids insulation, installing photovoltaic panels and more energy-efficient air source heat pumps. These upgrades improved the majority of EPC ratings to Band C and reduced the broader carbon footprint.

South Kesteven District Council has also installed solar PV on Grantham which provides energy used on site, reduce carbon emissions and generate income.

In 2023, South Kesteven District Council commissioned a Source Apportionment Exercise to support their updated Air Quality Action Plan (AQAP) document. The assessment involved reviewing Automatic Traffic Count (ATC) and Automatic Number Plate Recognition (ANPR) traffic data within and around the outskirts of the AQMA boundary to determine the composition of vehicles travelling in the centre of Grantham. Thus, ascertaining which vehicle types are most polluting and contributing to increased NO_2 concentrations across South Kesteven. From the exercise, the Council were able to outline key strategies to implement which seek to reduce air pollutant concentrations in the district, as detailed in the updated AQAP issued on 11th November 2024 post approval by councillors and cabinet. This project demonstrates the Council's approach to working with partner organisations to improve air quality for its residents and visitors' welfare, particularly those who are vulnerable.

The Council awarded a total of £540,460 in funding through The Rural Fund, integrated into the UK Shared Prosperity Fund (UKSPF), for projects delivered between 2023 and

March 2025. The fund finances projects across rural areas throughout South Kesteven, with a key objective of enhancing productivity, improving energy efficiency and implementing low carbon technologies and techniques. Thus, encouraging applicants to consider the impact of their business on the environment and subsequent longevity of their proposals.

South Kesteven District Council continues to promote the Let's Move Lincolnshire initiative who highlight free sessions for locals across various activities such as swimming, cycling and walking within South Kesteven District. This platform encourages active transport whilst promoting the benefits of air quality and health.

The Council, alongside Lincolnshire County Council (LCC), continue to develop and enhance the Komoot app. Komoot is an app for encouraging cycling in South Kesteven, as well as alternate locations, with users able to review a collection of road biking routes around the area. Individuals are able to utilise the 'Tours' tab to see a full breakdown of route details including elevation profiles and surface analyses, as well as browse cycling tips and photos shared by other members of the Komoot community. With future collaboration, the app aims to improve air quality by promoting cycling which in turn reduces emission sources.

During 2024 the Council has maintained its positive relationship with the bicycle club Witham Wheelers in Grantham, who are part of British Cycling's GoRide development programme established in 1958. The club offer cycling activities such as club rides, touring, time trials, road racing, track racing, sportives, cyclo-cross, mountain biking, and charity events. This relationship promotes the use and benefits of active transport on air quality and health whilst educating the next generation to reduce vehicle uptake.

Within South Kesteven District there is a bike hiring service - Cliff Edge Cycles. Cliff Edge Cycles also offer chargeable bicycle servicing for locals to check that their bikes are safe and make minor adjustments to get them on the road. They promote alternative and accessible forms of travel between neighbouring towns and villages across the East Midlands region to help its residents lead active lifestyles and limit vehicular emissions. The business has a local base in Wyndham Park in Grantham.

LCC, with support of South Kesteven District Council, have issued the Grantham Transport Strategy. This strategy has identified three key areas in Grantham which have a high likelihood for

walking and cycling. To support this, cycle and pedestrian priority junction, toucan crossings and segregated cycle lanes have been proposed at the following locations:

- North of Grantham town centre towards Manthorpe, via Grantham and District Hospital;
- South of Grantham town centre along A52 Somerby Hill; and
- West of Grantham town centre along A52 Barrowby Road.

With high commuting levels on the identified routes, improved active travel infrastructure is proposed to sup-port active travel reducing the levels of emissions released.

South Kesteven District Council encourages active travel, with established Core Walking Zones (CWZs) across the district. The CWZs have been assessed and audited to ensure safety and identify any required interventions along the pedestrian corridors within each CWZ. Improving existing infrastructure as well as introducing new pedestrian facilities such as wayfinding, new pedestrian crossings and benches will encourage walking and the reduction in vehicle usage.

The Council, alongside neighbouring Councils, is host to the National Cycle Network (NCN) as well as having a Local Cycle Network (LCN) that forms the connections between the NCN and destinations such as small town centres and villages. The NCN provides a strategic network with connections to key destinations, towns, villages, transport hubs, employment and housing areas with long distance trails and loops that support the visitor economy in the district. A key NCN route in South Kesteven is Route 15, which leads into Grantham centre and along the canal.

The district continued to promote the cycling initiative 'Bikeability' in 2024, led by Lincolnshire County Council. The scheme focussed on school children and adults, involves frequent cycling proficiency courses and has educated circa 100,000 people as of May 2023 with the area named amongst the top ten local authorities for providing cycle training. The initiative has centred on three core stages, Bikeability: Level 1, Level 2 and Level 3, with individuals required to meet specific criteria to be accredited the awards. There is also 'Bikeability Balance' and 'Bikeability Learn to Ride' levels which bode a suite of courses to meet needs and specifically to complement and support the core training delivered. The scheme also offers 'Bikeability Families' and 'Cycle Confidence' to target a range of audiences and skill levels. This programme aims seeks to encourage the uptake of cycling across the district to reduce pollutant concentrations and educate future generations.

The Council has a well-established and connected rail network that connects South Kesteven with wider England and Scotland. Encouraging the use of public transport would reduce the use of private vehicles having a positive effect on air quality.

South Kesteven District Council actively encourages developers at the planning stage to install suitable infrastructure to allow for future electric vehicle charge point installations, as outlined in Policy SB1 of the South Kesteven District Council Local Plan 2011-2036.

In 2024, South Kesteven District Council continued with the 'Lincolnshire Electric Vehicle Strategy'. This recommends that in collaboration with Lincolnshire County Council, circa 1100 Electric Vehicle (EV) publicly funded rapid and fast charging points are to be delivered by 2030 in the District. There will be a particular focus on charging points on residential streets. The scheme, funded by Department for Transport's Local Electric Vehicle Infrastructure (LEVI) Fund, will significantly expand on an already growing network of on and off-street EV charging points in South Kesteven.

South Kesteven District Council has a network of EV charging points across the area, resulting in 12 EV charging points implemented in Council owned car parks across the district since 2020. Installation of EV charging points in South Kesteven has been funded by the On-Street Residential Charge Point Scheme (OSRCPS), delivered by the Office of Zero Emission Vehicles (OZEV). The initiative aims to provide convenient and efficient charging for residents without off-street parking as well as visitors. Furthermore, charge points have been installed to assist residents in South Kesteven convert from internal combustion vehicles to EVs. As more residents use electric vehicles, communities will benefit from improved air quality and lower their carbon footprint. The uptake of each installed charger is monitored to understand demand and inform future installations. More information can be found on the Council's website.

South Kesteven District Council has also encouraged Ultra Low Emission Vehicle (ULEV) adoption across the district during the 2024 monitoring year, with infrastructure to support the uptake of ULEVs being implemented with a wider extent planned for implementation.

South Kesteven District Council is currently developing a Green Fleet Strategy with the central goal of operating a carbon neutral vehicle fleet by 2035. Facilitating the transition to a carbon neutral fleet through the use of green technology including electric vehicles and alternative fuels aims to reduce carbon emissions and pollutants benefiting air quality. Infrastructure to implement green alternatives has been considered in wider Council projects, with the opportunity to increase the number of EV charging points at the new depot. Facilitating the transition to greener driving behaviours and more effective fleet

usage will reduce the number of unnecessary journeys reducing the amount of emissions being released which will improve air quality.

The Department for Transport (DfT) awarded Lincolnshire County Council £799,900 in funding through the Active Travel Fund. Through this, the 'Grantham Active Travel Zone' has been proposed, referenced in the Lincolnshire County Council issued Grantham Transport Strategy, which aims at redeveloping the centre to improve travel choices and the transport network for people living, working, and visiting Grantham, in response to the climate emergency declared in 2019. The programme set out the Council's transport infrastructure priorities until 2036, with many schemes progressed or delivered as of 2024. The structural amendments to Grantham's pedestrian routes, cycleways, rail and road infrastructure seeks to allow easy interchange with other modes of public and active transport, promoting a green, cleaner District.

The Council continue to promote and engage with the LCC led Clean Air Lincolnshire project which is a partnership funded by DEFRA, between public health, sustainability, and environmental health departments at the eight local authorities in Lincolnshire, inclusive of South Kesteven District Council. There are also eight Lincolnshire schools participating in the project, using air quality monitoring to encourage action for cleaner air in their school areas, with The Kings School Grantham a participant, located within AQMA No.6. Overall, the initiative seeks to increase awareness of air pollution, the sources and impacts of it, and encourage supportive actions that will improve air quality for the district and individual's health.

Conclusions and Priorities

During 2024, the NO_2 annual mean objective was not exceeded at any monitoring location both within and outside of the AQMA boundary. This is a continuing trend that has been observed across the area since 2020. However, concentrations have frequently been within 10% of the annual NO_2 objective of 40µg/m^3, therefore, the monitoring data does not support the Council's revocation of AQMA No.6 for the NO_2 annual mean objective. It is noted that monitoring data for the past 12 years (including 2024) supports revocation of AQMA No.6 for the NO_2 1-Hour objective.

The Council have an updated AQAP document for AQMA No.6 which encompasses action for only the annual mean NO_2 objective and for the NO_2 1-Hour objective. The final AQAP was approved in 2024.

The Council will continue to use the passive monitoring network to monitor air quality within

the district and ensure compliance is maintained with the annual NO_2 objective.

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

- Greater progression and completion of actions within the Grantham Transport Strategy, to improve walking, cycling, rail and road infrastructure and to integrate greater public transport sources;
- Continue to review the current monitoring programme, exploring the need to deploy new monitoring locations in areas where monitoring has not previously been undertaken and where it is believed that there may be elevated concentrations of NO_2 in areas of relevant public exposure, relocate monitoring tubes, or remove locations where necessary;
- Actively engage with developers at planning application stages to promote the installation of electric vehicle (EV) charging or alternatively, provide suitable infrastructure to allow for future cost-efficient installations as per Policy SB1 in South Kesteven District Council Local Plan 2011-2036;
- Implementation of the scheduled EV charging points on streets and in car parks across the District as per Lincolnshire Electric Vehicle Strategy;
- Continue to provide an integrated transport network to facilitate the efficient movement of pedestrian and vehicular traffic, goods, and services across the District as per Grantham Transport Strategy;
- Continue to reduce the volume of traffic on the city roads by encouraging effective active transport methods (e.g. public transport, cycling, and walking);
- Continue to improve the existing walking and cycling network by acquiring funding for development;
- Take action via the Lincolnshire County Council led Clean Air Lincolnshire project to increase awareness of air pollution, the sources and impacts of it, and encourage supportive actions that will improve air quality for the District and individual's health, with a focus on The King's School in Grantham who deploy air quality monitoring equipment in and around their grounds; and
- Implement measures within the South Kesteven Climate Action Strategy to further reduce concentrations of NO_2 and PM.

How to get Involved

Given the main source of air pollution across South Kesteven is from transport sources,

the public can support the reduction in air pollutant(s) release and improve air quality within the district by participating in active travel.

South Kesteven District Council have progressed additional public engagement work in 2024 through the below schemes, although the engagement schemes from 2023 are still active:

- The collaborative relationship with Lincolnshire County Council to roll out a programme of charging points for EVs across the District through the Lincolnshire Electric Vehicle Strategy, with circa 1100 EV charging points scheduled for implementation;
- Successfully implementing 12 EV charging points in Council owned car parks for public use, alongside Office of Zero Emission Vehicles (OZEV);
- Improving the use of ULEVs across the District through improving infrastructure to support the uptake with a wider extent planned for implementation;
- Acquiring funding through The Rural Fund, integrated into the UK Shared Prosperity Fund (UKSPF), for projects with a key objective of productivity enhancement, energy efficient and low carbon technologies and techniques. Thus, encouraging applicants to consider the impact of their business in South Kesteven on the environment and subsequent longevity of their proposals;
- Continue to offer active transport education to children, the future generation, and adults through cycling proficiency courses via the 'Bikeability' initiative, reducing vehicular pollutant emissions with circa 100,000 people engaging in the scheme;
- Planned investment via the Grantham Transport Strategy to further enhance adoption and utilisation of the public transport network;
- Collaboration between local businesses and clubs via Let's Move Lincolnshire initiative to host events promoting active transport and the benefits supporting people in becoming more sustainable and reducing their air pollutant contributions;
- Promotion of the National Cycle Network (NCN) and the Core Walking Zones (CWZs) post COVID-19 lockdown, encouraging active travel across the District and wider East Midlands region, with a community focus;
- Collaboration with Lincolnshire County Council, neighbouring local authorities and local residents through the Clean Air Lincolnshire project to increase awareness of air pollution, the sources and impacts of it, and encourage supportive actions that will improve air quality for the District and individual's health, with a focus on The King's School in Grantham who deploy air quality monitoring equipment in and

around their grounds; and

- Enhancement and further endorsement of the Witham Wheelers and Cliff Edge Cycles innovative bike sharing services who offer cycling activities such as: club rides, supported rides, as well as chargeable bike maintenance workshops for locals to ensure bikes are safe and road worthy and broader bicycle hire. Thus, promoting the use and benefits of active transport on air quality and health whilst educating the next generation to reduce vehicle uptake, supporting the establishment of a greener, cleaner district.

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

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

The public can also engage with air quality issues via South Kesteven District Council's dedicated Air Quality Website. This provides information on a range of air quality topics, such as the current monitoring locations, the latest AQAP, declared AQMAs, and copies of previous ASRs.

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Figures

Tables

1 Local Air Quality Management

This report provides an overview of air quality in South Kesteven 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 South Kesteven 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.

A summary of AQMAs declared by South Kesteven District Council can be found in Table 2.1. The table presents a description of the AQMA that is currently designated within South Kesteven District Council Appendix D provides maps of the AQMA and also the air quality monitoring locations in relation to the AQMA. During 2024, the district amended the AQMA. The Council has plans to revoke the AQMA for the NO_2 1-hour objective following 12 years of compliance with the relevant objective.

Between 2021-2023 this location has consistently reported concentrations within 10% of the NO_2 annual mean AQS, 36.6µg/m^3 (2021), 37.8µg/m^3 (2022) and 36.1µg/m^3 (2023). The concentration within the AQMA during 2024 was 33.1µg/m^3 which is not within 10% of the NO_2 annual mean AQS.

The air quality objectives pertinent to the current AQMA designation are as follows:

- NO_2 annual mean; and
- NO_2 1-hour objective.

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
SKDC AQMA No.6	08/08/2013	NO_2 Annual Mean	An area encompassing Manthorpe Road, Wharf Road, High Street and London Road.	No	58.2µg/m^3	33.1µg/m^3 (SK33/SK34)	1 year (2024)	SKDC Air Quality Action Plan 2024	https://www.laqmportal.co.uk/v_rswuploads/report_5/22895_28485_SKDC%20-%20AQAPv10%20-%20final.pdf
SKDC AQMA No.6	08/08/2013	NO_2 1 Hour Mean	An area encompassing Manthorpe Road, Wharf Road, High Street and London Road.	No	None predicted as annual mean is below 60µg/m^3	None predicted as annual mean is below 60µg/m^3	12	SKDC Air Quality Action Plan 2016	https://www.laqmportal.co.uk/v_rswuploads/report_5/22895_28485_SKDC%20-%20AQAPv10%20-%20final.pdf

☒ **South Kesteven confirm the information on UK-Air regarding their AQMA(s) is up to date.**

☒ **South Kesteven confirm that all current AQAPs have been submitted to Defra.**

2.2 Progress and Impact of Measures to address Air Quality in South Kesteven

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

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

The following comments were designed to help inform South Kesteven 2025 ASR:

1. The Council have considered the comments made during previous appraisals. This is commended and the Council are encouraged to continue this approach for ASRs.

   The council has continued to consider appraisal comments

2. It should be noted that AQMA No.6 will also be amended during 2024. The Council will revoke this AQMA for the NO_2 1-hour objective, following 11 consecutive years of compliance and will remain in place for the annual mean NO_2 AQS objective only. This is welcomed.

   The council has plans to revoke AQMA 6 for the NO_2 1-hour mean objective

3. The Council have continued to provide clear evidence of several key actions to improve air quality during the current reporting year. One key example is the source apportionment exercise to support the updated AQAP. This is commended and indicative of good practice.

   The council has continued to provide evidence in order to support key actions

4. The Council have provided excellent mapping of all monitoring locations within the Borough and included AQMA boundaries, which is commended.

   The council has continued to provide mapping of monitoring locations and AQMAs

5. The Council have provided clear evidence of local engagement, which is welcomed.

   The council has continued to provide clear evidence of local engagement

6. Extensive trend graphs and analysis have been provided for all monitoring data, which is commended.

The council has continued to provide trends and graph analysis

7. The use of the Public Health Outcomes Framework to account for the health effects of $PM_{2.5}$ is commended.

   The council has continued to use the Public Health Outcomes Framework

8. The Council have clearly stated that tube deployments were done in line with the Defra 2023 calendar. This is commended and should be included in future ASRs.

   The council during 2024 has deployed tubes in line with the Defra 2024 calendar

9. Defra recommends that Directors of Public Health approve draft ASRs. Sign off is not a requirement, however collaboration and consultation with those who have responsibility for Public Health is expected to increase support for measures to improve air quality, with co-benefits for all. The Council have stated that they will try to arrange sign off for the 2025 ASR, which is welcomed.

   The council now has sign off from the Director of Public Health

South Kesteven District Council has taken forward a number of direct measures during the current reporting year of 2024 in pursuit of improving local air quality. Details of all measures completed, in progress or planned are set out in Table 2.2. There are eight measures included in Table 2.2, with the type of measure and the progress South Kesteven District 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.

South Kesteven District Council's priorities for the coming year are:

- Implement measures within the South Kesteven Climate Action Strategy to further reduce concentrations of NO_2 and PM;
- Progress upgrades of District housing stock through the Home Upgrade Grant (HUG) and Green Homes Grant (GHG) to alleviate fuel poverty alongside reducing carbon emissions associated with energy used in domestic properties, thus improving South Kesteven's carbon footprint;
- Promote engagement with the Lincolnshire County Council led Clean Air Lincolnshire project to increase awareness of air pollution, the sources and impacts of it, and encourage supportive actions that will improve air quality for the District and individual's health;
- Further develop the area through the Grantham Transport Strategy, expanding

active transport accessibility and encouraging adoption of it as well as improving road connectivity across the District; and

- Continue to implement EV charging points throughout the District as part of the Lincolnshire Electric Vehicle Strategy to support the uptake of EVs and those residing in remote locations, with circa 1100 charging points planned for development in the District.

South Kesteven District Council worked to implement measures in partnership with the following stakeholders during 2024:

- UK Government (DfT);
- Local businesses and charities;
- Neighbouring local authorities; and
- Lincolnshire County Council.

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	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
M1	Grantham Southern Quadrant East West Relief Road	Traffic Management	Strategic highway improvements, Re-prioritising Road space away from cars, including Access management, Selective vehicle priority, bus priority, high vehicle occupancy lane	Ongoing project	2025	Lincolnshire County Council Highways & South Kesteven District Council	Lincs County Council Highways Infrastructure funding Highways England Growth and Housing Fund Developer contributions	No	Fully funded	>£10 million	Implementation	0.5 - 1µg/m^3	Reduced HGV through traffic in the town centre – reduced overall traffic flows through the town	Work commenced on site in late 2015. Phase 1 complete, Phase 2 completed December 2022, Phase 3 estimated completion 2025.	In progress/ potential delay to estimated completion date.
M2	Improve traffic management at key junctions.	Traffic Management	Strategic highway improvements, Re-prioritising Road space away from cars, including Access management, Selective vehicle priority, bus priority, high vehicle occupancy lane.	Ongoing project	2024+ 3-5 years	Lincolnshire County Council Highways	Lincs County Council Highways Infrastructure funding	No	As funding opportunities arise	£50k-£100k	Planning	1 - 2µg/m^3	Reduced congestion and increased average speeds through the AQMA.	The Grantham Transport Strategy 2023 sets out several improvements planned for improving traffic management in and around Grantham.	Lack of funding/change in priorities
M3	Improvements in Bus fleet emissions	Promoting Low Emission Transport	Other	Ongoing project	2024+ 3-5 years	Lincolnshire County Council Highways & South Kesteven DC	Lincolnshire County Council Transport Services	No	As funding opportunities arise	£50k-£100k	Planning	1 - 2µg/m^3	Improved bus fleet composition. Bus use more attractive to potential users – increased passenger numbers.	The Lincolnshire Bus Service Improvement Plan 2023 has been approved. Working in partnership with operators and stakeholders this will enhance bus services and further improve the bus offer to residents and visitors over the next 5 - 10 years.	Lack of funding/change in priorities
M4	Clean Air Lincolnshire air quality monitoring and	Public Information	Via the internet	2023	2024+ 1-2 years	Lincolnshire County Council and South Kesteven DC	DEFRA	Yes	Fully funded	£50k-£100k	Implementation	0.2 - 0.5µg/m^3	Engagement sessions completed with school in AQMA.	Air monitors installed and engagement session underway	Clean Air Lincolnshire is a county wide project

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
	communication														
M5	Encouraging modal shift	Promoting Travel Alternatives	Intensive active travel campaign & infrastructure	Ongoing	2024+ 3-5 years	Lincolnshire County Council and South Kesteven DC	Lincolnshire County Council South Kesteven District Council	No	Partially funded	<£10k	Implementation	0.2 - 0.5µg/m^3	Reduced vehicle usage and increased use of public transport.	The Grantham Cycling & Walking Network Plan has been developed as part of the new Grantham Transport Strategy 2022. This document will inform all future schemes.	Lack of funding
M6	Provision of Cycling infrastructure	Promoting Travel Alternatives	Promotion of cycling	Ongoing	2024+ 3-5 years	Lincolnshire County Council Highways	Lincs County Council Highways Infrastructure funding Active Travel England funding	No	Not funded	£100k-500k	Planning	0.2 - 0.5µg/m^3	Increased number of cycle lanes makes cycling a more attractive alternative method of transport.	The Grantham Cycling & Walking Network Plan has been developed as part of the new Grantham Transport Strategy 2022. This document will inform all future schemes.	Lack of funding/change in priorities/developments
M7	Rolling programme of replacing older more polluting vehicles with newer cleaner vehicles	Vehicle fleet efficiency	Company Vehicle Procurement - Prioritising uptake of low emission vehicles	Ongoing	2024+ 3-5 years	South Kesteven District Council	South Kesteven District Council	No	Partially funded	£100k-500k	Implementation	0.2 - 0.5µg/m^3	Continue to improve average euro class of the whole council owned fleet and introduce additional EVs.	Fleet review completed 2021. New depot site targeted end of 2025 Review further EV implementation 2026 onward	Relocation of fleet to new facilities.
M8	Implement improved travel planning amongst the council's employees.	Public information	Via the internet	Ongoing	2024+ 3-5 years	South Kesteven District Council	South Kesteven District Council	No	Partially funded	<£10k	Implementation	0.2 - 0.5µg/m^3	Reduce number of council staff driving to work	Staff travel survey completed 2020 showing decrease in single occupancy car travel. Hybrid working policy in place from 2021 to minimise need to travel. Cycle to work scheme in	Lack of take up

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
														place- approx. 6 users each year	

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[2], 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:

Between 2020-2024 there has been no monitoring of PM_{10} or $PM_{2.5}$ within South Kesteven District Council. As such, no concentration values can be reported or estimated using the method described in Box 7.7 of LAQM.TG(22), which provides a for estimating $PM_{2.5}$ concentrations from PM_{10} measurements.

$PM_{2.5}$ Background Concentrations:

The current Defra 2024 background maps for South Kesteven District Council (2021 based)[3] show that all background concentrations of $PM_{2.5}$ are significantly below the current target of 20µg/m^3. The highest background concentration is predicted to be 9.1µg/m^3 within the grid square (1 km x 1 km) with the centroid grid reference 490500, 337500. This grid square encompasses North Grantham, including Gonerby Road (B1174), which is a key arterial route from the A1 into and through Great Gonerby and Gonerby Hill Foot towards the centre of Grantham, surrounding areas such as Little Ponton and rejoins the A1 southbound, where the PM secondary fraction (formed of gaseous pollutants) constitutes as the key contributor to $PM_{2.5}$.

The predicted $PM_{2.5}$ background concentration in 2024 is well below the current annual mean target of 20µg/m^3, and just below the $PM_{2.5}$ target of 10µg/m^3 that is not to be exceeded at any monitoring station by 31st December 2040.

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

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

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).

There are currently 42 SCAs declared within South Kesteven District. These areas are defined regions throughout Grantham and Stamford where smoke emissions from chimneys are legally prohibited. Only authorised fuels and 'exempt appliances' are not subject to these rules.

The Council have outlined if they determine an increase in smoke reports causing a statutory nuisance, they will enforce further SCAs within the district with accompanying fines for those who do not comply to the guidelines.

More information regarding the district's SCAs, including maps of the SCA enforcement areas, are available to review.

Impact on Human Health:

The Public Health Outcomes Framework data tool[4], compiled by Public Health England quantifies the mortality burden of $PM_{2.5}$ within England on a county and local authority scale. The fraction of mortality attributable to $PM_{2.5}$ emissions within South Kesteven is 5.3%, which is lower than the regional average for the East Midlands (5.6%) and England as a whole (5.2%).

Measures to Improve $PM_{2.5}$ Concentrations:

South Kesteven District Council is continuing taking the following measures to address $PM_{2.5}$:

- Actively encouraging large developers at the planning stage to install EV charging points or the consideration of suitable infrastructure to allow for future cost efficient installations;
- Implementation of the Grantham Transport Strategy to reduce the number of

[4] Public Health England – Public Health Outcomes Framework. Available at: https://fingertips.phe.org.uk/profile/public-health-outcomes-framework/data#page/1/gid/1000043/pat/6/ati/501/are/E07000141/iid/93861/age/230/sex/4/cat/-1/ctp/-1/yrr/1/cid/4/tbm/1/fip/0

vehicle trips generated by South Kesteven District and subsequent pollutant emission release, due to its moderate population concentration and related hierarchical position in the East Midlands settlements as well as its associated tourism appeal;

- Implementation of an EV charging programme alongside Lincolnshire County Council, with approximately 1100 publicly accessible EV charging points scheduled for implementation through Lincolnshire Electric Vehicle Strategy to encourage cleaner vehicle adoption;
- Promotion of railway routes across the area, with a core, busy commuter line between Edinburgh and London, and enhancement of existing networks to encourage more sustainable transportation uptake; and
- Introduction of strategies within the South Kesteven Climate Action Strategy to assist achievement of net-zero carbon emissions from Council activities by 2030 with many of the measures addressing local air quality including $PM_{2.5}$.

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

- Investment into enhancing the existing active travel network for walking and cycling, promoting active travel and supporting the reduction in vehicle volume and associated emission releases;
- Promotion of its established and well-connected railway branch lines between Edinburgh and London via Grantham, a core, busy commuter line that connects South Kesteven with wider English and Scottish destinations. Highlighting the benefits of public transport on air quality comparative to private vehicle use to commute;
- Endorsement of the bicycle mechanic and hire business Cliff Edge Cycles who host servicing sessions for locals to check that their bikes are safe and make minor adjustments to get them on the road, as well as offering bicycle hire. Thus, incentivising active transportation uptake throughout the District whilst seeking to reduce air pollution contributions from frequent vehicular usage;
- Enhancement of the Komoot app to encourage cycling in South Kesteven, with users able to review a collection of road biking routes around the area. The app seeks to promote an inclusive community with future collaboration between the

Council, neighbouring local authorities, and people by working together to identify opportunities to improve air quality by limiting emission source(s) use whilst encouraging mortality longevity;

- Collaboration with Witham Wheelers to promote cycling activities such as: club rides, track racing, and charity events. This relationship promotes the use and benefits of active transport on air quality and health whilst educating the next generation to reduce vehicle uptake thus promoting the area as inclusive and an enabler of active travel for all; and
- Promotion and development of the National Cycle Network (NCN) as well as the Local Cycle Network (LCN), demonstrating South Kesteven District Council's commitment to cycling development in the area. The NCN highlights a key course (Route 15) available to cycle, walk, and run thus promoting alternative forms of travel and reducing emissions.

The Environmental Protection Team of South Kesteven District Council continues to work collaboratively alongside industrialised organisations in the district with activities permitted by the Council, subject to regular inspections. Inspections are undertaken to establish where combustion and non-combustion processes could lead to anthropogenic emissions of $PM_{2.5}$, thus worsening air quality. The Council seeks to reduce, if not eliminate, additional anthropogenic $PM_{2.5}$ emissions by ensuring that they inspect and review industrialised activities and implement appropriate mitigation where necessary.

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

This section sets out the monitoring undertaken within 2024 by South Kesteven District 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

South Kesteven District Council did not undertake any automatic (continuous) monitoring in 2024.

3.1.2 Non-Automatic Monitoring Sites

South Kesteven District Council undertook non-automatic (i.e. passive) monitoring of NO_2 at 58 sites during 2024, including single, duplicate and triplicate locations. A total of 35 passive diffusion tube sites were deployed across South Kesteven consisting of 58 diffusion tubes. Of the 58 Site IDs, 16 were single tube locations, 15 were duplicate tube locations, and four were triplicate monitoring sites. Table A.1 in Appendix A presents the details of the non-automatic sites. Maps showing the location of the monitoring sites are provided in Appendix D. Further details on Quality Assurance/Quality Control (QA/QC) for the diffusion tubes, including bias adjustments and any other adjustments applied (e.g. annualisation and/or distance correction), are included in Appendix C.

During 2024, there have been no changes to the non-automatic monitoring sites.

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

Table A.2 highlights an overall general decreasing trend in NO_2 concentrations monitored across South Kesteven between 2020-2024.

In 2021 and 2022 there are slight increases at some locations which could be attributed to a return to normalised traffic conditions post COVID-19 lockdown where UK Government advice was given to stay at home where possible.

Of the 35 sites that made up the diffusion tube monitoring network in 2024, the NO_2 annual mean concentration decreased at 33 locations compared to 2023. The maximum decrease in NO_2 concentration between the two reporting years was 5.6µg/m^3 at SK 4.

It is noted that triplicate site SK 11, SK 12 and SK 13 was the only site which reported no concentration change between 2023 and 2024.

SK23 reported an increase in 2024 comparative to 2023. SK 23 is located along High Street between Pond Street and Long Street. There has been roadworks on sections of High Street which may have led to an increase of slow-moving traffic and an increase of NO_2 concentrations at the SK 23 site.

Across the 14 diffusion tube sites that are located within the AQMA (SK 19-22, SK 27-42 and SK 50-57), all sites recorded an NO_2 annual mean concentration below the air quality objective of 40µg/m^3, with the maximum concentration recorded within the AQMA at SK33-SK34 being 33.1µg/m^3.

Beyond the AQMA, the maximum reported NO_2 annual mean concentration was 22.4µg/m^3 at location SK 7.

No diffusion tube monitoring site in 2024 recorded an NO_2 annual mean concentration within 10% of the objective.

Between 2020-2024 there have been no exceedances of the annual mean NO_2 objective. Given compliance was not achieved in 2019, and concentrations have been within 10% of

the annual mean NO_2 objective between 2021-2023, the monitoring data is currently insufficient to support the Council's revocation of AQMA No.6.

The Council updated the AQAP for AQMA No.6 which was submitted in November 2024 following approval by the Councillor and Cabinet. The AQAP covers AQMA No.6 for exceedances of the annual mean NO_2 objective, and for exceedances of the 1-Hour NO_2 objective.

For diffusion tubes, the full 2024 dataset of monthly mean values is provided in Appendix B. Note that the concentration data presented in Table B.1 includes distance corrected values, only where relevant.

Appendix A compares the ratified continuous monitored NO_2 hourly mean concentrations for the past five years with the air quality objective of 200µg/m^3, not to be exceeded more than 18 times per year.

3.2.2 Particulate Matter (PM_{10})

Particulate Matter (PM_{10}) is not monitored in South Kesteven.

3.2.3 Particulate Matter ($PM_{2.5}$)

Particulate Matter ($PM_{2.5}$) is not monitored in South Kesteven.

3.2.4 Sulphur Dioxide (SO_2)

Sulphur Dioxide (SO_2) is not monitored in South Kesteven.

Appendix A: Monitoring Results

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

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube Co-located with a Continuous Analyser?	Tube Height (m)
SK 1	Scotgate	Roadside	502659	307218	NO_2	No	3.2	1.6	No	2.5
SK 2	Scotgate	Roadside	502659	307218	NO_2	No	3.2	1.6	No	2.5
SK 3	Essex Rd	Roadside	502717	307750	NO_2	No	14.3	23.4	No	2.5
SK 4	Opp Stamford School	Roadside	503291	307420	NO_2	No	0.0	5.7	No	2.5
SK 5	East St/St Pauls St	Roadside	503391	307396	NO_2	No	0.0	3.2	No	2.5
SK 6	East St/St Pauls St	Roadside	503391	307396	NO_2	No	0.0	3.2	No	2.5
SK 7	Stamford School	Roadside	503281	307398	NO_2	No	0.0	2.5	No	2.5
SK 8	London Inn	Roadside	502910	307120	NO_2	No	0.0	2.3	No	2.5
SK 9	All Saints Rd	Roadside	502873	307141	NO_2	No	19.0	2.5	No	2.5
SK 10	Avondale Roundabout	Roadside	502382	306890	NO_2	No	4.7	1.3	No	2.5
SK 11	Welwyn Cl	Roadside	490118	334165	NO_2	No	5.0	2.0	No	2.5

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube Co-located with a Continuous Analyser?	Tube Height (m)
SK 12	Welwyn Cl	Roadside	490118	334165	NO_2	No	5.0	2.0	No	2.5
SK 13	Welwyn Cl	Roadside	490118	334165	NO_2	No	5.0	2.0	No	2.5
SK 14	Springfield Rd	Roadside	490877	334642	NO_2	No	24.5	2.1	No	2.5
SK 15	Springfield Rd	Roadside	490877	334642	NO_2	No	24.5	2.1	No	2.5
SK 16	Meres Rd	Roadside	489263	335353	NO_2	No	26.0	12.1	No	2.5
SK 17	Meres Rd	Roadside	489263	335353	NO_2	No	26.0	12.1	No	2.5
SK 18	Balmoral Dr	Urban Background	489956	336574	NO_2	No	32.1	0.8	No	2.5
SK 19	Opp Asda	Roadside	491067	336209	NO_2	Yes - No.6	2.6	5.4	No	2.5
SK 20	Opp Asda	Roadside	491067	336209	NO_2	Yes - No.6	2.6	5.4	No	2.5
SK 21	Broad St Scout Hut	Roadside	491270	336256	NO_2	Yes - No.6	0.0	7.6	No	2.5
SK 22	Brook St	Roadside	491260	336188	NO_2	Yes - No.6	0.5	6.0	No	2.5
SK 23	Gt Gonerby Pond St	Roadside	489720	338204	NO_2	No	16.0	9.5	No	2.5
SK 24	Gt Gonerby Park	Roadside	489870	338683	NO_2	No	10.8	5.0	No	2.5
SK 25	Manthorpe	Roadside	492069	337874	NO_2	No	49.6	7.6	No	2.5
SK 26	Belton Ln	Roadside	491280	336573	NO_2	No	9.9	7.0	No	2.5

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) [1]	Distance to kerb of nearest road (m) [2]	Tube Co-located with a Continuous Analyser?	Tube Height (m)
SK 27	Jet Garage	Roadside	491496	336354	NO_2	Yes - No.6	0.0	2.3	No	2.5
SK 28	Jet Garage	Roadside	491496	336354	NO_2	Yes - No.6	0.0	2.3	No	2.5
SK 29	Jet Garage	Roadside	491496	336354	NO_2	Yes - No.6	0.0	2.3	No	2.5
SK 30	King School 5 Bells	Roadside	491472	336315	NO_2	Yes - No.6	2.2	2.7	No	2.5
SK 31	King School 5 Bells	Roadside	491472	336315	NO_2	Yes - No.6	2.2	2.7	No	2.5
SK 32	King School 5 Bells	Roadside	491472	336315	NO_2	Yes - No.6	2.2	2.7	No	2.5
SK 33	Opp Jet Garage	Roadside	491515	336389	NO_2	Yes - No.6	0.0	1.7	No	2.5
SK 34	Opp Jet Garage	Roadside	491515	336389	NO_2	Yes - No.6	0.0	1.7	No	2.5
SK 35	Black Dog	Roadside	491330	336022	NO_2	Yes - No.6	5.0	1.0	No	2.5
SK 36	Black Dog	Roadside	491330	336022	NO_2	Yes - No.6	5.0	1.0	No	2.5
SK 37	High St	Roadside	491460	335715	NO_2	Yes - No.6	1.2	0.8	No	2.5
SK 38	High St	Roadside	491460	335715	NO_2	Yes - No.6	1.2	0.8	No	2.5
SK 39	High St	Roadside	491460	335715	NO_2	Yes - No.6	1.2	0.8	No	2.5
SK 40	Old Job Centre	Roadside	491512	335719	NO_2	Yes - No.6	51.2	1.7	No	2.5
SK 41	London Rd	Roadside	491602	335485	NO_2	Yes - No.6	2.4	3.9	No	2.5
SK 42	London Rd	Roadside	491602	335485	NO_2	Yes - No.6	2.4	3.9	No	2.5

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube Co-located with a Continuous Analyser?	Tube Height (m)
SK 43	Welcome Takeaway	Roadside	491734	335196	NO_2	No	2.0	0.5	No	2.5
SK 44	Welcome Takeaway	Roadside	491734	335196	NO_2	No	2.0	0.5	No	2.5
SK 45	South Parade	Roadside	491869	334960	NO_2	No	0.0	3.5	No	2.5
SK 46	South Parade	Roadside	491869	334960	NO_2	No	0.0	3.5	No	2.5
SK 47	White Lion	Roadside	492067	334922	NO_2	No	5.0	1.0	No	2.5
SK 48	White Lion	Roadside	492067	334922	NO_2	No	5.0	1.0	No	2.5
SK 49	Launder Terrace	Roadside	491427	335193	NO_2	No	4.0	1.4	No	2.5
SK 50	Gt Northern Ct	Roadside	491184	335575	NO_2	Yes - No.6	0.0	3.6	No	2.5
SK 51	Gt Northern Ct	Roadside	491184	335575	NO_2	Yes - No.6	0.0	3.6	No	2.5
SK 52	Blue Bull	Roadside	491200	335636	NO_2	Yes - No.6	2.0	0.5	No	2.5
SK 53	Blue Bull	Roadside	491200	335636	NO_2	Yes - No.6	2.0	0.5	No	2.5
SK 54	Bus Stn/Post Office	Roadside	491492	335505	NO_2	Yes - No.6	1.5	1.4	No	2.5
SK 55	Bus Stn/Post Office	Roadside	491492	335505	NO_2	Yes - No.6	1.5	1.4	No	2.5
SK 56	Wharf Rd Morrisons	Roadside	491402	335501	NO_2	Yes - No.6	0.8	0.9	No	2.5
SK 57	Wharf Rd	Roadside	491402	335501	NO_2	Yes - No.6	0.8	0.9	No	2.5

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube Co-located with a Continuous Analyser?	Tube Height (m)
	Morrisons									

Notes:

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

(2) N/A if not applicable.

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

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2024 (%) (2)	2020	2021	2022	2023	2024
SK 1, SK 2	502659	307218	Roadside	92.5	92.5	21.4	24.3	24.3	23.4	20.5
SK 3	502717	307750	Roadside	100.0	100.0	9.5	11.0	8.7	9.6	7.2
SK 4	503291	307420	Roadside	90.6	90.6	21.3	24.9	26.2	26.6	21.0
SK 5, SK 6	503391	307396	Roadside	100.0	100.0	23.5	27.0	24.6	24.5	20.0
SK 7	503281	307398	Roadside	100.0	100.0	25.5	28.0	28.3	24.1	22.4
SK 8	502910	307120	Roadside	100.0	100.0	15.8	18.4	17.3	17.1	15.1
SK 9	502873	307141	Roadside	83.0	83.0	17.9	19.2	17.5	17.5	15.3
SK 10	502382	306890	Roadside	100.0	100.0	14.7	15.1	14.5	13.4	11.8
SK 11, SK 12, SK 13	490118	334165	Roadside	100.0	100.0	13.4	15.1	14.9	12.3	12.3
SK 14, SK 15	490877	334642	Roadside	100.0	100.0	20.9	21.2	22.4	22.8	19.6
SK 16, SK 17	489263	335353	Roadside	100.0	100.0	19.7	20.4	20.8	22.0	18.8
SK 18	489956	336574	Urban Background	100.0	100.0	12.2	13.1	11.5	12.8	10.0

SK 19, SK 20	491067	336209	Roadside	100.0	100.0	18.2	25.8	25.5	23.4	20.5
SK 21	491270	336256	Roadside	100.0	100.0	18.8	22.4	20.6	19.3	18.5
SK 22	491260	336188	Roadside	100.0	100.0	20.3	23.2	24.5	20.6	19.6
SK 23	489720	338204	Roadside	100.0	100.0	14.3	16.2	15.1	13.1	14.1
SK 24	489870	338683	Roadside	92.5	92.5	15.2	15.5	15.1	13.3	12.5
SK 25	492069	337874	Roadside	92.5	92.5	13.2	15.3	14.7	13.7	12.1
SK 26	491280	336573	Roadside	100.0	100.0	15.7	21.1	19.1	19.2	17.3
SK 27, SK 28, SK 29	491496	336354	Roadside	100.0	100.0	27.3	35.1	34.3	32.1	29.7
SK 30, SK 31, SK 32	491472	336315	Roadside	100.0	100.0	22.0	24.6	24.5	24.6	21.8
SK 33, SK 34	491515	336389	Roadside	100.0	100.0	31.3	**36.6**	**37.8**	**36.1**	33.1
SK 35, SK 36	491330	336022	Roadside	100.0	100.0	25.3	26.8	27.4	26.3	22.8
SK 37, SK 38, SK 39	491460	335715	Roadside	100.0	100.0	30.6	22.1	27.5	25.8	23.3
SK 40	491512	335719	Roadside	100.0	100.0	22.1	27.5	27.7	17.0	16.8
SK 41, SK 42	491602	335485	Roadside	100.0	100.0	18.7	19.8	18.7	24.8	21.4
SK 43, SK 44	491734	335196	Roadside	100.0	100.0	22.5	27.7	25.2	23.9	21.7

SK 45, SK 46	491869	334960	Roadside	100.0	100.0	21.2	26.0	26.3	29.3	26.7
SK 47, SK 48	492067	334922	Roadside	100.0	100.0	26.4	29.7	31.2	23.6	22.5
SK 49	491427	335193	Roadside	100.0	100.0	25.2	24.9	25.5	14.7	12.4
SK 50, SK 51	491184	335575	Roadside	100.0	100.0	14.7	15.3	15.1	23.9	24.4
SK 52, SK 53	491200	335636	Roadside	100.0	100.0	24.2	27.0	27.4	25.7	21.3
SK 54, SK 55	491492	335505	Roadside	100.0	100.0	31.9	28.9	29.1	31.8	27.5
SK 56, SK 57	491402	335501	Roadside	100.0	100.0	29.1	35.2	34.4	27.0	25.0
SK 58	503070	306957	Roadside	100.0	100.0	26.1	29.8	29.4	19.2	17.0

☒ **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.1 – Trends in Annual Mean NO_2 Concentrations – Diffusion Tubes within AQMA 6

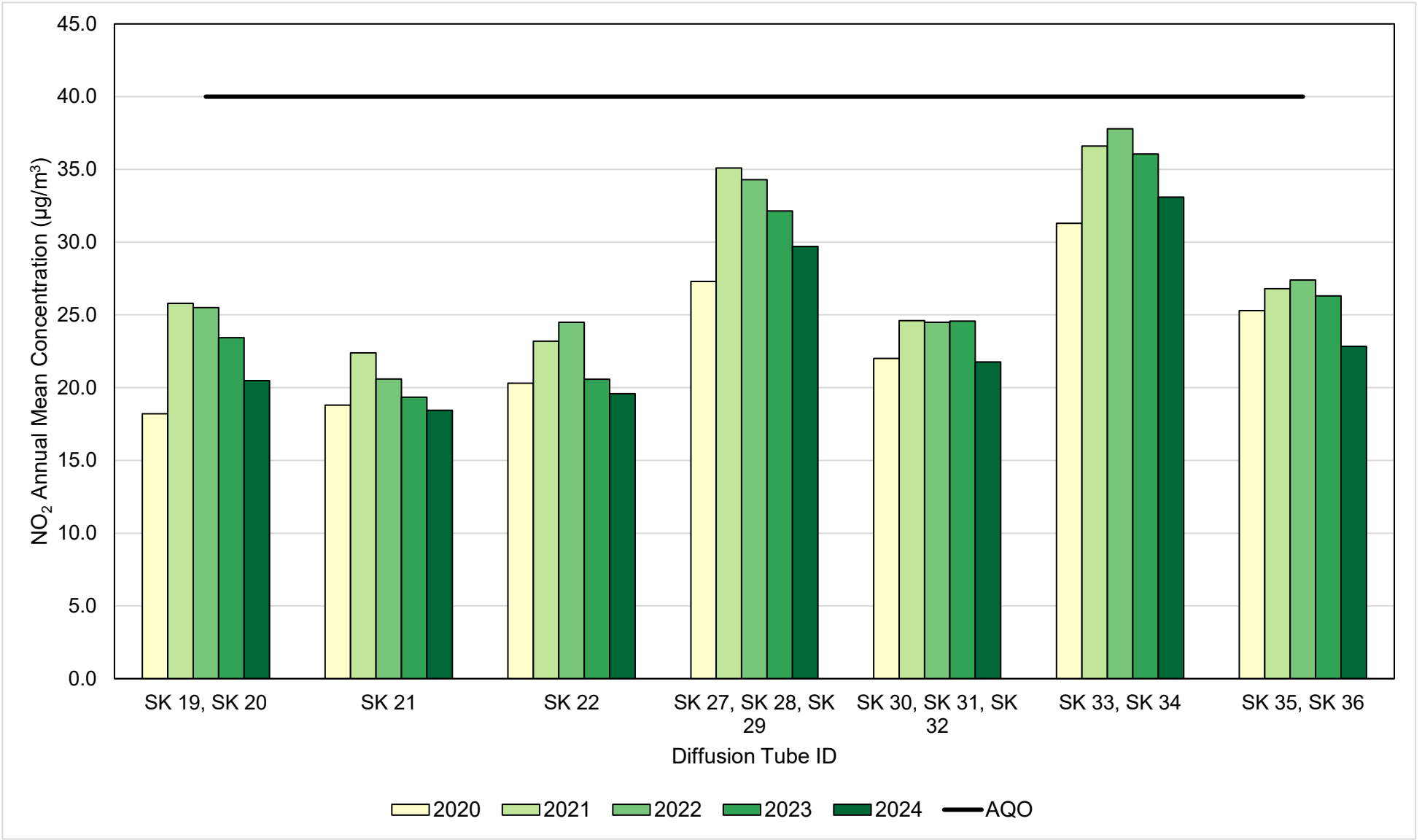


Figure A.2 – Trends in Annual Mean NO_2 Concentrations – Diffusion Tubes within AQMA 6 continued

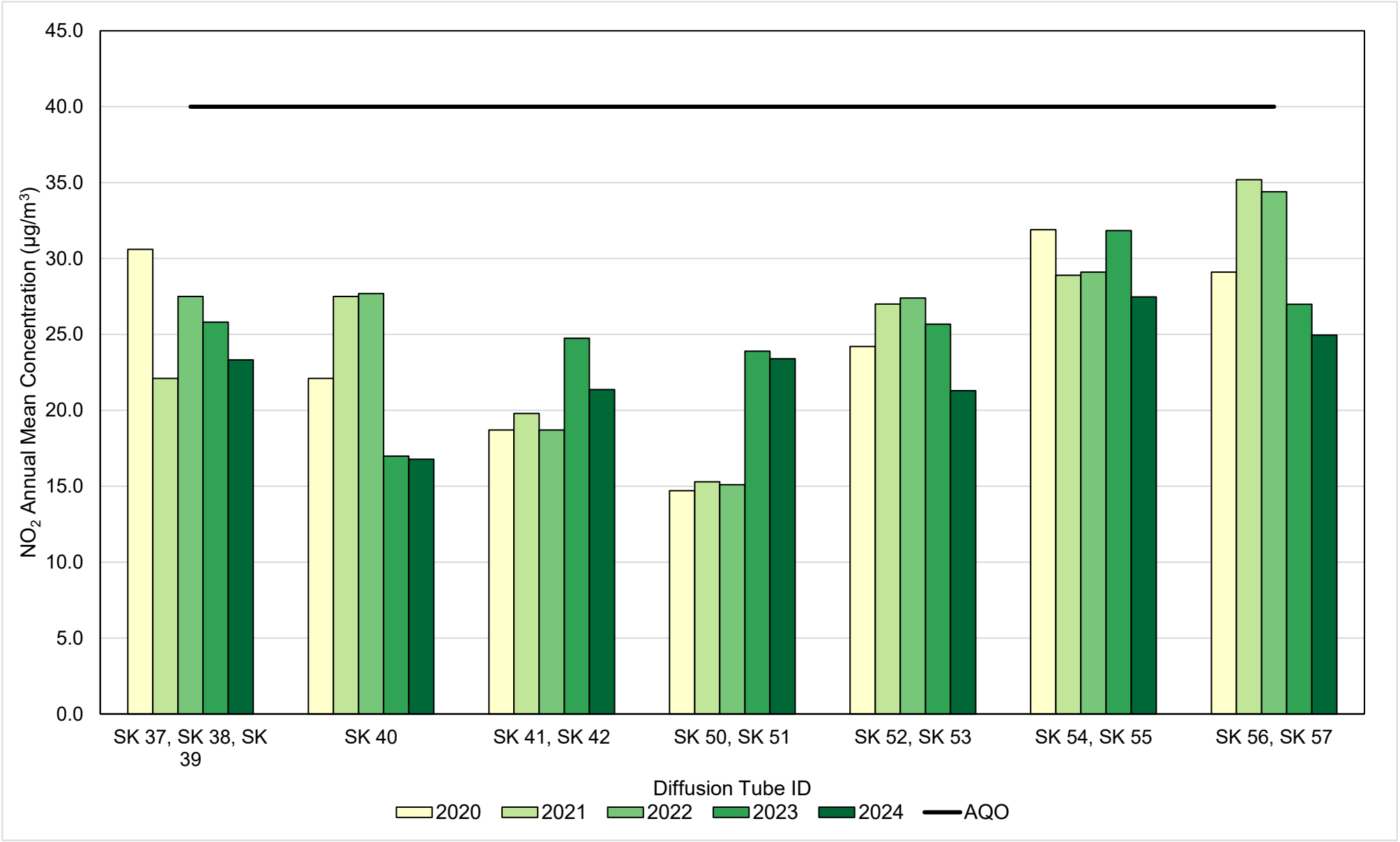


Figure A.3 – Trends in Annual Mean NO_2 Concentrations – Diffusion Tubes in Grantham (Outside AQMA)

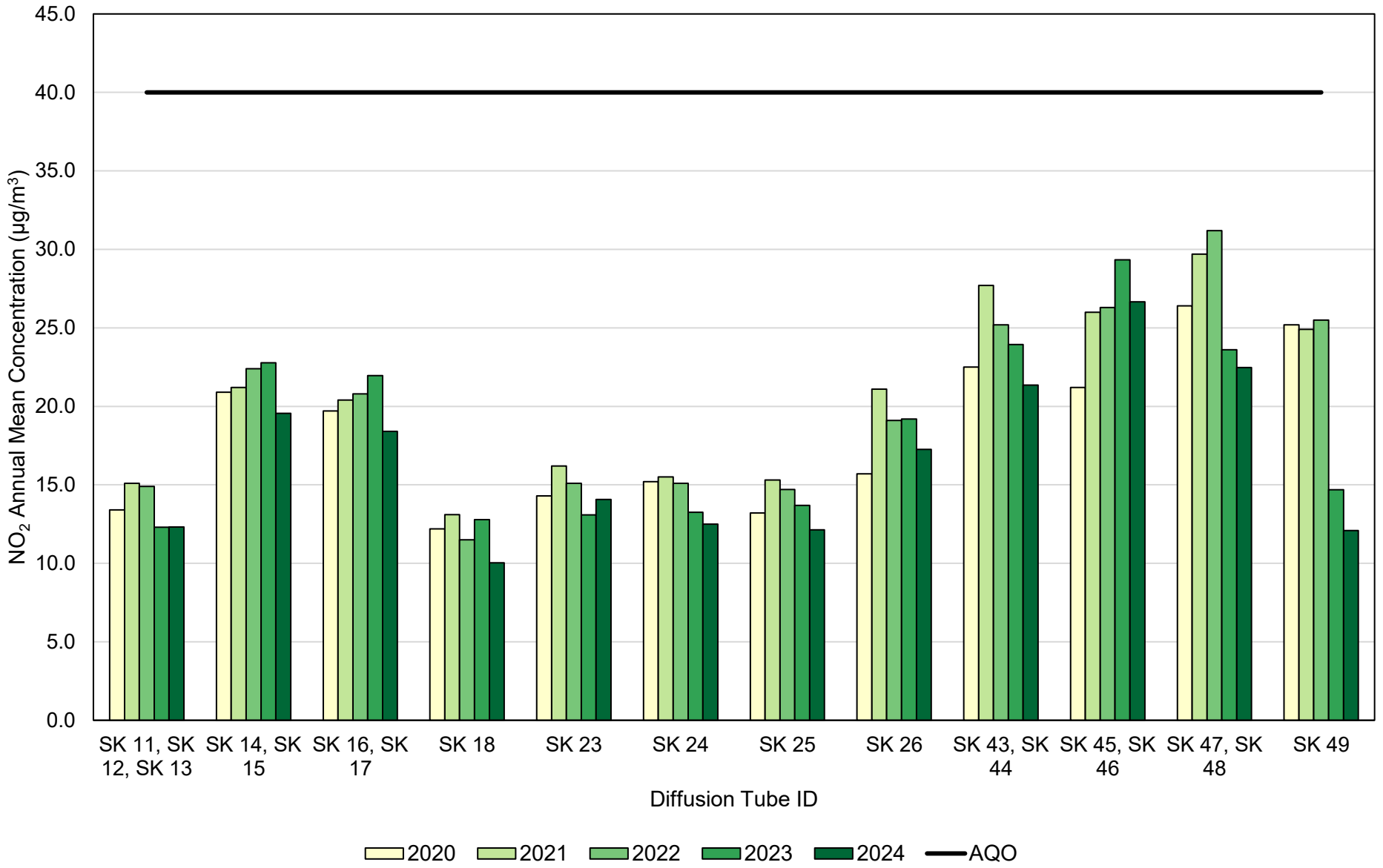
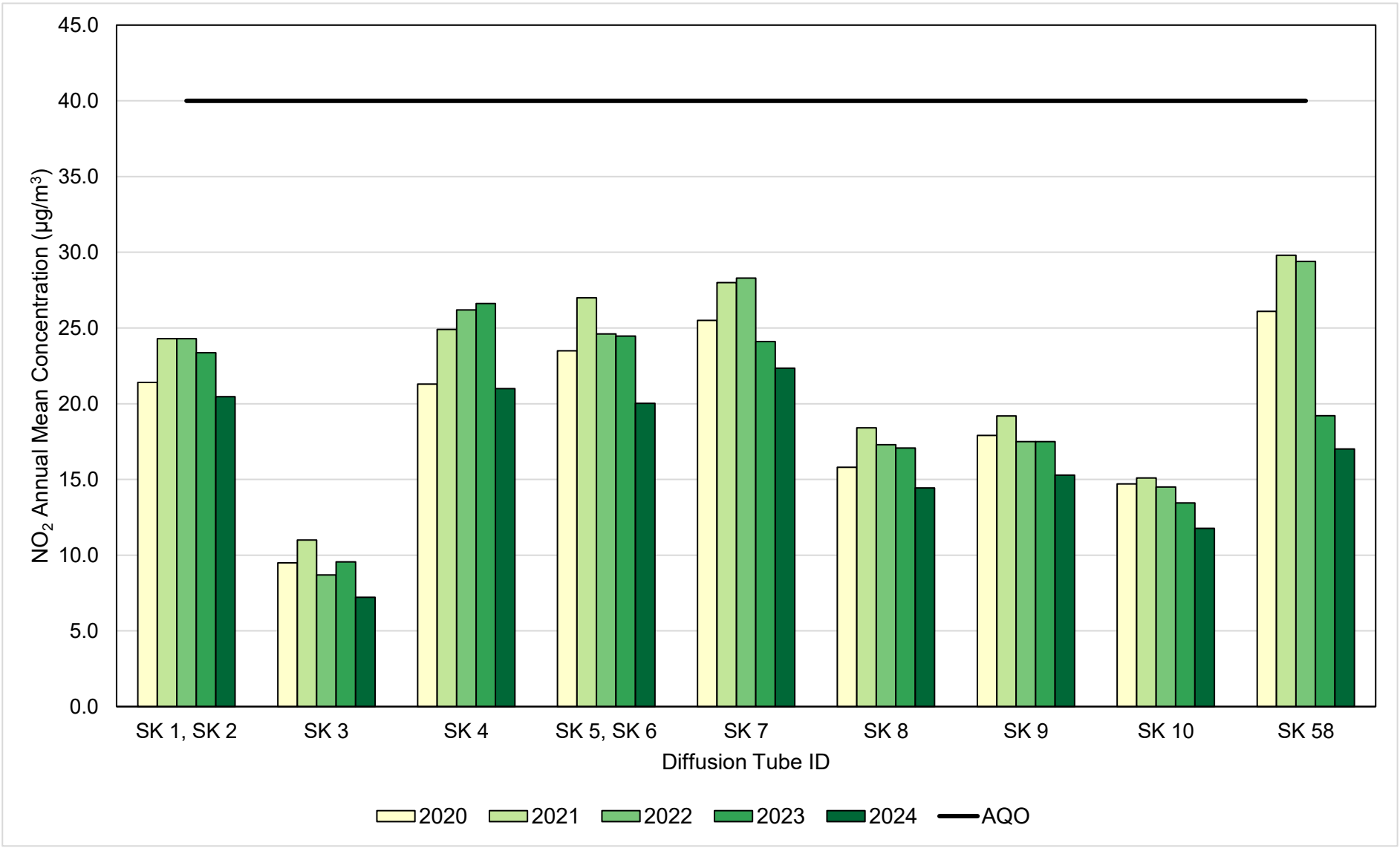


Figure A.4 – Trends in Annual Mean NO_2 Concentrations – Diffusion Tubes (Sites in Stamford)



Appendix B: Full Monthly Diffusion Tube Results for 2024

Table B.1 – NO_2 2024 Diffusion Tube Results (µg/m^3)

DT ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Annualised and Bias Adjusted (0.78)	Annual Mean: Distance Corrected to Nearest Exposure	Comment
SK 1	502659	307218	22.9	30.1	28.7	25.7	26.3		22.1	22.6	24.4		27.7	26.8	-	-	-	Duplicate Site with SK 1 and SK 2 - Annual data provided for SK 2 only
SK 2	502659	307218	30.8	32.0	26.9	22.8	27.2		22.8	22.6	27.0	29.0	25.8	24.1	26.2	20.5	-	Duplicate Site with SK 1 and SK 2 - Annual data provided for SK 2 only
SK 3	502717	307750	13.0	10.0	10.9	5.5	7.1	6.3	7.7	6.3	7.2	8.6	15.6	12.9	9.3	7.2	-	
SK 4	503291	307420	22.7	35.6	30.0	22.9	22.2	22.2	23.0	23.6	24.2	31.5	38.2		26.9	21.0	-	
SK 5	503391	307396	27.7	33.5	26.7	24.5	28.4	21.4	20.9	20.8	29.5	29.4	31.9	23.6	-	-	-	Duplicate Site with SK 5 and SK 6 - Annual data provided for SK 6 only
SK 6	503391	307396	29.4	30.8	24.8	25.4	25.3	19.5	21.1	19.1	27.0	26.3	29.6	19.7	25.7	20.0	-	Duplicate Site with SK 5 and SK 6 - Annual data provided for SK 6 only
SK 7	503281	307398	28.2	38.9	31.9	24.2	29.9	23.5	26.7	21.7	32.5	33.4	27.7	25.3	28.7	22.4	-	
SK 8	502910	307120	22.0	20.6	23.0	17.7	19.6	16.0	18.0	15.0	16.1	23.6	21.5		19.4	15.1	-	Abnormally low data removed from December
SK 9	502873	307141	21.5	25.9	24.1	15.5	17.7	16.5	17.0	15.6	17.4	24.7			19.6	15.3	-	
SK 10	502382	306890	19.4	21.6	15.7	12.4	12.9	11.5	11.2	11.5	12.9	15.5	21.1	15.3	15.1	11.8	-	
SK 11	490118	334165	19.3	20.2	16.5	15.4	12.6	13.2	13.4	13.9	13.9	17.5	22.6	12.2	-	-	-	Triplicate Site with SK 11, SK 12 and SK 13 - Annual data provided for SK 13 only
SK 12	490118	334165	21.2	21.5	13.9	14.5	13.5	12.6	12.8	12.7	12.5	19.2	22.9	15.3	-	-	-	Triplicate Site with SK 11, SK 12 and SK 13 - Annual data provided for SK 13 only

DT ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Annualised and Bias Adjusted (0.78)	Annual Mean: Distance Corrected to Nearest Exposure	Comment
SK 13	490118	334165	20.7	17.3	16.0	13.4	12.4	11.8	14.4	13.7	12.8	18.0	22.1	12.2	15.8	12.3	-	Triplicate Site with SK 11, SK 12 and SK 13 - Annual data provided for SK 13 only
SK 14	490877	334642	38.3	30.9	21.5	19.1	23.4	20.5	24.1	19.7	25.2	23.2	34.8	22.9	-	-	-	Duplicate Site with SK 14 and SK 15 - Annual data provided for SK 15 only
SK 15	490877	334642	32.7	26.6	19.9	21.9	21.6	21.3	22.9	22.0	31.2	24.2	28.4	25.6	25.1	19.6	-	Duplicate Site with SK 14 and SK 15 - Annual data provided for SK 15 only
SK 16	489263	335353	29.4	26.1	19.5	20.8	16.1	31.0	25.7	28.4	22.0	26.6	20.8	19.0	-	-	-	Duplicate Site with SK 16 and SK 17 - Annual data provided for SK 17 only
SK 17	489263	335353	28.5	25.3	17.1	19.8	21.1	30.0	28.8	30.1	20.2	27.3	27.2		24.2	18.8	-	Abnormally low data removed from December
SK 18	489956	336574	16.9	15.3	12.8	9.6	10.8	7.7	10.4	8.7	13.4	16.8	19.4	12.6	12.9	10.0	-	
SK 19	491067	336209	27.8	36.9	26.7	20.8	23.0	19.7	22.5	23.3	32.0	31.5	21.1	20.2	-	-	-	Duplicate Site with SK 19 and SK 20 - Annual data provided for SK 20 only
SK 20	491067	336209	28.7	37.0	26.2	18.6	23.2	17.8	24.1	23.7	45.7	32.3	22.6	24.8	26.3	20.5	-	Duplicate Site with SK 19 and SK 20 - Annual data provided for SK 20 only
SK 21	491270	336256	26.8	32.9	23.7	18.8	19.0	14.9	22.1	19.1	29.1	30.1	22.9	24.5	23.7	18.5	-	
SK 22	491260	336188	30.0	34.2	26.9	20.3	20.7	21.6	22.2	19.7	25.7	31.4	22.1	26.4	25.1	19.6	-	
SK 23	489720	338204	21.0	19.9	12.7	14.4	25.9	12.3	12.7	10.3	17.3	20.7	34.8	14.5	18.0	14.1	-	
SK 24	489870	338683	16.6	21.2	16.6	14.9	13.4	12.3	12.2	10.4		17.8	28.4	12.5	16.0	12.5	-	
SK 25	492069	337874	18.8	20.2	14.2	13.4	13.2		14.0	11.9	13.4	16.5	20.8	14.6	15.5	12.1	-	
SK 26	491280	336573	24.4	28.3	19.8	20.5	20.2	19.4	19.1	16.6	23.1	24.2	27.2	22.6	22.1	17.3	-	
SK 27	491496	336354	46.0	53.3	37.8	38.0	40.3	32.5	34.0	27.8	36.5	45.6	19.4	27.7	-	-	-	Triplicate Site with SK 27, SK 28 and SK 29 - Annual data

DT ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Annualised and Bias Adjusted (0.78)	Annual Mean: Distance Corrected to Nearest Exposure	Comment
																		provided for SK 29 only
SK 28	491496	336354	39.3	50.4	40.3	35.7	36.4	31.7	34.0	32.9	42.9	48.6	47.6	32.3	-	-	-	Triplicate Site with SK 27, SK 28 and SK 29 - Annual data provided for SK 29 only
SK 29	491496	336354	39.2	47.9	39.6	33.8	35.9	32.7	33.5		46.3	45.3	44.2	31.6	38.1	29.7	-	Triplicate Site with SK 27, SK 28 and SK 29 - Annual data provided for SK 29 only
SK 30	491472	336315	35.4	32.0	22.4	23.7	26.1	27.2	22.2	21.3	36.8	26.3	35.3	22.1	-	-	-	Triplicate Site with SK 30, SK 31 and SK 32 - Annual data provided for SK 32 only
SK 31	491472	336315	36.6	33.4	21.0	23.1	26.1	23.0	21.7	23.3	41.9	27.5	37.4	25.9	-	-	-	Triplicate Site with SK 30, SK 31 and SK 32 - Annual data provided for SK 32 only
SK 32	491472	336315	34.1	36.6	21.8	27.0	23.9	23.4	24.2	21.2	37.9	28.3	32.8	22.0	27.9	21.8	-	Triplicate Site with SK 30, SK 31 and SK 32 - Annual data provided for SK 32 only
SK 33	491515	336389	54.9	51.6	39.7	41.7	38.5	39.6	36.8	37.4	44.6	41.8	43.8	37.3	-	-	-	Duplicate Site with SK 33 and SK 34 - Annual data provided for SK 34 only
SK 34	491515	336389	52.3	51.8	38.9	43.8	35.0	41.8	35.0	33.3	45.0	40.5	51.3	41.8	42.4	33.1	-	Duplicate Site with SK 33 and SK 34 - Annual data provided for SK 34 only
SK 35	491330	336022	32.9	35.6	33.4	28.2	28.8	19.0	25.2	24.2	20.7	39.3	38.4	24.5	-	-	-	Duplicate Site with SK 35 and SK 36 - Annual data provided for SK 36 only
SK 36	491330	336022	34.6	39.0	30.1	25.9	26.4	22.7	25.0	25.0	32.3	36.5	33.5	21.8	29.3	22.8	-	Duplicate Site with SK 35 and SK 36 - Annual data provided for SK 36 only
SK 37	491460	335715	29.4	37.8	30.3	27.0	30.0	22.0	26.4	25.1	37.9	40.2	37.9	25.3	-	-	-	Triplicate Site with SK 37, SK 38 and SK 39 - Annual data provided for SK 39 only

DT ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Annualised and Bias Adjusted (0.78)	Annual Mean: Distance Corrected to Nearest Exposure	Comment
SK 38	491460	335715	32.6	28.9	28.1	28.6	30.1	22.3	24.4	23.9	33.9	39.6	38.4	23.2	-	-	-	Triplicate Site with SK 37, SK 38 and SK 39 - Annual data provided for SK 39 only
SK 39	491460	335715	30.6	35.4	26.7	28.3	32.1	21.0	23.0	23.2	34.6	38.2	39.3	20.8	29.9	23.3	-	Triplicate Site with SK 37, SK 38 and SK 39 - Annual data provided for SK 39 only
SK 40	491512	335719	26.2	27.5	20.9	19.1	18.1	17.3	15.9	16.0	19.6	25.7	30.7	21.1	21.5	16.8	-	
SK 41	491602	335485	32.1	34.4	26.4	25.5	28.0	25.0	27.8	20.4	31.8	33.9	18.7	17.9	-	-	-	Duplicate Site with SK 41 and SK 42 - Annual data provided for SK 42 only
SK 42	491602	335485	30.3	29.2	24.0	26.2	27.7	22.1	23.5	21.5	50.5	37.4		24.3	27.4	21.4	-	Duplicate Site with SK 41 and SK 42 - Annual data provided for SK 42 only
SK 43	491734	335196	36.9	30.6	35.3	23.0	26.9	25.5	30.0	24.7	29.2	37.7	32.4		-	-	-	Abnormally low data removed from December
SK 44	491734	335196	29.2	34.6	23.6	23.8	25.5	24.3	20.0	19.8	33.1	27.0	37.8	18.3	27.8	21.7	-	Duplicate Site with SK 43 and SK 44 - Annual data provided for SK 44 only
SK 45	491869	334960	34.2	43.9	43.1	30.9	28.0	28.8	29.7	30.4	45.9	42.3	39.7	29.8	-	-	-	Duplicate Site with SK 45 and SK 46 - Annual data provided for SK 46 only
SK 46	491869	334960	40.3	41.0	33.1	31.4	27.6	28.7	30.3	26.7	40.6	35.3	31.0	27.5	34.2	26.7	-	Duplicate Site with SK 45 and SK 46 - Annual data provided for SK 46 only
SK 47	492067	334922	33.9	27.3	26.9	25.7	23.6	27.2	23.3	27.8	39.5	34.0	35.7	28.2	-	-	-	Duplicate Site with SK 47 and SK 48 - Annual data provided for SK 48 only
SK 48	492067	334922	31.4	34.6	31.6	23.8	25.3	26.5	25.1	27.7	30.1	31.5	27.2	23.7	28.8	22.5	-	Duplicate Site with SK 47 and SK 48 - Annual data provided for SK 48 only
SK 49	491427	335193	22.5	18.3	11.3	14.0	12.1	11.1	13.4	12.8	14.1	19.5	25.4		15.9	12.4	-	Abnormally low data removed from December

DT ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Annualised and Bias Adjusted (0.78)	Annual Mean: Distance Corrected to Nearest Exposure	Comment
SK 50	491184	335575		23.8	24.6	24.5	27.0	31.7	27.4	21.4	59.3	31.1	39.2	26.6	-	-	-	Duplicate Site with SK 50 and SK 51 - Annual data provided for SK 51 only
SK 51	491184	335575	32.6	36.5	28.3	28.4	27.7	22.7	29.1			<0.5	37.3		31.3	24.4	-	Duplicate Site with SK 50 and SK 51 - Annual data provided for SK 51 only. Abnormally low data removed from October
SK 52	491200	335636	36.9	37.5	28.3	24.1	23.9	19.9	22.7	23.4	25.3	29.7	32.1	24.5	-	-	-	Duplicate Site with SK 52 and SK 53 - Annual data provided for SK 53 only
SK 53	491200	335636	34.3	34.8	28.4	22.3	25.5	21.5	24.5	24.6	22.5	30.3	32.6	25.8	27.3	21.3	-	Duplicate Site with SK 52 and SK 53 - Annual data provided for SK 53 only
SK 54	491492	335505	35.0	42.8	28.4	34.7	38.8	32.1	34.6	29.5	37.2	36.3	33.4	27.8	-	-	-	Duplicate Site with SK 54 and SK 55 - Annual data provided for SK 55 only
SK 55	491492	335505	34.8	50.4	40.6	33.0	37.7	30.7	39.3	28.3	31.9	42.4	42.4	23.3	35.2	27.5	-	Duplicate Site with SK 54 and SK 55 - Annual data provided for SK 55 only
SK 56	491402	335501	27.7	38.8	32.5	26.6	29.1	31.4	28.8	28.6	31.9	35.9		28.3	-	-	-	Duplicate Site with SK 56 and SK 57 - Annual data provided for SK 57 only
SK 57	491402	335501	35.2	44.1	34.0		27.5	28.8	30.5		30.6		39.0		32.0	25.0	-	Duplicate Site with SK 56 and SK 57 - Annual data provided for SK 57 only
SK 58	503070	306957	28.6	25.8	21.8	19.9	20.5	20.8	18.5	18.8	21.2	22.5	27.1	16.1	21.8	17.0	-	

☒ **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.**

☒ **National bias adjustment factor used.**

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

☒ **South Kesteven District 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 South Kesteven District Council During 2024

During 2024 there were a number of additional road sources of NO_2. There was roadworks on a number of roads which may have affected NO_2 concentrations. A list of the additional works are below:

- Market Place works commenced 7th May 2024 – 13th September 2024 – Full closure from May until August. Market Place was then opened from Westgate through the High Street and then fully open including Conduit Lane from 13th September 2024.
- Station Approach works commenced on 16th August 2024 – 20th December 2024 – series of phased traffic management (five stages) daily until beginning of December then also included night-time closures for resurfacing.
- Queuing traffic especially on A52/1607station approach works which resulted in queues up wharf road to St Catherines

Spring 2024

- SKDC's proposed changes to the Market Place in the town centre
- Reconstruction of sections of High Street, Great Gonerby and Gonerby Road, Grantham
- Construction of a new High Street, Great Gonerby pedestrian crossing

Summer 2024

- Reconstruction of Dysart Road
- Reconstruction of Alma Park Road
- Construction of a new Greenhill Road / Barrowby Road pedestrian crossing
- Construction of a new Barrowby Road / Poplar Farm pedestrian crossing
- SKDC's proposed changes to Station Road and A52/A607 junction

Additional Air Quality Works Undertaken by South Kesteven District Council During 2024

No additional works were undertaken by South Kesteven District during 2024.

QA/QC of Diffusion Tube Monitoring

The diffusion tubes for the year 2024 were supplied and analysed by SOCOTEC, using the 50% Triethanolamine (TEA) in acetone preparation method. SOCOTEC, a UKAS accredited laboratory, participate 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 calibre. From the most recent set of AIR-PT results (AR063, April – June), in which SOCOTEC scored 100% – the percentage score reflects the results deemed satisfactory based upon the z-score of ± 2.

There were 35 local authority co-location studies which used tubes supplied by SOCOTEC with the 50% TEA in acetone preparation method. This precision reflects the laboratory's performance and consistency in preparing and analysing the tubes, as well as the subsequent handling of the tubes in the field.

Monitoring in 2024 throughout South Kesteven District was completed in adherence with the 2024 Diffusion Tube Monitoring Calendar, whereby all changeovers throughout the monitoring year were completed in line with Defra guidance.

There were anomalous results during the reporting year of 2024. The abnormally low results were removed from the dataset. Any abnormally high results were not removed as there was extensive roadworks during 2024 which may have been responsible for higher concentrations reported at diffusion tubes sites.

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".

During 2024, there was no requirement for annualisation at any diffusion tube sites within South Kesteven District, as all sites had greater than 75% data capture.

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.

South Kesteven District Council have applied a national bias adjustment factor of 0.78 to the 2024 monitoring data. A summary of bias adjustment factors used by South Kesteven District Council over the past five years is presented in Table C.1.

Table C.1 – Bias Adjustment Factor

Monitoring Year	Local or National	If National, Version of National Spreadsheet	Adjustment Factor
2024	National	04/25	0.78
2023	National	03/24	0.83
2022	National	03/23	0.82
2021	National	03/22	0.83
2020	National	03/21	0.84

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

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 (enable your selection, choose (All) from the pop-up list)	Year[2] (enable your selection, choose (All) from the pop-up list)	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[4]	Bias Adjustment Factor (A) (Cm/Dm)
SOCOTEC Didcot	50% TEA in acetone	2024	R	Cambridge City Council	11	20	15	31.0%	G	0.76
SOCOTEC Didcot	50% TEA in acetone	2024	R	Cardiff Council / Shared Regulatory Services	9	35	31	14.2%	G	0.88
SOCOTEC Didcot	50% TEA in acetone	2024	R	Ipswich Borough Council	9	24	20	21.0%	G	0.83
SOCOTEC Didcot	50% TEA in acetone	2024	R	Ipswich Borough Council	11	36	26	37.9%	G	0.73
SOCOTEC Didcot	50% TEA in acetone	2024	UB	City Of York Council	11	13	11	16.0%	P	0.86
SOCOTEC Didcot	50% TEA in acetone	2024	R	City Of York Council	11	22	18	22.9%	G	0.81
SOCOTEC Didcot	50% TEA in acetone	2024	R	City Of York Council	11	26	20	31.0%	G	0.76
SOCOTEC Didcot	50% TEA in acetone	2024	R	East Suffolk Council	9	26	20	32.8%	G	0.75
SOCOTEC Didcot	50% TEA in acetone	2024	KS	Marylebone Road Intercomparison	10	47	36	30.5%	G	0.77
SOCOTEC Didcot	50% TEA in acetone	2024	UB	Hull City Council	10	21	16	25.4%	P	0.80
SOCOTEC Didcot	50% TEA in acetone	2024	R	Hull City Council	9	27	20	35.3%	G	0.74
SOCOTEC Didcot	50% TEA in acetone	2024	R	Waverley Borough Council	10	21	18	13.7%	G	0.88
SOCOTEC Didcot	50% TEA in acetone	2024	R	Waverley Borough Council	11	22	16	32.3%	G	0.76
SOCOTEC Didcot	50% TEA in acetone	2024	R	Wrexham County Borough Council	10	15	13	17.0%	G	0.85
SOCOTEC Didcot	50% TEA in acetone	2024	UB	Gravesham Borough Council	11	21	19	9.7%	P	0.91
SOCOTEC Didcot	50% TEA in acetone	2024	R	Slough Borough Council	11	35	24	43.5%	G	0.70
SOCOTEC Didcot	50% TEA in acetone	2024	R	Slough Borough Council	11	26	20	32.6%	G	0.75
SOCOTEC Didcot	50% TEA in acetone	2024	R	Slough Borough Council	11	23	17	34.0%	G	0.75
SOCOTEC Didcot	50% TEA in acetone	2024	R	Slough Borough Council	10	31	23	33.4%	G	0.75
SOCOTEC Didcot	50% TEA in acetone	2024	R	Slough Borough Council	11	30	23	33.7%	G	0.75
SOCOTEC Didcot	50% TEA in acetone	2024	R	Thanet Dirtric Council	10	19	15	24.3%	G	0.80
SOCOTEC Didcot	50% TEA in acetone	2024	UB	Wirral Council	9	14	12	19.9%	G	0.83
SOCOTEC Didcot	50% TEA in acetone	2024	R	Derry City And Strabane Dirtrict Council	11	28	32	-11.8%	G	1.13
SOCOTEC Didcot	50% TEA in acetone	2024	UB	Derry City And Strabane Dirtrict Council	11	11	7	58.1%	G	0.63
SOCOTEC Didcot	50% TEA in Acetone	2024	R	Horsham Dirtrict Council	11	22	17	31.1%	G	0.76
SOCOTEC Didcot	50% TEA in Acetone	2024	R	Leeds City Council	10	36	28	32.5%	G	0.75
SOCOTEC Didcot	50% TEA in Acetone	2024	KS	Leeds City Council	11	29	20	42.7%	G	0.70
SOCOTEC Didcot	50% TEA in Acetone	2024	R	Leeds City Council	11	24	18	36.4%	G	0.73
SOCOTEC Didcot	50% TEA in Acetone	2024	UC	Leeds City Council	10	25	19	31.2%	G	0.76
SOCOTEC Didcot	50% TEA in Acetone	2024	R	Huntingdonshire Dirtrict Council	10	28	23	21.1%	G	0.83
SOCOTEC Didcot	50% TEA in Acetone	2024	R	North East Lincolnshire Council	11	39	21	84.1%	G	0.54
SOCOTEC Didcot	50% TEA in Acetone	2024	UB	North East Lincolnshire Council	10	12	10	20.0%	G	0.83
SOCOTEC Didcot	50% TEA in Acetone	2024	R	North East Lincolnshire Council	11	21	18	15.7%	G	0.86
SOCOTEC Didcot	50% TEA in acetone	2024		Overall Factor[3] (33 studies)				Use		0.78

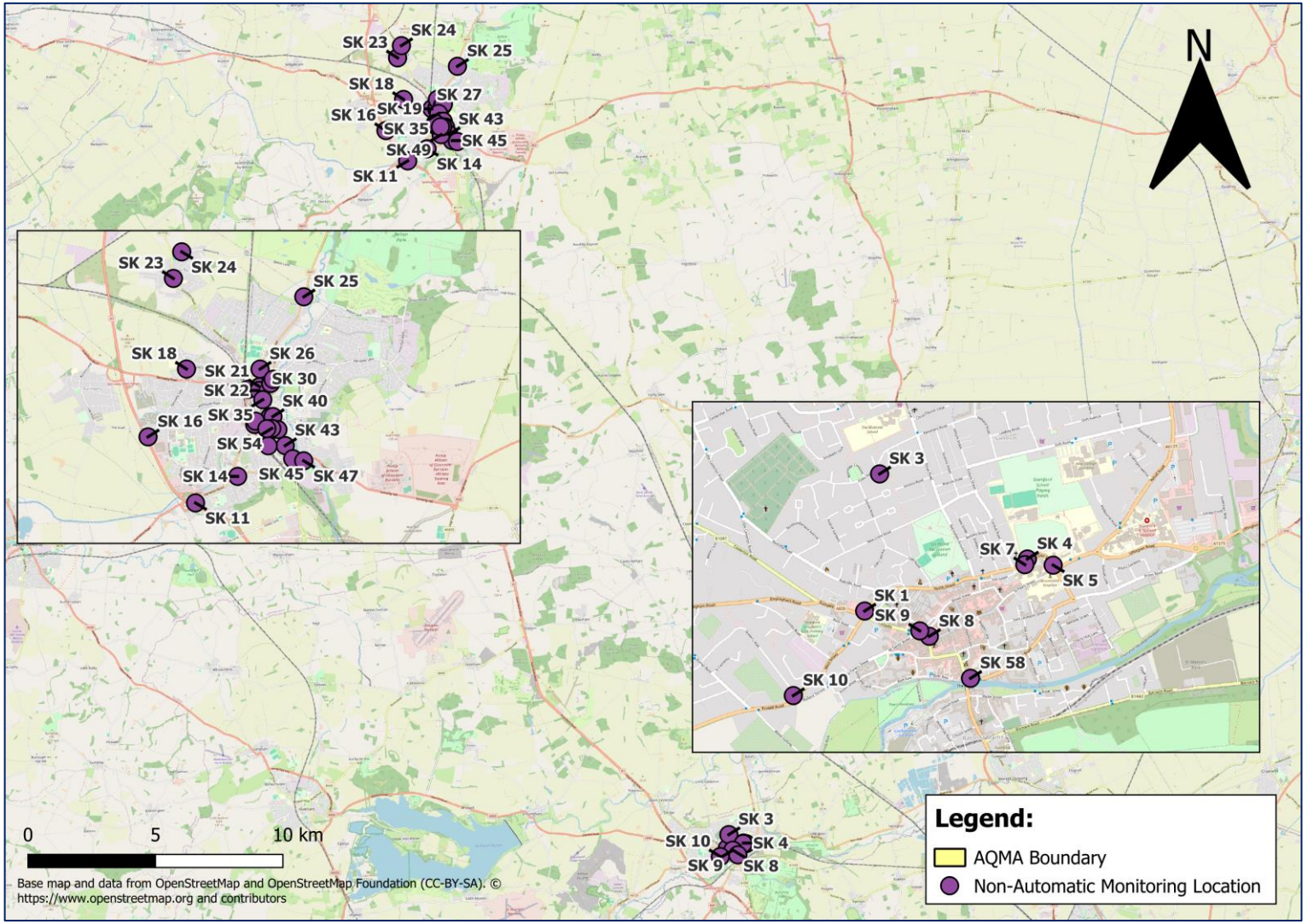
NO_2 Fall-off with Distance from the Road

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 presented in Table B.1.

No diffusion tube monitoring location within South Kesteven District required distance correction during 2024.

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

Figure D.1 – All Non-Automatic Monitoring Locations in South Kesteven



NOTE: As majority of the monitoring locations in South Kesteven are duplicate or triplicates, only one Site ID has been provided for ease of visuals in the Appendix D Figures. Refer to Table A.2 to match up locations.

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

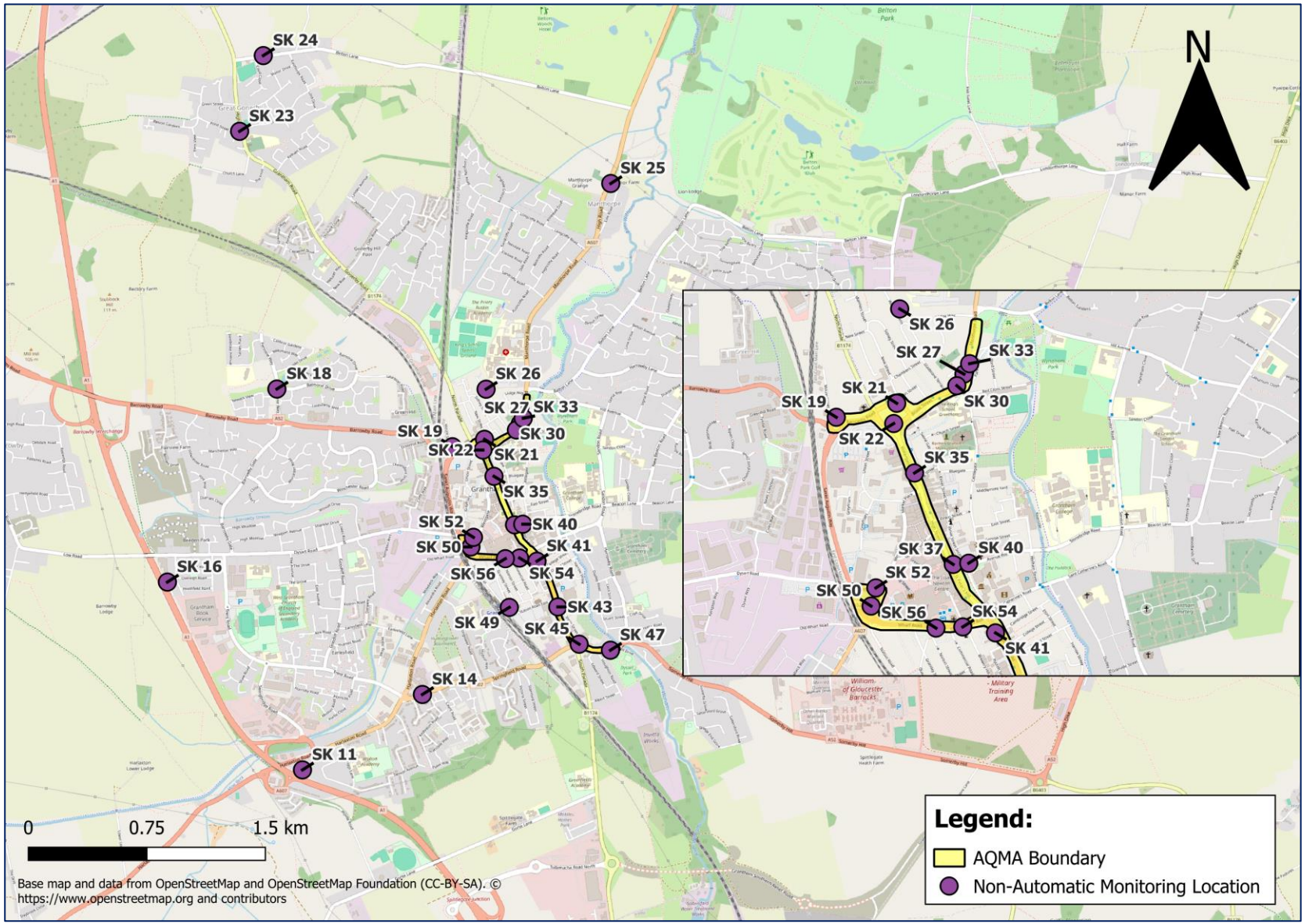


Figure D.3 – Non-Automatic Monitoring Locations: Grantham AQMA No.6

NOTE: Figure D. 4 shows SK40 on the outskirts of the AQMA boundary. It has been included in the Figure as the Council still consider SK40 to be a good representation of concentrations within the AQMA despite being near the border.

Figure D.4 – 2024 Annual NO_2 Concentrations All Non-Automatic Monitoring Locations: Stamford

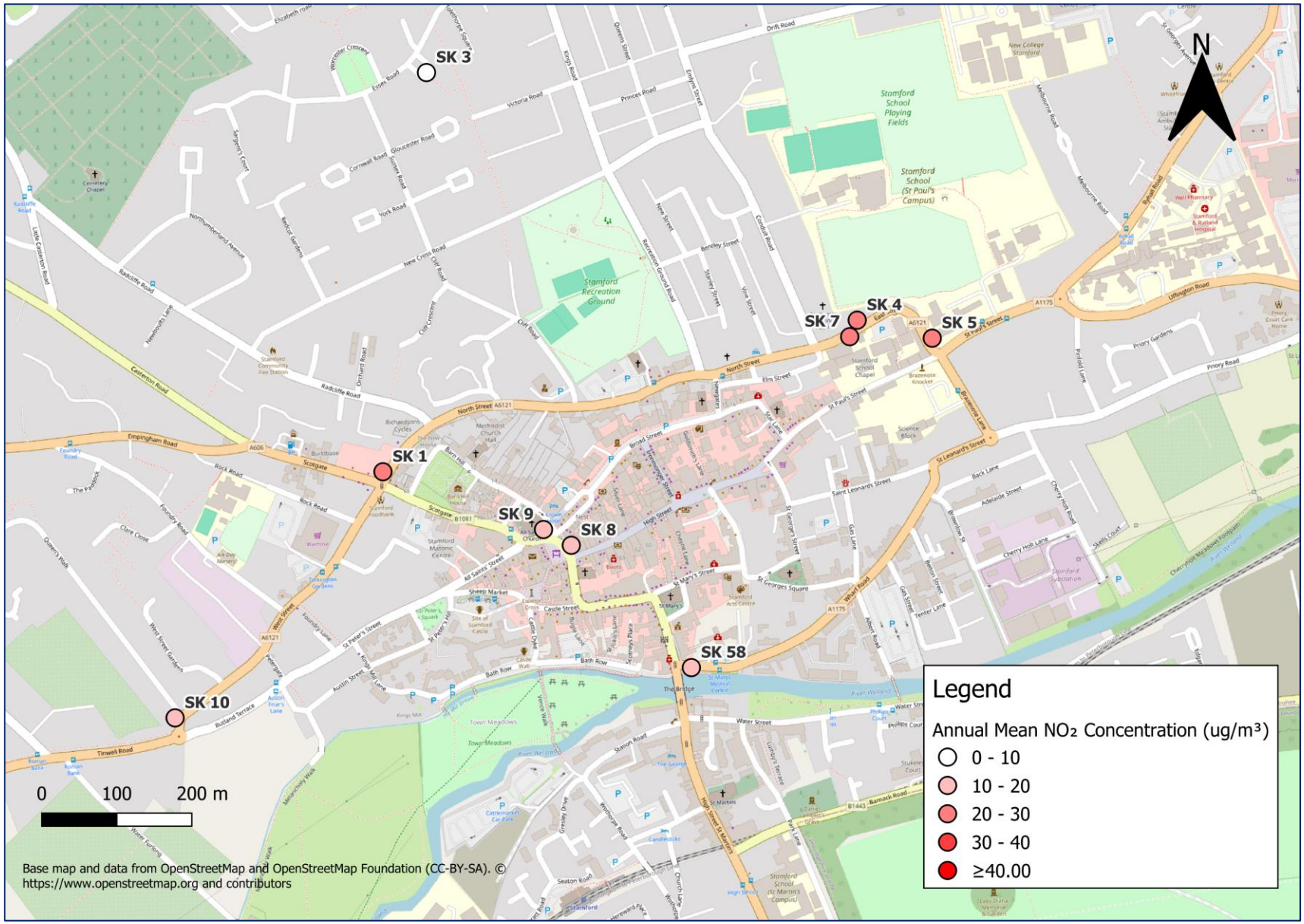


Figure D.5 – 2024 Annual NO_2 Concentrations All Non-Automatic Monitoring Locations Grantham

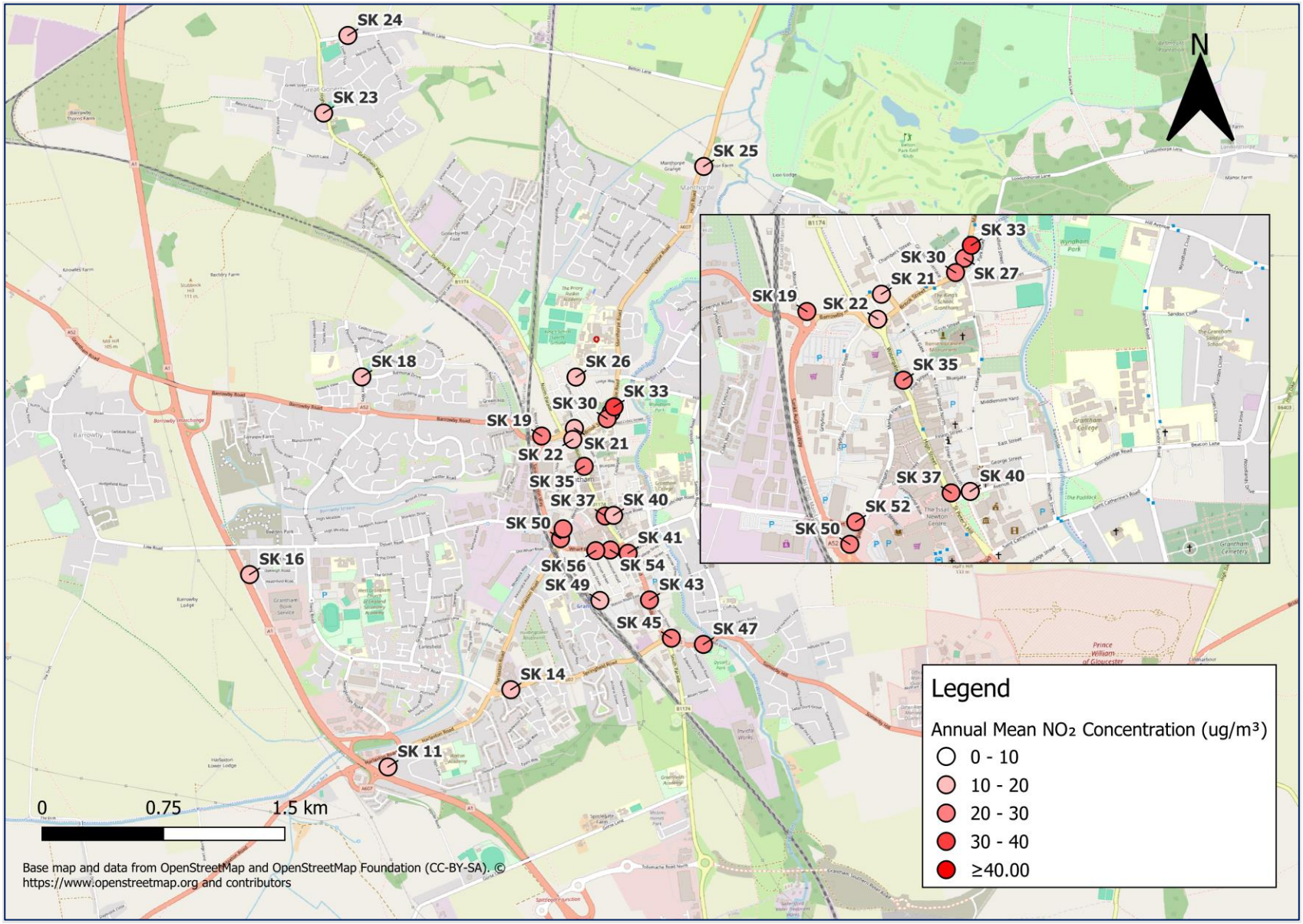
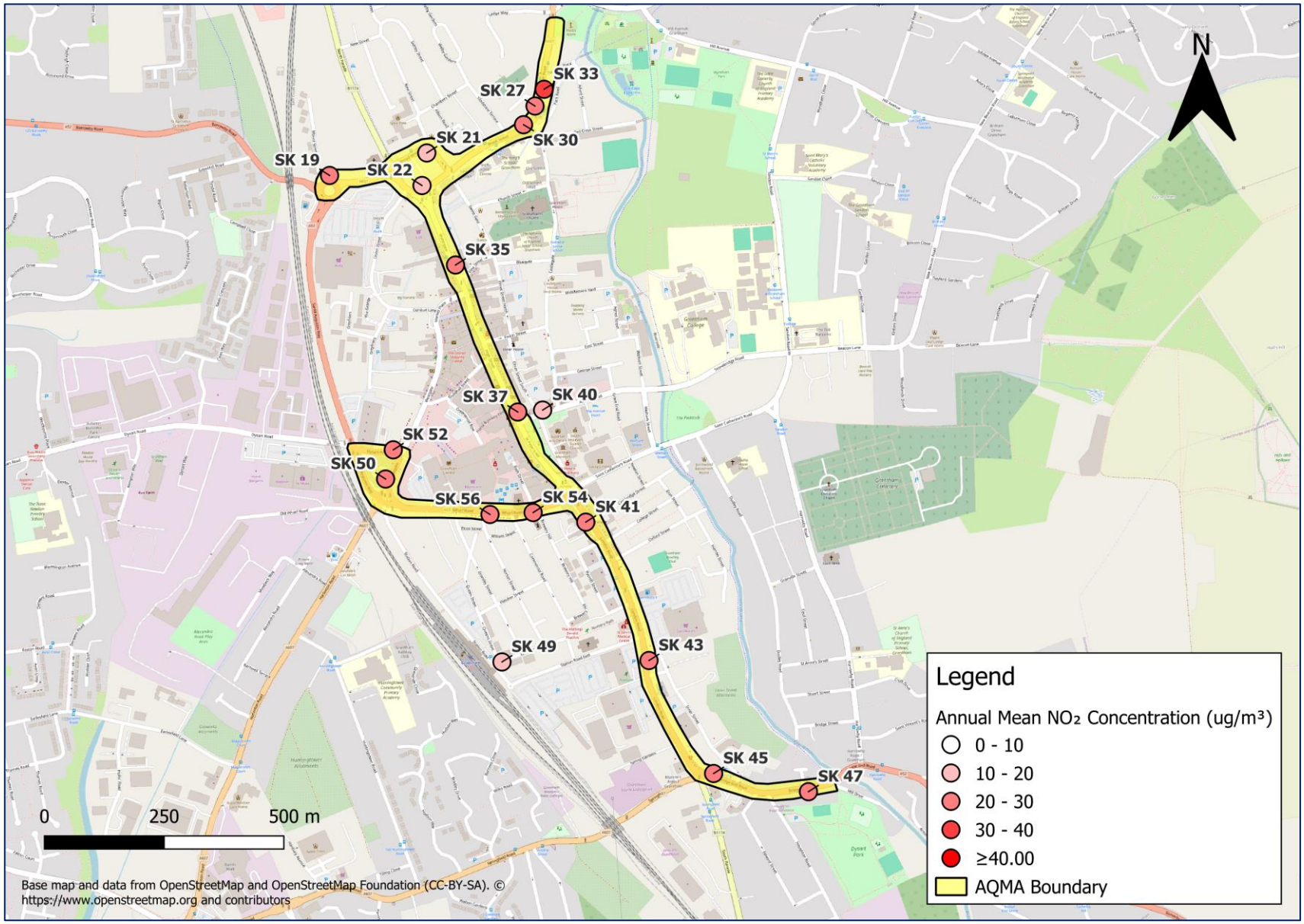


Figure D.6 – 2024 Annual NO_2 Concentrations All Non-Automatic Monitoring Locations Grantham AQMA No.6



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
ASHP	Air Source Heat Pumps
ANPR	Automatic Number Plate Recognition
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
ATC	Automatic Traffic Count
CWZ	Core Walking Zones
Defra	Department for Environment, Food and Rural Affairs
DMRB	Design Manual for Roads and Bridges – Air quality screening tool produced by National Highways
EPC	Energy Performance Certificate
EV	Electric Vehicle
GHG	Green Homes Grant
HUG	Home Upgrade Grant
LAD2	Local Authority Delivery Phase 2
LAQM	Local Air Quality Management
LCC	Lincolnshire County Council
LCN	Local Cycle Network
LED	Light Emitting Diode
LEVI	Local Electric Vehicle Infrastructure
NCN	National Cycle Network
NHS	National Health Service
NO_2	Nitrogen Dioxide
NO_x	Nitrogen Oxides
OSRCPS	On-Street Residential Charge Point Scheme

Abbreviation	Description
OZEV	Office of Zero Emission Vehicles
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
SCA	Smoke Control Areas
SO_2	Sulphur Dioxide
UKSPF	UK Shared Prosperity Fund
ULEV	Ultra Low Emission Vehicle

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- South Kesteven Climate Action Strategy - https://www.southkesteven.gov.uk/sites/default/files/2023-10/Climate_Action_Strategy.pdf
- South Kesteven Parking and Transport roads for EV charging - https://www.southkesteven.gov.uk/parking-transport-and-roads/electric-vehicle-charging/skdc-electric-vehicle-charging-points
- UK-AIR Background Mapping for Local Authorities available at: https://uk-air.defra.gov.uk/data/laqm-background-home.