North East Lincolnshire Council

Annual Progress Report 2024

Bureau Veritas

June 2024

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Document Control Sheet

Identification	
Client	North East Lincolnshire Council
Document Title	North East Lincolnshire Council – 2024 Annual Progress Report
Bureau Veritas Ref No.	AIR21938161

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Configuration				
Version	**Date**	**Author**	**Reason for Issue/Summary of Changes**	**Status**
v1.0	04/06/2024	ET	Draft	Draft
v2.0	25/06/2024	ET	Comments Addressed	Draft
V3.0	27/08/2024	ET	Final Issue	Final Issue

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2024 Air Quality Annual Status Report (ASR)

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

Date: June, 2024

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Report Reference Number	21938161
Date	June 2024

Executive Summary: Air Quality in Our Area

Air Quality in North East Lincolnshire

Breathing in polluted air affects our health and costs the NHS and our society billions of pounds each year. Air pollution is recognised as a contributing factor in the onset of heart disease and cancer and can cause a range of health impacts, including effects on lung function, exacerbation of asthma, increases in hospital admissions and mortality. In the UK, it is estimated that the reduction in healthy life expectancy caused by air pollution is equivalent to 29,000 to 43,000 deaths a year[1].

Air pollution particularly affects the most vulnerable in society, children, the elderly, and those with existing heart and lung conditions. Additionally, people living in less affluent areas are most exposed to dangerous levels of air pollution[2].

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

Table ES 1 - Description of Key Pollutants

Pollutant	Description
Nitrogen Dioxide (NO_2)	Nitrogen dioxide is a gas which is generally emitted from high-temperature combustion processes such as road transport or energy generation.
Sulphur Dioxide (SO_2)	Sulphur dioxide (SO_2) is a corrosive gas which is predominantly produced from the combustion of coal or crude oil.
Particulate Matter (PM_{10} and $PM_{2.5}$)	Particulate matter is everything in the air that is not a gas. Particles can come from natural sources such as pollen, as well as human made sources such as smoke from fires, emissions from industry and dust from tyres and brakes. PM_{10} refers to particles under 10 micrometres. Fine particulate matter or $PM_{2.5}$ are particles under 2.5 micrometres.

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

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

North East Lincolnshire is situated on the east coast of England, at the mouth of the River Humber. It covers 192 km^2, is home to approximately 160,000 people and incorporates the towns of Grimsby, Immingham and Cleethorpes. The main source of air pollution within North East Lincolnshire is from road traffic, with additional background sources including domestic, industrial and commercial space heating.

On 22nd May 2024 the Air Quality Management Area (AQMA) declared in North East Lincolnshire Council, located at Cleethorpe Road in Grimsby ('Grimsby AQMA') was formally revoked. The AQMA was declared in 2010 due to exceedances of the NO_2 annual mean. An Air Quality Action Plan was produced initially in 2012. This was revised in July 2020 and North East Lincolnshire Council adopted a new Air Quality Action Plan, outlining new measures to reduce NO_2 concentrations in the AQMA.

During 2023 there was a decrease in the annual mean NO_2 recorded at every diffusion tube site and all automatic monitoring stations when compared to 2022 which continues the trend from 2021-2022. All of the reported concentrations continued to be below the NO_2 annual mean AQS objective (40 $\mu g/m^3$). The maximum NO_2 annual mean concentration was recorded at the Cleethorpe Road diffusion tube site co-located with the automatic monitor (NEL 24/25/26) at 33.0 $\mu g/m^3$. At the three automatic monitoring stations, annual mean NO_2 concentrations of 10.4 $\mu g/m^3$ (Immingham Woodlands Avenue AURN), 26.4 $\mu g/m^3$ (Cleethorpes Road) and 20.6 $\mu g/m$ NO_2 (Peaks Parkway) were recorded in 2023. During 2023, the annual mean and hourly objective for NO_2 was not exceeded at any site.

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[3] sets out actions that will drive continued improvements to air quality and to meet the new national interim and long-term targets for fine particulate matter ($PM_{2.5}$), the pollutant of most harmful to human health. The Air

[3] Defra. Environmental Improvement Plan 2023, January 2023

Quality Strategy[4] provides more information on local authorities' responsibilities to work towards these new targets and reduce fine particulate matter in their areas.

The Road to Zero[5] details the Government's approach to reduce exhaust emissions from road transport through a number of mechanisms, in balance with the needs of the local community. This is extremely important given that cars are the most popular mode of personal travel and the majority of Air Quality Management Areas (AQMAs) are designated due to elevated concentrations heavily influenced by transport emissions.

North East Lincolnshire Council is committed to reducing the exposure of people to poor air quality in order to improve health. The actions taken by North East Lincolnshire Council to improve air quality can be considered under five broad topics:

- Transport: Upgrading existing transport infrastructure, changing the road layout to give priority to public transport, forming traffic plans that encourage the use of greener modes of transport, and reducing congestion and associated vehicle emissions.
- Public Health: Encouraging wider behavioural changes in the local population with respect to travel choices and raising to the public on the impacts of air pollution. This is done by educating people so that they feel inclined to change their current habits.
- Planning and Infrastructure: Mitigating potential air quality impacts effectively by being involved in decision making early on for future developments required to support the growth of North East Lincolnshire.
- Strategies and Policy Guidance: Working with partners and stakeholders to direct the use of legislation and targeted enforcement to control air pollution.
- Air Quality Monitoring: Ensure satisfactory air quality monitoring data is available to track outcomes of the implemented Air Quality Action Plan measures.

Consultation on a new North East Lincolnshire Council Local Plan is currently underway and supporting the drive towards a low carbon economy and supporting a greener and

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

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

more biodiversity rich environment are two key themes that will be given increased weight in the draft local plan.

Conclusions and Priorities

During 2023, no exceedances of the NO_2 annual mean objective were identified within the existing AQMA, continuing the trend observed since 2018 which supported the move to revoke the AQMA in 2024. Additionally, the NO_2 annual mean air quality objective was not exceeded at any monitoring location outside of the AQMA during 2023. Relative to 2022, the NO_2 annual mean concentration also decreased at all three automatic monitoring sites within North East Lincolnshire in 2023. This decrease in NO_2 across both the diffusion tube network and automatic monitoring network continues the post covid trend in concentrations seen in 2022.

The updated AQAP adopted in 2020 outlines the priorities of North East Lincolnshire Council in addressing air quality. These five priorities align to the five categories listed above and are as follows:

- **Priority 1**: Improve transport infrastructure to encourage the use of public transport, or sustainable modes of travel (i.e. walking/cycling).
- **Priority 2**: Promote behavioural changes by raising awareness and educating the public on the impacts of air pollution so that they rethink their travel choices.
- **Priority 3**: Ensure that potential air quality impacts are mitigated early on in any new developments, required to support the growth of North East Lincolnshire.
- **Priority 4**: Use legislation and enforcement to control air pollution by effectively engaging with partners and stakeholders.
- **Priority 5**: Obtain measures of air quality and ensure the data is satisfactory so that it can be determined if the measures that have been implemented from the Air Quality Action Plan are having a positive impact on the concentration of NO_2.

North East Lincolnshire Council currently engage with the following working groups on the topic of air quality:

- North East Lincolnshire Council Air Quality Steering Committee (AQSC) – an internal Air Quality Steering Group which continues to meet quarterly to discuss council wide air quality issues
- Associated British Ports (ABP) – quarterly meetings with ABP and other Humber local authorities discussing Port and local air quality issues

- Yorkshire and Lincolnshire Pollution Advisory Group (YALPAG) – a knowledge sharing working group with other local authorities
- Air Quality Hub – North East Lincolnshire Council has completed the onboarding process on the Air Quality Hub.

While the Grimsby AQMA was revoked on 22nd May 2024 North East Lincolnshire Council remain committed to improving air quality within the local area. While preparing for the revocation of the AQMA, North East Lincolnshire has revised the monitoring locations within the area and added a further 8 diffusion tube locations in 2023.

Local Engagement and How to get Involved

Air pollution is contributed to, often inadvertently, by the wider community. Therefore, localised changes in behaviour can help to reduce the concentrations of air pollutants on a wider scale. Many of these measures will also simultaneously improve health:

- Where possible, consider walking, cycling or using public transport. This is important for short journeys where it may not be necessary to use a private vehicle. An increase in the amount of people using active forms of travel of public transport not only reduces the emissions by decreasing the number of cars on the road, but also from the reduced congestion, thus less stopping and starting of vehicles.
- Driving economically by turning your engine off when stationary. Not idling the vehicle can reduce emissions but also save fuel.
- Keep your vehicle in good working order. Having well inflated tyres means your car will be more efficient and use less fuel.

North East Lincolnshire Council have also promoted initiatives such as ‘Clean Air Day’, encouraging people to find out more about air pollution, share information with others and help make the environment safer for everyone. Clean Air Day took place on 15th June 2023 and North East Lincolnshire Council promoted the day on social media channels.

Additional air quality resources can be found on North East Lincolnshire Council’s website.

Local Responsibilities and Commitment

This ASR was prepared by the Bureau Veritas on behalf of the Environmental Protection Department of North East Lincolnshire Council with the support and agreement of the following officers and departments:

- Louisa Hewett, Environmental Protection Officer, Environmental Protection

- Communication and Marketing Team
- Policy Strategy and Resources
- Economy and Growth Team
- Fleet Management
- Highway and Transport Department
- Planning Department
- Public Health Department
- Regulatory Services Strategic Lead
- Environmental Sustainability

This ASR has been approved by:

Kath Jickells, Assistant Director Environment; and

Geoff Barns, Deputy Director of Public Health.

If you have any comments on this ASR please send them to Louisa Hewett at:

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1 Local Air Quality Management

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

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

As of the 22nd May 2024, North East Lincolnshire Council currently does not have any declared AQMAs. The Air Quality Action Plan from 2020 is still in place to prevent and reduce polluting activities and the AQMA was still declared during the year 2023 for which this ASR is reporting. The Air Quality Action Plan is available here.

Table 2.1 – 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
Grimsby AQMA	September 2010 Revoked 22nd May 2024	NO_2 Annual Mean	Cleethorpe Road between Freeman Street and Nacton Street	No	48.4 µg/m^3	33.0 µg/m^3	6	July 2020 AQAP	July 2020 AQAP

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

☒ **North East Lincolnshire confirm that all current AQAPs have been submitted to Defra.**

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

Defra's appraisal of last year's ASR concluded the report was detailed and well structured.

- NELC continues to enjoy excellent air quality with zero exceedances recorded in 2022; the fifth consecutive year where compliance with AQOs has been achieved. Even excluding 2020 and 2021 which were impacted by COVID-19, NELC has had three consecutive years of compliance. Subsequently, NELC should undertake steps towards revoking the existing AQMA as per LAQM Technical guidance.
- NELC undertook a full review of the diffusion tube network in October 2022, using data from Highways and Planning, NELC commenced monitoring in eight new locations in January 2023. This is commended.
- Extensive Trend graphs have been provided for all monitoring data including diffusion tubes, which is commended.
- It is encouraging to see the council considered the comments made during the previous appraisal and actively made an effort to address all of these actions for this year's ASR.
- The council is commended for continuing to update their AQAP, eight new measures have been introduced for 2023.
- The Council have provided good mapping of all monitoring locations within the district. However, the Council are highly encouraged to update some of the labels in Figure D.2 to improve readability.

North East Lincolnshire 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. 27 measures are included within Table 2.2, with the type of measure and the progress North East Lincolnshire have made during the reporting year of 2023 presented. Where there have been, or continue to be, barriers restricting the implementation of the measure, these are also presented within Table 2.2.

More detail on these measures can be found in the 2020 Air Quality Action Plan[6].

[6] https://www.nelincs.gov.uk/assets/uploads/2021/01/Air-Quality-Action-Plan-2020.pdf

Key completed measures in 2023 include social media campaigns including domestic burning with communications sent out every two weeks between October and February and a Clean Air Day poster competition. The revocation of the AQMA will lead to the commencement of the preparation of an Air Quality Strategy in the next reporting cycle.

Net Zero Carbon Roadmap

In October 2019, North East Lincolnshire Council declared a climate emergency and in 2016 the council signed up to Climate Local. Since then, North East Lincolnshire Council has worked with partner EQUANS to plan how to reduce the carbon emissions. The Net Zero Carbon Roadmap explains how targets will be achieved and mitigate the impact of climate change. North East Lincolnshire Council adopted the roadmap and set net zero targets in December 2021.

The Net Zero Carbon Roadmap sets out six workstreams which must be completed to reach net zero by 2030:

- Low carbon estate (our buildings)
- Low carbon fleet (council vehicles)
- Low carbon street lighting
- Climate-conscious decision-making
- Climate-conscious purchasing (goods and services)
- Climate conscious behaviours (staff and those who work for the council)

The Net Zero Carbon Roadmap also sets out a further six workstreams the council will follow, to help the area of North East Lincolnshire reach carbon net zero by 2050:

- Climate-conscious community: by facilitating and encouraging community engagement and sustainability actions
- Low carbon commercial buildings: working as an enabler to ensure sufficient support is in place for businesses to increase sustainability
- Low carbon transport: through policy change, network investment and partnership working we want to enable a local transition to more sustainable travel
- Low carbon industry: by supporting our partners and industry in achieving industrial decarbonisation, including carbon capture and hydrogen economy
- Enable low carbon new homes-through our role as a policy maker and planning authority
- Climate-conscious improvements to older homes, by supporting our partners and residents to improve their homes to become more sustainable

The measures to improve air quality that feature in North East Lincolnshire Council's Natural Assets Plan 2021 can be found here.

The 'Improving Air Quality' section outlines the actions that North East Lincolnshire Council want to see with respect to air quality, these include:

- Air quality issues being prominent in decision making and being considered in local policy development
- Air quality monitoring identifying risks and delivering publicly available information
- Solutions for air quality reduction, including those that use natural assets

The Natural Asset Plan also outlines North East Lincolnshire Council's main focus areas for the coming years that will help to reduce air pollution within the area. These cover a range of topics and include the following:

- Acquire new monitoring equipment to assist when meeting new statutory duties on measuring concentrations of smaller particulates (i.e. $PM_{2.5}$)
- Producing a Planning Technical Advice Document for air quality
- Linking air quality into public education/public health on environmental matters
- Providing accessible air quality information to assist those with breathing difficulties
- Make links between air quality and other environmental services
- Investigate how nature-based solutions might help to improve air quality

Quarterly monitoring of progress on both of these documents is undertaken with an annual report produced and submitted to cabinet. Our Second Annual Report to Cabinet has been completed with members happy with our progress to meet our Net Zero targets. We have also been successful over the past year in bids for the UTCF and LATF tree planting funds as well as the Salix PSDS 3c fund. This means that over 800 standard trees and 3000 whips will be planted across the borough. On top of this 9 council buildings will be decarbonised over the next 2 years. We are exploring more grant funding and other ways to deliver our Natural Assets Plan and Carbon Roadmap, with great progress having been made so far.

Local Transport Plan

The current Local Transport Plan (LTP) is being refreshed and due for publication towards Autumn 2024. The key themes are focused on de-carbonisation of transport with a big focus on electric vehicles and the infrastructure required to support the Government targets over the next few years of eliminating petrol and diesel cars, HGV's and buses which are one of the main factors that increase air pollution.

Offering sustainable and green alternatives to car travel are another major focus and North East Lincolnshire Council will be looking at offering better improved services along with educating and encouraging change in people's choices to show improved healthier lifestyles that emerge from cycling and walking which ultimately help improve the air quality.

2.2.1 Air Quality Action Plan

North East Lincolnshire Council has taken forward a number of direct measures during the current reporting year of 2023 in pursuit of improving local air quality. Details of all measures completed, in progress or planned are set out in Table 2.2. Twenty-seven measures are included within Table 2.2, with the type of measure and the progress North East Lincolnshire Council have made during the reporting year of 2023 presented. Eight of these measures were new in 2023 to continue the work North East Lincolnshire Council has made with two completed measures to date. 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 North East Lincolnshire Council Air Quality Action Plan. Key completed measures are:

- The social media campaign for domestic burning undertaken between October and February. Burn Better information added to NELC AQ website page.
- A Clean Air Day poster competition was held to increase awareness of the importance of Air Quality.

Through the AQAP North East Lincolnshire Council has achieved compliance with the annual NO_2 air quality objective within the Grimsby AQMA which was revoked on 22nd May 2024.

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
26	Fare capping by day/ week	Promoting Travel Alternatives	Intensive active travel campaign & infrastructure	2023	2025	NELC/ Stagecoach East Midlands	DfT BSIP funding	No		£257,168	Mobilisation	Encourage modal shift/ increase patronage, resulting in less single occupancy car journeys.	Increase in patronage and potential encouragement of modal shift.	Scheme to be delivered by 31 March 2025	
32	EV Infrastructure Project. Following the adoption of the EV Strategy by NELC in March 2024, we are now working towards installing 800 EV chargepoints in the Borough by 2030	Promoting Low Emission Transport	Other	2023	2030	NELC & EQUAN	LEVI Grant Fund, ORCS Fund, NELC, Equans & Private Investment	NO	NELC have been given an indicative award	< £3 Million	Bid and procurement	Reduced vehicle emissions	No. of Council EV charge points operational throughout the Borough	The transport team are currently working through the ORCS bid and LEVI bid in order to secure the contracts and execute projects. There are also LTP funds available from NELC to assist areas in the project which are not eligible for ORCS and LEVI.	NELC are committed to the role out of the EV infrastructure. Procurement, supply issues and public concerns may delay the project.
10	Ensure that air quality is taken into account in the planning process	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	2015	On-going	NELC	NELC	NO	Not Funded	< £10k	Implementation	Ensure developments don't have a negative impact on AQ	Number of planning applications with air quality conditions/assessments	Environmental Protection Team review of planning applications weekly for adverse effects of AQ	Progressing as normal
22	Burn Better Campaign	Public Information	Via the Internet	2023	2024	NELC	NELC	NO	Not Funded	< £10k	Completed	Targeting $PM_{2.5}$ emissions	Number of people reached via social media channels	A social media campaign was undertaken, with Comms going out every two weeks between October and February. Burn Better information added to NELC AQ website page.	Completed
17	Declared Climate Emergency in September 2019	Policy Guidance and Development Control	Other policy	2019	2030	NELC & EQUAN	NELC & EQUAN	NO	Not Funded	Over £30 million	Planning and Implementation	Carbon reduction	NELC Carbon Neutral by 2030 and NEL Carbon Neutral by 2050	NELC adopted the Carbon Roadmap and Natural Assets Plan in 2021 and the quarterly monitoring of progress on both of these, with an annual report to cabinet. Our Second Annual Report to Cabinet has been completed with members happy with our progress to meet our Net Zero targets. Since implementation, NELC has planted at least 416 trees and has begun decarbonising its buildings through the Salix Decarbonisation Grant.	Measure progressing
23	Clean Air Day Poster Competition	Public Information	Via the Internet	2023	2023	NELC	NELC	NO	Not Funded	<£10k	Completed	Public information	Public information	Competition Launched, winners were announced on CAD.	Intending on repeating again this year for CAD
8	Public Air Quality Information	Public Information	Via the Internet	2017	On-going	NELC	NELC	NO	Not Funded	£10k - 50k	Implementation	Reduced vehicle emissions	Number of people reached	NELC AQ webpages updated during 2023 to provide more concise and clearer information. www.nelincs.gov.uk/keeping-our-area-clean-and-safe/air-quality/	Funding needed for further media campaigns
5	Continue to promote and facilitate cycling as for both transportation and leisure	Promoting Travel Alternatives	Promotion of cycling	2021	2022	NELC/ EQUAN	Capability Fund grant (DfT)	No	Funding awarded	£300k	Implementation	Reduced vehicle emissions	Uptake of cycling incentives and bike purchases	Doctor Bike cycle maintenance events continue to be delivered, over 25 events delivered across 2023. Design and delivery of new 'local walks' and 'local rides' guides with distribution through TIC and other leisure outlets.	Promotion of Active Travel plans. Super Cycle Highway. Currently only one -year funding from

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
	purposes - Capability Fund													Completion of phases 1&2 of Cycle Superhighway link along the South Humber Bank between Immingham and Grimsby. Improvements made to on-street public cycle parking facilities around NEL including new facility at Grimsby Town railway station. Cycle Hubs now operating at both Cleethorpes & Grimsby Town railway station	DfT, awaiting confirmation of future years funding.
29	BSIP + Funding - £1 fare scheme (£1 per bus trip after 6pm week days and £1 per trip all day weekends)	Promoting Travel Alternatives	Intensive active travel campaign & infrastructure	2024	2025	NELC/ Stagecoach East Midlands	DfT BSIP funding	No		£560,266	Mobilisation	Improved infrastructure/ improved facilities for passengers, increased patronage/ modal shift	Increase in patronage and potential encouragement of modal shift.	Scheme currently being delivered with scheme end date estimated at June 2024 noting possible scheme extension beyond June 24.	
31	Revision of the Air Quality Strategy	Policy Guidance and development control	Air Quality Planning & Policy Guidance	2024	2025	NELC	NELC	NO	Not Funded	< £10k	Planning	NELC Policy	Not quantifiable	Strategy to be completed once revocation of the AQMA has been finalised	
11	Work together with developers to improve sustainable transport links serving new developments	Transport Planning and Infrastructure	Other	2015	On-going	NELC & Developer	NELC & Developer	NO	Not Funded	< £10k	Implementation	Ensure developments don't have a negative impact on AQ	% modal shift to public transport	Continuing working on this issue with the requirements for Travel Plans in major planning apps which are assessed by Highways colleagues	Progressing as normal
1	Improve public transport services, bus stop/train infrastructure & information and interchange facilities	Transport Planning and Infrastructure	Public transport improvements- interchanges stations and services	2016	On-going	NELC & Service Provider	NELC & Service Provider	NO	Not Funded	£50k - £100k	Implementation	Reduced vehicle emissions	Increase in use of public transport based on average numbers of people using the services	The 24/25 Local Transport Plan Capital Programme & Bus Service Improvement Plan includes bus stop infrastructure and public transport information improvements. The programme will be delivered by 31 March 2025.	Currently being delivered
9	Report on air quality, including making details of the Action Plan measures and Annual Progress Reports available on the Website and inclusion of an Air Quality update in the Corporate Annual Report	Public Information	Via the Internet	2000	Updated annually after DEFRA approval of ASR.	NELC	NELC	NO	Not Funded	< £10k	Implementation	Public information	Availability of recently published reports online	2023 Annual Status Report/Action Plan 2020 is available on NELC website. www.nelincs.gov.uk/keeping-our-area-clean-and-safe/air-quality/	Progressing as normal
14	NELC Vehicle Procurement	Promoting Low Emission Transport	Company Vehicle Procurement - Prioritising uptake of low emission vehicles	2016	On-going	NELC	NELC	NO	Not Funded	£1 million - £10 million	Planning	Reduced vehicle emissions	Number of vehicles replaced (in addition to normal fleet turnover)	Currently replaced 36 diesel vehicles with 36 full electric vehicles, including the Mayor's car (20% of fleet). Currently trying to plan how to replace larger commercial vehicles, which are either limited on availability or are not an economically viable option. Lack of alternatives and price are limiting transition to EV. Budget has been approved for 2024/25 and 2025/26. This only includes the replacement of two vehicles to electric, all others will remain diesel replacements.	Measure progressing

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
15	Produce Air Quality Strategies setting out their plans to reduce emissions across the port estate including ship and shore activities.	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	2019	On-going	NELC & ABP	NELC & ABP	NO	Not Funded	< £10k	Planning	Reduce port emissions	Not quantifiable	Quarterly meetings held with ABP Environmental Team/Local authorities to ensure AQ matters are considered. ABP Port strategy progressing working on building the inventories.	Measure progressing
6	Encouraging residents and visitors to North East Lincolnshire to use car share and public transport	Alternatives to private vehicle use	Car & lift sharing schemes	2016	On-going	NELC & EQUAN	NELC & EQUAN	NO	Not Funded	< £10k	Implementation	Reduced vehicle emissions	% modal shift to car share/public transport	Support for post COVID public transport recovery.	Passenger numbers increasing, getting back to pre-pandemic levels.
16	Local air quality monitoring across the Borough to ensure a high standard of data is achieved	Public Information	Other	2000	On-going	NELC	NELC	NO	Not Funded	£10k - 50k	Implementation	LAQM	Number of monitoring locations	Continue to monitor NO_2 levels in the borough, currently have 2 real-time monitors and 37 diffusion tubes.	Progressing as normal
20	Indoor Air Quality	Public Information	Via the Internet	2023	n/a	NELC	NELC	NO	Not Funded	<10K	Planning	Public information	Public information	Added Indoor Air Pollution onto Departmental Service Plan. New area to research and inform public on. Included section to NELC AQ webpages	Will continue to obtain further knowledge on the subject.
21	Produce Developers Guidance	Policy Guidance and Development Control	Other policy	2023	2024	NELC	NELC	NO	Not Funded	< £10k	Planning	Ensure that AQ is a material consideration in the planning process	Number of requests from developers for AQ information	To be finalised once revocation of the AQMA complete	Measure progressing
24	Bus Priority Measures	Transport Planning and Infrastructure	Bus route improvements	2023	2025	NELC/ Stagecoach East Midlands	DfT BSIP funding	No		£909,662	Mobilisation	Reduction in congestion. Reduction in bus idle time/ journey time improvements	Increase in public transport use and reduction is bus punctuality/ journey time	NELC are reviewing a bus priority study to decide what schemes will be implemented. Possible delivery during September 2024.	Level of improvements delivered is subject to Council decision.
7	Encourage the uptake of Employer and School Travel Plans within the Borough	Promoting Travel Alternatives	School Travel Plans	2018	On-going	NELC & EQUAN	NELC & EQUAN	NO	Not Funded	< £10k	Implementation	Reduced vehicle emissions	No. of travel plans in place	Five school travel plans developed in 2021/22, two schools awarded Modeshift accreditation for their efforts to encourage and support sustainable and active travel.	Four new School Street zones to be implemented in 2022 to restrict vehicles near the school gate creating a safer and more pedestrian orientated environment.
25	Traffic Signal Priority Programme	Transport Planning and Infrastructure	Bus route improvements	2023	2025	NELC	DfT BSIP funding	No		£271,350	Mobilisation	Reduction in journey times, resulting in increased patronage. Less congestion/ emissions	Increase in public transport use and reduction is bus punctuality/ journey time	Funds available April 2023, scheme currently being delivered with scheme delivered by 31 March 2025.	
13	Consideration of measures to improve air quality in all new strategies when	Policy Guidance and development control	Other policy	2017	On-going	NELC & EQUAN	NELC & EQUAN	NO	Not Funded	< £10k	Implementation	LAQM	Air Quality a key topic in released strategy documents	Air Quality Steering Group continues to meet quarterly to discuss AQ issues council wide. Increasing our efforts to consider a range of environmental issues	Measure progressing

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
	a Strategy is reviewed or updated													when decisions are made and business cases developed.	
27	Bus Service Enhancements	Promoting Travel Alternatives	Intensive active travel campaign & infrastructure	2023	2026	NELC/ Stagecoach East Midlands	DfT BSIP funding	No		£864,000	Proposal	Improved connections resulting in increased patronage/ modal shift	Increase in patronage and potential encouragement of modal shift.	Service Enhancements currently being delivered with BSIP Phase 1 funding for this measure due to end 31 March 2026.	
28	High Quality Bus Interchange	Transport Planning and Infrastructure	Public transport improvements- interchanges stations and services	2024	2025	NELC/ Stagecoach East Midlands	DfT BSIP funding	No		£1,705,499	Concept	Improved infrastructure/ improved facilities for passengers, increased patronage/ modal shift	Increase in patronage and potential encouragement of modal shift.	Scheme due to commence during 2024/2025.	
30	BSIP Phase 3 funding - Funding to improve frequency of local bus services, pre 09:30am Concessionary Travel and Bradley Road bus service.	Transport Planning and Infrastructure	Public transport improvements- interchanges stations and services	2024	2025	NELC/ Stagecoach East Midlands	DfT BSIP funding	No		£893,000	Subject to DfT approval	Improved infrastructure/ improved facilities for passengers, increased patronage/ modal shift	Increase in patronage and potential encouragement of modal shift.	Schemes currently awaiting NELC and DfT approval. Once approval is given, delivery is likely to commence late May 2024 or early June 2024.	
3	Bus fleet upgrades	Promoting low emission transport	Public vehicle procurement – prioritising uptake of low emission vehicles	2017	On-going	NELC & Stagecoach	NELC & Stagecoach	NO	Not Funded	£1 million - £10 million	Implementation	Reduced vehicle emissions	Number of low/zero emission buses	NELC considered whether to submit an Expression of Interest to the Department for Transport Zero Emission Bus Regional Areas scheme – 2021/22	The Council could not provide any match funding towards it was decided we could not submit a bid.
12	Work together with developers to promote the inclusion of electric charging points for electric/hybrid vehicles at new development sites	Promoting Low Emission Transport	Producing alternative refuelling infrastructure to promote low emissions vehicles, EV recharging, gas fuel recharging	2016	On-going	NELC & EQUAN	NELC &EQUAN	NO	Not Funded	< £10k	Implementation	Ensure developments don't have a negative impact on AQ	Number of planning applications where charging points have been secured	Environmental Protection Team review of planning applications weekly for adverse effects of AQ	Building Control Document S has helped with this measure
33	To provide workshop container and supplies for cycle repair/recycle in conjunction with R-Evolution to provide facilitates to train bike mechanics, ultimately helping to supply recycled bikes in deprived areas.	Promoting Travel Alternatives	Promotion of cycling	2023	2024	NELC & EQUAN	NELC & EQUAN	No	Funding awarded	<£18k	Implementation	Reduced vehicle emissions	Uptake of cycles and number of trained bike mechanics to facilitate the project	The container and site were secured in late 2023, the project is hoping to be fully operational by summer of 2024	These projects need volunteers from the local community to work alongside R-Evolution in order to future proof the success.
2	Encourage Council Travel Plan opportunities and seek to facilitate	Promoting Travel Alternatives	Workplace Travel Planning	2016	On-going	NELC & EQUAN	NELC & EQUAN	NO	Not Funded	£10k - 50k	Implementation	Reduced vehicle emissions	% modal shift to car share/public transport/ walking/ cycling	No progress to date	Travel Plan to be progressed as part of

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
	uptake of sustainable modes of transport														Doughty Road renewal

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[7], 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.

There are a number of measures outlined in Table 2.2 that have been implemented to reduce NO_2 emissions that will subsequently reduce $PM_{2.5}$ concentrations. Some major sources of $PM_{2.5}$ are road traffic from exhaust emissions, brake and tyre wear, and the resuspension of particles on the road. Thus, by reducing private vehicle use and introducing more efficient, less polluting vehicles, the concentration on $PM_{2.5}$ should begin to reduce.

North East Lincolnshire Council has included a specific new measure in the Air Quality Action Plan for 2023 to address $PM_{2.5}$ through a social media Burn Better campaign which was undertaken between February and October. Communications were sent out every two weeks during this period and the NELC website updated with the Defra Burn Better campaign resources. The requirement for $PM_{2.5}$ monitoring has been highlighted in the North East Lincolnshire Council Natural Assets Plan. The Immingham AURN station began monitoring $PM_{2.5}$ in 2022.

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

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

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

3.1 Summary of Monitoring Undertaken

3.1.1 Automatic Monitoring Sites

North East Lincolnshire Council undertook automatic (continuous) monitoring at two sites during 2023, in addition there is an Automatic Urban and Rual Network (AURN) monitoring site located within the authority boundary at Immingham. Table A.1 in Appendix A shows the details of the automatic monitoring sites. The automatic monitoring results for North East Lincolnshire automatic monitoring results are available through the UK-Air website.

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

3.1.2 Non-Automatic Monitoring Sites

North East Lincolnshire Council undertook non-automatic (i.e. passive) monitoring of NO_2 at 29 diffusion tubes sites during 2023 including three triplicate sites. This included 12 new monitoring locations and the closure of 11 sites following a review of the monitoring results within the local authority area. The new monitoring locations include one site in Immingham and 11 in Grimsby outside the now revoked AQMA. Table A.2 in Appendix A presents the details of the non-automatic sites.

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

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 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).

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

All monitoring locations were below the annual mean NO_2 air quality objective in 2023. The continued trend in decreasing concentration continues in North East Lincolnshire with lower concentrations at all monitoring locations, passive and continuous in 2023 continuing the trend from 2022. The trends can be seen in the Figures A1 – Figure A4 in Appendix A which include the new monitoring locations for 2023.

The highest concentration was recorded at the co-located triplicate diffusion tubes at the Grimsby Automatic monitoring station within the now revoked AQMA. The annual concentration was 33.0µg/m^3 in 2023 which demonstrates the continued evidenced for the revocation of the AQMA.

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 200µg/m^3, not to be exceeded more than 18 times per year.

During 2023 there were no exceedances of the NO_2 hourly objective of 200 µg/m^3, with the maximum hourly concentration recorded at the three automatic monitoring stations being 93.6 µg/m^3 (AURN Immingham Woodlands Avenue), 122.0 µg/m^3 (Cleethorpes Road) and 93.1.0 µg/m^3 (Peaks Parkway). In addition, no single diffusion tube recorded an annual

mean concentration greater than 60 µg/m^3, indicating that it is unlikely that the 1-hour objective was exceeded at any diffusion tube monitoring site in 2023.

3.2.2 Particulate Matter (PM_{10})

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

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 50µg/m^3, not to be exceeded more than 35 times per year. There were no exceedances in 2023.

3.2.3 Particulate Matter ($PM_{2.5}$)

Table A.8 in Appendix A presents the ratified and adjusted monitored $PM_{2.5}$ annual mean concentrations for the past five years.

Appendix A: Monitoring Results

Table A.1 – Details of Automatic Monitoring Sites

Site ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Monitoring Technique	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Inlet Height (m)
AURN	Immingham Woodlands Avenue	Urban Background	518277	415116	NO_2, PM_{10} $PM_{2.5}$	NO	Chemiluminescent FIDAS	10.0	4.0	3.0
Cleethorpe Road	Cleethorpe Road	Roadside	527767	410414	NO_2	YES (Grimsby AQMA)	Serinus 40 Oxides	0.0	2.0	2.0
Peaks Parkway	Peaks Parkway	Roadside	527540	408080	NO_2	NO	Serinus 40 Oxides	20.0	1.5	2.0

Notes:

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

(2) N/A if not applicable

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

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube Co located with a Continuous Analyser?	Tube Height (m)
NEL S1	8 Town Hall Street, Grimsby	Roadside	527095	409367	NO_2	No	5.0	2.0	No	2.0
NEL S2	Littlefield Lane, Grimsby	Kerbside	526185	409136	NO_2	No	3.0	1.5	No	2.0
NEL S3	123 Chelmsford Avenue, Grimsby	Kerbside	525461	408347	NO_2	No	15.0	2.0	No	2.0
NEL S4	15 Scartho Road, Grimsby	Kerbside	526482	407708	NO_2	No	15.0	2.0	No	2.0
NEL S5	213 Scartho Road, Grimsby	Kerbside	526504	406678	NO_2	No	15.0	2.0	No	2.0
NEL S6	127 High Street, Waltham	Kerbside	526427	404055	NO_2	No	15.0	1.0	No	2.0
NEL S7	Toll Bar Roundabout, New Waltham	Roadside	527716	404516	NO_2	No	13.0	2.0	No	2.0
NEL S8	Toll Bar A16 side, New Waltham	Roadside	527748	404396	NO_2	No	31.0	2.0	No	2.0
NEL S9	28 St Peters Avenue, Cleethorpes	Kerbside	530760	408378	NO_2	No	0.0	1.5	No	2.0
NEL S10	Isscas Hill (Bursar St corner), Cleethorpes	Kerbside	530288	408898	NO_2	No	10.0	0.5	No	2.0
NEL S11	Hewitts Circus, Cleethopres	Roadside	529532	406835	NO_2	No	6.0	2.0	No	2.0
NEL S12	Love Lane Corner, Grimsby	Roadside	528891	408078	NO_2	No	14.0	2.0	No	2.0
NEL S13, NEL S14, NEL S15	Peaks Parkway Grimsby Air Quality Station C	Roadside	527540	408080	NO_2	No	20.0	2.0	Yes	2.0

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)
NEL S16	Aylesby Road, Grimsby	Roadside	523284	409883	NO_2	No	3.0	2.0	Yes	2.0
NEL S17	Pelham Road/Margaret Street , Immingham	Kerbside	518108	414533	NO_2	No	29.0	0.5	Yes	2.0
NEL S18, NEL S19, NEL S20	Woodlands, Immingham Air Quality Station C	Urban Background	518277	415116	NO_2	No	10.0	5.0	No	2.0
NEL S21	Kings Road/Pelham Road roundabout, Immingham	Roadside	519193	415279	NO_2	No	20.0	1.0	No	2.0
NEL S22	9 Pyewipe Road, Grimsby	Roadside	526077	410124	NO_2	No	2.0	2.0	Yes	1.5
NEL S23	Victoria Mills, Victoria Street North, Grimsby	Kerbside	527182	410092	NO_2	No	5.0	2.0	Yes	2.0
NEL S24, NEL S25, NEL S26	Cleethorpe Road, Grimsby Air Quality Station C	Roadside	527761	410425	NO_2	Yes - Grimsby AQMA	0.0	2.0	Yes	2.0
NEL S27	113 Cleethorpe Road, Grimsby	Kerbside	527754	410445	NO_2	Yes - Grimsby AQMA	5.0	0.5	No	2.0
NEL S28	123 Cleethorpe Road, Grimsby	Kerbside	527789	410438	NO_2	Yes - Grimsby AQMA	5.0	0.5	No	2.0
NEL S29	6 Freeman St, Riby Square, Grimsby	Kerbside	527693	410413	NO_2	No	0.0	1.5	No	2.0
NEL S30	458 Cleethorpe Road, Grimsby	Roadside	528725	410102	NO_2	No	7.0	3.0	Yes	2.0
NEL S31	3 Eleanor Street, Grimsby	Roadside	527627	409563	NO_2	No		2.0	Yes	2.0
NEL S32	Peaks Parkway & Welholme Road, Grimsby	Kerbside	527403	408666	NO_2	No	8.0	1.0	Yes	2.0
NEL S33	Lamppost Magistrates Court, Grimsby	Kerbside	527183	409647	NO_2	No	3.0	2.0	No	2.0

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)
NEL S34	Victoria Street South, Grimsby	Roadside	527181	409513	NO_2	No	0.0	2.0	No	2.0
NEL S35	Doughty Dept, Grimsby	Other	527288	409223	NO_2	No	n/a	0.5	No	2.0

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 2023 (%) (2)	2019	2020	2021	2022	2023
AURN	518277	415116	Urban Background	93.6	93.6	13.5	11.0	12.1	11.7	10.4
Cleethorpe Road	527767	410414	Roadside	99.4	99.4	32.0	26.0	33.4	29.6	26.4
Peaks Parkway	527540	408080	Roadside	97.4	97.4	-	20.0	29.2	26.3	20.6

☒ **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 2023.**

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%).

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 2023 (%) [2]	2019	2020	2021	2022	2023
NEL S1	527095	409367	Roadside	100.0	100.0	28.9	26.3	32.2	28.1	29.0
NEL S2	526185	409136	Kerbside	100.0	100.0	-	-	-	-	17.3
NEL S3	525461	408347	Kerbside	100.0	100.0	-	-	-	-	14.1
NEL S4	526482	407708	Kerbside	100.0	100.0	-	-	-	-	23.8
NEL S5	526504	406678	Kerbside	100.0	100.0	-	-	-	-	21.0
NEL S6	526427	404055	Kerbside	100.0	100.0	-	-	-	-	14.7
NEL S7	527716	404516	Roadside	100.0	100.0	23.9	20.6	21.6	19.8	16.8
NEL S8	527748	404396	Roadside	100.0	100.0	17.4	12.0	17.5	15.1	12.3
NEL S9	530760	408378	Kerbside	100.0	100.0	-	-	-	-	17.3
NEL S10	530288	408898	Kerbside	90.4	90.4	-	-	-	-	19.6
NEL S11	529532	406835	Roadside	77.2	77.2	22.5	19.1	23.2	21.0	16.8
NEL S12	528891	408078	Roadside	92.9	92.9	20.7	15.1	21.9	19.8	16.6
NEL S13, NEL S14, NEL S15	527540	408080	Roadside	100.0	100.0		20.0	23.6	21.9	18.6
NEL S16	523284	409883	Roadside	84.1	84.1	19.9	16.4	18.9	16.6	12.2
NEL S17	518108	414533	Kerbside	100.0	100.0	29.6	26.4	31.8	28.1	14.6
NEL S18, NEL S19, NEL S20	518277	415116	Urban Background	92.0	92.0	-	-	-	-	9.6
NEL S21	519193	415279	Roadside	100.0	100.0	24.5	21.1	25.3	21.7	19.4
NEL S22	526077	410124	Roadside	92.3	92.3	25.2	22.5	27.2	23.8	23.9
NEL S23	527182	410092	Kerbside	90.4	90.4	32.9	29.7	34.8	28.0	23.0
NEL S24, NEL S25, NEL S26	527761	410425	Roadside	100.0	100.0	37.8	32.7	39.1	36.7	33.0
NEL S27	527754	410445	Kerbside	100.0	100.0	31.6	28.2	34.2	31.5	25.4
NEL S28	527789	410438	Kerbside	100.0	100.0	31.0	28.0	35.8	31.3	23.9
NEL S29	527693	410413	Kerbside	100.0	100.0	28.9	28.4	31.8	27.2	24.3
NEL S30	528725	410102	Roadside	100.0	100.0	29.6	26.4	31.8	28.1	24.2
NEL S31	527627	409563	Roadside	90.4	90.4	-	-	-	-	18.6
NEL S32	527403	408666	Kerbside	100.0	100.0	28.5	23.6	28.2	25.9	20.9
NEL S33	527183	409647	Kerbside	100.0	100.0	27.2	20.6	25.6	23.9	20.3
NEL S34	527181	409513	Roadside	100.0	100.0	27.0	22.6	29.6	26.7	24.4

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2023 (%) (2)	2019	2020	2021	2022	2023
NEL S35	527288	409223	Other	100.0	100.0	-	-	-	-	11.6

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

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

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

Notes:

The annual mean concentrations are presented as 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 within Grimsby AQMA (revoked 2024)

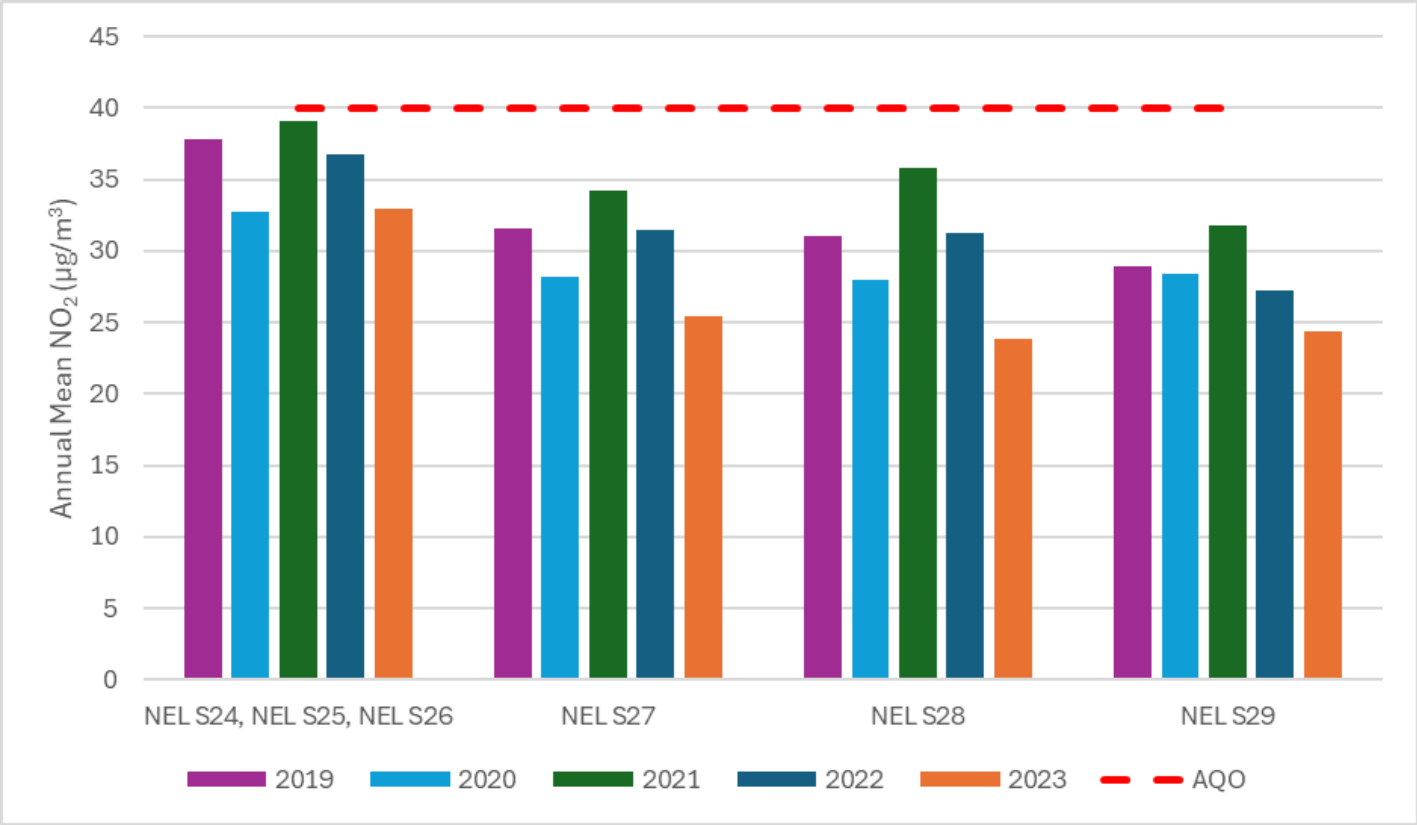


Figure A.2 – Trends in Annual Mean NO_2 Concentrations within Grimsby (not within AQMA part 1)

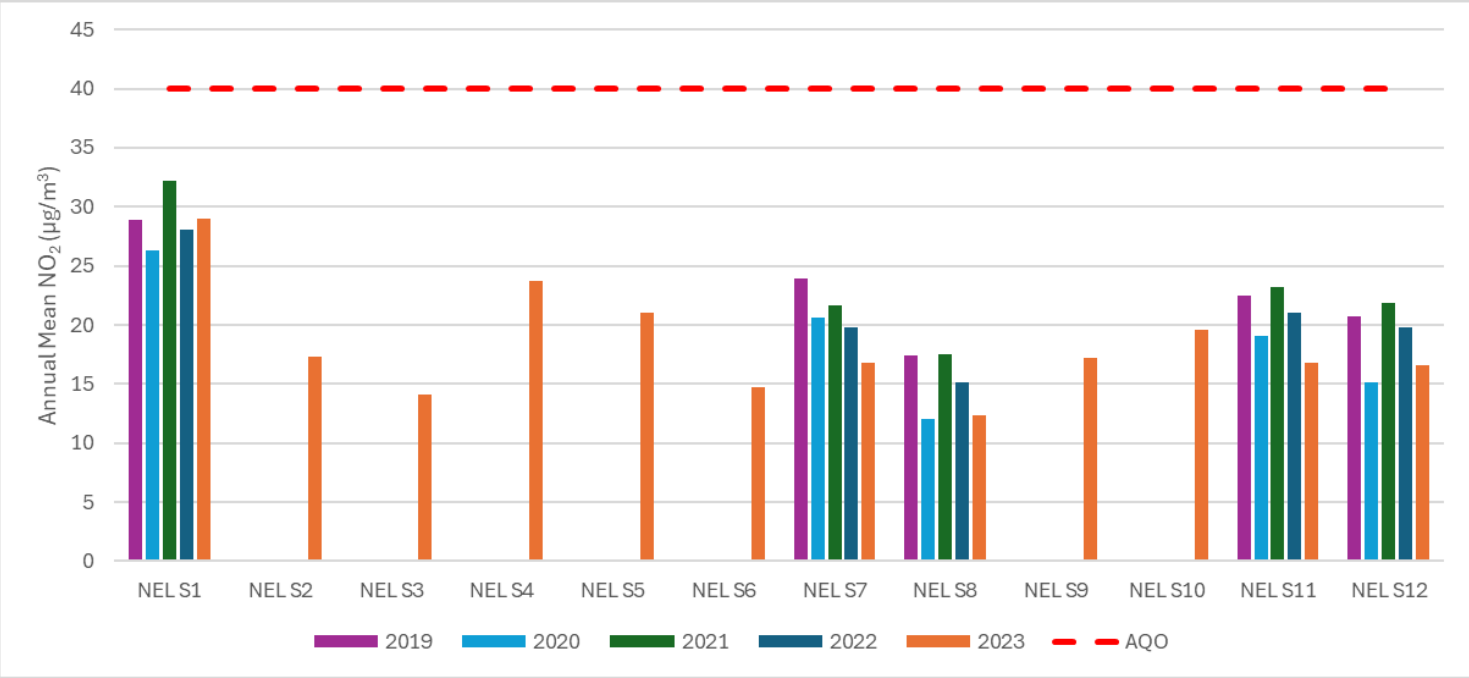


Figure A.3 – Trends in Annual Mean NO_2 Concentrations within Grimsby (not within AQMA part 2)

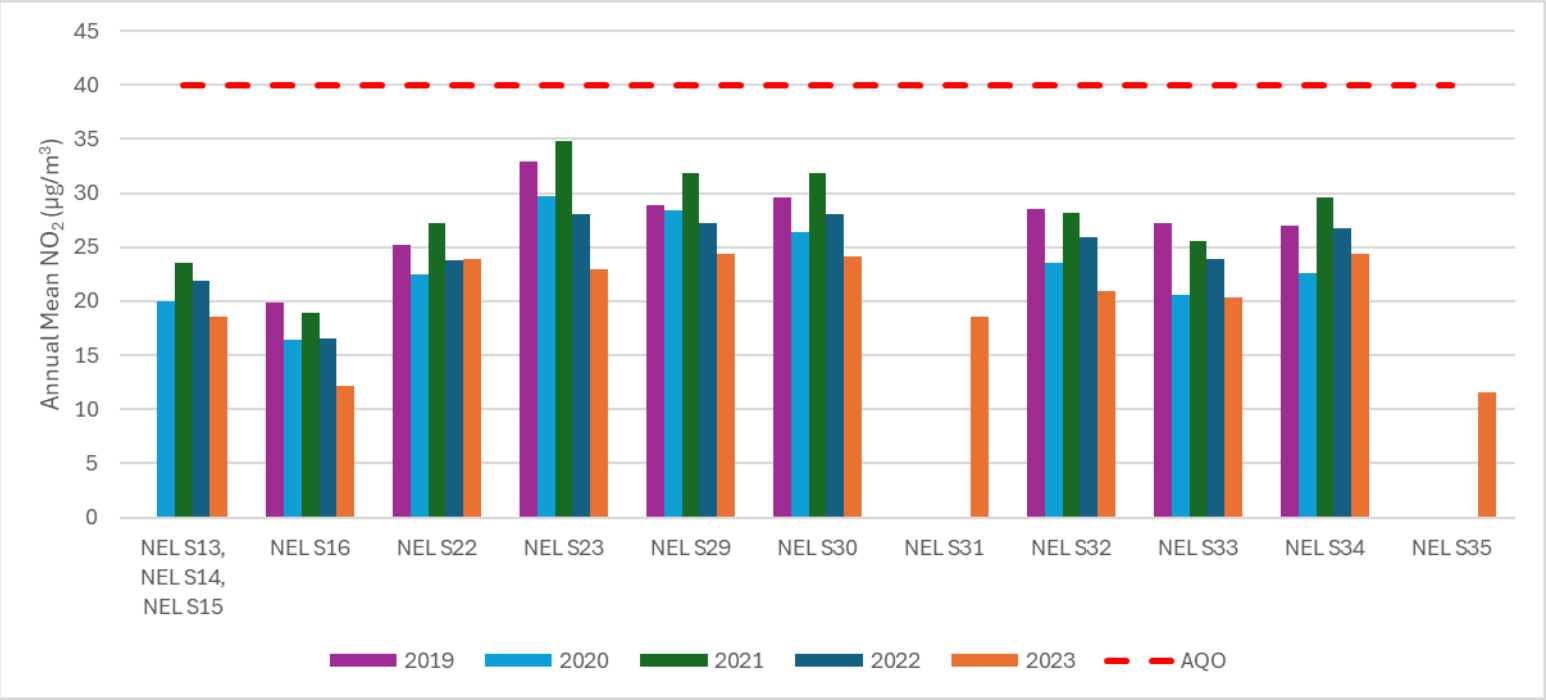


Figure A.4 – Trends in Annual Mean NO_2 Concentrations within Immingham

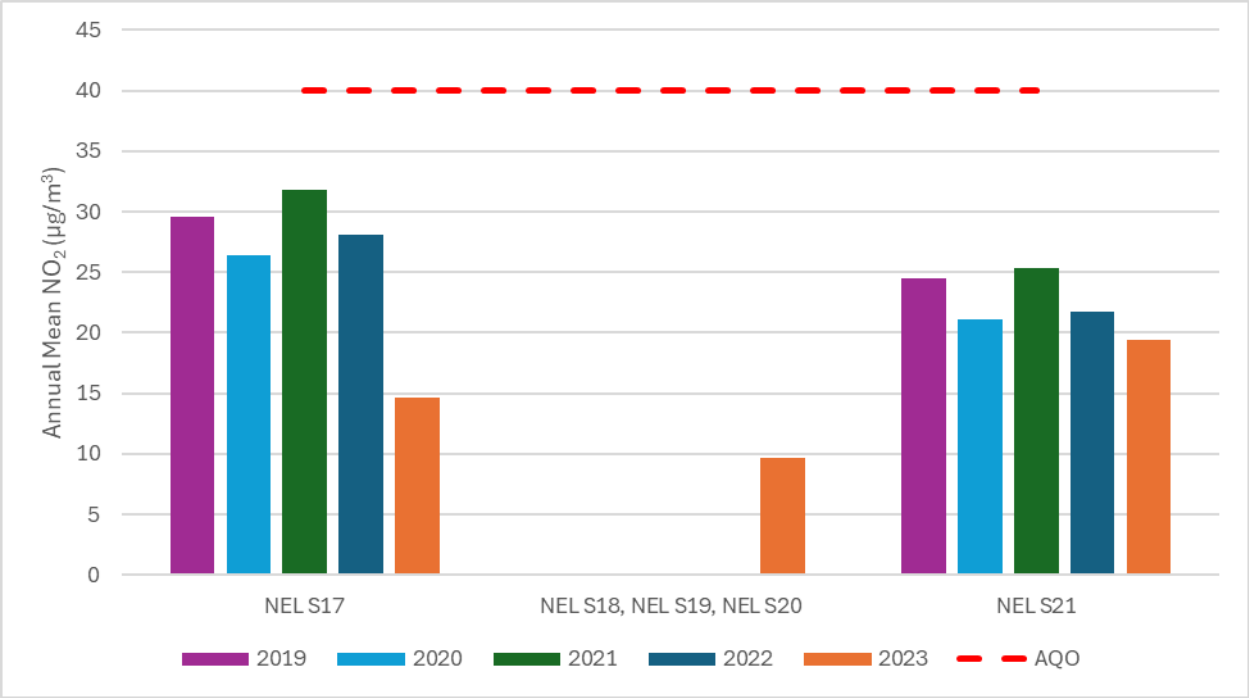


Table A.5 – 1-Hour Mean NO_2 Monitoring Results, Number of 1-Hour Means > 200µg/m^3

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2023 (%) (2)	2019	2020	2021	2022	2023
AURN	518277	415116	Urban Background	93.6	93.6	0	0	0	0	0
Cleethorpe Road	527767	410414	Roadside	99.4	99.4	0	0	0	0	0
Peaks Parkway	527540	408080	Roadside	97.4	97.4	0	0	0	0	0

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 2023 (%) (2)	2019	2020	2021	2022	2023
AURN	518277	415116	Urban Background	99.6	99.6	-	-	-	12.7	11.9

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

Notes:

The annual mean concentrations are presented as µg/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%).

Table A.7 – 24-Hour Mean PM_{10} Monitoring Results, Number of PM_{10} 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 2023 (%) (2)	2019	2020	2021	2022	2023
AURN	518277	415116	Urban Background	99.6	99.6	-	-	-	0	0

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%).

Table A.8 – Annual Mean $PM_{2.5}$ Monitoring Results ($\mu g/m^3$)

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2023 (%) (2)	2019	2020	2021	2022	2023
AURN	518277	415116	Urban Background	99.6	99.6	-	-	-	7.6	7.0

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

Notes:

The annual mean concentrations are presented as $\mu g/m^3$.

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

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

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

Appendix B: Full Monthly Diffusion Tube Results for 2023

Table B.1 – NO_2 2023 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 (0.77)	Annual Mean: Distance Corrected to Nearest Exposure	Comment
NEL S1	527095	409367	46.7	48.6	39.3	34.6	34.0	32.7	33.8	36.0	38.0	35.7	35.9	36.6	37.7	29.0		
NEL S2	526185	409136	30.1	26.5	21.0	18.9	20.7	21.7	16.9	18.9	21.5	24.8	27.7	20.7	22.5	17.3		
NEL S3	525461	408347	27.6	15.9	17.5	15.9	15.8	14.6	15.0	16.2	19.7	21.2	20.9	19.8	18.3	14.1		
NEL S4	526482	407708	43.0	28.0	32.9	25.7	27.6	27.8	25.2	28.5	32.1	36.7	39.1	23.8	30.9	23.8		
NEL S5	526504	406678	38.6	34.1	28.9	23.2	23.4	21.2	23.6	23.6	25.1	24.3	32.3	29.1	27.3	21.0		
NEL S6	526427	404055	23.6	20.4	17.3	20.1	19.1	19.1	17.4	18.4	21.0	16.5	18.8	17.7	19.1	14.7		
NEL S7	527716	404516	31.2	28.8	20.1	21.0	16.6	16.1	21.2	20.0	22.4	25.8	21.6	16.3	21.8	16.8		
NEL S8	527748	404396	19.8	14.8	16.3	13.9	19.1	16.7	11.1	15.3	15.3	19.6	16.7	13.0	16.0	12.3		
NEL S9	530760	408378	35.9	29.8	19.7	18.1	16.1	18.3	19.7	21.6	20.6	19.8	29.4	19.9	22.4	17.3		
NEL S10	530288	408898	30.6	28.8	24.0	26.5	23.9		21.0	25.1	25.1	28.5	30.1	16.8	25.5	19.6		
NEL S11	529532	406835			19.4	19.6		21.4	16.6	18.9	25.5	23.8	26.5	24.1	21.8	16.8		
NEL S12	528891	408078	27.8		19.9	24.1	21.7	21.4	16.8	19.2	20.9	24.4	24.3	16.3	21.5	16.6		
NEL S13	527540	408080	29.9	26.5	25.4	27.5	23.3	21.6		20.2	21.9		29.0	22.0	-	-		Triplicate Site with NEL S13, NEL S14 and NEL S15 - Annual data provided for NEL S15 only
NEL S14	527540	408080	31.2	30.2	28.6	29.1	25.4	20.7		18.8	22.7	25.7	25.5	24.0	-	-		Triplicate Site with NEL S13, NEL S14 and NEL S15 - Annual data provided for NEL S15 only
NEL S15	527540	408080	32.9	24.9	20.5	30.2	26.0	18.4	15.4	20.0	23.5	25.4	26.2	21.0	24.2	18.6		Triplicate Site with NEL S13, NEL S14 and NEL S15 - Annual data provided for NEL S15 only
NEL S16	523284	409883		14.6	16.8	14.6	15.6	16.4	14.6	17.3	17.0		19.8	11.5	15.8	12.2		
NEL S17	518108	414533	25.9	27.1	17.7	17.3	17.8	20.4	14.9	16.2	19.9	8.9	20.2	21.5	19.0	14.6		
NEL S18	518277	415116		16.9	12.5	11.9	12.9	13.7	9.7	9.4	13.6	14.3	12.2	11.4	-	-		Triplicate Site with NEL S18, NEL S19 and NEL S20 - Annual data provided for NEL S20 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 (0.77)	Annual Mean: Distance Corrected to Nearest Exposure	Comment
NEL S19	518277	415116		14.3	11.7	11.4	11.9	13.5	8.5	11.1	14.6	15.3	15.6	10.4	-	-		Triplicate Site with NEL S18, NEL S19 and NEL S20 - Annual data provided for NEL S20 only
NEL S20	518277	415116		17.4			11.7	15.2	8.5	10.5	13.0	7.7	16.0	11.8	12.5	9.6		Triplicate Site with NEL S18, NEL S19 and NEL S20 - Annual data provided for NEL S20 only
NEL S21	519193	415279	31.6	36.2	20.3	25.4	25.4	23.0	17.2	19.0	23.5	23.6	33.1	24.5	25.2	19.4		
NEL S22	526077	410124	35.3	39.7	31.7	26.4		28.6	23.9	20.9	34.4	32.0	39.3	29.2	31.0	23.9		
NEL S23	527182	410092	43.0	38.9	28.7	23.5	24.9		21.9	20.0	32.3	34.6	31.7	28.8	29.8	23.0		
NEL S24	527761	410425	51.9	48.1	40.4	41.2	36.5	37.6	41.5	41.4	43.0	50.3	49.5	42.1	-	-		Triplicate Site with NEL S24, NEL S25 and NEL S26 - Annual data provided for NEL S26 only
NEL S25	527761	410425	40.1	42.8	39.0	40.3	34.0	33.5	38.2	41.2	42.9	52.8	45.9	70.2	-	-		Triplicate Site with NEL S24, NEL S25 and NEL S26 - Annual data provided for NEL S26 only
NEL S26	527761	410425	46.1	42.9	37.4	39.7	34.7	31.5	37.3	39.4	38.7	62.5	45.5	42.3	42.8	33.0		Triplicate Site with NEL S24, NEL S25 and NEL S26 - Annual data provided for NEL S26 only
NEL S27	527754	410445	39.1	41.3	24.3	37.5	35.9	33.1	26.2	35.5	36.1	24.6	34.1	28.7	33.0	25.4		
NEL S28	527789	410438	40.0	38.3	31.6	32.1	33.2	29.6	23.0	31.7	30.2	31.3	31.1	20.2	31.0	23.9		
NEL S29	527693	410413	42.1	16.1	35.5	30.6	28.0	29.6	30.5	28.6	29.2	37.2	37.4	34.6	31.6	24.3		
NEL S30	528725	410102	39.6	35.7	35.6	27.8	32.6	26.3	30.5	26.2	35.4	33.1	28.9	24.7	31.4	24.2		
NEL S31	527627	409563	34.1	30.9	23.7	22.8	19.7	21.9	20.0		24.0	19.9	32.8	16.2	24.2	18.6		
NEL S32	527403	408666	36.8	24.4	29.4	17.9	25.5	27.1	22.6	27.3	29.0	29.5	32.0	24.9	27.2	20.9		
NEL S33	527183	409647	38.4	24.5	30.7	21.4	22.7	22.7	24.2	23.6	30.3	33.1	13.3	32.2	26.4	20.3		
NEL S34	527181	409513	32.6	34.0	32.2	34.6	33.1	33.8	23.3	29.4	31.9	40.6	30.6	23.6	31.6	24.4		
NEL S35	527288	409223	22.6	16.9	14.2	13.7	13.5	12.4	10.7	14.0	15.0	7.9	25.0	14.6	15.0	11.6		

☒ **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.**

☒ **North East Lincolnshire confirm that all 2023 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 North East Lincolnshire During 2023

NELC granted planning permission for the construction of a free-range egg (poultry) unit in 2023 (planning application number DM/0507/23/FUL). The applicant was advised by the Environment Agency that an environmental permit would be required due to the number of poultry proposed but no major concerns were raised regarding the permit application.

The North East Lincolnshire Council Environmental Protection department reviewed over 660 planning applications during 2023. Air quality assessments were requested from ten developments in 2023 including:

- DM/1098/22/OUT Land South of Millennium Park Humberston, Avenue Humberston
- DM/0053/23/PREAPP Louth Road & Grimsby Road, Scartho
- DM/0089/23/PREAPP Land at Energy Park Way Great Coates DN31 2TT
- DM/0465/23/FUL Land Adj to Aldi Matthew Telford Park Grimsby North East Lincs
- DM/0448/23/FUL Land Off Sunningdale Waltham North East Lincolnshire 30/05/2023
- DM/0378/23/FUL Land Off Ladysmith Road and Cleefield Drive Grimsby DN32 9PL
- DM/0769/23/FUL Land at Auckland Road Grimsby Docks Grimsby 18/08/2023
- DM/0761/23/FUL Land at Louth Road New Waltham North East Lincolnshire
- DM/0864/23/FUL Grimsby Ice Factory Fish Dock Road Grimsby Docks Grimsby
- DM/1019/23/REM Highfield House Stallingborough Road Immingham North East Lincs

In addition, air quality assessments were submitted for seven developments in 2023, including:

- DM/0445/23/FUL Knauf, Immingham
- DM/0927/22/OUT Land at The Former YMCA Peaks Lane Grimsby
- DM/1103/22/FUL Land Off Energy Park Way Grimsby
- DM/1109/22/FUL Former Pleasure Island Theme Park Kings Road Cleethorpes
- DM/0864/23/FUL Grimsby Ice Factory Fish Dock Road Grimsby Docks
- DM/0865/23/LBC Grimsby Ice Factory Fish Dock Road Grimsby Docks

- DM/0750/23/FUL Beacon Academy Chatsworth Place Cleethorpes
- DM/0912/23/FUL Land To The South West Of Cheapside Waltham

NELC reviewed two DCO application in 2023:

- Immingham Eastern Ro-Ro Terminal: Environmental Statement Appendix 13A: Air Quality
- Immingham Green Energy Terminal: DCO 2023: 6.2 Environmental Statement Chapter 6: Air Quality

Additional Air Quality Works Undertaken by North East Lincolnshire Council During 2023

North East Lincolnshire has not completed any additional works within the reporting year of 2023.

QA/QC of Diffusion Tube Monitoring

The diffusion tubes used during 2023 were supplied and analysed by SOCOTEC Didcot and were prepared using the 50% TEA in acetone preparation method. SOCOTEC Didcot, 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, thereby ensuring that the reported NO_2 concentrations are of a high calibre. In the first four rounds of results during 2023, running form January – October (AIR-PT AR055, AR056, AR058 and AR059), SOCOTEC Didcot were awarded a score of 100% – the percentage score is an indication of the results deemed satisfactory based upon the z-score of < ±2. At the time of writing this report, the AIR-PT results for October 2023 onwards were not available (full details of the precision results are available here).

For the months of 2023 in which data was obtained (January – December), all diffusion tubes were deployed in line with the national monitoring calendar (±2 days either side of the changeover date). Therefore, no single diffusion tube site was exposed beyond the 4-5 week recommendation of LAQM TG(22), providing an overall high level of data capture for 2023.

Diffusion Tube Annualisation

All diffusion tube monitoring locations within North East Lincolnshire recorded data capture of 75% therefore it was not required to annualise any monitoring data.

Diffusion Tube Bias Adjustment Factors

The diffusion tube data presented within the 2023 ASR have been corrected for bias using an adjustment factor. Bias represents the overall tendency of the diffusion tubes to under or over-read relative to the reference chemiluminescence analyser. LAQM.TG22 provides guidance with regard to the application of a bias adjustment factor to correct diffusion tube monitoring. Triplicate co-location studies can be used to determine a local bias factor based on the comparison of diffusion tube results with data taken from NO_X/NO_2 continuous analysers. Alternatively, the national database of diffusion tube co-location surveys provides bias factors for the relevant laboratory and preparation method.

North East Lincolnshire have applied a national bias adjustment factor of 0.77 to the 2023 monitoring data. A summary of bias adjustment factors used by North East Lincolnshire over the past five years is presented in Table C.1.

A local bias adjustment factor of 0.75 was also calculated, based on concentrations obtained at three collocated sites. The national bias adjustment factor was slightly more conservative than the local adjustment factor, and therefore was applied to this year's results.

Table C.1 – Bias Adjustment Factor

Monitoring Year	Local or National	If National, Version of National Spreadsheet	Adjustment Factor
2023	National	03/24	0.77
2022	Local	n/a	0.79
2021	Local	n/a	0.88
2020	National	03/21	0.77
2019	National	03/20	0.75

Figure C.1 Bias Adjustment Factor Database

National Diffusion Tube Bias Adjustment Factor Spreadsheet — Spreadsheet Version Number: 03/24

Follow the steps below in the correct order to show the results of relevant co-location studies
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 2024
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	Year[5]	Site Type	Local Authority	Length of Study (months)	Diffusion Tube Mean Conc. (Dm) ($\mu g/m^3$)	Automatic Monitor Mean Conc. (Cm) ($\mu g/m^3$)	Bias (B)	Tube Precision[6]	Bias Adjustment Factor (A) (Cm/Dm)
SOCOTEC Didcot	50% TEA in acetone	2023	UB	City Of York Council	11	15	12	27.9%	G	0.78
SOCOTEC Didcot	50% TEA in acetone	2023	R	City Of York Council	11	22	17	26.8%	G	0.79
SOCOTEC Didcot	50% TEA in acetone	2023	R	City Of York Council	9	22	17	33.7%	G	0.75
SOCOTEC Didcot	50% TEA in acetone	2023	R	City Of York Council	10	31	25	26.1%	G	0.79
SOCOTEC Didcot	50% TEA in acetone	2023	UB	Gravesham Borough Council	12	19	15	25.6%	G	0.80
SOCOTEC Didcot	50% TEA in acetone	2023	UB	Gravesham Borough Council	12	23	19	18.4%	G	0.84
SOCOTEC Didcot	50% TEA in acetone	2023	R	Ipswich Borough Council	9	26	20	33.0%	G	0.75
SOCOTEC Didcot	50% TEA in acetone	2023	R	Ipswich Borough Council	12	36	27	34.3%	G	0.74
SOCOTEC Didcot	50% TEA in acetone	2023	R	North East Lincolnshire Council	12	43	26	61.9%	G	0.62
SOCOTEC Didcot	50% TEA in acetone	2023	UB	North East Lincolnshire Council	10	13	10	29.1%	G	0.77
SOCOTEC Didcot	50% TEA in acetone	2023	R	North East Lincolnshire Council	11	24	21	18.0%	G	0.85
SOCOTEC Didcot	50% TEA in acetone	2023	R	Cardiff Council / Shared Regulatory Services	11	41	34	22.2%	G	0.82
SOCOTEC Didcot	50% TEA in acetone	2023	UB	Torfaen County Borough Council	11	12	9	43.9%	G	0.70
SOCOTEC Didcot	50% TEA in Acetone	2023	R	East Suffolk Council	12	29	21	38.9%	G	0.72
SOCOTEC Didcot	50% TEA in Acetone	2023	R	Wrexham County Borough Council	11	17	14	25.2%	G	0.80
SOCOTEC Didcot	50% TEA in Acetone	2023	R	Horsham District Council	12	21	17	23.5%	G	0.81
SOCOTEC Didcot	50% TEA in Acetone	2023	R	Horsham District Council	10	25	17	43.5%	G	0.70
SOCOTEC Didcot	50% TEA in Acetone	2023	R	Horsham District Council	10	23	24	-5.4%	G	1.06
SOCOTEC Didcot	50% TEA in Acetone	2023	UI	North Lincolnshire Council	10	14	11	26.2%	G	0.79
SOCOTEC Didcot	50% TEA in acetone	2023	R	Bridgend Council	11	32	27	20.8%	G	0.83
SOCOTEC Didcot	50% TEA in acetone	2023	R	Cambridge City Council	12	22	18	24.8%	G	0.80
SOCOTEC Didcot	50% TEA in acetone	2023	R	Leeds City Council	10	39	29	32.3%	G	0.76
SOCOTEC Didcot	50% TEA in acetone	2023	KS	Leeds City Council	10	30	20	48.9%	G	0.67
SOCOTEC Didcot	50% TEA in acetone	2023	R	Leeds City Council	12	25	19	30.0%	G	0.77
SOCOTEC Didcot	50% TEA in acetone	2023	UC	Leeds City Council	11	26	19	40.0%	G	0.71
SOCOTEC Didcot	50% TEA in acetone	2023	KS	Marylebone Road intercomparison	11	53	38	41.4%	G	0.71
SOCOTEC Didcot	50% TEA in acetone	2023	R	Vale Of White Horse District Council	10	22	18	21.2%	G	0.83
SOCOTEC Didcot	50% TEA in acetone	2023	UB	Wirral Council	11	15	13	16.7%	G	0.86
SOCOTEC Didcot	50% TEA in acetone	2023		Overall Factor[3] (28 studies)				Use		0.77

Table C.2 – Local Bias Adjustment Calculation

	Local Bias Adjustment Input 1	Local Bias Adjustment Input 2	Local Bias Adjustment Input 3
Periods used to calculate bias	10	10	11
Bias Factor A	0.84 (0.77 - 0.94)	0.82 (0.75 - 0.9)	0.63 (0.57 - 0.7)
Bias Factor B	18% (7% - 30%)	22% (11% - 34%)	59% (42% - 75%)
Diffusion Tube Mean ($\mu g/m^3$)	25.2	12.5	42.1
Mean CV (Precision)	6.5%	7.3%	6.3%
Automatic Mean ($\mu g/m^3$)	21.3	10.2	26.5
Data Capture	99%	99%	99%
Adjusted Tube Mean ($\mu g/m^3$)	21 (19 - 24)	10 (9 - 11)	26 (24 - 29)

Notes:

A single national bias adjustment factor has been used to bias adjust the 2023 diffusion tube results.

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 NO_2 monitoring locations within North East Lincolnshire required distance correction during 2023.

QA/QC of Automatic Monitoring

Air quality measurements from the Cleethorpes Road and Peaks Parkway automatic monitoring stations are validated and ratified by Air Quality Data Management (AQDM) to the standards described in LAQM TG.22. Regular calibrations with certified gas standards are used to measure the zero and sensitivity. Ratification of the data generally occurs at three, six or twelve moth intervals; however, unexpected faults can be identified during any routine servicing or independent audits which are often carried out at six month intervals.

The Immingham Woodlands Avenue automatic monitoring station is part of the AURN operated by Bureau Veritas. The AURN have appointed LSO's and servicing is conducted by Acoem UK on a six monthly basis. Audits are conducted by Ricardo-AEA Ltd annually. Live and historic data is available through the Defra website.

PM_{10} and $PM_{2.5}$ Monitoring Adjustment

The Palas Fidas 200 monitors utilised at the AURN Immingham site do not require the application of a correction factor for PM_{10} and in accordance with Method 11, $PM_{2.5}$ data requires correction by a factor of 1.06. The ratified data published on UK-AIR has already had the correction factor is applied and therefore no further correction is required.

Automatic Monitoring Annualisation

All automatic monitoring locations within North East Lincolnshire recorded data capture above 75%, therefore annualisation was not required. In addition, any sites with a data capture below 25% do not require annualisation of which there were no sites in 2023 in North East Lincolnshire.

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

Figure D.1 – Map of Monitoring Sites within Grimsby AQMA (AQMA revoked May 2024)

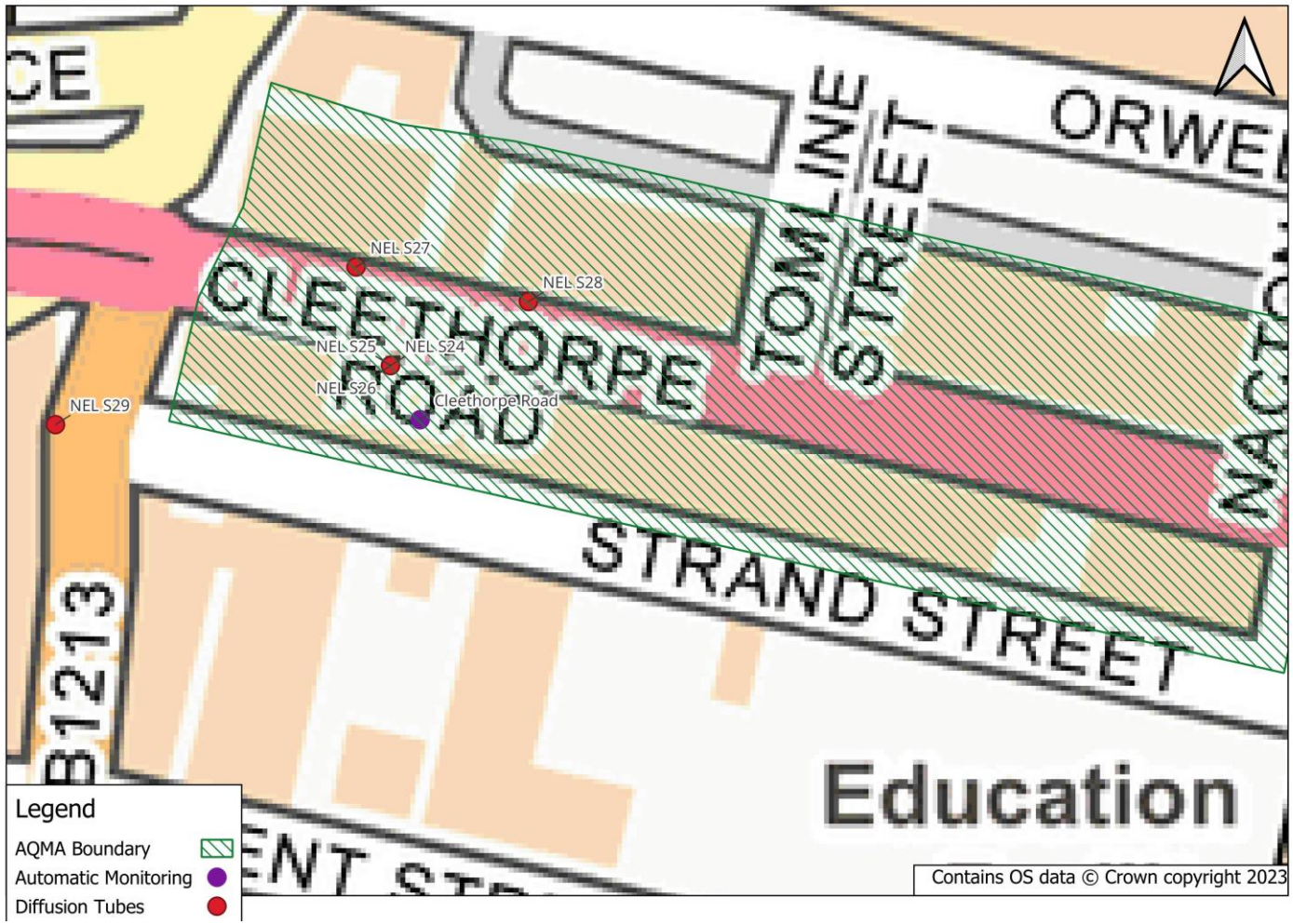


Figure D.2 – Map of Monitoring Sites in Grimsby

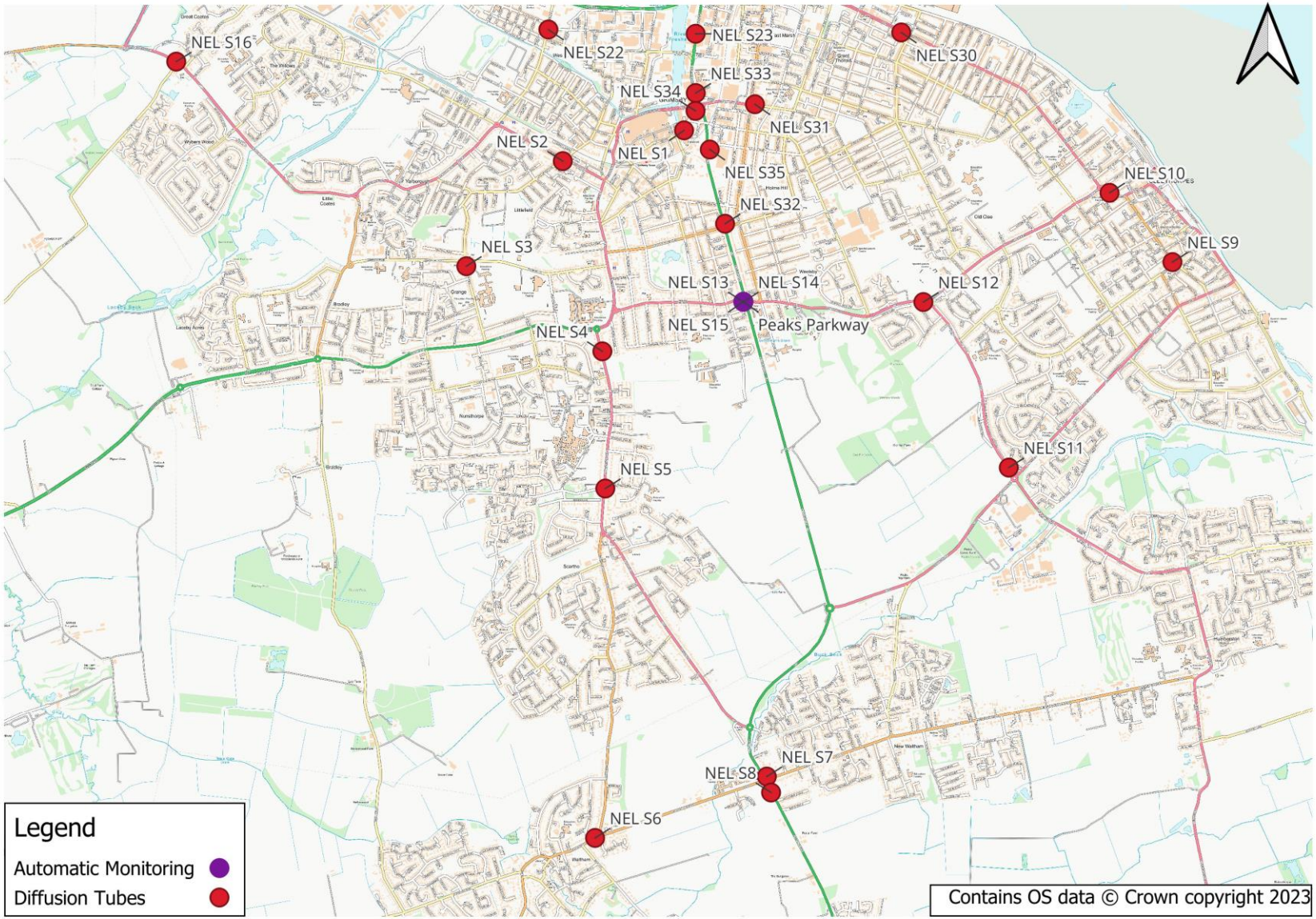
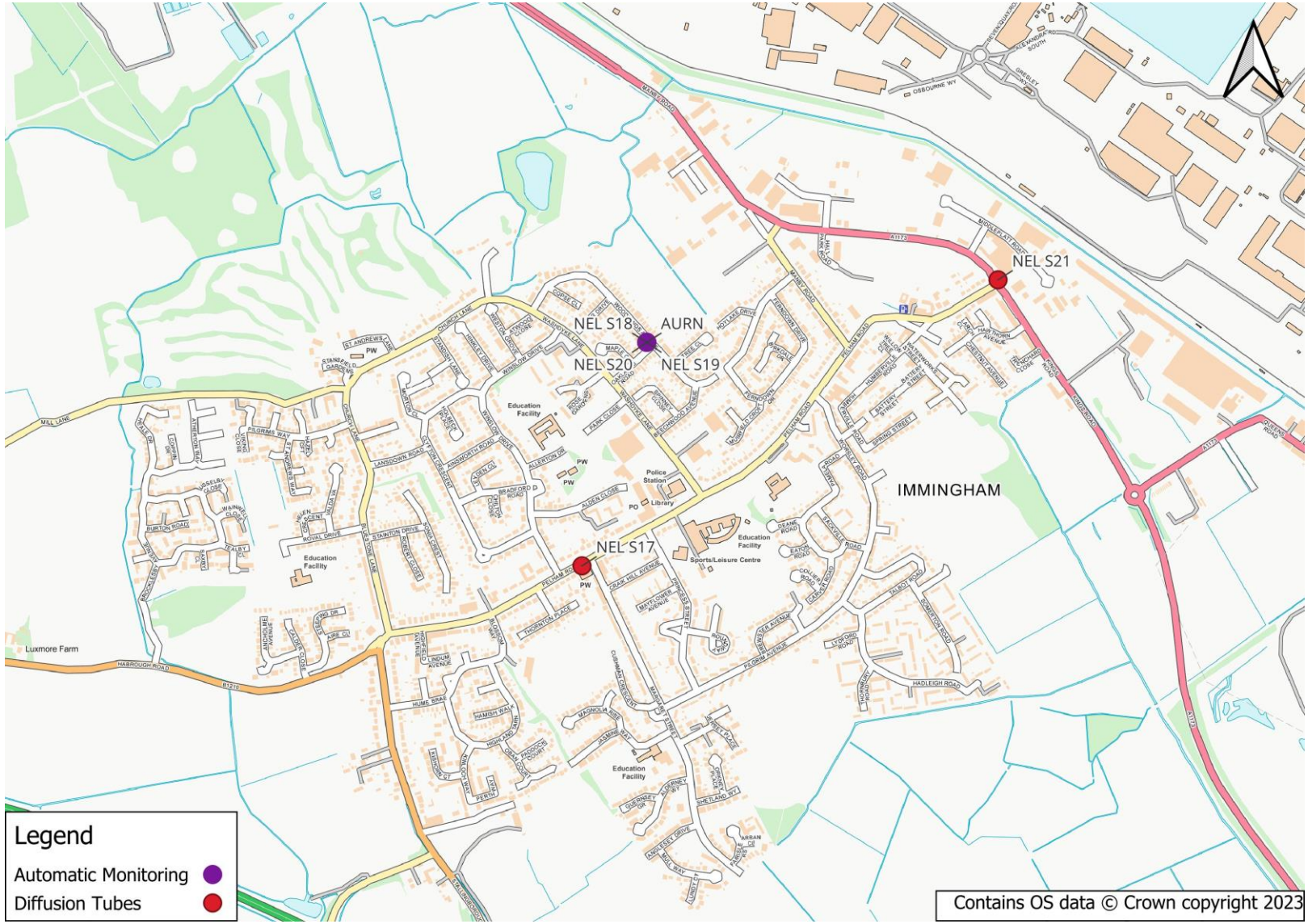


Figure D.3 – Map of Monitoring Sites in Immingham



Appendix E: Summary of Air Quality Objectives in England

Table E.1 – Air Quality Objectives in England[8]

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

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

Glossary of Terms

Abbreviation	Description
ABP	Associated British Ports
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
AQS	Air Quality Strategy
AQSC	Air Quality Steering Committee
ASR	Annual Status Report
BSIP	Bus Service Improvement Plan
Defra	Department for Environment, Food and Rural Affairs
DMRB	Design Manual for Roads and Bridges – Air quality screening tool produced by National Highways
EU	European Union
FDMS	Filter Dynamics Measurement System
HGV	Heavy Goods Vehicle
LAQM	Local Air Quality Management
LATF	Local Authority Treescapes Fund
LTP	Local Transport Plan
NELC	North East Lincolnshire Council
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
UTCF	Urban Tree Challenge Fund
YALPAG	Yorkshire and Lincolnshire Pollution Advisory Group

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