2024 Air Quality Annual Status Report (ASR) for Broxtowe Borough Council

In fulfilment of Part IV of the Environment Act 1995 Local Air Quality Management

June, 2024

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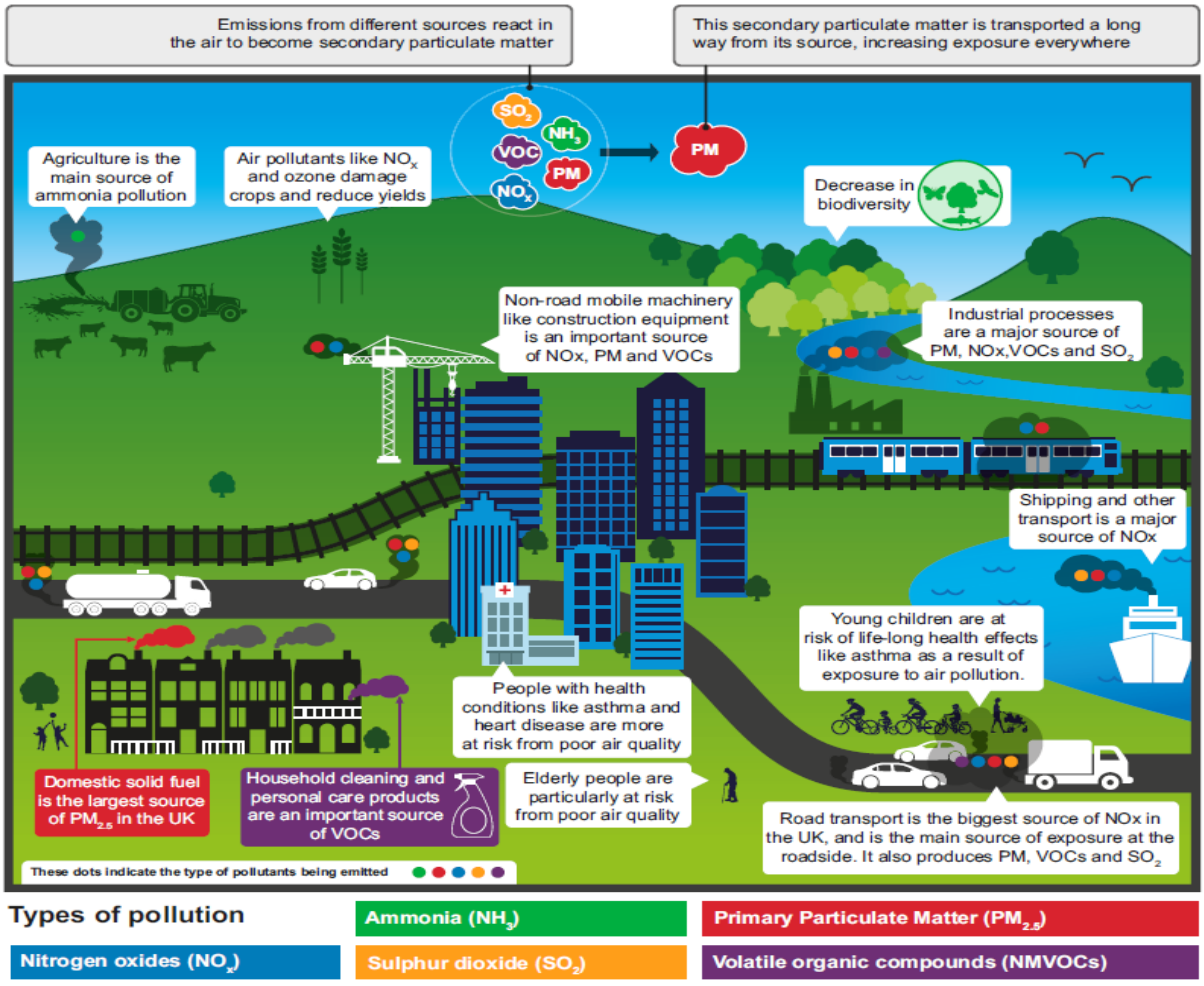
Executive Summary: Air Quality in Our Area

What is Air Pollution and where does it come from?

Air pollution is generally defined as any type of particulate (dust) or gaseous substance (e.g. Oxides of Nitrogen) that is emitted into the atmosphere due to the combustion of fuels such as coal, oil, gas, petrol, diesel and the burning of wood or natural gas from domestic central heating boilers or power stations. When these fuels are combusted, they are emitted into the atmosphere and they affect the air quality within the United Kingdom (UK).



Source – Clean Air Strategy 2019, DEFRA Clean Air Strategy

Poor air quality can affect people's health on a daily basis and can result in premature death. Therefore, it is imperative that poor air quality is recognised as a public health issue

and that continual measures are taken to improve the air quality even if the air quality objectives in the UK are being met.

The two main types of air pollution within the United Kingdom are Nitrogen Dioxide (NO_2) and Particulate Matter (PM_{10} and $PM_{2.5}$). Therefore, this report will explain the effects of these pollutants on health, the concentration levels within the Borough of Broxtowe and measures that have been, are being and will be taken to improve the air quality within the Borough.

What is Nitrogen Dioxide?

Nitrogen Dioxide is a reddish brown gas with the chemical formula NO_2. Nitrogen Monoxide is a colourless gas with the chemical formula NO. Collectively NO_2 and NO are known as Oxides of Nitrogen and the chemical formula is NOx.

As mentioned previously NOx is emitted into the atmosphere due to the combustion of fuels such as coal, oil, gas, petrol, diesel and the burning of wood or as natural gas from domestic central heating boilers or power stations.

Some sources of NOx release NOx in the form of NO_2 into the atmosphere, these are known as primary sources of NO_2, which are mainly emitted from vehicle exhausts. It was previously believed that it was petrol vehicles that were the main source of NO_2 however the use of diesel particulate filters within the exhaust systems of diesel vehicles have resulted in high concentrations of NO_2 being emitted into the atmosphere.

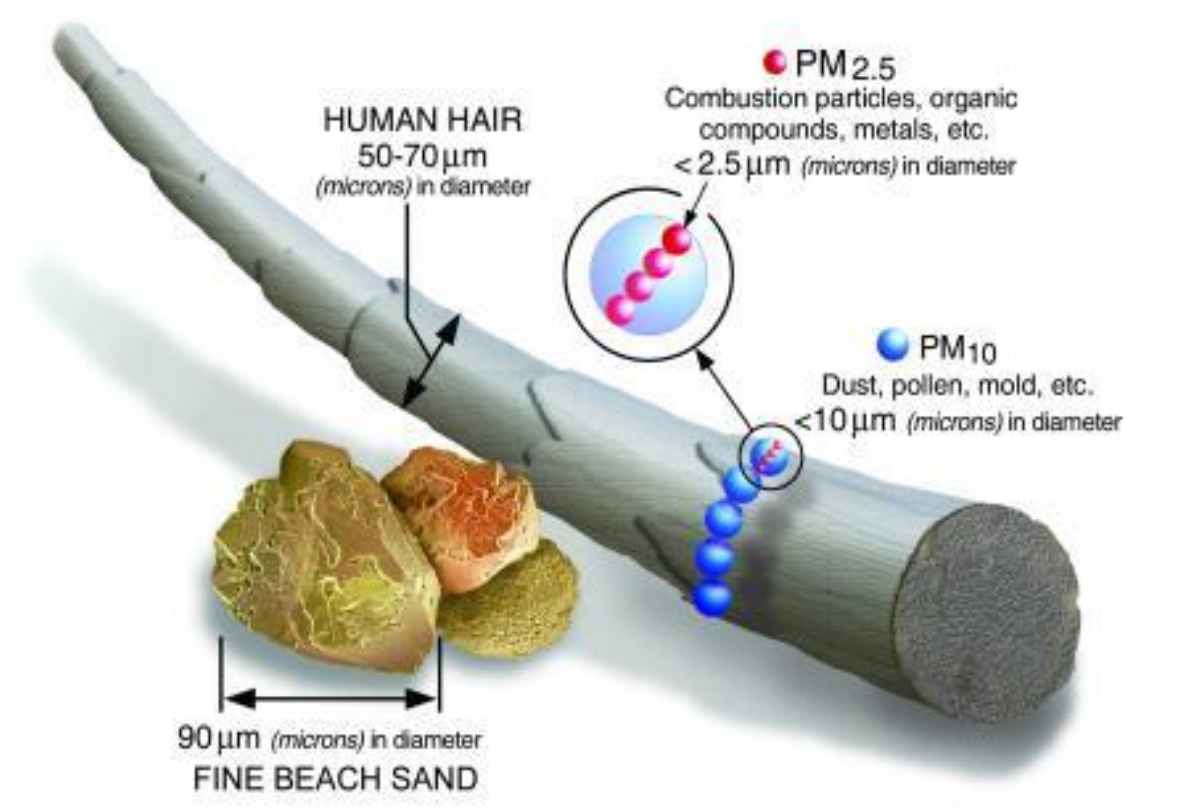
Another source of NO_2 in the atmosphere is due to a chemical reaction in the atmosphere between NO and Ozone (O_3). This is classed as a secondary source of NO_2. However, if concentrations of O_3 are low near to the source of NO then NO_2 will not be formed.

What is Particulate Matter?

Particulate matter is the term used for a mixture of solid particles and/or liquid droplets within the air. Particulate matter varies in size with some particles being easily visible to humans e.g. dust, soot, smoke and vapour from domestic boiler flues. However, some

particles are so small that they cannot be seen with the naked eye and it is these particles that are easily absorbed deep into the lungs and cannot be expelled when they are breathed in.

Size of Particulate Matter



Source: United States Environmental Protection Agency (US EPA), 2020 - Size of Particulate Matter

Research has shown that there is significant harm to health at concentrations of Particulate Matter well below the current EU and UK limit values. (See Appendix H for the Air Quality Objectives for the UK).

There are many sources of particulate matter in the United Kingdom, examples of these are:

- Vehicle exhausts
- The wearing of brake pads, tyres and asphalt
- Rust from vehicles
- Poor fuel combustion

- Dust from demolition and building sites
- Bonfires and inefficient burning of solid fuel e.g. wood.

Within the United Kingdom the main particulate matter that causes concern is particulates that are classed as 'fine particles' ($PM_{2.5}$) or 'inhalable coarse particles' (PM_{10}). The particles are measured in size and referred to as microns (µm). PM_{10} are particles that are 10 microns to 2.5 microns in size, and $PM_{2.5}$ are particles that are 2.5 microns or less.

What are the Health Effects of Poor Air Quality?

Air pollution is associated with a number of adverse health impacts both short term and long term. It is recognised as a contributing factor in the onset of heart disease and cancer. Additionally, air pollution particularly affects the most vulnerable in society: children and older people, and those with heart and lung conditions. There is also often a strong correlation with equalities issues, because areas with poor air quality are also often the less affluent areas[1,2].

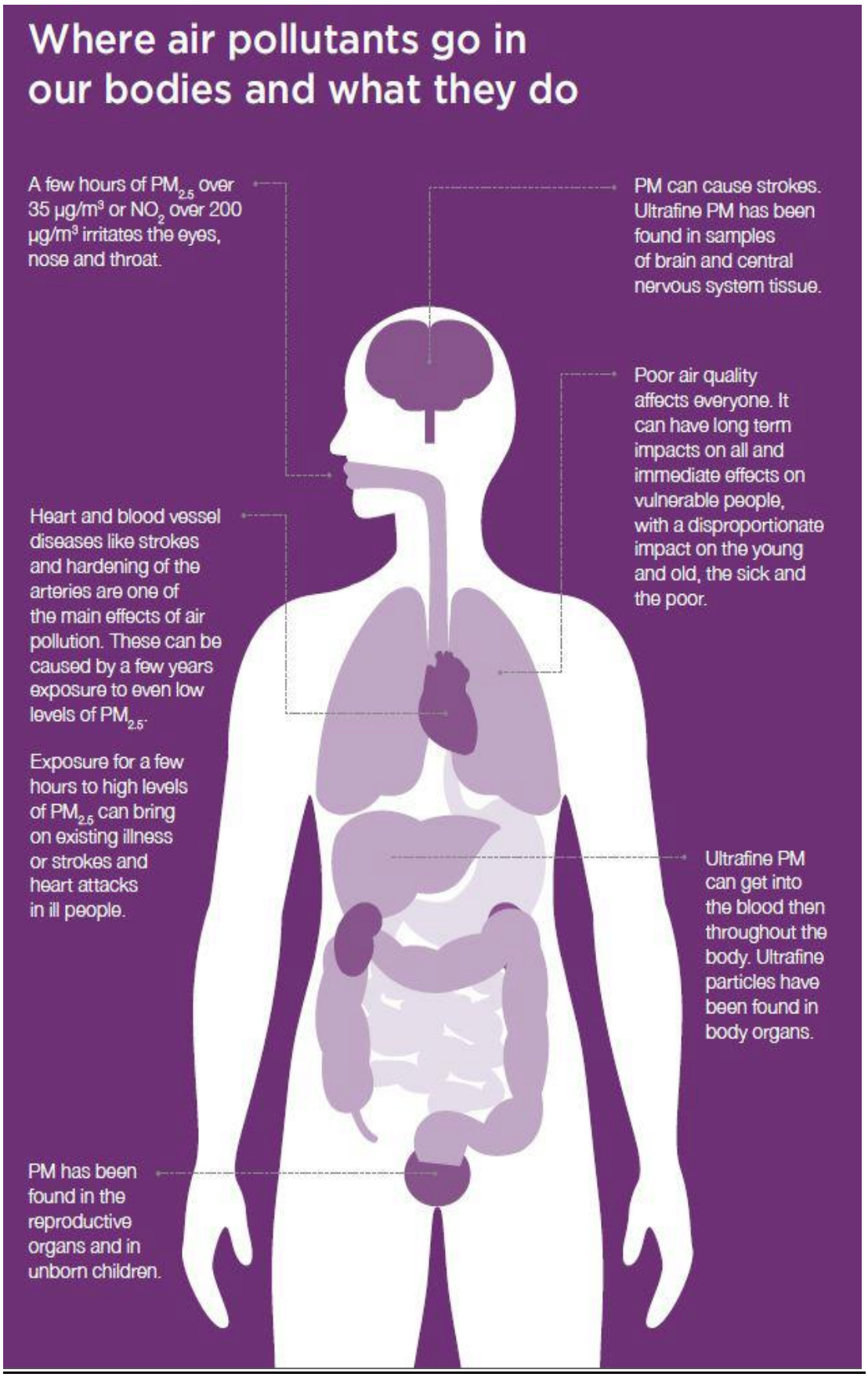
The annual healthcare cost to the NHS and social care in the UK is estimated to be around £157 million in 2017[3].

To be able to understand the full effects of poor air quality on humans an understanding of how the pollutants enter the body, where they go once they are within the body and the effects that they have are shown in the diagram below.

[1] Office for Health Improvement & Disparities. Air Quality: A Briefing for Directors of Public Health, 2017

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

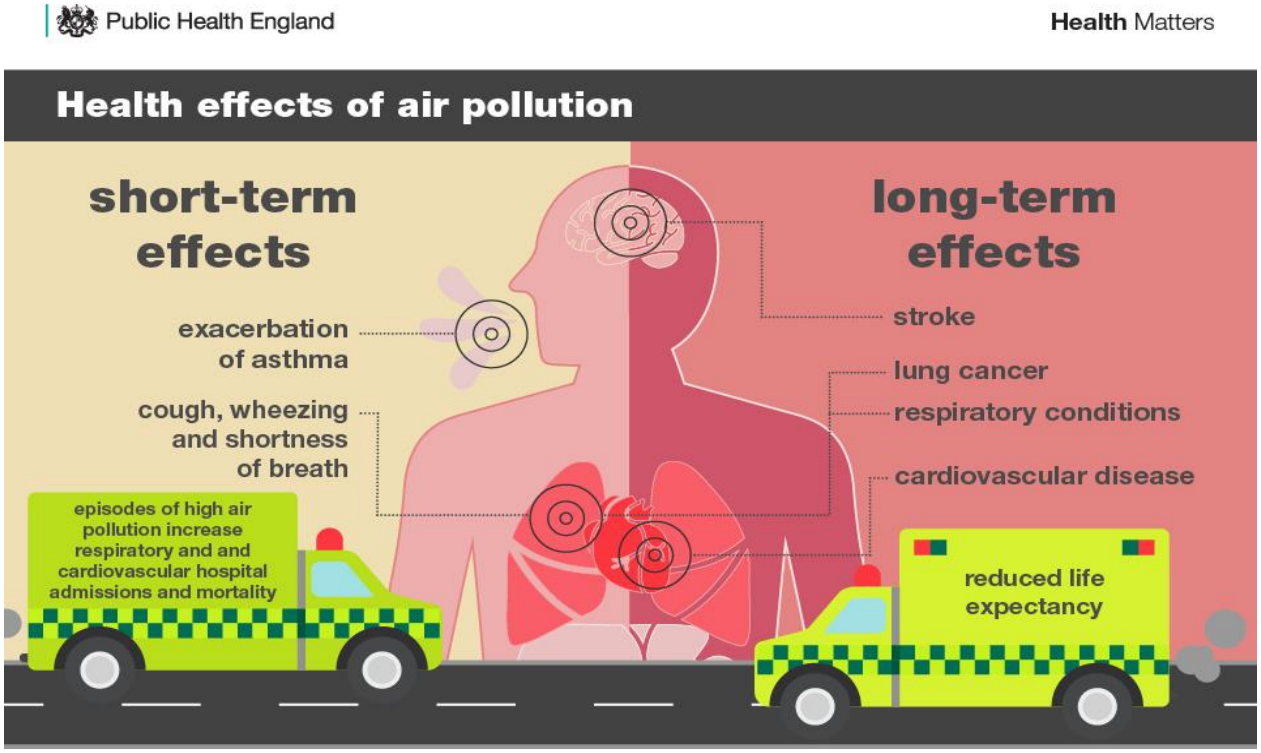
[3] Office for Health Improvement & Disparities. Estimation of costs to the NHS and Social Care due to the health impacts of air pollution: summary report, May 2018



Source - Air Quality: A Briefing for Directors of Public Health, March 2017 [Air Quality: A Briefing for Directors for Public Health]

When people are within an area of poor air quality the length of time they are there is called the ‘exposure time’. There are two types of exposure, short-term and long term. Short-term is when the person is subjected to poor air quality for a short time e.g. a couple of hours and the effects are called ‘Short-term effects’. Long term exposure is when people are consistently living or working with in an area where there is poor air quality. The short- term and long-term effects on the body are shown in the diagram below.

The short and long-term effects of air pollution



Source – Health Matters 2018, Office for Health Improvement & Disparities

Health Effects of Nitrogen Dioxide

The main health effect of breathing in raised levels of Nitrogen Dioxide is the increased likelihood of respiratory problems, as Nitrogen Dioxide inflames the lining of the lungs, and it can reduce immunity to lung infections. This can cause problems such as wheezing, coughing, colds, flu and bronchitis and can exasperate pre-existing conditions like asthma and Chronic Obstructive Pulmonary Disease.

The Committee on the Medical Effects of Air Pollution (COMEAP) has produced estimates of the attributable deaths of people aged 25+ due to NO_2 and Particulate Matter based on 36,000 for all local authorities in the United Kingdom. The estimates are based on the researched evidence of mortality risk combined with modelled levels of background air pollution to which populations are exposed to at each local authority. Table i provides the results for the East Midlands, Nottingham City and all the District and Borough Councils within Nottinghamshire.

Table i – Estimated Attributable Deaths in 2022 due to NO_2 and Particulate Matter based on 36,000.

Area	Attributable deaths Age 25+ due to NO_2 and PM based on 36,000	Associated Life-years Lost based on 36,000 (COMEAP Aug 18)
East Midlands	3,866	30,878
Nottingham City	208	2,004
Ashfield	110	851
Newark and Sherwood	100	805
Bassetlaw	85	797
Broxtowe Borough Council	100	787
Mansfield	89	764
Gedling	99	807
Rushcliffe	90	679

Source: COMEAP, Associations of long-term average concentrations of Nitrogen Dioxide with mortality, 2018.

Table i shows that in the Borough of Broxtowe out of 787 life years lost, 100 of these are attributable to NO_2 and Particulate Matter. However, the data also identifies that Broxtowe does not have the highest number of deaths that are attributable to air quality in comparison to other District and Borough authorities in Nottinghamshire.

Health Effects of Particulate Matter

The health effects associated with short term and long-term exposure to particulate matter are; exacerbation of asthma, effects on lung function, increases in hospital admissions for respiratory and cardiovascular conditions, and also increases in mortality[4]. Office for Health Improvement & Disparities has produced estimates of the risk of mortality from particulates for all local authorities in the United Kingdom. The estimates are based on the researched evidence of mortality risk combined with modelled levels of background air pollution to which populations are exposed to at each local authority. See Section 2.3 of this report for further information on the estimated effects of annual mortality in 2021 of human made $PM_{2.5}$ air pollution.

Air Quality in the Borough of Broxtowe

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[5].

[4]Gowers, A.M. et al Estimating Local Mortality burdens associated with Particulate Air Pollution, Public Health England, 2017.

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

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[6].

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.

The main air quality issue within the Borough is due to the M1 and the A52. The A52 is the main road that connects Nottingham to Derby and is used heavily by commuters. Residential properties are situated alongside the M1 and the A52.

The main pollutants of concern within the Borough is Nitrogen Dioxide and Particulate Matter, which is emitted from vehicles exhausts and is prevalent in areas where there are congested roads e.g. the M1 and the A52. However, it must also be noted that ambient background levels are affected by emissions from domestic heating e.g. Oxides of nitrogen from boilers and particulate matter from solid fuel burners.

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

Broxtowe Borough Council participates in the United Kingdom Nitrogen Dioxide diffusion tube network and has 51 diffusion tubes sites throughout the Borough. The sites are primarily monitoring the M1 corridor and the A52. Some of the diffusion tubes are sited within and near to the existing Air Quality Management Area (AQMA), which is situated in Trowell. Monitoring is still being undertaken in the three revoked AQMAs to ensure that the concentrations remain below the air quality objective. Further information on the AQMA is discussed in Section 2.1 of this report.

The 2023 nitrogen dioxide results show that the air quality levels are below the objective of 40µg/m^3 for all of the monitoring locations throughout the Borough. The results and trends are discussed in greater detail in Section 3.2.1 of this report.

In respect of particulates, the modelled background level provided by Defra for the Borough of Broxtowe indicated levels between 7.3µg/m^3 and 9.4µg/m^3 for 2023, with the annual mean for 2023 being 8.2µg/m^3. The World Health Organisation (WHO) guideline level for $PM_{2.5}$ is 10µg/m^3.

Broxtowe Borough Council has a close working relationship with National Highways and Nottinghamshire County Council's Place Department who have responsibility for highways. National Highways manages the M1 Motorway and the A52, which run through the Borough. Nottinghamshire County Council Place Department manage the remaining roads that run through the Borough; this includes the A610/B600 Nuthall Roundabout.

The Council works with National Highways and Nottinghamshire County Council by continuing to monitor air quality levels throughout the Borough, to inform them of any changes to the air quality levels, to provide maps of the air quality management areas and to provide yearly air quality reports. By working together actions are implemented where possible to ease congestion by maintaining a steady flow of traffic throughout the Borough and to also promote sustainable travel.

The Environmental Health team at Broxtowe Borough Council also works closely with the Environment Agency who attend the Nottinghamshire Environmental Protection Working Group meetings along with some of the local authority planners. This ensures that air quality issues are raised and considered throughout the planning process.

Actions to Improve Air Quality

Whilst air quality has improved significantly in recent decades, and will continue to improve due to national policy decisions, there are some areas where local action is needed to improve air quality further.

The Environmental Improvement Plan[7] sets out actions that will drive continued improvements of air quality and to meet the new national interim and long-term targets for fine particulate matter ($PM_{2.5}$), the pollutant of most harmful to human health. The Air Quality Strategy[8] 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[9] 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.

Below is a brief summary of the core actions to target sources of pollution in the Borough of Broxtowe over the past year.

- To undertake Phase 1 of Public consultation on Smoke Control Areas introducing the new Smoke Control order. This was undertaken in 2023.

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

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

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

- To write a Smoke Control Order Enforcement Policy and for BBC to formally adopt the Smoke Control Order Enforcement Policy. This was formally adopted in October 2023 to support enforcement of its Order and enable improved future regulation of the issue.
- Low Emission Vehicle Procurement - BBC has purchased three new Euro 6 Refuse Collection vehicle in the financial year 23/24 replacing two older vehicles.
- To take on the provision of the cycle store at Beeston's Railway Station - Due to the risk of closure, BBC have taken over the provision of the cycle store at Beeston Railway station, to ensure that it is still available for the public to use.
- To install a cycle track on the Ilkeston Road Recreational Ground in Stapleford - A new cycle track was installed on the Ilkeston Road Recreational Ground in Stapleford in Works completed in March 2023
- To install a Cycling proficiency track to assist children/adults when learning to ride bikes - A new cycle proficiency track was installed on the Ilkeston Road Recreational Ground in Stapleford in Works completed in March 2023
- To install bicycle parking stands at the Ilkeston Road Recreational Ground in Stapleford - Nine new bicycle parking stands was installed on the Ilkeston Road Recreational Ground in Stapleford in Works completed in March 2023
- Electric Vehicle Fleet Procurement for small vans below 2 tonnes - All 9 vehicles (small vans) have now been replaced with Electric Vehicles.
- Broxtowe Borough Council Cycle to Work Scheme – Nine employees purchased bikes through this scheme in 2023. Since the scheme started, 189 employees have purchased bikes through the scheme.
- To investigate the feasibility of BBC employees having staff discounts with NET when using their trams - Following discussions with NET, the employer must buy the tickets in advance – which makes feasibility difficult. Employees were asked to express an interest in potential tram discounts but the interest was minimal.
- Development of Local Cycling and Walking Infrastructure Plan (LCWIP) - A D2N2 Local Cycling and Walking Infrastructure Plan (LCWIP) has been developed. - The D2N2 LCWIP will become the responsibility of the East Midlands Combined County Authority (EMCCA), and will be reviewed and continue to evolve and develop over time.

- Investigation into whether it is feasible for free parking in the borough car parks for Electric and Hybrid vehicles - BBC's Committee reviewed the report in October 2023 and voted against free parking in the borough for Electric and hybrid vehicles.
- Marketing and promotion of sustainable transport alternatives – both the County Council and Broxtowe Borough Council continue to develop and deliver programmes to encourage more sustainable travel. These include infrastructure improvements such as the County Council's integrated transport programme delivering improvements for pedestrians, cyclists and bus users; cycle training, as well as marketing materials and campaigns developed in partnership with stakeholders such as passenger transport operators.
- Nottinghamshire on-street EV charging pilot scheme - electric vehicle cable channels (EVCC) – NCC successfully secured (and received in January 2023) £774k from the Government's Local Electric Vehicle Infrastructure (LEVI) Pilot Funding enabling the delivery of up to 300 EV cable channels. Delivery started in February 2023 and is currently in progress.

Further information on these core actions and progress on grant funded projects are discussed in greater detail in Table 2.2 of this document.

Conclusions and Priorities

The 2023 Nitrogen Dioxide results show that the air quality levels are below the objective of 40µg/m^3 for all of the monitoring locations throughout the Borough including the AQMA. Although the objectives are being met it is very important to continue to improve air quality within the UK as poor air quality is a public health concern.

Therefore, to continue to improve the air quality in the Borough the priorities for Broxtowe Borough Council in addressing air quality for the coming year are to:

- Review the NO_2 diffusion tubes network annually, discontinue sites where the annual air quality levels are comfortably below the objective, and relocate them to new sites within the Borough if needed. Extensive monitoring will allow Broxtowe Borough Council to identify and focus on 'problem' areas.
- Continue to reduce the levels of NO_2 in the Borough by working with National Highways and Nottinghamshire County Council.

- Continue to promote the final version of the “EMAQN Air Quality and Emissions Mitigation: guidance for developers” document.
- Continue to be a member of the Nottinghamshire Environmental Protection Working Group, and to liaise with colleagues in Public Health and the Health and Wellbeing Boards (Nottingham City and Nottinghamshire County) to ensure that Air Quality continues to be included in the Joint Health and Wellbeing strategy 2022-2026 and any future work. Engage with the public about air quality and raise awareness of the health effects of air quality.
- Continue to provide the public, companies and businesses within the Borough with methods that they can use to improve air quality for themselves and also the health of their employees.
- Continue to provide information on green travel e.g. walking, cycling by providing leaflets.
- Continue to support bus companies and taxis that operate within the Borough to reduce emissions.
- Continue to review suitable research methods for reducing air quality levels for both NO_2 and particulate matter.

One of the challenges associated with addressing the air quality in the Borough is that the main source of the air quality problem is the M1 Motorway, which is managed by National Highways and is not under the control of Broxtowe Borough Council. Although Broxtowe Borough Council have a close working relationship with National Highways it is unable to impose or make any changes to the M1 to improve the air quality within the neighbouring residential areas. However, National Highways has undertaken projects at great expense in the past to improve the air quality within the Borough e.g. widening scheme and Smart Motorway scheme.

Apart from the M1 and the A52 all of the roads within the Borough are managed by Nottinghamshire County Council who manage the traffic flows, repairs, diversions etc. There are several challenges associated with this. The first challenge is that Broxtowe Borough Council is unable to impose or make any changes to the structure or flow of the roads. The second challenge is the limited funding currently available to County Councils

for significant integrated transport improvements (£3.9m per year for all safety, capacity, active travel, parking, bus and traffic management infrastructure improvements). This limits the funding available for transport schemes that will deliver air quality improvements.

Local Engagement

Broxtowe Borough Council was selected in 2018 to be in the Air Quality Task and Finish Group, which was set up to update the Nottinghamshire Air Quality Strategy (NAQS). The draft NAQS was approved at the Nottinghamshire County and City Health & Wellbeing Boards in 2019 and the finished format of the NAQS has been endorsed by the portfolio holders and is now published online. Improving Air Quality is now a priority of the Nottinghamshire Joint Health and Wellbeing Strategy 2022-2026 as part of the Ambition to develop Healthy and Sustainable Places.

Air Quality also forms part of the Spatial planning & Health Framework and Health Impact Checklist produced and used for Local Development Plans.

How to get Involved

Residents and businesses living or working in Nottinghamshire can improve the air quality in the area by taking simple measures. One of the main changes that can be made is to use sustainable travel more and reduce dependency on the car when possible. Below are some of the actions that people can take, and particularly for short journeys.

- Travel Choice – Nottinghamshire County Council's Travel Choice webpages provide information and advice on the different ways to travel around Nottinghamshire, whether that's walking, cycling, public transport or car sharing. Residents, jobseekers, businesses and employees can find travel information and advice for the county (including bus and cycle maps, leisure 'Routes and Rides' and a journey planner) at Travel Choice

- School Travel Toolkit – Aimed at school leaders, teachers, parents/carers, children, and those living near to our schools, the Nottinghamshire School Travel Planning Toolkit provides information and advice on improving travel to and from

Nottinghamshire's schools, including the sustainable and active travel modes available. The toolkit can be found at School Travel Toolkit

- Public transport – To use all means of public transport whenever possible e.g. trams, buses and trains. In addition to printed materials, an integrated public transport planning tool detailing local bus, rail and tram networks, as well as for trips further afield can be found at Travel Choice Journey Planner and Traveline Details on travelling on school buses to Nottinghamshire schools and assistance available to do so, can be found at Travel to Schools. The tram timetable is available at Tram Timetable.

- Car share – The Nottinghamshire car share scheme, *'nottinghamshare'*, is available to anyone Car Share Scheme but all businesses can produce their own.

- Park and Ride – There are a variety of Park and Ride sites within Nottinghamshire, which serve the Nottingham Tram and buses. Information for these Park and Ride sites which includes maps of their locations are found at Park and Ride

- Walking and Cycling – The health benefits of physical activity e.g. walking or cycling outweigh the risks from air pollution. You can easily avoid the worst pollution by travelling along quieter streets. Even walking on the side of the pavement furthest from the road can help.

Walking -

  - Walk short distances rather than drive; this also has the benefit of improving your health as well.
  - Information on walking networks in Nottinghamshire can be found at Walking Networks and Rights of way when walking in Nottinghamshire and a planning tool for deciding your route when walking can be found on the Travel Choice website

- Walking and cycling to school – School travel plans promote group cycling and walking for pupils to safely get to school. Information on the travel to school options can be found at Travel to Schools Options.

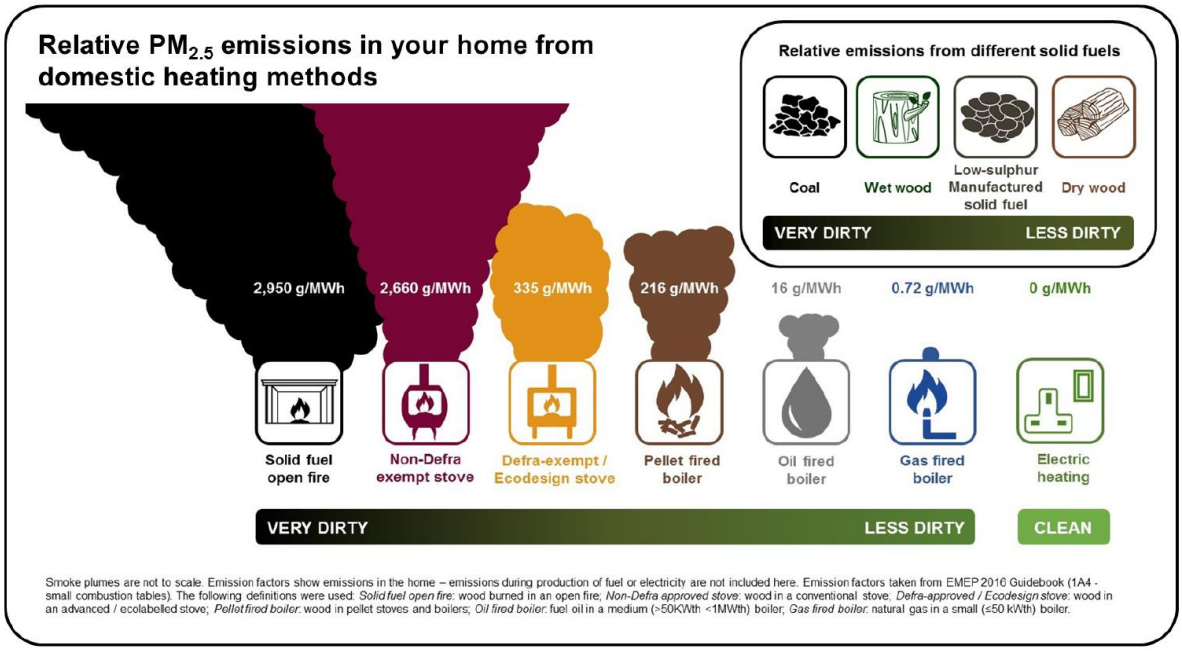
Cycling –

Use the extensive cycle routes that are available throughout Nottinghamshire. Maps and cycling journey planners that cover Nottinghamshire, including Broxtowe are available on the Travel Choice website and at Cycling Rights of Way in Nottinghamshire. Maps of just the city cycle routes for Nottingham are available at Cycle Maps for Nottingham.
Sustrans is a charity that promotes sustainable travel and further information can be found at Sustrans
RideWise, a local cycling charity, also provide advice, training, bike rides, free bike loans and information about routes and journey planning. Further information about RideWise can be found at RideWise

- Driving- When you have to drive you can still help to improve air quality by;
  - Make sure that your car is at its most efficient and think about how you drive, this will also save you money. Tips on how to save money on fuel and reduce your emissions are available at Driving Advice from Energy Saving Trust.
  - If you are thinking about changing your car consider buying a low-emission vehicle, you can get more information on these vehicles and the support available at Electric vehicle charging in and around Nottinghamshire
- Bonfires – To not have bonfires at all and to compost all garden waste and recycle rubbish rather than burn it.
- Heating your home –
  - Smoke Control Area – Large parts of Nottinghamshire are smoke control areas; therefore, you cannot emit smoke from a chimney unless you are burning an authorised fuel or using an exempt appliance e.g. some burners or stoves. Further information on suitable fuels and exempt appliances can be

found at Smoke Control Information from Defra All appliances must be kept in good working order to ensure that they are working efficiently and it is advised that you contact your Local Council to determine whether you are in a smoke control area or not.

- House Boilers – Ensure that boilers are serviced regularly and kept in good working order. If a boiler needs replacing, then purchase one that has a low NOx emission rating



Source – Clean Air Strategy 2019, DEFRA Clean Air Strategy, Defra 2019

Local Responsibilities and Commitment

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

- Suzanne Hickey, Chief Environmental Health Officer - BBC Public Protection Department.
- Steven Mills, Environmental Health Technical Officer - BBC Public Protection Department.
- Dave Lawson, Planning Policy Team Leader - BBC Planning Policy Department.
- Derek Musto, Parking Manager - BBC Parking Services Department.
- Nicola Rowlands, Licensing Manager - BBC Licensing Team.

- Aaron Gidney, Human Resources Manager – BBC Human Resources Division
- Luke Mellors, Capital Works Manager – BBC Capital Works Department.
- Emma Georgiou, Head of Environmental Services – BBC Executive Director Department (Environment Division)
- Chris Alldread, Transport and Stores Manager - BBC Transport and Stores Department.
- Mohammed Habib, Asset Manager – BBC Asset Management and Development Department.
- Hugh Turrell, Environmental Development Officer - BBC Parks and Open Spaces
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- Sarah Robertson, Climate Change Manager – BBC Environment Department
- Sam Comerie, Regeneration Projects Manager – BBC Economic Development Planning Department
- Sean Parks, Team Manager – Nottinghamshire County Council Local Transport Plans & Programme Development Place Department.
- Ellie Jaycock, Senior Local Transport Plan Officer - Nottinghamshire County Council Local Transport Plans & Programme Development Place Department.
- Jo Marshall, Public Health & Commissioning Manager, Public Health, Nottinghamshire County Council.
- Councillor Helen E Skinner, Chair of the Environment and Climate Change Committee, Broxtowe Borough Council.

This ASR has been approved by:

Councillor Helen E Skinner, Chair of the Environment and Climate Change Committee, Broxtowe Borough Council.	

This ASR has been signed off on behalf of the Director of Public Health by:

Jo Marshall, Public Health & Commissioning Manager, Public Health, Nottinghamshire County Council	

If you have any comments on this ASR, please send them to Kate Ratcliffe at:

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1 Local Air Quality Management

This report provides an overview of air quality in Broxtowe Borough Council during 2022. 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 Broxtowe Borough Council to improve air quality and any progress that has been made.

The statutory air quality objectives applicable to LAQM in England are presented in Table I.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 the AQMA declared by Broxtowe Borough Council can be found in Table 2.1. The table presents a description of the AQMA currently designated within Broxtowe Borough Council. The AQMA was designated as the levels at the time of designation were above the NO_2 annual mean of 40µg/m^3. Appendix D: Map of all Monitoring Locations and Appendix E: Map of AQMA in Trowell provides maps of the AQMA and also the air quality monitoring locations in relation to the AQMA and throughout the Borough. Further information about the Trowell AQMA declared by Broxtowe Borough Council and the 2023 data can be found in Table 2.1.

Further information related to declared, or revoked AQMAs, including maps of AQMA boundaries, are available online at Broxtowe Borough Councils Air Quality Webpage, or reviewed in this report.

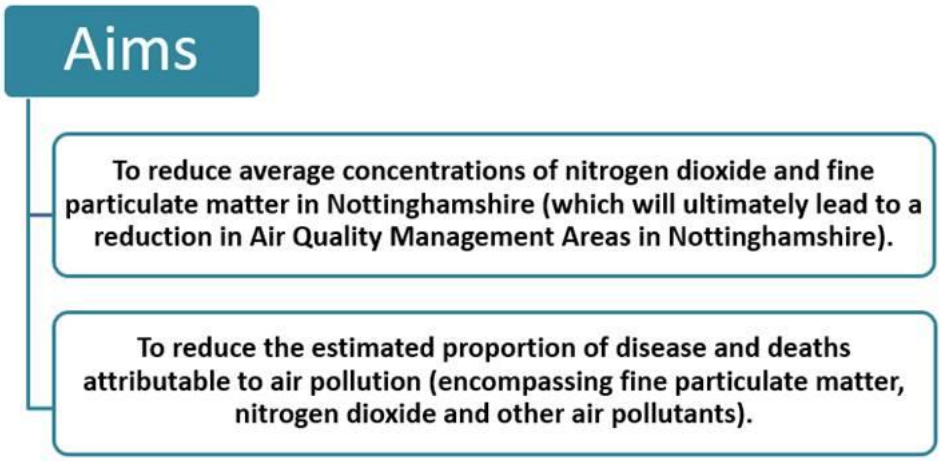
The LAQM Technical Guidance 2022 states that ‘where there have been no exceedances for the past five years, local authorities must proceed with plans to revoke the AQMA’. Therefore, as 2022 was the seventh year in which there were no exceedances in the AQMA, Broxtowe Borough Council stated in the 2023 ASR that the remaining AQMA will be revoked, this was supported by Defra. The AQMA was revoked in October 2023, which was approved by Defra on the 16th January 2024. Although Broxtowe Borough Council’s AQMA was revoked in October 2023, the 2023 data for the AQMA has been reported on in this ASR. Broxtowe Borough Council will continue to monitor the NO_2 levels in this area and report on them in the ASR.

Local Air Quality Strategy

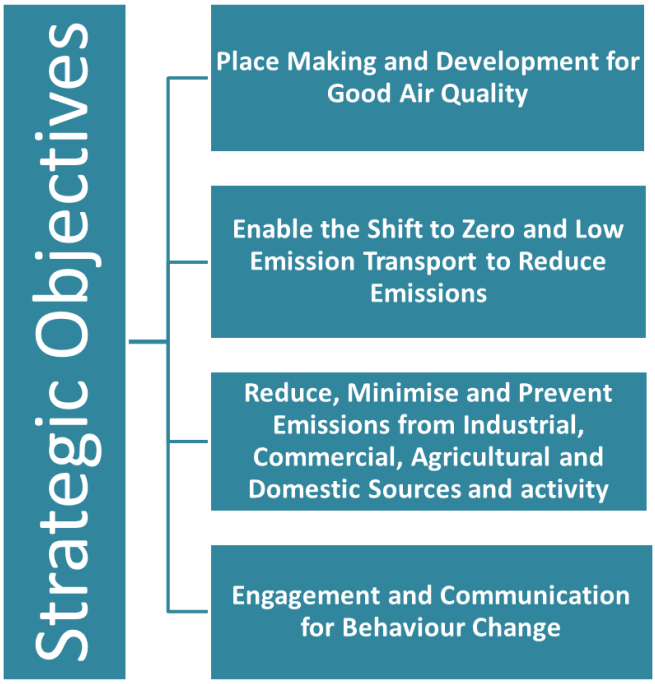
The LAQM Policy Guidance 2022 states that 'Following a revocation, from 2023 (where this would result in that local authority no longer having any AQMA) the local authority should put in place a local air quality strategy to ensure air quality remains a high profile issue and to ensure it is able to respond quickly should there be any deterioration in condition'.

Although Broxtowe Borough Council does not have an Air Quality Strategy solely for this borough, it is included in the regional Air Quality Strategy for Nottingham and Nottinghamshire. This ASR is written taking into account the aims and objectives of the **Air Quality Strategy for Nottingham and Nottinghamshire 2020-2030.** The Air Quality Strategy for Nottingham and Nottinghamshire 2020-2030 demonstrates how as a partnership we are continuing to improve local air quality and maintain ongoing compliance with Air Quality Objectives.

This strategy is considered to be relevant for the City/County and all regional authorities within it. Therefore, it is deemed relevant for maintaining the air quality in the borough of Broxtowe. Its aims are to encourage prevention and reduction of polluting activities across a range of diverse sectors.



When deciding on possible measures to improve the air quality within the Borough, Broxtowe Borough Council ensured that the measures stated in Table 2.2 of this report are linked into and meet the four strategic objectives that are in the Air Quality Strategy for Nottingham and Nottinghamshire 2020-2030.



The Strategy is subject to ongoing review by the Nottingham and Nottinghamshire Air Quality Oversight Group (NNAQOG), to ensure it remains current and that progress is fed back to the County and City Health and Wellbeing Boards. Broxtowe Borough Council is a member of the NNAQOG.

The NNAQOG includes colleagues from City and County Local Authorities and consists of Public Health, Environmental Health, Transport Planning and the local NHS; with input also from National Highways, Environment Agency, UKHSA, among others.

The NNAQOG will also look to engage with the Mayor's office for the East Midlands Combined County Authority (EMCCA) at the earliest opportunity.

Other Local Strategies

The Nottinghamshire Joint Health and Wellbeing Strategy 2022 – 2026 has four ambitions one of which is to Create Healthy and Sustainable Places:

- We'll ensure that the environment we grow, live, work and age in promotes good health and wellbeing.
- We'll use the planning and transport system, along with economic planning, licensing and policy decisions, to create places that do this.

This will also help to reduce health inequalities and also benefit the environment, for a better quality of life. There are nine areas of focus and one of them is Air quality, which states that:

"Clean air is essential for good health and for the environment and climate. We will work to make positive changes which can also have positive Air Quality - Ensure that outdoor air quality supports healthier lives in all communities' effects in terms of travel to school and work, being active and safety."

The Nottingham and Nottinghamshire ICS Green Plan 2022 to 2025 recognises the importance of the NHS taking action to reduce air pollution and work with partners to improve air quality. The Plan includes the following ambitions:

- Promoting sustainable transport and reducing overall transport
- Increasing the use of ULEV and ZEV vehicles
- Developing the infrastructure to support lower carbon transport options
- Enhancing understanding and communication via Green Travel Plans

The Nottingham and Nottinghamshire ICS Health Inequalities Strategy 2020-2024 has a strategic objective for system partners to work together to support action to improve air quality.

Air Quality and Climate Change

Many sources of air pollution are also sources of greenhouse gas emissions e.g. combustion creates CO_2, NOx and PM. Emissions from road transport, energy and heat generation and domestic solid fuel burning are some of the most common sources that contribute to both climate change and air pollution.

Broxtowe Borough Councils Climate Change and Green Futures Strategy 2023-2027 has ten strategic themes to identify, manage and mitigate the worst impacts of Climate Change;

Climate Strategy	Transport and Travel
Energy and Water	Built Environment
Core Strategy and Planning	Recycling and Resources
Natural Environment	Communities
Business and Supply Chain	Communications

Air Quality Monitoring is included in the Natural Environment theme and as climate change mitigation measures reduce emissions of greenhouse gases it will also help reduce air pollutants and lead to improvements in health outcomes as evidenced in Health Effects of Climate Change (HECC) in the UK: 2023 report.

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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 National Highways?	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
AQMA 1 Trowell	Declared 1st February 2006.	NO_2 Annual Mean	AQMA 1 encompasses twenty properties on parts of Iona Drive and Tiree Close next to the M1 motorway in Trowell	YES	45µg/m^3	19.3µg/m^3 *	8	AQAP for Broxtowe Borough Council 2008	Visit the AQAP for AQMA 1 Trowell Action Plan 2008.

☒ **Broxtowe Borough Council confirm the information on UK-Air regarding their AQMA(s) is up to date**

☒ **Broxtowe Borough Council confirm that all current AQAPs have been submitted to Defra**

***** The average of the annual mean from all of the seven monitoring tubes located with the AQMA.

2.2 Progress and Impact of Measures to address Air Quality in Broxtowe Borough Council

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

- The executive summary provides additional information about NO_2 and particulate matter, as well as the health impacts of both. This is a welcome addition and should be continued in future ASRs – **BBC will continue to do this.**
- The "how to get involved" section of the executive summary provides numerous suggestions. Along with the additional information provided about pollutants, this is useful for informing the general public – **BBC will continue to do this.**
- The trends observed in the data reported in this ASR are discussed for the AQMA, former AQMAs, individual tubes and small areas. This provides significant detail about the air quality in the borough and is appreciated. The addition of colour to table B.1. is welcomed as it helps add context to missing periods of data **– BBC will continue to do this.**
- The report is descriptive and informative throughout with each section providing a significant amount of detail, this is appreciated and encouraged to continue in future ASRs. In particular, the measures to manage $PM_{2.5}$ by the Council and individuals, the key priorities for the next reporting year and the measures completed in this reporting year – **BBC will continue to do this.**
- The $PM_{2.5}$ modelling undertaken by the council is detailed and helps provide context for the councils $PM_{2.5}$ measures, the addition of the map is very useful for visualization of areas to prioritize **– BBC will continue to do this.**
- The Council could include an image of the appropriate national bias adjustment spreadsheet to demonstrate where the chosen bias adjustment factor has come from **– BBC has done this**.
- The Council could also provide the latest results from the AIR PT/WASP Scheme to verify the quality of the analysis lab's results. **– BBC has done this, see QA/QC Chapter.**
- It would be good if the council verify if tube deployments are in line with the Defra Calendar, or if there was any reason as to why this couldn't happen **– BBC has done this**.

- Overall this report is an example of good practice due to the required information and significant detail provided throughout – **BBC will continue to produce reports of this standard.**

Broxtowe Borough 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 that are completed, in progress, or planned are set out in Table 2.2. One Hundred and Ten measures are included within Table 2.2, with the type of measure, and the progress Broxtowe Borough Council have made during the reporting year of 2023 presented. Table 2.2 is colour coded with the Three Key measures for Broxtowe Borough Council in yellow, the measures that were completed in 2023 are in blue and the measures that were completed between 2017 – 2022 are in green. 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 their respective Action Plans BBC Air Quality Action Plan, BBC Improving the Air We Breathe Action Plan, The Air Quality Strategy for Nottingham and Nottinghamshire 2020-2030, BBC Local Plan 2018 – 2028, The Nottinghamshire Local Transport Plan 2011 -2026 (and its Implementation Plans), Nottinghamshire County Council's Environment Strategy and Action Plan 2020 and National Highways Reports (post opening project evaluation reports for the M1 Junction 25 to 28 widening and the A52 West of Nottingham Corridor Improvements).

Key completed and on-going measures are:

- To undertake Phase 1 of Public consultation on Smoke Control Areas introducing the new Smoke Control order. This was undertaken in 2023.
- To write a Smoke Control Order Enforcement Policy and for BBC to formally adopt the Smoke Control Order Enforcement Policy. This was formally adopted in October 2023 to support enforcement of its Order, and enable improved future regulation of the issue.
- Low Emission Vehicle Procurement - BBC has purchased three new Euro 6 Refuse Collection vehicle in the financial year 23/24 replacing two older vehicles.

- To take on the provision of the cycle store at Beeston's Railway Station - Due to the risk of closure, BBC have taken over the provision of the cycle store at Beeston Railway station, to ensure that it is still available for the public to use.
- To install a cycle track on the Ilkeston Road Recreational Ground in Stapleford - A new cycle track was installed on the Ilkeston Road Recreational Ground in Stapleford in Works completed in March 2023
- To install a Cycling proficiency track to assist children/adults when learning to ride bikes - A new cycle proficiency track was installed on the Ilkeston Road Recreational Ground in Stapleford in Works completed in March 2023
- To install bicycle parking stands at the Ilkeston Road Recreational Ground in Stapleford - Nine new bicycle parking stands was installed on the Ilkeston Road Recreational Ground in Stapleford in Works completed in March 2023
- Electric Vehicle Fleet Procurement for small vans below 2 tonnes - All 9 vehicles (small vans) have now been replaced with Electric Vehicles.
- To continue to replace Broxtowe Borough Council older combination boilers and system boilers to Seasonal Efficiency of a Domestic Boiler in the UK (SEDBUK) A rated condensing boilers.
- To continue investigating new heating technologies that are more efficient, effective and produce lower emissions - A trial was undertaken for fitting air source heat pumps in 7 new builds in 2021 and in 5 new builds in 2022.
- To investigate and consider suitable alternative replacements for the remaining electrically heated Council properties - High heat retention units were being fitted as replacements in 2022 and this will be continuing in future years
- Broxtowe Borough Council Cycle to Work Scheme – Nine employees purchased bikes through this scheme in 2023. Since the scheme started, 189 employees have purchased bikes through the scheme.
- To investigate the feasibility of BBC employees having staff discounts with NET when using their trams - Following discussions with NET, the employer must buy the tickets in advance – which makes feasibility difficult. Employees were asked to express an interest in potential tram discounts but the interest was minimal.
- NCC Car sharing scheme - A review of the car sharing scheme found 3,250 members were registered, but not active. Activity and use of the scheme has been

minimal for a number of years and consequently funding could not be justified and hence the licence has not been renewed.

- Development of Local Cycling and Walking Infrastructure Plan (LCWIP) - A D2N2 Local Cycling and Walking Infrastructure Plan (LCWIP) has been developed. - The D2N2 LCWIP will become the responsibility of the East Midlands Combined County Authority (EMCCA), and will be reviewed and continue to evolve and develop over time.
- Investigation into whether it is feasible for free parking in the borough car parks for Electric and Hybrid vehicles - BBC's Committee reviewed the report in October 2023 and voted against free parking in the borough for Electric and hybrid vehicles.
- Marketing and promotion of sustainable transport alternatives – both the County Council and Broxtowe Borough Council continue to develop and deliver programmes to encourage more sustainable travel. These include infrastructure improvements such as the County Council's integrated transport programme delivering improvements for pedestrians, cyclists and bus users; cycle training, as well as marketing materials and campaigns developed in partnership with stakeholders such as passenger transport operators.
- Nottinghamshire on-street EV charging pilot scheme - electric vehicle cable channels (EVCC) – NCC successfully secured (and received in January 2023) £774k from the Government's Local Electric Vehicle Infrastructure (LEVI) Pilot Funding enabling the delivery of up to 300 EV cable channels. Delivery started in February 2023 and is currently in progress.
- To develop a plan for future infrastructures to support growth in BBC's Electric Fleet and the domestic use of Electric Vehicles - A review has estimated that the cost is in the region on 12.4 million for a complete decarbonisation and infrastructure modification to the Kimberley Depot. A report is currently being written and the proposal will be submitted to BBC Committee in 2024.

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

- To develop an implementation plan for the Nottingham and Nottinghamshire Air Quality Strategy 2020-2030 to ensure it is implemented locally by the Nottingham and Nottinghamshire Air Quality Oversight Group (NNAQOG), Broxtowe Borough Council is a member of the NNAQOG.

- ★ to ensure it is implemented locally by the Nottingham and Nottinghamshire Air Quality Oversight Group (NNAQOG), Broxtowe Borough Council is a member of the NNAQOG.
- ★ To Undertake Phase Two of public consultations on Smoke Control Areas - to revoke the previous Smoke Control Orders and to introduce the new Smoke Control order (minus the moored Vessels).
- ★ Electric Vehicle Infrastructure (EVI) Strategy - The Strategy is to facilitate access to a reliable Electric Vehicle Infrastructure (EVI) for residents, businesses and visitors, which will help to support the decarbonisation of transport and travel within the Borough. The Management Strategy for the expansion of EVI across Broxtowe Borough is going to Cabinet in July 2024
- ★ Investigate ways to decarbonise BBC's fleet through alternative fuels - transition to HVO. It is anticipated that the transition will take place in 2024.
- ★ To Replace older combination boilers and system boilers to Seasonal Efficiency of a Domestic Boiler in the UK (SEDBUK) A rated condensing boilers - BBC carrying out a data quality review on boiler information held for the properties.
- ★ To develop a plan for future infrastructures to support growth in BBC's Electric Fleet and the domestic use of Electric Vehicles - A review has estimated that the cost is in the region on 12.4 million for a complete decarbonisation and infrastructure modification to the Kimberley Depot. A report is currently being written and the proposal will be submitted to BBC Committee in 2024
- ★ To investigate the viability of obtaining equipment and software that will record BBC Fleet Vehicle driver's behaviour – this will enable a training programme to be established to improve efficiency. A Business Case for the purchase and subscription of Tachograph analysis software has been submitted for ICT review.
- ★ Installation of 7kW electric vehicle (EV) chargepoints at BBC Kimberley Depot for Public Sector Fleet Vehicles - Four new 7kW electric vehicle (EV) charge points to be installed at Kimberley Depot (increasing the number to six.) The charge points when installed will form part of a network of public sector organisations who have agreed to share the EV chargepoints which will enable the delivery of collective efficiencies in EV operations across the region. These chargepoints are for the use of any Council operated fleet across the region.

★ Development of Integrated ticketing strategy Organisation (ITSO) public transport smartcard ticketing - The Nottinghamshire Enhanced Partnership is seeking to use indicative BSIP funding to deliver a multi operator ticket alongside development of an add-on for passengers travelling into the Robin hood network in Greater Nottingham. Robin hood add-on to launch: March 2024

Broxtowe Borough Council's priorities for the coming year are predominantly through measures to make the best use of the transport networks and through smarter travel measures that will encourage people to travel more sustainably.

Measures will include:

- On-going effective land use planning and securing of appropriate levels of developer contributions for mitigation (including travel planning) and sustainable transport improvements
- Traffic control and information provision to minimise disruption and delay on County Council managed roads (including the A610) such as contingency planning, the effective co-ordination of works and the provision of real-time travel information
- Measures to reduce the need to travel at peak times such as the provision and encouragement of flexible working arrangements
- The facilitation of smarter travel behaviour such as the provision of a car sharing scheme and integrated and concessionary ticketing schemes
- The encouragement of smarter travel behaviour such as the marketing and promotion of passenger transport, walking and cycling, provision of cycling and walking route maps, cycle training programmes, and web-based journey planners
- The encouragement of the uptake of low-emission vehicles, including the continued identification and implementation of the Nottinghamshire public electric vehicle charging network as well as grants for businesses to install on-site charging infrastructure
- Enhancements to the local cycling and walking networks
- Travel planning such as the development of new travel plans at businesses across the county through planning conditions

The principal challenges and barriers to implementation that Broxtowe Borough Council and Nottinghamshire County Council anticipates facing are:

- Availability of funding for the above measures to continue their delivery
- Ensuring sufficient mitigation is secured through the development control process to address the potential impacts on the highway network of not only individual developments but also the cumulative impacts of development.

Progress on the following measures has been slower than expected due to:

- Promoting travel choices - Consideration of car club into the County - Dependent on the determination of business case and commercial operator coming forward.

  Barriers include financial risk, organisational culture (i.e. using personal cars less) and specific service needs.

Whilst the measures stated above and in Table 2.2 will help to contribute towards improving the air quality, Broxtowe Borough Council anticipates that further additional measures not yet prescribed will be required in subsequent years to improve the air quality in the borough.

Table 2.2 – Progress on Measures to Improve Air Quality

Measure No.	Measure	Category	Classification	Year Measure Introduced	Estimated / Actual Completion Year	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Barriers to Implementation
1	**Electric Vehicle Infrastructure (EVI) Strategy**	Policy Guidance and Development Control	Low Emission Strategy	2023	2024	BBC – Climate Change Manager	LA-BBC	No	Not Funded	Within existing resources	Planning	Reduction in N02 and PM due to increased use of electric vehicles.	% Usage of EVCP	The Strategy is to facilitate access to a reliable Electric Vehicle Infrastructure (EVI) for residents, businesses and visitors, which will help to support the decarbonisation of transport and travel within the Borough. The Management Strategy for the expansion of EVI across Broxtowe Borough is going to Cabinet in July 2024.	Update will be provided in the 2025 ASR
2	**To revoke the current Smoke Control Orders and introduce a new single Smoke Control Order which will be supported the Smoke Control Order Enforcement Policy**	Policy Guidance and Development Control	Other Policy	2023	2025	BBC Public Protection - Senior Environmental Health Officer	Defra	No	Funded	£10k - £50k	Planning	Reduction in Particulates	% of people not complying with the Enforcement Policy	Broxtowe Borough Council has also formally adopted a Smoke Control Order Enforcement Policy in October 2023 to support enforcement of its Order and enable improved future regulation of the issue. Public consultation will be undertaken in 2024 about Revoking the Previous smoke control Orders and to introducing a new Smoke Control order (Minus the moored vessels) The Council have therefore made a Smoke Control Orders Revocation Order and this will be consulted on and subject to Secretary of State approval, be brought into effect replacing all current smoke control orders. It is expected this will be in effect on or around Spring 2025.	2025
3	**Investigate ways to decarbonise BBC's fleet through**	Vehicle Fleet Efficiency	Fleet efficiency and recognition schemes	2021	2024	BBC Environment - Head of Environment	LA-BBC	No	Not Funded	£100k - £500k	Planning	Reduction in NO_2 and PM	Reduced emissions	• A report was submitted to Cabinet in July 2023, which approved the transition to HVO. It	2024

Measure No.	Measure	Category	Classification	Year Measure Introduced	Estimated / Actual Completion Year	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
	alternative fuels													is anticipated that the transition will take place at the beginning on the new financial year (April 2024).	
4	**Light rail tram infra-structure**	Transport Planning and Infrastructure	Public transport improvements-interchanges stations and services	2015	-	NCiC and NCC	DfT/WPL funding	No	Funded	>£10 Million	Completed	Reduction in NO_2 and PM	Increased passenger transport patronage	• NET Phase 2 (with route through Broxtowe) opened in 2015 • In 2023/24 so far 14,418,691 passengers have used the tram and 4,347,542 of these passengers were on the Toton Line	On-going
5	**Promoting travel choices - Consideration of car club into the county**	Alternatives to private vehicle use	Car Clubs	TBD	Ongoing	NCC/NCiC	NCC	No	TBD	-	Ongoing	Reduction in NO_2 and PM	Restrain average journey times in the morning peak to a 1% increase per year A reduction in staff business emissions and cost, through both a car club and a wider review of staff travel habits.	• NCiC scheme introduced in 2014, with the provider reviewed in 2018. Expansion of scheme into county dependent on its success, which is still unclear. • Work has been undertaken to look at the feasibility of a partnership with a Car Club operator in the county, for both residents and internal use (i.e. staff travel). The work will feed in to a wider fleet review and review of staff business travel, with a few more aspects to be expanded upon. • Funding for implementation to be determined.	Dependent on the determination of business case and commercial operator coming forward. Barriers include financial risk, organisational culture (i.e. using personal cars less) and specific service needs.
6	**Nottinghamshire on-street EV charging pilot scheme - electric vehicle cable channels (EVCC)**	Promoting Low Emission Transport	Procuring alternative Refuelling infrastructure to promote Low Emission Vehicles, EV recharging, Gas fuel recharging	2022		NCC / Via EM Ltd	Privately funded by resident and OZEV LEVI Pilot Funding	No	Privately funded by resident and OZEV LEVI Pilot Funding	Costs to be determined	Implementation	Reduction in pollutants and emissions due to increased use of low emission vehicles.	Number of EVCC installed and back-office data from EV charge point	• NCC approved the trialling of on-street EV charging cable channels at Transport & Environment Committee in February 2022. • NCC successfully secured (and	NCC's EV cable channel pilot programme is currently in progress.

Measure No.	Measure	Category	Classification	Year Measure Introduced	Estimated / Actual Completion Year	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
														received in January 2023) £774k from the Government's Local Electric Vehicle Infrastructure (LEVI) Pilot Funding enabling the delivery of up to 300 EV cable channels. • Delivery started in February 2023.	
7	**Nottinghamshire EV charging infrastructure (potentially on and off street)**	Promoting Low Emission Transport	Procuring alternative Refuelling infrastructure to promote Low Emission Vehicles, EV recharging, Gas fuel recharging	2023/2024	2025/26	NCC / Borough and District Councils	OZEV funding (LEVI)	No	LEVI revenue and capital funding secured for EV infrastructure programme development, NCC are currently producing procurement documents to go out to tender, likely to be August 2024	£1 million to £10 million	Implementation	Reduction in pollutants and emissions due to increased use of low emission vehicles.	Number of EV charging installed and back-office data from EV charge point	• NCC is working to develop an Electric Vehicle Chargepoint Framework for the county. Consultation on a draft framework was undertaken between December 2023 and March 2024. • NCC have developed bid in partnership with the district councils for LEVI capital funding for EV infrastructure. Funding has been secured and procurement is currently being undertaken	Measure is reliant on a successful LEVI bid
8	**To develop an implementation plan for the Nottingham and Nottinghamshire Air Quality Strategy 2020-2030**	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	2024	2030	NCC/NCiC/ Borough and District councils	N/A	No	Not Funded	N/A	Planning	Reduced Emissions from raising awareness	Improving Air Quality, reduced Emissions and Raising awareness	To develop an implementation plan for the Nottingham and Nottinghamshire Air Quality Strategy 2020-2030 to ensure it is implemented locally by the Nottingham and Nottinghamshire Air Quality Oversight Group (NNAQOG), Broxtowe Borough Council is a member of the NNAQOG.	2024
9	**To continue to promote the Nottingham and Nottinghamshire Air Quality**	Public Information	Via the Internet	2020	On-going	BBC Public Protection – Environmental Health Officer	N/A	No	Not Funded	N/A	On-going	Reduced Emissions from raising awareness	Improving Air Quality, reduced Emissions and Raising awareness	•The NAQS was endorsed by portfolio holders in 2020 and it is promoted on BBCs website.	On-going

Measure No.	Measure	Category	Classification	Year Measure Introduced	Estimated / Actual Completion Year	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
	Strategy 2020-2030														
10	**To investigate providing Supplementary Planning Guidance or a Supplementary Planning Document relating to 'Air Quality and Emissions Mitigation Guidance for Developers'**	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	2021	To be decided	BBC Planning Policy Department – Planning Policy Team Leader	LA-BBC	No	Not Funded	N/A	Planning	Reduced Emissions of N02 and PM	Reduced emissions	Possible measures could involve: • Supplementing Part 1 of Policy 20 of the Local Plan to provide further guidance on what reasonable steps are required in order to encourage the use of public transport. • Supplementing Part 2 of Policy 20 of the Local Plan to say what would constitute a "significant deterioration" in air quality. • Supplementing Part 3 Policy 20 of the Local Plan to set a ratio of Electric Vehicle Charging Points to new dwellings. • Promoting Travel Choices – Encouraging developers to provide occupants with 'travel packs' regarding public transport, walking and cycling to all new built homes.	Planning policy work is currently prioritising the preparation of the Greater Nottingham Strategic Plan (GNSP), which is likely to be published in autumn 2024 and examined and adopted in 2025. The GNSP will incorporate policies relating to air quality and emissions mitigation.
11	**To Undertake phase two of the public consultation on Smoke Control Areas to Revoke the Previous Smoke Control Orders and to introduce the new Smoke Control order (minus the moored Vessels)**	Public Information	Other	2022	2023	BBC Public Protection - Senior Environmental Health Officer	Defra	No	Funded	<£10k	Planning	Reduction in Particulates	% of people that responded to the public Consultation	To undertake Public consultation on Smoke Control Areas. Revoking the Previous smoke control Orders and to introducing the new Smoke Control order (Minus the moored vessels) This will be undertaken in 2024.	2024

Measure No.	Measure	Category	Classification	Year Measure Introduced	Estimated / Actual Completion Year	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
12	**To replace cremators and associated plant including abatement system at Bramcote Crematorium**	Environmental Permits	Other	2023	2025	BBC Project Manager, Capital Works	General fund, borrowing 50-50 split with Erewash Borough Council	No	Funded	£1m-£10m	Planning	Reduced Emissions	Reduced emissions due to more efficient cremators and plant	Measures to reduce pollution through replacing the current cremators to ones that using the Best Available Techniques (BAT) which are the best for preventing or minimising emissions and impacts on the environment. Planning and specification stage completed. Tender to be completed in May 2024, and cremator supply contractor appointed, works due to commence in summer 2024.	An update on this new measure will be in the 2025 ASR.
13	**Inspection of Permitted Processes**	Environmental Permits	Other Measures through permit systems and economic instruments	2012	On-going	BBC Public Protection – Environmental Health Technical Officer	N/A	No	Not Funded	N/A	On-going	Reduced Emissions	Reduction in airborne pollutants from the various processes throughout the Borough.	All scheduled inspections completed on time.	On-going
14	**To ensure that all Permitted Processes (where feasible) continue to be rated as 'low environmental risk'**	Environmental Permits	Measures to reduce pollution through IPPC Permits going beyond BAT	On-going	On-going	BBC Public Protection – Environmental Health Technical Officer	N/A	No	Not Funded	N/A	On-going	Reduced Emissions	Reduction in airborne pollutants from the various processes throughout the Borough.	The risk rating did not change in 2023, and all permitted processes were fully compliant.	On-going
15	**To Inspect Crushers that are used within the Borough on demolition sites when notifications are received to ensure compliance with the process permit and ensure good housekeeping is being maintained**	Environmental Permits	Other measure through permit systems and economic instruments	On-going	On-going	BBC Public Protection – Environmental Health Technical Officer	N/A	No	Not Funded	N/A	On-going	Reduction in airborne particulates from the crushers used throughout the Borough.	Reduction in airborne particulates from the crushers used throughout the Borough	Reduction in airborne particulates from the crushers used throughout the Borough	On-going

Measure No.	Measure	Category	Classification	Year Measure Introduced	Estimated / Actual Completion Year	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
16	**To ensure that all Dust Management Plans are reviewed and approved during the planning application stage**	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	On-going	On-going	BBC Public Protection – Environmental Health Officers	N/A	No	Not Funded	N/A	On-going	Reduction in airborne particulates from new developments throughout the Borough.	% of dust management plans that are reviewed and approved during the planning stage	All dust management plans were reviewed and approved during the planning stage in 2023.	On-going
17	**Encouragement of low-emission public transport fleets**	Promoting Low Emission Transport	Company Vehicle Procurement - Prioritising uptake of low emission vehicles	2018	On-going	NCC/NCiC/PT operators	NCT (operator) funding	No	-	-	On-going	Reduction in NO_2 and PM due to increased use of low emission vehicles.	Reduced Emissions	• All vehicles into Nottingham City Centre are now Euro VI or better. • Nottinghamshire BSIP targeting Euro IV by March 2025.	Funding details not known as dependent on private commercial operators
18	**Co-ordination of street works**	Traffic Management	UTC, Congestion management, traffic reduction	On-going	On-going	NCC/Via EM/NCiC	NCC and NCiC revenue funding	No	Funded	Funded within existing resources	On-going	Reduced emissions by reducing congestion on the roads	Restrain average journey times in the morning peak to a 1% increase per year	• NCC introduced a street works permit scheme on 1 April 2020 to help plan/coordinate roadworks on its managed highway network. Street works management is undertaken by Via EM on behalf of NCC. The fundamental aim of the coordination/inspection regime is to facilitate necessary works, whilst minimising disruption by reducing duration etc. • Regular coordination meetings held between all works promoters and regional partners	Costs are dependent on number street works undertaken

Measure No.	Measure	Category	Classification	Year Measure Introduced	Estimated / Actual Completion Year	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
														in additional to regular meetings between NH and regional partners to create a framework programme of planned works affecting strategic and local routes. Detailed journey time monitoring undertaken annually since 2005/06.	
19	**Traffic control and management contingency planning, and effective event and incident management**	Traffic Management	UTC, congestion management, traffic reduction	Ongoing	Ongoing	NCiC / NCC / Via EM / National Highways (NH)	NCiC / NCC / NH revenue funding	No	Funded	£100k - £500k	Implemented and ongoing	Reduced emissions of N02 and PM by reducing congestion on the roads	Restrain average journey times in the morning peak to a 1% increase per year	• The local operating agreement between NCC and NH has been comprehensively reviewed to identify the relevant parts of the network which have interaction on each authority and to put in place appropriate communication channels for management of incidents and dissemination of information. • Key locations on the local network have been identified and associated diversion routes investigated in line with the developing network hierarchy. • Incidents dealt with through agreed procedures and regular partnership meetings held. Working in close collaboration with the NCiC and NH, tactical diversion routes have been developed for the emergency diversion of traffic from any part of the strategic road	A potential barrier to this work is a lack of future revenue funding. Lack of future revenue funding The UTCC is a shared facility between Nottinghamshire County Council and the City Council. Estimated cost shown is the County Council's annual contribution Cost dependent on the number of incidents.

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														network, to reduce the delay in rerouting traffic to ease congestion at the time of incidents. • Detailed journey time monitoring undertaken annually since 2005/06. • A traffic control centre monitors traffic movement on the local highway network (not the trunk road/motorways) and provides real time traffic control over many traffic signal installations, including on A610 at Nuthall	
20	**Traffic management control patrols on arterial route through the Borough at peak period travel times to identify hot spots where parking affects the traffic flow**	Traffic Management	UTC, Congestion management, traffic reduction	2019	On-going	NCC	NCC	No	Funded	Not known	On-going	Reduced emissions by reducing congestion on the roads.	Number of visits to the locations and number of observations during the visits.	•All main routes into, out of and through the Borough are patrolled regularly and enforcement action where necessary is taken. If particular areas suffer as a result of road works patrols are increased to ensure the smooth flow of traffic. **Update** - On-street parking patrol activities now comes directly under Nottinghamshire County Council	On-street parking patrol activities now comes directly under Nottinghamshire County Council
21	**Moving Traffic Enforcement**	Traffic Management	UTC, Congestion management, traffic reduction	2023		NCC	NCC	No	Funded		Planning	Reduced emissions of N02 and PM by reducing congestion on the roads	Restrain average journey times in the morning peak to a 1% increase per year	Since June 2022, local authorities have been able to apply to the DfT for the powers to enforce moving traffic offences. Such offences include: banned turns, driving in pedestrian areas, environmental weight limits, box junctions etc. NCC's first pilot site was the box junction	

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														at Lady Bay Bridge, West Bridgford. Further pilot sites were planned, however, the DfT have paused any further applications.	
22	**Optimisation of traffic signals**	Traffic Management	UTC, Congestion management, traffic reduction		On-going	NCC / Via EM	NCC	No	Funded	£1m - £10m	Implemented	Reduced vehicle emissions	Restrain average journey times in the morning peak to a 1% increase per year	SCOOT and MOVA equipped signals are relayed back to the Traffic Control Centre so that they can be altered in real time as required.	Implementation ongoing
23	**Lane Rental Scheme**	Traffic Management	UTC, congestion management, traffic reduction	2023	2025	NCC	NCC	No	Not funded		Planning	Reduced emissions of N02 and PM by reducing congestion on the roads	Restrain average journey times in the morning peak to a 1% increase per year	NCC are looking at potentially introducing a Lane Rental scheme within the county. This would involve determining the top most congested roads in the county and then, following consultation, making an Order which will allow NCC (as the Highway Authority) to apply a levy/charge to anyone undertaking either street works (utilities) or roadworks (Council) during the peak times on these roads. The intention of the scheme is to minimise works from taking place during the peak times, which would lead to excessive congestion (which impacts on air quality). Any income raised through the scheme can be reinvested in projects to reduce congestion/improve highways, and subsequently air quality. The anticipated start date for a Lane Rental scheme in the county is April 2025.	2025
24	**Promoting on the Council Webpage the**	Public Information	Via the Internet	2020		BBC Parking services – Parking Manager	LA - BBC	No	Not Funded	Within existing resources	On-going	Reduction in $N0_2$ and PM due to raising	32 EVCP are currently promoted	•The Council currently has 32 electric vehicle charging points in	On-going

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	Council's Electric Vehicle Charging Points Network within the Borough				On-going							awareness of where people can use the charge points for their electric vehicles	on BBC's website.	Beeston, Stapleford, Kimberley and Eastwood these are displayed with the postcodes for easy identification on the Council website and this is updated when necessary. • 2 new 50KW charges were added and promoted in 2021.	**Complete**
25	**To continue investigating the installation of Electric Vehicle Charging Points for staff and visitors to the Council to use**	Promoting Low Emission Transport	Other	2020	On-going	BBC Parking services – Parking Manager	LA - BBC	No	Not Funded	Within existing resources	On-going	Reduction in NO_2 and PM by encouraging Electric Vehicle use	Number of EVCP installed for employees and visitors to the Council to use.	Investigation into this has been undertaken and the infrastructure and power supply has already been installed within Devonshire Avenue car park. • Broxtowe Borough Council's Climate Change strategy is currently being refreshed. An action falling from this revised strategy is to look at and produce an Electric Vehicle charging strategy for the borough. • Funding opportunities for further charging points need to be explored.	**Infrastructure and power supply complete** On-going On-going
26	**Review of off-street car parking charging**	Traffic Management	Emission based parking or permit charges	2020	2023	BBC Parking services – Parking Manager	LA - BBC	No	Funded	<10K	Completed	Reduction in NO_2 and PM	Reduced Emissions	•BBC has consolidating all of their Off-Street Parking Orders into one Order which was made legal in 2021. • On-going annually. The policy document is updated only when there is significant legislation or council policy changes •Charges will also be reviewed on an adhoc basis. • Charges will be reviewed in 2023. This review will also include the use of	On-going On-going **Complete**

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														electric vehicle charging points. **UPDATE**: Review was undertaken by Cabinet and it was resolved that chargers would be increased.	
27	**Real time travel information**	Public Information	Other	-	Ongoing	NCC/Via EM Ltd	NCC revenue funding	No	Funded	-	Implemented and on-going	Reduced Emissions	Restrain average journey times in the morning peak to a 1% increase per year	• Information conveyed by all forms of media (press, radio, website, social media etc.). • The Travelwise centre remains in operation 24hrs a day, every day.	Nottingham Travelwise website: https://www.itsnottingham.info/
28	**Bus service improvements**	Transport Planning and Infrastructure	Public transport improvements-interchanges stations and services	2019	2025	NCC / NCiC / PT operators	DfT	No	Funded	>£10 million	On-going	Reduced emissions of N02 and PM due to increased passenger transport patronage.	Increased bus patronage	• NCC have developed two Bus Service Improvement Plans (BSIP) for Nottinghamshire; the BSIP for the Greater Nottinghamshire (Robin Hood) area which was developed in partnership with NCiC, and the BSIP for Nottinghamshire. The plans, which were approved at the Transport and Environment Committee in November 2021, outline the Council's ambitions for improving bus services within the county.	
29	**Encouraging the use of emissions standards when procuring school bus contracts and supported bus services**	Promoting Low Emission Transport	Company Vehicle Procurement - Prioritising uptake of low emission vehicles		On-going	NCC / PT operators	PT operators	No	Funded		Ongoing	Reduced emissions of N02 and PM	Reduced emissions and ongoing take-up of cleaner vehicles	On-going take-up of LEVs	Funding details not known as its funded commercial private operators
30	**Bus stop clearways**	Traffic Management	UTC, congestion management, traffic reduction		Ongoing	NCC / Via EM	NCC	No	Funded	£50k - £100k	Implemented and ongoing	Reduced vehicle emissions	Manage parking to improve journey time reliability	Bus stop clearways are introduced at bus stops within the county, where parked vehicles are identified as	The estimated cost provided is the annual cost of this measure.

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														impeding traffic flows. CCTV enforcement car introduced in 2016, second vehicle purchased in 2018; and third vehicle introduced in 2019.	
31	**Bus infrastructure**	Transport Planning and Infrastructure	Public transport improvements-interchanges stations and services		Ongoing	NCCV	Integrated transport block funding	No	Funded	£100k - £500k	Implemented and ongoing	Reduced emissions of N02 and PM due to increased passenger transport patronage	Increased passenger transport patronage	An annual programme of bus infrastructure improvements is delivered as part of the integrated transport block programme, including the installation of new bus shelters and real time bus information, and the update/maintenance of all stops e.g. updating network maps to ensure all information is current and accurate.	The estimated cost provided is the annual cost of this measure.
32	**Bus fleet low emission vehicles**	Vehicle Fleet Efficiency	Promoting Low Emission Public Transport			NCC / NCiC / PT operators; NCT (operator)	OLEV funding	No	Funded	£1m - £10m	Implemented	Reduced emissions of N02 and PM due to increased use of low emission vehicles	Reduced emissions and ongoing take-up of cleaner vehicles	OZEV/OLEV funding in the county Green/Clean Bus Technology Fund in the council Euro VI buses/fleets in the county	
33	**Under 22s Young Persons' Ticket**	Transport Planning and Infrastructure	Other	2022/ 2023	2025	NCC/NCiC/PT operators	PT operators	No	Funded	-	Implemented	Reduction in N02 and PM due to increased passenger transport patronage	Increased passenger transport patronage	BSIP funding secured to launch an Under 22 young persons' ticket for use in Greater Nottingham and Nottinghamshire providing an extension of under 19s discounted travel to under 22s. **Update**: it was launched in September 2023	The Under 22s scheme was launched in September 2023 and is due to run until March 2025, at which point the scheme will be reviewed.
34	**Marketing and promotion of**	Promoting Travel Alternatives	Other	-	On-going	NCC/NCiC/PT operators	LA-NCC LA-NCiC	No	Funded	Within existing Resources	On-going	Reduction in NO_2 and PM as increased	Increased passenger transport patronage	• NCC undertakes various marketing campaigns in partnership with	On-going

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	passenger transport											bus patronage		operators and NCiC – coordinated through the Greater Enhanced Partnership. • Post-COVID Sales & Marketing Plan launched to help promote public transport. • Network maps produced to coincide with route/timetable changes • NCC's Travel Choice webpages include information on public transport across the county (for residents and businesses)	
35	**Sustainable Travel information for the Public**	Public Information	Via the internet	2010	On-going	BBC Human Resources - Human Resources Manager	LA-BBC	No	Not Funded	Within existing resources	On-going	Reduced Emissions of NO_2 and PM	Increased use of public transport	• The Travel Choice website provides information and advice to residents, jobseekers and businesses, on sustainable travel options within the county • School travel Toolkit (see measure No.68) BBC have leaflets on safe cycling on the tram lines, bus routes, Broxtowe cycling map, Broxtowe Country and Erewash Valley routes and walking leaflets. These are all available in the Council reception. •Sustainable Travel methods are also available on the main council website.	On-going
36	**Concessionary fare schemes**	Transport Planning and Infrastructure	Other	On-going	On-going	NCC/PT operators	LA-NCC	No	Funded	> £10 million	On-going	Reduced emissions due to increased bus patronage.	Increased passenger transport patronage	• Countywide off-peak concessionary public transport fare scheme available for the	Annual costs are shown in the Estimated Cost of Measure

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														over 60s and disabled.	
37	**Taxi Licensing Conditions**	Promoting Low Emission Transport	Taxi Licensing conditions	2018	On-going	BBC Licensing Team - Licensing Manager	N/A	No	Not Funded	N/A	On-going	Reduction in NO_2 and PM as cleaner vehicles	Recued Emissions	No vehicle older than 8 years will be licensed on first application. Petrol fuelled vehicles must be Euro 5 or above Diesel fuelled vehicles must be Euro 6	On-going
38	**To Increase the number of low emission and electric vehicles licensed as Taxis by Broxtowe Borough Council.**	Promoting Low Emission Transport	Taxi Licensing conditions	2020	On-going	BBC Licensing Team - Licensing Manager	N/A	No	Not Funded	N/A	On-going	Reduction in NO_2 and PM as cleaner vehicles	Number of LEV and Electric Vehicles licensed within the borough as Taxis	Broxtowe Borough Council currently licence 4 Electric vehicles, 47 Hybrid vehicles and 63 Euro 6 Vehicles out of the 114 Vehicles that are licensed to operate as Taxis. This is an increase from last year.	On-going
39	**To Investigate the feasibility of incentives for Taxi Drivers to purchase low emission or electric vehicles**	Promoting Low Emission Transport	Taxi emission incentives	2020	2024	BBC Licensing Team - Licensing Manager	N/A	No	Not Funded	N/A	Planning	Reduction in NO_2 and PM as cleaner vehicles	% uptake of the incentive if implemented.	The Implementation of National Standards in November 2022 were not in relation to LEV or electric vehicles. Therefore, a project of looking at incentives for drivers of low emission vehicles needs to be looked at.	On-going
40	**To consult with Taxi Trade about Increasing the number of Low Emission and Electric vehicles licensed**	Promoting Low Emission Transport	Other	2020	2024	BBC Licensing Team - Licensing Manager	N/A	No	Not Funded	N/A	Planning	Reduction in NO_2 and PM as cleaner vehicles	Increase in the number of LEV and Electric Vehicles licensed within the borough as Taxis	This needs to be looked at when the results of measure 39 are known. As in order to increase numbers we need an incentive to purchase LEV and Electric vehicles .	On-going
41	**To amend the Taxi Policy as required following consultation on Increasing the number of low emission and electric**	Policy Guidance and Development Control	Other policy	2020	2024	BBC Licensing Team - Licensing Manager	N/A	No	Not Funded	N/A	Planning	Reduction in NO_2 and PM as cleaner vehicles	Number of LEV and Electric Vehicles licensed within the borough as Taxis	The Taxi Policy will need amending once Measures 39 and 40 have been concluded	Ongoing

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	vehicles licensed														
42	**To Replace older combination boilers and system boilers to Seasonal Efficiency of a Domestic Boiler in the UK (SEDBUK) A rated condensing boilers**	Other	Other	2020	On-going 2024	BBC Capital Works - Capital Works Manager	LA-BBC	No	Funded	£10k - £50k	Implementation	Reduced emissions due to more efficient boilers	Number of boilers replaced	•The replacement of the remaining less efficient units (less than 1%) is planned. The typical life cycle of a unit is 15 years. Therefore, the current stock needs to be replaced as it becomes beyond its serviceable life. This is a 15 year Rolling program. • BBC carrying out a data quality review on boiler information held for the properties in question as we believe these may have already been incorporated in replacement programmes - this will be completed in 2024.	On -going 2024
43	**To investigate and consider new heating technologies that are more efficient, effective and produce lower emissions**	Other	Other	2020	2021 and ongoing 2023	BBC Capital Works - Capital Works Manager	Better Care fund	No	Funded	£50k - £100k	Implementation	Reduced emissions due to more efficient boilers	Success of the trials for cleaner heating technology	•Currently reviewing the development of hydrogen technology for boilers. Studies show that the emissions are reduced greatly. Subject to existing networks and Government. •A trial was undertaken for fitting air source heat pumps in 7 new builds in 2021 and in 5 new builds in 2022.	On-going
44	**To investigate and consider**	Other	Other	2020	2024	BBC Capital Works - Capital Works Manager	N/A	No	N/A	N/A	Success of the trials for cleaner	Reduced emissions due to	Efficiency rating of new heating	• High heat retention units were being fitted as	On-going

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	suitable alternative replacements for the remaining electrically heated Council properties				On-going consideration						heating technology	more efficient and cleaner technologies to heat the council properties	replacements.	replacements in 2022 and this will be continuing in future years •Air source heat pumps will also be considered at suitable properties where a retro fit solution is possible.	
45	**Public sector LEV procurement**	Vehicle Fleet Efficiency	Fleet efficiency and recognition schemes	2015	2024 and On-going	NCC/BBC	LA-BBC LA-NCC	No	Funded	-	On-going	Reduction in NO_2 and PM due to increased use of low emission vehicles.	Reduction in vehicle emissions du to less polluting vehicles replacing olde more pollutin vehicles	•NCC upgraded its pool vehicles to lower emission diesel vehicles. •All new fleet vehicles at BBC are Euro6 emissions complaint. There are 90+ fleet vehicles and they are on a 10 year replacing rolling programme •Procurement strategies for such measures are being reviewed as part of NCC's Environmental Strategy •Dependant on whether funding from Central Government continues	2024
46	**Low Emission Vehicle Procurement**	Promoting Low emission transport	Company vehicle Procurement - prioritising uptake of low emission vehicles	2017, 2019 and 2020	2024	BBC Transport and Stores Manager	LA-BBC	No	Funded	£10k - £50k	On-going	Reduced Emissions of N02 and PM	Reduction in $N0_2$ and PM due to cleaner vehicle technology	• All new fleet vehicles at BBC are Euro6 emissions complaint. There are 95 fleet vehicles and they are on a 12 year replacing rolling programme. • BBC has purchased three new Euro 6 Refuse Collection vehicle in the financial year 23/24 replacing two older vehicles. • BBC currently operate a fleet of 9 electric vans	On- going

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47	**To develop a plan for future infrastructures to support growth in BBC's Electric Fleet and the domestic use of Electric Vehicles**	Vehicle Fleet Efficiency	Other	2020	2022-2024	BBC Transport and Stores Manager	LA-BBC and External grant – Grant provider not currently known	No	-	>£10 Million	Planning	Reduction in NO_2 and PM due to increased use of low emission vehicles.	Reduction in NO_2 and PM due to cleaner vehicle technology	A review is currently being undertaken to determine the necessary infrastructure to accommodate the move to a carbon neutral fleet. A 1000kv substation will be required and a charging relay system installed in the parking areas. A review has estimated that the cost is in the region on 12.4 million for a complete decarbonisation and infrastructure modification to the Kimberley Depot. A report is currently being written and the proposal will be submitted to BBC Committee in 2024 **Update**: the fleet conversion to EVs and subsequent infrastructure development is currently cost prohibitive, however this matter remains under review.	2024
48	**To investigate the viability of obtaining equipment and software that will record BBC Fleet Vehicle driver's behaviour, and enable a training programme to be established to improve efficiency**	Vehicle Fleet Efficiency	Driver training and ECO driving aids	2020	2023-2024	BBC Transport and Stores Manager	LA-BBC	No	Funded	Within existing resources	Planning	Reduction in NO_2 and PM due to improved driving efficiency.	Number of employees that have undergone driver training.	An investigation into the viability of obtaining equipment and software that will record driver behavior, and enable a training programme to be established. **Update** – a Business Case for the purchase and subscription of Tachograph analysis software has been submitted for ICT review.	2024
49	**Capital Fleet Vehicle Replacement for HGV's**	Vehicle Fleet Efficiency	Other	2020	2021-2024	BBC Transport and Stores Manager	LA-BBC	No	Funded	£500k - £1 Million	On-going	Reduction in NO_2 and PM due to replacement of older HGV's.	Number of replacement HGV's	• The Capital Vehicle Fleet replacement programme for HGV's (Refuse Freighters 26 Tonnes) identified for replacement will be replaced with Euro	On-going

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														standard engines (Euro 6 onwards). • £750k per annum • Before purchasing, consideration will be given based on practicality and economics of the adoption of new technologies that have come to market. This includes Electric and Hydrogen Propulsion methods.	
50	**Vehicle Emissions Testing**	Vehicle Fleet Efficiency	Testing Vehicle Emissions	On-going	On-going	BBC Transport and Stores Manager	LA - BBC	No	Not Funded	Within existing resources	On-going	Reduction in NO_2 and PM as regular serviced and maintained vehicles to ensure they are operating efficiently.	Reduced emissions	• All BBC Fleet vehicles are annually emission tested in house prior to MOT Emission testing. • BBC also undertakes additional emissions tests on all fleet vehicles if any new fuel or engine components have been changed. This is to ensure vehicle emission compliance. • **Update:** All BBCs commercial fleet of vehicles (95) are now being fuelled with HVO instead of Diesel.	On-going On-going
51	**Installation of 7kW electric vehicle (EV) chargepoints at BBC Kimberley Depot for Public Sector Fleet Vehicles**	Vehicle Fleet Efficiency	Other	2023	2025	BBC Transport and Stores Manager	Future Transport Zones (FTZ) funding	No	Funded	£10k - 50k	Planning	Reduced Emissions of N02 and PM	Reduction in N02 and PM due to cleaner vehicle technology	• Four new 7kW electric vehicle (EV) charge points to be installed at Kimberley Depot (increasing the number to six.) in 2024 Nottingham City Council was awarded a grant as part of the Future Transport Zones (FTZ) funding, to develop and operate an EV charging network across the Nottingham, Nottinghamshire, Derby and Derbyshire (D2N2) region. The charge	2024

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														points when installed will form part of a network of public sector organisations who have agreed to share the EV chargepoints which will enable the delivery of collective efficiencies in EV operations across the region. • These chargepoints are for the use of any Council operated fleet across the region. **BBC's financial contribution for these was: £15,796**	
52	**To provide all new allotment tenants within the borough, a Tenancy agreement regarding bonfires.**	Public Information	Other	2012	On-going	BBC Parks and Open Spaces – Environmental Development Officer	LA-BBC	No	Not Funded	N/A	On-going	Reduction in Particulates due to reduction of bonfires on site	Reduction in bonfires from allotments within the borough.	All new allotment tenants within the borough are provided with a tenancy agreement which includes the following information; bonfires should only be used on very rare occasions, and due consideration for other allotment holders and neighbouring properties must be used at all times. They must only be in the period 1st October to 31st March and only used to burn non compostable garden waste that is produced on the allotment.	On-going
53	**To regularly communicate with all allotment providers in the borough to discourage the use of bonfires to dispose of garden waste**	Public Information	Other	2023	2024	BBC Parks and Open Spaces – Environmental Development Officer	LA-BBC	No	Not Funded	N/A	Planning	Reduction in Particulates due to reduction of bonfires on site	Reduction in bonfires from allotments within the borough.	Due to another heatwave in Summer 2023, the correspondence to all allotment tenants in the borough in 2023 was about conserving, collecting and utilising the water on the allotments. In January 2025 the allotment newsletter will include a section	2025

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														about bonfires and discouraging them, and using alternative methods to dispose of garden waste.	
54	**Marketing of cycling**	Promoting Travel Alternatives	Promotion of cycling	2010 and 2017	On-going	BBC	LA - BBC	No	Not Funded	Within existing resources	On-going	Reduced Emissions of NO_2 and PM	In Broxtowe district there has been a 30% increase in cycling between 2010 and 2014	• Prior Covid-19 (2019) cycling levels had increased in Nottinghamshire by 4% and in Broxtowe by 5%. Cycling levels, particularly on urban/commuter route, across the county have been impacted by the Covid-19 pandemic and have not yet fully recovered	On-going
55	**To investigate the feasibility of increased provision for cycle parking in the Borough**	Alternatives to private vehicle use	Other	2022	2025	BBC Head of Asset Management	LA - BBC	No	Not yet identified	Not yet calculated	Planning	Reduced Emissions of NO_2 and PM	No of cycle parking spaces in the borough	A feasibility study has not been undertaken yet. However, several projects were undertaken in 2023 to increase cycling provision in the Borough. These projects are discussed in this Table as separate measures	2025
56	**Improving the cycle network in Stapleford**	Transport Planning and Infrastructure	Cycle Network	2022	2025	BBC Economic Development - Regeneration Projects Manager	Stapleford Towns Deal	No	Funded	£1m-£10m	Planning	Reduced Emissions of NO_2 and PM	Reduced emissions due to increase in cycling	Funds have been sourced through the Stapleford Towns Deal to improve and encourage cycling within Stapleford by improving the cycling infrastructure. Project Adjustment request has been submitted and awaiting DLUHC approval for amended scheme to progress.	Delays in approval and External stakeholder engagement may cause issues (Highway Authority)
57	**Cycle Repair Workshops**	Alternatives to Private Vehicle use	Other	2022	2023	BBC Economic Development - Regeneration Projects Manager/ RideWise	Stapleford Towns Deal/ RideWise	No	Funded	£10-£50k	Implemented	Reduced Emissions of NO_2 and PM	Reduced emissions due to increase in cycling	Ridewise continue to support the Cycle Hub, which has been extended for another year to Mar 25. They have supported 914 people to date with bike repairs.	Future grant funds to continue to the service.
58	**Cycling networks**	Transport Planning and	Cycle network	2018	On-going	NCC/Via EM/NCiC	LGF, s106 funding	No	Funded	>£10 million	Implementation	Reduced Emissions of N02 and PM	Increased cycling trips	• Construction of improved cycle links between Beeston,	• Future schemes will be determined by members following finalisation of LCWIP

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		Infrastructure												Enterprise Zone and the City are completed. • NCC, working in partnership with NCiC, has secured funding through NCiC's Transforming Cities Fund to potentially upgrade routes along A6005 • Other small-scale cycling improvements are developed and delivered as part of the annual integrated transport programme and through developer funded improvements	• Any future cycle improvement schemes will be subject to funding availability, feasibility consultation, and approvals.
59	**Cycling networks as part of Active Travel Funding (ATF) Tranche 4**	Transport Planning and Infrastructure	Cycle network	2023	On-going	NCC	Active Travel Fund (ATF)	No	Funded	£1 million - £10 million	On-going	Reduced Emissions of N02 and PM	Increased cycling trips	• In May 2023, the government announced that NCC were successful in securing • £1.1m from Tranche 4 of the Active Travel Fund (ATF), for the development of a new walking and cycling facility along Baulk Lane, Stapleford. The scheme is subject to feasibility, consultation, and County Council Cabinet Member approval.	
60	**Cycling network and infrastructure as part of Towns Fund**	Transport Planning and Infrastructure	Cycle network	2015	On-going	BBC/NCC / Via EM	Towns Fund	No	Funded	£1 million - £10 million	On-going	Reduced Emissions of N02 and PM	Increased cycling trips	• Cycle hub installed at Beeston Train Station in 2015 to integrate with bus/rail services. • BBC's Town Fund includes potential cycle infrastructure (funding amount to be determined by Board and scheme proposals subject to feasibility, consultation, and County Council	A potential barrier to such projects is lack of future revenue funding. The Towns Fund funded proposals are still subject to feasibility, consultation, and County Council Cabinet approval.

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														Cabinet Member approval).	
61	**Cycle hire scheme**	Transport Planning and Infrastructure	Public cycle hire scheme	2021	Not known - dependent on commercial cycle hire scheme providers	NCiC/NCC	Funding source to be determined	No	TBC	-	Planning	Reduced Emissions of N02 and PM	Increased cycling trips	• Hire schemes at the nearby University of Nottingham in place • Feasibility study undertaken on a city based hire scheme which potentially could include parts of the county such as Beeston • Scheme dependent on commercial cycle hire scheme providers committing to, and delivering a scheme	Scheme dependent on commercial cycle hire scheme providers committing to, and delivering a scheme
62	**Cycle training**	Promoting Travel Alternatives	Promotion of cycling	Circa 1970s	Ongoing	NCC	DfT funding/PH funding	No	Funded	Various	Implemented and On-going	Reduced Emissions of N02 and PM	Increased cycling trips	• Across the county, 11,709 people received cycle training during 2023/24 and in Broxtowe specifically, training was delivered to 879 people. • Implementation is ongoing.	On-going
63	**Cycle parking facilities**	Transport Planning and Infrastructure	Cycle network	2015	On-going	NCC/BBC	Integrated transport block/developer contributions	No	Funded	£10k - £50k	Implemented and on-going	Reduced Emissions of N02 and PM	Increased cycling trips	• Cycle hub installed in 2015 to integrate with bus/rail services • Ad-hoc parking provided where required • BBC's Town Fund bid includes proposals for cycle hub in Stapleford Town Centre.	• Potential barrier: Lack of future revenue funding
64	**Marketing of cycling**	Promoting Travel Alternatives	Promotion of cycling	2010 and 2017	On-going	NCC	NCC	No	Not Funded	within existing resources	Implemented and on-going	Reduced Emissions of N02 and PM due to increased cycling uptake	Increased cycling trips	• Marketing of cycling is undertaken in a variety of formats for both commute and leisure trips. Various NCC campaigns have been undertaken including 'cycling week', 'Notts Routes & Rides' and cycle maps.	Travel Choice website: https://travelchoice.nottinghamshire.gov.uk/getting-around-nottinghamshire/cycle/

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														• NCC's website and Travel Choice webpages provide information on cycling across the county (for residents and businesses	
65	**Marketing of walking**	Promoting Travel Alternatives	Promotion of walking	-	On-going	NCC	NCC	No	Funded	Within existing resources	Implemented and on-going	Reduced Emissions of N02 and PM due to more people walking	Increased walking trips	• General promotion (e.g. website and literature) ongoing. • NCC's website and Travel Choice webpages provide information on alternatives to using private vehicles, including cycle maps, leisure 'Routes and Rides' and the Rights of Way network	Travel Choice website: https://travelchoice.nottinghamshire.gov.uk/getting-around-nottinghamshire/walk/
66	**Pedestrian infrastructure improvements**	Transport Planning and Infrastructure	Other	2020	On-going	NCC / Borough and District Councils	NCC and various other sources of funding e.g. S38, S278 and S106	No	Funded	£100k to £500k	On-going	Reduction in $N0_2$ and PM emissions as more people are walking	Increased walking trips	• Pedestrian improvements (e.g. pedestrian crossing, dropped kerbs, footways) are developed and delivered as part of NCC's annual integrated transport programme. • In addition to the integrated transport block funding, improvements are also delivered using funding secured through the planning process (e.g. S38, S106, S278).	• NCC's annual integrated transport programme is published on the Council's website • Schemes identified are subject to feasibility and availability of funding. • A potential barrier to such schemes is the lack of future funding.
67	**Encouraging the use of emissions standards when procuring school bus contracts and supported bus services**	Promoting Low Emission Transport	Company Vehicle Procurement - Prioritising uptake of low emission vehicles	-	Ongoing	NCC/PT operators	PT operators	No	Funded	-	On-going	Reduced Emissions of N02 and PM	Reduced Emissions and on-going take-up of cleaner vehicles	• On-going take-up of LEV	Funding details not known as its funded commercial private operators

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68	**School travel plans**	Promoting Travel Alternatives	School Travel	2000	On-going	NCC	NCC	No	Not Funded	£10k - £50k	Completed	Reduced Emissions of N02 and PM if alternative methods of sustainable travel are used	Restrain average journey times in the morning peak to a 1% increase per year	• Following a trial with four pilot schools in 2019/20, the online school travel toolkit was rolled out to all County schools during the 2020/21 academic year. • The Nottinghamshire School Travel Toolkit provides school children, parents and staff with information and advice on improving travel to and from Nottinghamshire's schools.	Costs detailed are for the School Travel Toolkit only. There currently is not any funding available for delivering travel planning to individual schools. Link to School travel toolkit: https://www.nottinghamshire.gov.uk/education/travel-to-schools/school-travel-toolkit
69	**Web based journey planners**	Public Information	other	2019	On-going	NCC	NCC	No	Funded	within existing resources	Implemented	Reduction in NO_2 and PM due to increase in sustainable travel	Increased walking/cycling/ passenger transport trips	• Nottinghamshire is part of the national, multi-modal Traveline journey planner. • Web links to the Traveline site are publicised and available from NCC's website. • New Live Travel Suite to be launched in July 2024 to replace Traveline offering enhanced features for journey planning.	Journey planner on NCC's website: http://www.nottinghamshire.gov.uk/transport/public-transport/plan-journey Web based tools are also included on NCC's Travel Choice website: https://travelchoice.nottinghamshire.gov.uk/journey-planner
70	**Personalised travel planning**	Promoting Travel Alternatives	Personalised Travel Planning	2016	On-going	NCC / AECOM	DfT Access Fund	No	Funded	£50k - £100k	Completed	Reduction in NO_2 and PM due to increase in sustainable travel	Restrain average journey times in the morning peak to a 1% increase per year	• NCC have delivered Personalised Travel Planning (PTP) to residents, jobseekers, workplaces and schools across various parts of the county, over a number of years: • including Beeston, West Bridgford, Newark, Ashfield, Mansfield and Worksop • The 2019 DfT Access Fund funded PTP	Future PTP will be delivered should revenue funding sources be identified and secured for its delivery

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														project targeted 4,976 households in Daybrook; with 1,188 households opting to take part in the project and receiving travel advice. • The Capability Fund funded PTP project has delivered to over 550 households and 400 employees in Bassetlaw and Ashfield to date	
71	**Car Lease Scheme for BBC employees**	Promoting low emission transport	other	2021	On-going	BBC Human Resources - Human Resources Manager	LA-BBC	No	Not Funded	-	Implementation	Reduction in NO_2 and PM	Number of employees leasing ULEV	BBC has introduced a Car Lease Scheme in 2021 for employees, to encourage and uptake in ULEV to reduce emissions. This also includes electric vehicles. 5 employees have made use of the scheme, utilising EV/ULEV cars. 2 employees have returned vehicles and 3 vehicles are currently being leased.	Covid/post-covid silicon chip shortage which is severely impacting on car manufacturing and therefore limiting delivery times for vehicles and general availability. Increase car costs also may limit affordability.
72	**Encouraging the use of Hybrid or Electric vehicles for BBC employees**	Promoting Low Emission Transport	Other	2020	On-going	BBC Human Resources - Human Resources Manager	LA-BBC	No	Funded	Within existing resources	Implementation	Reduction in NO_2 and PM	Number of employees using hybrid or electric vehicles	•To encourage employees of BBC to purchase hybrid vehicles and electric vehicles for their personal and business use. •Four employees used a personal Electric vehicle and three used a ULEV in 2023.	On –going
73	**Investigate the feasibility of a Council staff car sharing**	Alternatives to Private Vehicle Use	Car Clubs	2020	On-going	BBC Human Resources - Human Resources Manager	N/A	No	Not Funded	N/A	Planning	Reduction in NO_2 and PM	No of staff car sharing	Due to Covid-19 being prevalent and it is transmissible in confined spaces, this measure has been put on hold temporarily. However, staff in the future will be encouraged to travel together. An update will be provided in the next ASR.	

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														Car clubs are going be explored in 2024/25. An understanding of the infrastructure and availability/feasibility will be key to determining success.	
74	**Promoting travel choices - Consideration of car club into the county**	Alternatives to private vehicle use	Car Clubs	2023		NCC	NCC	No	Not Funded		On-going	Reduced emissions of N02 and PM	Restrain average journey times in the morning peak to a 1% increase per year. A reduction in staff business emissions and cost, through both a car club and a wider review of staff travel habits.	NCiC scheme introduced in 2014, with the provider reviewed in 2018. Expansion of scheme into county dependent on its success, which is still unclear. Work has been undertaken to look at the feasibility of a partnership with a Car Club operator in the county, for both residents and internal use (i.e. staff travel). The work will feed in to a wider fleet review and review of staff business travel, with a few more aspects to be expanded upon. Funding for implementation to be determined.	Dependent on the determination of business case and commercial operator coming forward. Barriers include financial risk, organisational culture (i.e. using personal cars less) and specific service needs.
75	**Cycle to work Scheme**	Promoting Travel Alternatives	Promotion of cycling	2009	On-going	BBC Human Resources - Human Resources Manager	N/A	No	Not Funded	Within existing resources	On-going	Reduction in NO_2 and PM	No of bikes purchased through scheme	•Cycle to work Scheme – to assist and give tax relief on bike purchases for employees of BBC. •Nine employees purchased a bike through this scheme in 2023. Since the scheme started 189 employees have purchased bikes through the scheme.	On-going
76	**Flexible working arrangements**	Promoting Travel Alternatives	Encourage/Facilitate Home Working	2012	On-going	NCC and BBC Human Resources - Human Resources Manager	N/A	No	Not Funded	N/A	On-going	Reduction in NO_2 and PM due to employees not commuting	Restrain average journey times in the morning peak to a 1% increase per year	•NCC operates flexible working arrangements for all its staff. •BBC New Ways of Working was introduced in 2019, which allows and	On-going On-going

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														encourages employees to work from home when practical to do so.	
77	**To reschedule the dry recycling waste rounds to reduce fuel consumption and improve efficiency**	Vehicle Fleet Efficiency	Other	2020	2024	BBC Environment – Head of Environment	N/A	No	Not Funded	N/A	Planning	Reduction in NO_2 and PM due to efficient routes.	Reduced emissions	Improved vehicle utilisation has been undertaken to improve service delivery. Rescheduling is planned in 2024/25 to take account of new builds and increased tonnages.	2024/2025
78	**To reschedule the green waste rounds to reduce fuel consumption and improve efficiency**	Vehicle Fleet Efficiency	Other	2020	On-going	BBC Environment – Head of Environment	N/A	No	Not Funded	N/A	Planning	Reduction in NO_2 and PM due to efficient routes	Reduced emissions	Improved vehicle utilisation has been undertaken to improve service delivery. The garden waste rounds are dictated by the number of subscribers to the service and this is reviewed on an annual basis. However, the round review planned in 2024/25 will help to support this utilisation.	On-going
79	**Development of ITSO public transport smartcard ticketing**	Transport Planning and Infrastructure	Public transport improvements-interchanges stations and services	2014	2024	NCC/NCiC/PT operators		No	Funded	-	Completed	Reduction in NO_2 and PM due to increased passenger transport patronage	Increased passenger transport patronage	• Integrated ticketing strategy developed in 2014/15. A new smartcard platform was introduced in 2014 and the Robin Hood card scheme was introduced in 2015. All the major bus operators have now introduced contactless payments for their own ticketing products alongside the Robin hood card and this was completed in around March 2020. • The first multi-operator contactless ticketing system in the UK outside	The Nottinghamshire Enhanced Partnership is seeking to use indicative BSIP funding to deliver a multi operator ticket (MOT) in Newark & Mansfield, alongside development of an add-on for passengers travelling into the Robin hood network in Greater Nottingham. MOT strategy completed: December 2022 Mansfield scheme to launch: September 2023 Robinhood add-on to launch: March 2024

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														London was launched in the Nottingham area in May 2022. Public transport users can now pay a single daily capped fare across the majority of the city's buses and trams using their chosen contactless payment method.	
80	**Undertaken Phase 1 public consultation on Smoke Control Areas introducing the new Smoke Control order including Moored Vessels**	Public Information	Other	2022	2023	BBC Public Protection - Senior Environmental Health Officer	Defra	Yes	Funded	<£10k	Completed	Reduction in Particulates	% of people that responded to the public Consultation	To undertake Public consultation on Smoke Control Areas introducing the new Smoke Control order. This was undertaken in 2023	**Complete**
81	**To write a Smoke Control Order Enforcement Policy and to get BBC to formally adopt it.**	Policy guidance and Development Control	Other Policy	2022	2023	BBC Public Protection - Senior Environmental Health Officer	LA-BBC	No	Funded	Within existing resources	Completed	Reduction in Particulates	Improving Air Quality by taking action to reduce Emissions	• To write a Smoke Control Order Enforcement Policy and to get BBC to formally adopt it. • Broxtowe Borough Council has also formally adopted a Smoke Control Order Enforcement Policy in October 2023 to support enforcement of its Order and enable improved future regulation of the issue.	**Complete**
82	**Investigation into whether it is feasible for free parking in the borough car parks for Electric and Hybrid vehicles**	Traffic Management	Emission based parking or permit charges	2020	2021 2023	BBC Parking services – Parking Manager	LA - BBC	No	Funded	Currently unknown	Completed	Reduction in NO_2 and PM by encouraging ULEV to utilise free parking	% Usage of spaces for Electric and Hybrid vehicles if this measure is introduced	•There are currently 28 x 7KW Electric Vehicle spaces, an x 2 rapid Electric Vehicle charging spaces, totalling 30 spaces. • To be explored as part of the new Electric Vehicle strategy. It is currently not free to park and this would need consideration	**Complete.**

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														by members Any free provision would have to be managed by limiting time, otherwise it would reduce the availability of spaces for Electric Vehicles **UPDATE:** BBC's Committee reviewed the report in October 2023 and voted against free parking in the borough for Electric and hybrid vehicles.	
83	**To take on the provision of the cycle store at Beeston's Railway Station**	Alternatives to private vehicle use	Other	2022	2024	BBC Head of Asset Management	LA-BBC	No	Funded	<£10k	Completed	Reduced Emissions of NO_2 and PM	Number of bikes using the cycle store	Due to the risk of closure, BBC have taken over the provision of the cycle store at Beeston Railway station, to ensure that it is still available for the public to use.	**Complete**
84	**To install a cycle track on the Ilkeston Road Recreational Ground in Stapleford**	Promoting travel Alternatives	Promotion of Cycling	2022	2023	BBC Project Manager, Capital Works	Stapleford Towns Deal	No	Funded	£100k-£500k	Completed	Reduced Emissions of NO_2 and PM	Reduced emissions due to increase in cycling	Funds have been sourced through the Stapleford Towns Deal to improve and encourage cycling within Stapleford. A new cycle track was installed on the Ilkeston Road Recreational Ground in Stapleford in Works completed in March 2023	**Complete**
85	**To install a Cycling proficiency track to assist children/adults when learning to ride bikes**	Promoting travel Alternatives	Promotion of Cycling	2022	2023	BBC Project Manager, Capital Works	Stapleford Towns Deal	No	Funded	£100k-£500k	Completed	Reduced Emissions of NO_2 and PM	Reduced emissions due to increase in cycling	Funds have been sourced through the Stapleford Towns Deal to encourage cycling within Stapleford. A new cycle proficiency track was installed on the Ilkeston Road Recreational Ground in Stapleford in Works completed in March 2023	**Complete**
86	**To install bicycle parking stands at the Ilkeston Road Recreational Ground in Stapleford**	Promoting travel Alternatives	Promotion of Cycling	2022	2023	BBC Project Manager, Capital Works	Stapleford Towns Deal	No	Funded	£10k-£50k	Completed	Reduced Emissions of NO_2 and PM	Reduced emissions due to increase in cycling	Funds have been sourced through the Stapleford Towns Deal to encourage cycling within Stapleford. Nine new bicycle parking stands was installed on the Ilkeston Road Recreational Ground in Stapleford in	**Complete**

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														Works completed in March 2023	
87	**To investigate the feasibility of BBC employees having staff discounts with NET when using their trams**	Alternatives to private Vehicles use	Other	2022	2023	BBC Human Resources - Human Resources Manager	LA-BBC	No	Not Funded	-	Completed	Reduction in NO_2 and PM due to increase in sustainable travel	Restrain average journey times in the morning peak to a 1% increase per year	To investigate the feasibility of BBC employees having staff discounts with NET when using their trams. Employees were surveyed to express an interest to determine feasibility of progressing discussions. A meeting between BBC and Net was undertaken in March 2022. **UPDATE**: Following discussions with NET, the employer must buy the tickets in advance – which makes feasibility difficult. Employees were asked to express an interest in potential tram discounts but the interest was minimal.	**Complete**
88	**Car sharing scheme**	Alternatives to private vehicle use	Car & lift sharing schemes	Early 2000s	2023	NCC	Local Authority	No	Funded	<£10k annually	Completed	Reduction in NO_2 and PM	Restrain average journey times in the morning peak to a 1% increase per year	• Covid-19 pandemic has impacted on people's travel to work patterns/behaviours, which has impacted significantly on car sharing demand. • A review of the car sharing scheme found 3,250 members were registered, but not active. Activity and use of the scheme has been minimal for a number of years and consequently funding could not be justified and hence the licence has not been renewed.	Funding could not be justified and hence licence has not been renewed.
89	**Development of Local Cycling and Walking**	Transport Planning and	Cycle network	2019	2023	NCC/NCiC/DCC/DCiC/borough and district councils/Sustrans/other stakeholders	DfT funding	No	Funded	Within existing resources	Completed	Reduced Emissions of N02 and PM	Increased levels of cycling	• A D2N2 Local Cycling and Walking Infrastructure	Future countywide cycling infrastructure priorities will be identified through technical analysis undertaken as part of the LCWIP

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	Infrastructure Plan (LCWIP)	Infrastructure												Plan (LCWIP) has been developed. • Data collected; three stakeholder events held to date, and further public engagement on the D2N2 LCWIP took place between December 2022 and March 2023. • The D2N2 LCWIP will become the responsibility of the East Midlands Combine County Authority (EMCCA), and will be reviewed and continue to evolve and develop over time.	development (which along with other priorities, takes into consideration air quality) and will be subject to feasibility, consultation, and County Council Cabinet Member approval. The D2N2 LCWIP public engagement focused on cycle corridors only, and not specific schemes. Any future cycle improvement schemes will be subject to funding availability, feasibility consultation, and approvals.
90	**Electric Vehicle Fleet Procurement for small vans below 2 tonnes**	Vehicle Fleet Efficiency	Other	2019	2023	BBC Transport and Stores Manager	LA-BBC	No	Funded	£100k-£500k	Completed	Reduced Emissions of N02 and PM	Reduction in $N0_2$ and PM due to cleaner vehicle technology and the procurement of two electric fleet vehicles.	•The Council currently has a fleet of 9 small vans (below 2 Tonnes). Two of these vehicles have been replaced with electric vehicles at a cost of £45k. •From 2021 to 2023 all 9 vehicles (small vans) have now been replaced with Electric Vehicles.	**Complete**
91	**Encouragement of low-emission public transport fleets**	Vehicle Fleet Efficiency	Vehicle Retrofitting programmes	2018	2022	NCC/Operators	NCC/OLEV - Clean Bus Technology Fund	No	Partially Funded	£500k-£1Million	Completed	Reduction in $N0_2$ and PM due to increased use of low emission vehicles.	Reduced Emissions and On-going take-up of cleaner vehicles	• NCC has invested £0.94m from the Clean Bus Technology Fund in Feb 2018 to retrofit older buses. This is in addition to operator investment in new Euro VI standard buses on some routes • Trentbarton invested in Euro VI vehicles for indigo and Rainbow 1 in 2020	**Complete**

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92	**Review of on-street car parking in and around the AQMA**	Traffic Management	Workplace Parking Levy, Parking Enforcement on highway	-	2022	NCC	LA-NCC	No	Funded	-	Completed	Restrain average journey times in the morning peak to a 1% increase per year	Reduced emissions by reducing congestion on the roads in and around the AQMA	• Introduction of junction protection and targeted roadside parking restrictions (including bus stop clearways) along feeder corridors into the AQMA to help traffic flows/journey times. • Parking restrictions already in place, no additional side-road/off-line locations currently identified as requiring restrictions to aid traffic flow; but annual programmes of such schemes are developed should any be required in the future	**Complete** **Complete**
93	**To raise awareness of anti-idling legislation with local bus companies and Taxi's that operate within the borough**	Vehicle Fleet Efficiency	Fleet efficiency and recognition schemes	2020	2021 2022	BBC Public Protection – Environmental Health Officer	N/A	No	Not Funded	N/A	Completed	Reduced Emissions from raising awareness	Improving Air Quality, reduced Emissions and Raising awareness	All local bus companies that operate within the borough were notified of anti-idling legislation and the associated health affects in 2021. All taxis that operate within the borough were notified of anti-idling legislation and the associated health affects via a leaflet in 2022	**Complete** **Complete**
94	**Increase the number of Electric Vehicle Charging Points in the Borough Car Parks.**	Transport Planning and Infrastructure	Other	2020	2021	BBC Parking services – Parking Manager	BP charge master	No	Funded	70K for 14 x 7kw units and £90K for 2 x 50kw units	Completed	Reduction in $N0_2$ and PM due to increased use of electric vehicles.	% Usage of EVCP	•This is undertaken in association with BP chargemaster, who fund the capital and revenue for number of years BBC lose income by dedicating spaces solely for Electric Vehicle use. . 2 x rapid fast charges were installed at Victoria Street car park Stapleford in 2021, BBC has dedicated 4 spaces for Electric Vehicle use.	**Complete**

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95	**To Investigate providing all allotments within the borough with green waste recycling collections**	Other	Other	2020	2021	BBC Environment - Head of Environment	LA-BBC	No	Not Funded	Within existing resources	Completed	Reduction in Particulates due to reduction of bonfires on site	Reduction in bonfires from allotments within the borough.	• Multi team meeting taken place to discuss the feasibility of this. Several factors need resolving to determine whether this is a viable option. • One allotment holders group has been written too, in order to ascertain the extent of the waste produced. • Update: The investigation determined that providing all allotments with a garden waste collection was not feasible.	**Complete**
96	**To consult all tenants on one allotment site in the borough about a total ban on bonfires on allotment sites as a means of disposing of green waste**	Public Information	Other	2020	2021	BBC Parks and Open Spaces – Environmental Development Officer	LA-BBC	No	Not Funded	N/A	Complete	Reduction in Particulates due to reduction of bonfires on site	Reduction in bonfires from allotments within the borough.	A questionnaire was sent to all allotment holders at one allotment site re waste and the results were varied. 118 questionnaires were sent, 57 were returned. 14 supported a ban 41 said No, 2 didn't answer. 54 of the responses said that they do compost their green waste.	**Complete**
97	**Installation of new cycle stands in the Borough**	Alternatives to private vehicle use	Other	2020	2021	BBC Head of Asset Management	LA - BBC	No	Not Funded	Within existing resources	Completed	Reduced Emissions of N02 and PM	No of cycle parking spaces in the borough	• New cycle stands were installed at Beeston Train station and in Eastwood and Beeston Town Centres. Improved more stands Kimberley Leisure Centre and Council Offices.	**Complete**
98	**To have Air Quality as a priority in the Nottinghamshire Joint Health and Wellbeing Strategy and the Nottinghamshire ICS Green Plan [led by the NHS].**	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	2021	2021	NCC and NHS	N/A	No	Funded	N/A	Completed	Reduced Emissions from raising awareness	Raising awareness and reduced emissions	Air Quality is now a priority in the 2022 - 2026 Nottinghamshire Joint Health and Wellbeing Strategy and the Nottinghamshire ICS Green Plan [led by the NHS].	**Complete**

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99	**To get the Nottinghamshire Air Quality Strategy endorsed by portfolio holders**	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	2020	2020	BBC Public Protection – Environmental Health Officer	N/A	No	Not Funded	N/A	Completed	Reduced Emissions from raising awareness	Improving Air Quality, reduced Emissions and Raising awareness	•The NAQS was endorsed by portfolio holders in 2020.	**Complete**
100	**Joint Strategic Needs Assessment**	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	2017	2020	NCC/NCiC/Borough and District councils	LA	No	Funded	N/A	Completed	Reduced Emissions from raising awareness	Raising awareness and reduced emissions	• Air Quality is now a chapter in the Joint Strategic Needs Assessment and part of the Health and wellbeing Board considerations. • Reviewed and updated in 2020.	**Complete**
101	**To contribute to Nottinghamshire Air Quality Strategy (NAQS)**	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	2018	2020	NCC/NCiC/ Borough and District councils	N/A	No	Not Funded	N/A	Completed	Reduced Emissions from raising awareness	Improving Air Quality, reduced Emissions and Raising awareness	•Strategy reviewed and rewritten; and the draft was approved at the Nottinghamshire County and City Health & Wellbeing Board in 2019. • The NAQS has been endorsed by portfolio holders and its published online	**Complete** **Complete**
102	**Nottingham Go-Ultra Low programme - promoting uptake of LEVs**	Promoting Low Emission Transport	Procuring alternative Refuelling infrastructure to promote Low Emission Vehicles, EV recharging, Gas fuel recharging	2016	2020	NCiC and NCC	OLEV funding	No	Funded	£1 Million-£10 Million	Completed	Reduction in NO_2 and PM due to increased use of low emission vehicles.	On-going take-up of cleaner vehicles	• £6.1m of funding was secured for 2016-2020 through the Go Ultra Low (GUL) programme. • 123 locations in the county have been investigated for the potential provision of EV charge points as part of GUL project, with total of 68 chargers installed across 22 sites in Nottinghamshire between 2019-20. • In Broxtowe, 24 sites were investigated; of which 5 were feasible; providing 1 rapid, 19 fast and 1 slow charge points within car parks in four towns within the	**Complete**

Measure No.	Measure	Category	Classification	Year Measure Introduced	Estimated / Actual Completion Year	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
														borough (Beeston, Eastwood, Kimberley and Stapleford). • Promotion events were held for public, businesses and fleet operators including loans of LEVs for trial use in 2018 and 2019.	
103	**Nottingham Go-Ultra Low programme - promoting uptake of LEVs**	Promoting Low Emission Transport	Procuring alternative Refuelling infrastructure to promote Low Emission Vehicles, EV recharging, Gas fuel recharging	2016	2020	NCiC/NCC	OLEV funding	No	Funded	£1 Million-£10 Million	Completed	Reduction in pollutants and emissions due to increased use of low emission vehicles.	On-going take-up of cleaner vehicles	• £6.1m funding secured for 2016-2020 through the Go Ultra Low programme. • Promotion events held for public, businesses and fleet operators including loans of LEVs for trial use in 2018 and 2019 • Funding ended in 2021	**Complete**
104	**Developer requirements to provide of EV charging points at new development**	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	2019	2020	BBC Planning Policy Department – Planning Policy Team Leader	N/A	No	Not Funded	N/A	Completed	Reduction in NO_2 and PM	Reduced Emissions	Review of the Broxtowe Local plan includes Policy 26 that would require a Travel Plan to be submitted with any planning application for 10 or more dwellings or 1,000 square metres or more floor space. This policy was adopted in September 2019.	**Complete**
105	**Workplace travel plans**	Promoting Travel Alternatives	Workplace Travel Planning	2018	2020	BBC Planning Policy Department – Planning Policy Team Leader and NCC	LA – BBC and NCC	No	Not Funded	N/A	Completed	0.2µg/m^3	Restrain average journey times in the morning peak to a 1% increase per year	•Broxtowe Part 2 of the Local Plan (2018-2028), which includes Policy 26 on Travel Plans, was adopted in 2019. It is expected in this policy that all planning applications for large development sites (10 or more dwellings or 1,000 square metres or more gross floor space) must include a travel plan. •BBC and NCC have a travel plan •BBC has undertaken a review of the Councils travel plan b	**Complete** **Complete**

Measure No.	Measure	Category	Classification	Year Measure Introduced	Estimated / Actual Completion Year	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
														reviewing Lease cars car allowances and work place parking. Produced a transport map specifying the modes of transport the organisation considers acceptable if other modes or transport are not suitable. Feasibility study of having bus card/ Tickets for employee use.	**Complete**
106	**Planning and Policy Guidance**	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	2019	2019	BBC Planning Policy Department – Planning Policy Team Leader	N/A	No	Not Funded	N/A	Completed	Reduction in NO_2 and PM	Reduced Emissions	Broxtowe Part 2 of the Local Plan (2018-2028), which includes Policy 20 on Air Quality, was adopted in 2019. This policy ensures that air quality remains an important consideration when granting planning permission and to encourage developers to include sustainable travel measures as part of the planning application.	**Complete**
107	**Eco-driver training sessions**	Vehicle Fleet Efficiency	Driver training and ECO driving aids	2012	2018	NCC	LA –NCC	No	Not Funded	Within existing resources	Completed	Reduction in NO_2 and PM due to improved driving efficiency.	Reduced emissions	Eco-driving training sessions held for NCC staff	**Complete**
108	**Encouragement of low-emission public transport fleets**	Vehicle Fleet Efficiency	Promoting low emission public transport	2017	2017	NCC	NCC/OLEV - Low Emission Bus Scheme	No	Funded	£100k-£500k	completed	Reduction in NO_2 and PM due to increased use of low emission vehicles.	Reduced Emissions and On-going take-up of cleaner vehicles	• NCC secured £527,000 OLEV funding and match funded the scheme with £410,000 from its transport budget. • Introduction of two electric buses (and their associated infrastructure) on route 510, serving communities in Beeston and Stapleford.	**Complete**
109	**Fleet vehicle tracking system**	Vehicle Fleet Efficiency	Driver Training and ECO driving aids	2015	2017	BBC Transport and Stores Manager and NCC	LA – BBC and NCC	No	Not Funded	Within existing resources	Completed	Reduction in NO_2 and PM due to improved driving efficiency and	Reduced emissions	•All BBC and NCC fleet vehicles are fitted with a vehicle tracking system, which records vehicle speed and idling time.	**Complete**

Measure No.	Measure	Category	Classification	Year Measure Introduced	Estimated / Actual Completion Year	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
												efficient routes.		•A review of the journeys undertaken will ensure that if necessary measures can be implemented e.g. staff training, to improve fleet efficiency.	**Complete**
110	**Zoning of refuse collections**	Vehicle Fleet Efficiency	Other	2016	2017	BBC Transport and Stores Manager	LA - BBC	No	Not Funded	Within existing resources	Completed	Reduction in $N0_2$ and Particulate Matter as there is one less fleet vehicle used.	Reduced emissions	•A review of the refuse collection areas at BBC to enable the areas to be zoned to ensure that the collection rounds are within the designated zone, which reduces the amount of non-productive travelling time.	**Complete** The Refuse round restructure is now complete and we have reduced the fleet size by one vehicle.

KEY: **BBC** =Broxtowe Borough Council, **DCC**= Derbyshire County Council; **DCiC**= Derby City Council; **NCC**= Nottinghamshire County Council, **NH** = National Highways, **NCiC**= Nottingham City Council, **DfT** = Department for Transport.

= Three Key Measures

= Measures that were completed in 2023

= Measures that were completed between 2017 - 2022

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[10], 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.

BBC purchased a Zephyr real time sensor in late 2021, which was installed in 2022 to monitor PM_{10}, $PM_{2.5}$ and NO_2 in the Trowell AQMA. There were a variety of issues with the sensor throughout 2022, and as a result BBC felt that the data was not reliable enough to report on. However, these issues were rectified, and the 2023 data is reported on in this ASR.

In 2023 the two methods used to determine the levels of $PM_{2.5}$ in the Borough are the results obtained from the Zephyr real time sensor, and to also identify the modelled background levels for the Borough from Defra's webpages.

The modelled background level provided by Defra for the Borough of Broxtowe are modelled to be between 7.3µg/m^3 and 9.4µg/m^3 for 2023, with the annual mean for 2023 being 8.2µg/m^3. The modelled background concentrations are shown to be in the higher range along the M1 Motorway. The background maps are shown in Appendix H.

The $PM_{2.5}$ annual mean concentrations obtained from the Zephyr real time sensor for 2023 was 8.0µg/m^3. Therefore, the $PM_{2.5}$ air quality objective of 20µg/m^3 was not exceeded. Further information about $PM_{2.5}$ Zephyr results are discussed in greater details in section 3.2.3 of this report.

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

The Air Quality Objective (AQO) for $PM_{2.5}$ is an annual mean of 20µg/m^3. However, the World Health Organisation guideline value, which are more stringent for $PM_{2.5,}$ give a guideline of 10µg/m^3 for $PM_{2.5}$. Therefore, the results from the Zephyr and the modelling results provided by Defra, show that the Borough are also meeting the current WHO guidelines.

As well as reviewing the Zephyr data and the modelled background data for $PM_{2.5}$, it is also important to review the Public Health Outcomes Framework (PHOF), which is published by Office for Health Improvement & Disparities and reviewed every three years. PHOF enables local authorities to identify the local indicator for $PM_{2.5}$ in their district, to compare the 'Fraction of mortality attributable to particulate air pollution indicator' value and to compare this to nearby local authorities.

Table 2.3 below provides the estimated effects of annual mortality in 2022 of human-made $PM_{2.5}$ air pollution for Nottingham City, Broxtowe Borough Council and other neighbouring local authorities. The figures show that within the Borough of Broxtowe there are modelled to be 78 deaths attributable to human-made air pollution.

Table 2.3 – Estimated Effects of Annual Mortality in 2022 of human-made $PM_{2.5}$ Air Pollution.

Council/Area	Attributable fraction	Attributable deaths aged 30+* (2022 deaths ONS)	Associated Life-years Lost due to PM based on 29,000 nationally (COMEAP 2010)
Nottingham City	6.8	162	1559
Ashfield District	6.0	85	662
Newark and Sherwood District	5.6	78	626
Bassetlaw District	4.8	66	620
Gedling Borough	6.4	77	628

Council/Area	Attributable fraction	Attributable deaths aged 30+* (2022 deaths ONS)	Associated Life-years Lost due to PM based on 29,000 nationally (COMEAP 2010)
Broxtowe Borough	6.5	78	612
Rushcliffe Borough	6.2	70	528
Mansfield District	5.7	70	594

Source: Estimating Local Mortality Burdens associated with particulate air pollution, Office for Health Improvement & Disparities, 2022.

*Air pollution is likely to contribute a small amount to the deaths of a larger number of exposed individuals rather than being solely responsible for the number of deaths equivalent to the calculated figure of attributable deaths.

Research has shown that there is significant harm to health at concentrations of Particulate Matter well below the current EU and UK limit values. Therefore, BBC is taking the following measures to address $PM_{2.5}$:

- Ensuring that dust management plans are requested during the planning application stage for all sites that involve large scale demolition and building works.
- To ensure that best practicable means of dust control measures are being used regardless of how large the development is. These measures can include the use of bowsers, road sweepers and dust suppression to prevent ‘trackout’. Also minimise dust generating activities on dry windy days, and if there are stockpiles ensure they are covered to prevent wind-whipping.
- Ensuring that developers are carrying out dust suppression monitoring on site at large development sites.
- Ensuring that water suppressants are in use when Nibblers and mobile crushers are on site.
- Educating the public in matters that contribute to air quality e.g. not having bonfires.

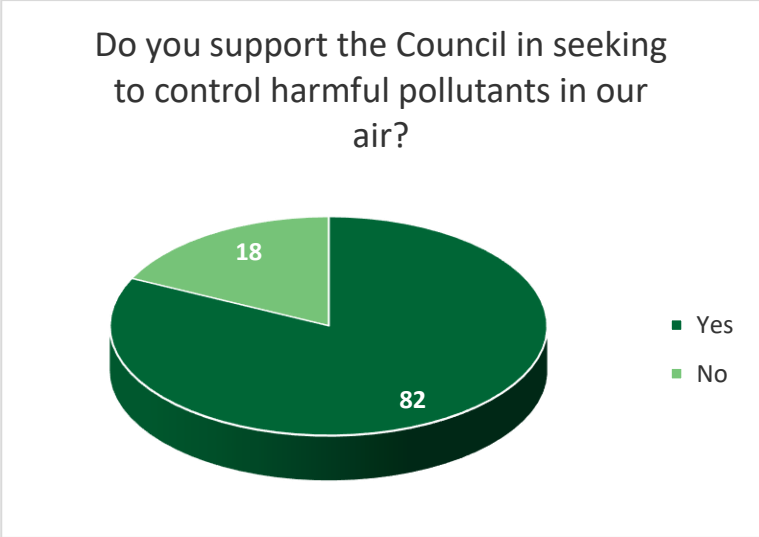
- Educate and advise the public about using exempt appliances with the correct fuel for that appliance in BBCs smoke control areas.
- Enforcing the Clean Air Act 1993 and the Environmental Protection Act 1990 where necessary to minimise the risk of particulates becoming air borne.
- To continue to manage, advice and enforce the Pollution Prevention and Control Regulations 1999 and the Environmental Permitting (England and Wales) Regulations 2010 (Amended in 2013) on permitted processes when necessary.
- To encourage, support and promote sustainable travel within the Borough by working with a variety of organisations and neighbouring local authorities.
- To continue to promote green travel e.g. walking, cycling, low emissions/ electric vehicles and the tram network.
- To continue to support bus companies and taxis that operate within the Borough to reduce emissions.
- To continue to review suitable research methods for reducing air quality levels for particulate matter e.g. the use of vegetation.
- Promote and encourage the use of the final version of the “EMAQN Air Quality and Emissions Mitigation: guidance for developers” document.
- To inspect Crushers that are used within the Borough on demolition sites when notifications are received, to ensure compliance with the process permit, and good housekeeping so that dust levels are reduced.
- To communicate with all allotment providers in the Borough, to discourage the use of bonfires to dispose of green waste.
- To educate the public that electric motor vehicles whilst being positive for reducing NO_2 and CO_2, will still emit Particulate Matter and therefore active travel is still recommended as an alternative.
- Broxtowe Borough Council also formally adopted a Smoke Control Order Enforcement Policy in October 2023 to enable improved future regulation of the issue.

2.3.1 Smoke Control Areas

In 2023 Broxtowe Borough Council has undertaken a public consultation on revoking its current Twenty-one Smoke Controls Orders which date back to the 1960's, and replacing them with a single Borough Wide Smoke Control Order.

As part of the public consultation BBC were able to obtain the following the information on what the public thought to the proposals. Figure 2.3.1 shows that 82% of the public support the Council to control the pollutants in the air, whereas 18% do not support BBC.

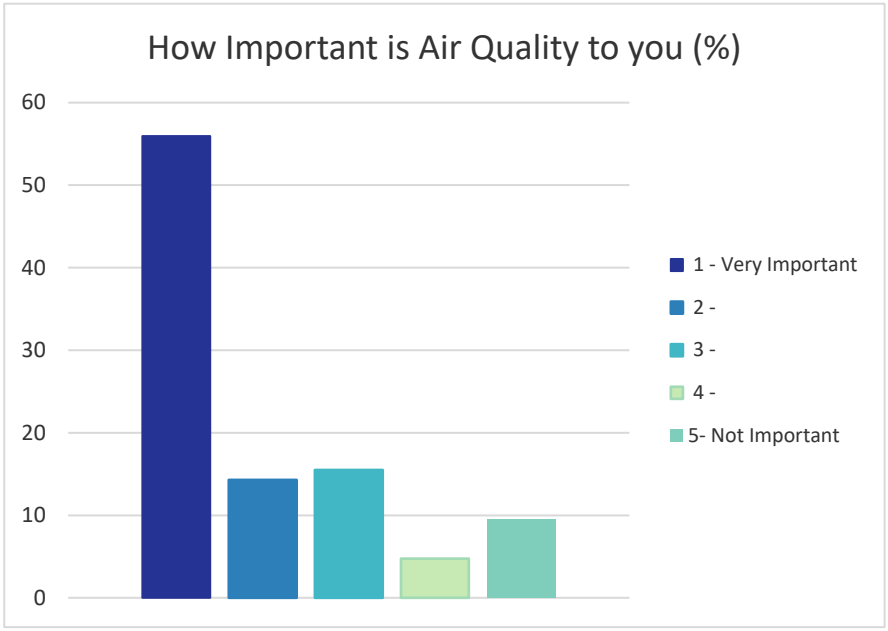
Figure 2.3.1 A Pie Chart depicting the percentage of people within the Borough that support the Council to control pollutants in the air.



The data from the public consultation also allowed the Council to quantify whether the public felt that air quality was important to them by using the scale of one to five with one being very important and five being not important. Figure 2.3.2 shows the responses.

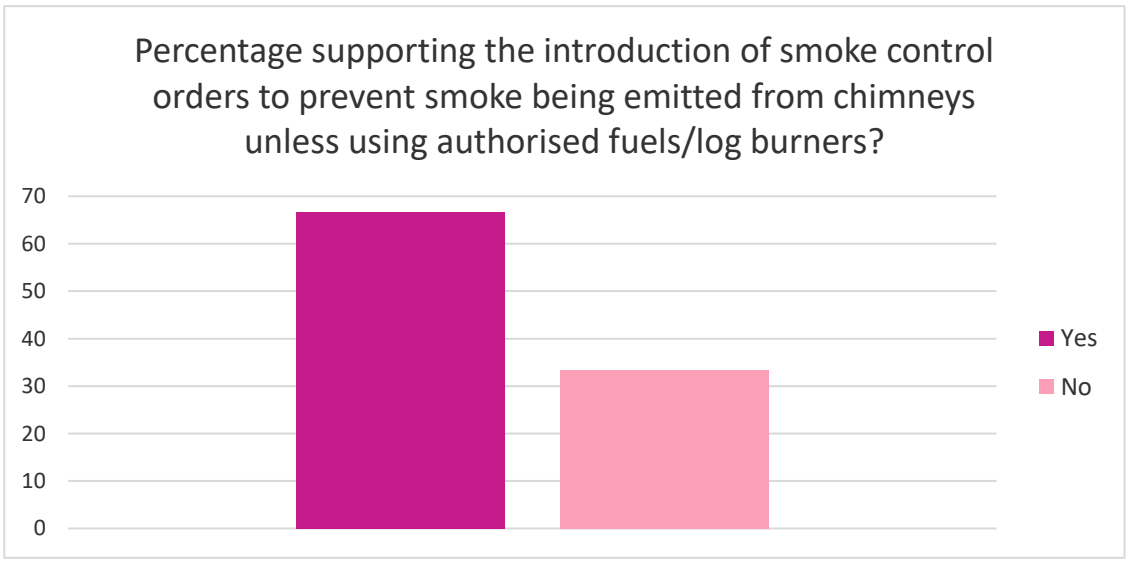
The data in Figure 2.3.2 shows that the majority of people (56%) felt that is was very important, and 34% of the public rated it between 2-4 on the scale of Importance. Whereas 10% of the people rated it is as not being important.

Figure 2.3.2 A bar chart showing the public consultation response to the question 'how important is air quality to you?'



The Council in its consultation, also wanted to determine whether the public supported the introduction of the smoke control orders to prevent smoke from being emitted from chimneys, unless the householder was using authorised fuel/ authorised log burner. The results from this question are shown in Figure 2.3.3 below.

Figure 2.3.3 A bar chart showing the percentages that the public support the introduction of smoke control areas to prevent smoke being emitted from chimneys.



The data in figure 2.3.3 shows that the 67% of people would support the introduction of a single smoke control order to prevent smoke being emitted from chimneys unless they are using authorised fuels/log burners. Whereas 33% of the people asked did not support the introduction of a smoke control order.

The findings from the consultation have shown that the majority of the public that responded, do support the Council in controlling the pollutants in the air. They also think that air quality is very important to them, and that they would support the introduction of a Borough wide smoke control order.

Therefore, the Council aims to complete this exercise and introduce the new Order to replace all of the current smoke control orders in 2024/25 after obtaining approval from the Secretary of State. Broxtowe Borough Council has also formally adopted a Smoke Control Order Enforcement Policy in October 2023 to support enforcement of its Order and enable improved future regulation of the issue.

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

This section sets out the monitoring undertaken within 2023 by Broxtowe Borough 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

Broxtowe Borough Council undertook automatic (continuous) monitoring at 1 site during 2023 by the use of a Zephyr which is a real time sensor. The Zephyr is located within the AQMA in Trowell on a lamppost, which also has triplicate co-location diffusion tubes attached to it. Table A.1 in Appendix A shows the details of the automatic monitoring sites. The https://www.ukairquality.net/ page presents automatic monitoring results for Broxtowe Borough Council, with automatic monitoring results also available through the UK-Air website.

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

3.1.2 Non-Automatic Monitoring Sites

Broxtowe Borough Council undertook non-automatic (i.e. passive) monitoring of NO_2 using 51 diffusion tubes during 2023. 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.

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.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).

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 of the tubes were deployed in line with the Defra Calendar.

Table A.5 in Appendix A shows the ratified continuous monitored NO_2 hourly mean concentration obtained from the Zephyr real time sensor for 2023, which showed that there was no exceedance of the air quality objective of 200µg/m^3. There is an annual allowance of 18 hours.

The NO_2 annual mean concentration obtained from the Zephyr real time sensor for 2023 was 15.6µg/m^3 for 2023, which did not exceed the AQS Objective of 40µg/m^3. The data capture was 100.0% which is greater than the 75% requirement.

A comparison or trend cannot be identified as there is only one year’s worth of data, and it is recommended by Defra that five years of data is usually considered the minimum necessary to identify a significant trend.

During 2023 as mentioned in the previous ASR, a decision was made and supported by Defra to revoke this remaining AQMA. This was undertaken, and since the 16th January 2024 the remaining AQMA in Trowell has now been revoked and Broxtowe Borough Council does not have an AQMA. However, the 2023 data for the AQMA will be discussed in greater detail below.

As well as discussing the results from the revoked AQMA in Nuthall and the AQMA in Trowell. The following chapter will discuss areas of concern within the Borough where the air quality levels are higher than average, but still within the Air Quality Objective. This is to determine whether any trends are developing, which will allow suitable measures if necessary, to be put in place to reduce the likelihood of an exceedance in the future.

Revoked AQMA in Nuthall

There are three diffusion tube sites located on Nottingham Road in Nuthall that are located within the recently revoked AQMA in Nuthall. The results below show that since 2014 the levels of NO_2 are consistently below the objective of 40µg/m^3 for all three sites. Site 33 and 34 are a duplicate site and the annual data is provided for 34 only.

Table 3.1 – Results for the Revoked AQMA in Nuthall 2014 – 2023.

Site ID	NO_2 Annual Mean Concentration (µg/m^3)									
	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
33 & 34	30.5	28.1	29.1	27.7	25.5	25.9	18.7	20.7	19.6	17.9
35	33.7	34.1	32.2	33.6	30.0	29.7	22.6	23.4	22.9	19.9

The data in Table 3.1 shows that there has been a overall downward trend and the data is below the AQO. Monitoring will continue to be undertaken at these three sites and the results will be reported in the 2025 Air Quality Annual Status Report.

AQMA in Trowell

Since 2011 there was only one monitoring site situated on the façade of a property on Iona Drive (Site ID 19). However, in January 2016 a second monitoring location was added

(Site ID 18) in Tiree Close and since March 2020, two new monitoring locations were added in Tiree Close (Site ID 58 and 59), as Defra and the LAQM Helpdesk recommended that more monitoring locations were added to provide a more detailed assessment of the air quality within this AQMA and to part fulfil Defra's requirements to not update the AQAP. All locations are situated between Junctions 25 and 26 of the M1 and are monitoring NO_2 levels from the M1 Motorway (see Appendix E for a map of the AQMA and the locations). The tubes are sited on the façade of properties that are the closest to the M1. In 2022, a Zephyr real time air quality monitor was installed in the AQMA on a street light in Iona Drive. A co-location study of triplicate tubes (Site ID 61, 62 and 63) were also sited next to the monitor to compare the accuracy between the two different types of monitoring methods. Therefore, as Site ID 61,62 and 63 are a triplicate site the annual data is provided for site 63 only.

The diffusion tube monitoring results from 2014 to 2023 are shown in Table 3.2. Please see Figure A.2 in the appendices for a trend chart showing the data from 2018 to 2023.

The data in Table 3.2 (excluding Site 58 and Site 59), shows that there has been a steady decrease year on year. However, the 2015 data did show an increase in NO_2. at Site 19. This may have been as a result of the SMART Motorway scheme on the M1 between junctions 28 and 31 (Junctions 25 to 28 were completed in 2010), which had just been opened in June 2016. Therefore, it was considered that this may have caused congestion further south, which could have had an effect on increasing the air quality levels in 2015.

Table 3.2 – Results for AQMA in Trowell 2014 – 2023.

Site ID	NO_2 Annual Mean Concentration ($\mu g/m^3$)									
	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
18	-	-	34.3	32.9	28.2	28.4	17.9	22.3	21.5	19.6
19	38.1	**42.3**	37.6	37.2	31.9	30.9	22.9	23.8	22.3	20.9
58	-	-	-	-	-	-	24.8	27.6	20.7	18.4
59	-	-	-	-	-	-	20.1	20.8	20.3	18.2

Site ID	NO_2 Annual Mean Concentration (µg/m^3)									
	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
61, 62 &63	-	-	-	-	-	-	-	-	21.7	19.5

However, the results do show that there is a decreasing trend (if the 2015 data is seen as an anomaly due to the SMART Motorway Scheme and the 2020 data is discredited), as the NO_2 levels have reduced by 14.7µg/m^3 from 2016 to 2023 for Site 18 and 16.7µg/m^3 from 2016 to 2023 for Site 19. Site 18 in 2023 is 20.4µg/m^3 below the AQO, Site 19 in 2023 is 19.1µg/m^3 below the AQO, Site 58 in 2023 is 21.6µg/m^3 below the AQO and Site 59 in 2023 is 21.8µg/m^3 below the AQO. The three new sites (Site 61, 62 and 63) in 2023 when averaged (as they are co-location tubes) are below the AQO by 20.5µg/m^3.

The results in Table 3.2 show that for eight consecutive years the AQO has been met within the remaining AQMA, and for six years the data has been below 36µg/m^3 which is a 10% reduction of the 40µg/m^3 AQO.

During 2023 as mentioned in the previous ASR, a decision was made and supported by Defra to revoke this remaining AQMA. This was undertaken and since the 16th January 2024 the remaining AQMA has now been revoked and Broxtowe Borough Council do not have a AQMA. However, the 2023 data for the AQMA has been reported on in this ASR.

BBC will continue to monitor NO_2 levels in this area and work alongside National Highways to improve air quality levels. The 2025 ASR will provide further information about the revocation of the AQMA in Trowell.

A610/B600 Nuthall Island

Since 2016 there have been two new sites for monitoring the air quality levels on the Nuthall Island (Site's 36 and 37). The reason for changing the original site (BX 22) was due to the diffusion tube being located less than 1m from Nottingham Road which was very near to the A610/B600 Nuthall Island but not near the residential properties.

Therefore, the site was not a true representation of the levels that receptors are receiving at their properties, so the site was relocated to the façade of a residential property in January 2016 (See Appendix F for the Map of the roundabout and the current monitoring locations).

In January 2016 a second site was also chosen to determine what the NO_2 levels are on a residential property that is situated on the opposite side of the roundabout to Site 36 where the traffic is leaving Nottingham City and travelling into the Borough of Broxtowe. The results from 2014 to 2015 are shown for the 'old' site and the 2016 to 2022 results for the 'new' sites are shown below.

Table 3.3 – Results for Nuthall Island 2014 – 2023.

Site ID	NO_2 Annual Mean Concentration (µg/m^3)									
	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
BX 22	39.2	**41.1**	-	-	-	-	-	-	-	-
36	-	-	35.2	35.2	32.8	31.7	24.9	26.0	25.4	23.4
37	-	-	32.2	29.5	28.9	26.4	19.3	23.5	21.1	19.7

The results above show that that the original site did not provide a true representation of NO_2 levels at the façade of the properties. However, the two 'new' sites are showing that the levels are below the air quality objective by 16.7µg/m^3 for site 36 and 20.3µg/m^3 for site 37 in 2023, and are showing an overall decreasing trend since 2016 (the 2020 data is considered an anomaly due to national and regional lockdowns). Therefore, BBC will continue to monitor NO_2 levels at these sites and provide an update in the 2025 ASR. BBC will also continue to work alongside Nottinghamshire County Council to improve air quality levels.

Bramcote Island, Derby Road, Bramcote

Since January 2016, increased monitoring has been undertaken at this location due to the original site showing exceedances of the air quality objective of 40µg/m^3. The original site (BX04) was discontinued and relocated in January 2016 to a neighbouring property at a

more suitable height and nearer to Bramcote Island (Site 41). An additional site was also chosen to determine whether the concentration reduces further away from the roundabout (Site 40). Both sites are on the façade of properties on Derby Road. (See Appendix G for the Map of the roundabout and the monitoring locations).

As discussed in the 2016 ASR, the diffusion tube results were believed to be over the objective level for several years as there were a number of parallel traffic schemes which were being undertaken in the Borough and also within Nottingham City. Therefore, as suspected, the traffic schemes affected the results when comparing the past results to the results since 2016.

Table 3.4 – Results for Bramcote Island 2014 – 2023.

Site ID	NO_2 Annual Mean Concentration (µg/m^3)									
	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
BX 04	41.8	40.7	-	-	-	-	-	-	-	-
40	-	-	37.5	32.7	34.0	32.0	23.6	27.4	25.8	24.0
41	-	-	37.4	35.6	34.1	30.9	23.5	26.0	25.3	23.5

Table 3.4 shows that in 2023 the NO_2 concentrations for Site 40 is 24.0µg/m^3 and Site 41 is 23.5µg/m^3, this is a decrease of 1.8µg/m^3 for site 40 and 1.8µg/m^3 for site 41 in comparison to the 2022 data. Both sites are showing that the levels are below the air quality objective by 16.0µg/m^3 for site 40 and 16.5µg/m^3 for site 41 in 2023.

Although this is an overall downward trend for both sites from 2016, and they are below the objective level. There was a slight increase by 1.3µg/m^3 at Site 40 in 2018. This was thought to be due to localised roadworks that were taking place on the A52, which has resulted in an increase in stationary traffic near to this site. However, since 2018 this site has shown a decrease in the levels, which further indicates that the slight increase was due to localised roadworks which were completed in 2018. Site 41 has continued to show a decreasing trend since 2016.

BBC will continue to monitor and report on the NO_2 levels in this area, to note any works that are being undertaken and to continue to work alongside National Highways to improve the air quality levels in this area.

Town Street, Bramcote.

In December 2016, a review was undertaken of the monitoring network and as Town Street is often used as a 'rat run' in rush hour to avoid the A52, a decision was made to monitor at this location. Therefore, in January 2017 a site location was picked where the street is narrowed due to residents parking outside their properties, which tends to cause a 'bottle neck' situation in rush hour. The siting of the tube was chosen so that it is parallel with the façade of a nearby residential property, as there were no suitable downpipes to attach it to the façade of the property.

Due to the result obtained in 2017 (see Table 3.5 below), a decision was made to start monitoring at a second location on Town Street (Site 56) in 2018 (the tube is sited on the façade of a house that is near to the Bramcote Island end of Town Street). The additional site in 2018 was to determine whether there is a potential issue along all of Town Street, or just at the site where there is a bottle neck.

Table 3.5 – Results for Town Street 2017 – 2023.

Site ID	NO2 Annual Mean Concentration (µg/m3)						
	2017	2018	2019	2020	2021	2022	2023
48	37.5	35.7	30.4	25.4	27.8	28.4	26.6
56	-	25.1	23.4	18.7	19.6	19.8	18.1

Table 3.5 shows that in 2023 the NO_2 concentrations for Site 48 is 26.6µg/m^3 and Site 56 is 18.1µg/m^3. Although there is an overall downward trend from 2017 to 2020, the results show that since 2020 (which was lower due to national and regional lockdowns), there has been a slight increase since 2020 to 2022. This is to be expected as there is an increase in people returning to offices and doing hybrid working rather than working from home full time. However, there has been a decrease in 2023 for both sites. Site 48 is 13.4µg/m^3 lower than the AQO and site 56 is 21.9µg/m^3 lower than the AQO.

Table 3.5 also shows that the data for site 48 in comparison to site 56 does enforce the theory that the results are higher on site 48 due to the 'Bottle neck' situation. Therefore, BBC will continue to monitor NO_2 levels at these sites and provide an update in the 2025 ASR. BBC will continue to work alongside Nottinghamshire County Council to improve air quality levels.

The Results and Trends for all Monitoring Sites in 2023.

Defra requested that trend charts were provided for all monitoring sites to identify any trends in the annual mean concentrations. The trend charts are displayed in Figure A.1 in the Appendices for all of the sites in use since 2019 to 2023.

Before evaluating the trend charts, it must be noted the effect that Covid-19 has had on the 2020 data and therefore the trends in the data discussed below, are for what the trends have shown since 2013 – 2023 excluding the 2020 data, as the 2020 data has shown a decreasing trend at all sites, but this is to be expected due to the national and regional lockdowns.

Out of the 49 sites that are identified in the trend charts in Figure A.1 in the Appendices, Forty-one have been in use since 2019, in 2020 there were a further three additional sites added. In 2020, site 10 was discontinued due to the consistently low readings and the tube was moved to site 57. In 2022, a triplicate co location study was added next to the Zephyr Real Time Sensor in the Trowell AQMA, and there were also an additional three sites added in 2022, which were sited in or next to parks within the borough.

The trend charts have identified that out of the 49 sites, forty are showing a consistent downward trend year on year. Six sites are showing an overall downward trend. One of the six sites have shown an increase in the 2021 data in comparison to the 2019 data but there has been a downward trend since. Five of the six sites have shown an increase in the 2022 data in comparison to the 2021 data but there has been a downward trend since. Two of the 49 sites have shown a slight increase in the 2023 data in comparison to the 2022 data. The remaining site out of the five (Site 10) was discontinued in 2020. Therefore, the remaining 48 sites and their trends will be discussed in greater detail below.

Forty of the forty-eight sites are showing a consistent downward trend year on year, these sites are; Site 1, site 2, site 3, site 4, site 5, site 8, site 9, site 11, site 12, site 13, site 16, site 17, site 18, site 19, site 20, site 30, site 31, site 32, site 33/34, site 35, site 36, site 37, site 38, site 39, site 40, site 41, site 43, site 44, site 45, site 50, site 52, site 53, site 54, site 57, site 58, site 59, site 60, site 61/62/63, site 64 and site 65.

Six of the forty-eight sites are showing an overall downward trend of the data these sites are; site 15, site 22, site 48, site 51, site 55 and site 56. All of the six sites, bar site 51 showed a slight increase in the data for 2022 in comparison to the 2021 data but have shown a decreasing trend since. Site 51 had a slight increase in the data for 2021 in comparison to the 2019 data but has shown a consistent decreasing trend since 2021.

The remaining two of the forty-eight sites (site 7 and site 27) have showed an increase in the 2023 data in comparison to the 2022 data (2020 excluded as an anomaly). Therefore, these sites will be discussed in greater detail below.

Site 7 - Hickton Drive, Chilwell

Table 3.6 below shows the results for Hickton Drive in Chilwell for 2016 to 2023, the data shows that the highest concentration was in 2016 at 26.8µg/m^3. In 2017 it had decreased by 0.4µg/m^3. In 2018 it increased by 3.4µg/m^3 but increased slightly by 0.4µg/m^3 in 2019. The 2020 data is seen as an anomaly, but the 2021 data shows a decrease of 5.4µg/m^3 in comparison to 2019 data. The reason for the slight increase in 2019 is unknown. In 2022 the concentration has decreased in comparison to 2021 by 1.5µg/m^3.

Table 3.6 – Results for Hickton Drive, Chilwell 2016 – 2023.

Site ID	NO_2 Annual Mean Concentration (µg/m^3)							
	2016	2017	2018	2019	2020	2021	2022	2023
7	26.8	26.4	23.0	23.4	16.2	18.0	16.5	17.3

The concentration in 2023 is 0.8µg/m^3 which, is slightly higher in comparison with the 2022 data. Even though there has been a slight increase of 0.8µg/m^3 between 2022 and 2023 it must be noted that this site has never exceeded the Air Quality Objective (AQO) of 40µg/m^3 for NO_2, and the 2023 concentration is 22.7µg/m^3 below the AQO. Although the data is below the air quality objective of 40µg/m^3, this site will continue to be monitored and an update will be provided in the 2025 ASR.

Site 27 - Sun Inn Pub, Derby Road, Eastwood

Table 3.7 shows the results for Sun Inn Pub in Eastwood for 2016 to 2023. The data shows that the highest concentration was in 2016 when monitoring first started at the site the concentration was 25.8µg/m^3. In 2017 it had decreased by 2.1µg/m^3. In 2018 it had increased slightly by 0.4µg/m^3. This was thought to be due to several 'bike meet up's' that they had in 2018 and the bikes were parked near to the tube, which is on the façade of the pub.

Table 3.7 – Results for Sun Inn Pub, Derby Road, Eastwood 2016 – 2023.

Site ID	NO_2 Annual Mean Concentration (µg/m^3)							
	2016	2017	2018	2019	2020	2021	2022	2023
27	25.8	23.7	24.1	20.4	17.8	18.9	18.0	18.2

Since 2018 until 2023 the data has shown a consistent downward trend (the 2020 data is seen as an anomaly due to covid). The 2023 data shows a very slight increase of 0.2µg/m3 in comparrison to the 2022 data. Even though there has been a slight increase of 0.2µg/m3 between 2022 and 2023 it must be noted that this site has never exceeded the Air Quality Objective (AQO) of 40µg/m3 for NO2, and the 2023 concentration is 21.8µg/m3 below the AQO. Although the data is below the air quality objective of 40µg/m^3, this site will continue to be monitored and an update will be provided in the 2025 ASR.

3.2.2 Particulate Matter (PM_{10})

BBC purchased a Zephyr real time sensor in late 2021, which was installed in 2022 in the Trowell NO_2 AQMA. BBC wanted to obtain real time data for NO_2 and to also identify what

the particulate levels are for PM_{10}, $PM_{2.5}$ in the area. Therefore, the Zephyr was purchased and sited on a street column on Iona Drive in Trowell, next to the M1 Motorway.

There were a variety of issues with the monitor throughout 2022, and as a result BBC felt that the 2022 data was not reliable enough to report on. However, these issues were rectified and the 2023 data will be discussed below.

Table A.6 in Appendix A show the monitoring results of the ratified and adjusted monitored PM_{10} annual mean concentrations obtained from the Zephyr real time sensor for 2023 as 12.3µg/m^3. Which, is below the air quality objective of 40µg/m^3. The data capture was 100.0 % which is greater than the 75% requirement. A comparison or trend cannot be identified as there is only one year's work of data and it is recommended by Defra that five years of data is usually considered the minimum necessary to identify a significant trend.

Table A.7 in Appendix A show the monitoring results of the ratified and adjusted monitored PM_{10} daily mean concentrations obtained from the Zephyr real time sensor for 2023. The air quality objective of 50µg/m^3, is not to be exceeded more than 35 times per year. The 2023 data shows that the AQO of 50µg/m^3, was exceeded twice in 2023, which is within the AQO. The data capture was 100.0 % which is greater than the 75% requirement. There were peaks of PM_{10} around the November bonfire night celebrations, but these peaks were too brief to exceed the daily mean limit.

A comparison or trend cannot be identified as there is only one year's worth of data, and it is recommended by Defra that five years of data is usually considered the minimum necessary to identify a significant trend.

3.2.3 Particulate Matter ($PM_{2.5}$)

BBC purchased a Zephyr real time sensor in late 2021, which was installed in 2022 in the Trowell NO_2 AQMA. BBC wanted to obtain real time data for NO_2 and to also identify what the particulate levels are for PM_{10}, $PM_{2.5}$ in the area. Therefore, the Zephyr was purchased and sited on a street column on Iona Drive in Trowell, next to the M1 Motorway.

There were a variety of issues with the monitor throughout 2022, and as a result BBC felt that the 2022 data was not reliable enough to report on. However, these issues were rectified and the 2023 data will be discussed below.

Table A.8 in Appendix A show the monitoring results of the ratified and adjusted monitored $PM_{2.5}$ annual mean concentrations obtained from the Zephyr real time sensor for 2023. The $PM_{2.5}$ air quality objective of 20µg/m^3, were not exceeded and the annual mean was 8.0µg/m^3. Throughout 2023, the $PM_{2.5}$ concentrations were in the 'Low' category for the Daily Air Quality Index (DAQI). The data capture was 100.0 % which is greater than the 75% requirement. There were peaks of $PM_{2.5}$ around the November bonfire night celebrations, but these peaks were too brief to exceed the daily mean limit.

A comparison or trend cannot be identified as there is only one year's worth of data, and it is recommended by Defra that five years of data is usually considered the minimum necessary to identify a significant trend.

3.2.4 Sulphur Dioxide (SO_2)

Previous air quality reports have shown there are no relevant sources of Sulphur Dioxide within the Borough. Subsequently, the Council does not monitor for this pollutant.

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)
Trowell Zephyr 932	Street Column 4, Iona Drive, Trowell NG9 3RF	Roadside	448607	339026	NO_2, PM_{10} and $PM_{2.5}$	Yes, in NO_2 AQMA 1 in 2023 until the NO_2 AQMA was revoked in January 2024	Real Time Sensor	1	2	2

Notes:

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

(2) N/A if not applicable

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

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube Co-located with a Continuous Analyser?	Tube Height (m)
1	113 Wollaton Road, Beeston	Roadside	452527	337313	NO_2	No	0	2	N	1.9
50	309 Wollaton Road, Beeston	Roadside	452114	338018	NO_2	No	0	14	N	1.7
2	166 Derby Road, Beeston	Roadside	452091	338122	NO_2	No	0	9	N	1.8
3	8 Queens Road East, Beeston	Roadside	453659	337412	NO_2	No	0	13	N	1.8
4	226 Queens Road, Beeston	Roadside	453361	336627	NO_2	No	0	5	N	1.8

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)
51	36 Meadow Road, Beeston	Roadside	453537	336100	NO_2	No	0	7	N	1.7
52	228 Station Road Beeston	Roadside	453287	336349	NO_2	No	0	5	N	1.7
5	Chilwell Olympia School, Beeston	Urban Background	451782	335320	NO_2	No	0	104	N	1.9
7	31 Hickton Drive, Chilwell	Roadside	450756	334328	NO_2	No	0	6	N	1.9
53	1 Calverton Close, Chilwell	Roadside	450360	334982	NO_2	No	0	5	N	1.7
8	The Manor Pub, 350	Roadside	450422	334243	NO_2	No	0	5	N	1.8

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)
	Nottingham Road, Toton									
9	Toton branch Surgery, 2 Banks Road, Toton	Roadside	449876	334804	NO_2	No	0	9	N	1.8
10	1 Katherine Drive, Toton	Roadside	449748	335472	NO_2	No	0	16	N	1.7
11	269 Stapleford Lane, Toton	Roadside	449694	335501	NO_2	No	0	10	N	1.8
12	Lamppost, Stapleford Lane, Toton	Roadside	449615	335664	NO_2	No	0	1	N	1.9

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)
45	209 Toton Lane, Stapleford	Roadside	449467	336220	NO_2	No	0	15	N	1.8
15	George Spencer Academy, Stapleford	Roadside	449406	336135	NO_2	No	0	4	N	1.9
13	George Spencer Lower School, Toton	Roadside	449266	336075	NO_2	No	0	15	N	1.8
16	24 Brampton Drive, Stapleford	Roadside	449516	336216	NO_2	No	0	7	N	1.7

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube Co-located with a Continuous Analyser?	Tube Height (m)
54	195 Derby Road, Stapleford	Roadside	448467	336591	NO_2	No	0	4	N	1.8
17	Lamppost Church Street, Stapleford	Roadside	448890	337190	NO_2	No	0	3	N	1.8
55	12 Ilkeston Road, Stapleford	Roadside	449814	338471	NO_2	No	0	9	N	1.8
18	20 Tiree Close, Trowell	Roadside	448560	338889	NO_2	Yes AQMA 1	0	9*	N	1.7
19	15 Iona Drive, Trowell	Roadside	448586	339023	NO_2	Yes AQMA 1	0	18*	N	1.9

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)
20	30 Derbyshire Avenue, Trowell	Roadside	448652	339652	NO_2	No	0	12*	N	1.9
22	81 Nottingham Road, Trowell	Roadside	448832	340098	NO_2	No	0	18*	N	1.8
44	32 Mansfield Road, Eastwood	Roadside	446509	347091	NO_2	No	0	2	N	1.8
27	Sun Inn Pub, 6 Derby Road, Eastwood	Roadside	446465	346985	NO_2	No	0	8	N	1.8
30	560 Nottingham Road, Giltbrook	Roadside	448544	345241	NO_2	No	0	4	N	1.9

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)
31	15 Hayley Close, Kimberley	Roadside	448826	344883	NO_2	No	0	7	N	1.9
32	59b Main Street, Kimberley	Roadside	450122	344658	NO_2	No	0	5	N	1.8
33 and 34	19a Nottingham Road, Nuthall^	Roadside	451631	344526	NO_2	No	0	11*	N	1.7
35	20 Nottingham Road, Nuthall	Roadside	451728	344440	NO_2	No	0	20*	N	1.9
36	113 Nottingham Road, Nuthall	Roadside	452232	344033	NO_2	No	0	20	N	1.7

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube Co-located with a Continuous Analyser?	Tube Height (m)
37	114 Nottingham Road, Nuthall	Roadside	452331	343910	NO_2	No	0	27	N	1.7
57	22-27 Spring Gardens, Strelley	Roadside	451413	341424	NO_2	No	0	23	N	1.9
38	Opp Sherwin Arms, Derby Road, Bramcote	Roadside	450389	337866	NO_2	No	2	2	N	1.8
39	9 Bembridge Court, Bramcote	Roadside	450434	337781	NO_2	No	0	14	N	1.6

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube Co-located with a Continuous Analyser?	Tube Height (m)
56	10 Town Street, Bramcote	Roadside	450570	337851	NO_2	No	0	9	N	1.9
40	153 Derby Road, Bramcote	Roadside	450632	337929	NO_2	No	0	13	N	1.7
41	169 Derby Road, Bramcote	Roadside	450555	337909	NO_2	No	0	10	N	1.8
43	Broxtowe Borough Council Offices	Urban Background	452733	336962	NO_2	No	0	8	N	1.8
48	Near 73 Town Street, Bramcote	Roadside	450817	337592	NO_2	No	0	2	N	1.8

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)
58	10 Tiree Close, Trowell	Roadside	448588	338940	NO_2	Yes AQMA 1	0	11*	N	1.7
59	4 Tiree Close, Trowell	Roadside	448602	338965	NO_2	Yes AQMA 1	0	9*	N	1.7
60	Dovecote Lane Park, Beeston	Roadside	453075	336311	NO_2	No	0	9	N	1.9
61, 62 and 63	Street Column Iona Drive, Trowell ^	Roadside	448607	339026	NO_2	Yes AQMA 1	1	2*	Y	2.0
64	Smithurst Road Park, Giltbrook	Roadside	447720	345443	NO_2	No	0	2	N	1.9
65	Hall Om Wong Park,	Roadside	449482	344888	NO_2	No	0	19	N	1.9

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)
	Eastwood Road, Kimberley									

Notes:

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

(2) N/A if not applicable.

(*) All distance to kerb of nearest road but sites near to the M1 Motorway.

(^) Duplicate/Triplicate Diffusion Tubes

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
Trowell Zephyr 932	448607	339026	Roadside	100	100	-	-	-	-	15.6

☐ **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)

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2022 (%) (2)	2019	2020	2021	2022	2023
1	452527	337313	Roadside	100	100	26.8	19.0	21.0	20.8	18.7
50	452114	338018	Roadside	100	100	29.2	18.9	16.3	15.2	13.9
2	452091	338122	Roadside	100	100	26.5	18.9	20.8	20.1	18.5
3	453659	337412	Roadside	100	100	23.1	17.7	19.1	18.0	16.7
4	453361	336627	Roadside	100	100	25.8	19.1	20.2	19.2	17.2
51	453537	336100	Roadside	100	100	15.9	15.0	16.5	15.8	14.6
52	453287	336349	Roadside	100	100	24.5	18.0	19.0	17.5	16.8
5	451782	335320	Urban Background	100	100	15.7	13.2	13.5	13.2	11.9
7	450756	334328	Roadside	100	100	23.4	16.2	18.0	16.5	17.3
53	450360	334982	Roadside	100	100	19.9	13.9	14.7	13.9	12.7

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) [1]	Valid Data Capture 2022 (%) [2]	2019	2020	2021	2022	2023
8	450422	334243	Roadside	100	100	24.3	20.8	22.4	21.1	20.1
9	449876	334804	Roadside	92.3	92.3	21.5	16.2	18.0	16.9	15.1
10	449748	335472	Roadside	-	-	21.6	-	-	-	-
11	449694	335501	Roadside	90.4	90.4	27.6	20.8	23.0	22.5	21.2
12	449615	335664	Roadside	92.3	92.3	20.5	17.3	19.1	18.9	17.3
45	449467	336220	Roadside	100	100	26.7	20.1	20.8	20.6	19.4
15	449406	336135	Roadside	100	100	28.6	24.4	25.2	28.3	25.6
13	449266	336075	Roadside	100	100	24.9	18.1	20.4	18.8	17.5
16	449516	336216	Roadside	100	100	25.4	18.4	20.0	19.8	18.1
54	448467	336591	Roadside	100	100	29.9	21.9	23.6	22.0	20.5
17	448890	337190	Roadside	90.4	90.4	32.7	25.1	26.7	26.3	24.3
55	449814	338471	Roadside	100	100	23.8	17.9	19.0	19.4	17.8

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) [1]	Valid Data Capture 2022 (%) [2]	2019	2020	2021	2022	2023
18	448560	338889	Roadside	100	100	28.4	21.5	22.3	21.5	19.6
19	448586	339023	Roadside	100	100	30.9	22.9	23.8	22.3	20.9
20	448652	339652	Roadside	100	100	23.3	17.3	19.7	18.7	17.4
22	448832	340098	Roadside	82.7	82.7	24.2	18.7	19.7	19.8	17.7
44	446509	347091	Roadside	100	100	31.7	24.8	27.6	26.9	24.9
27	446465	346985	Roadside	100	100	20.4	17.8	18.9	18.0	18.2
30	448544	345241	Roadside	100	100	21.9	18.3	20.3	19.1	18.4
31	448826	344883	Roadside	90.4	90.4	28.8	21.2	22.8	21.7	20.9
32	450122	344658	Roadside	76.9	76.9	28.9	21.3	22.9	20.9	19.6
33 and 34	451631	344526	Roadside	100	100	25.9	18.7	20.7	19.6	17.9
35	451728	344440	Roadside	100	100	29.7	22.6	23.4	22.9	19.9

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) [1]	Valid Data Capture 2022 (%) [2]	2019	2020	2021	2022	2023
36	452232	344033	Roadside	100	100	31.7	24.9	26.0	25.4	23.4
37	452331	343910	Roadside	100	100	26.4	19.3	23.5	21.1	19.7
57	451413	341424	Roadside	100	100	-	15.2	16.0	14.7	13.9
38	450389	337866	Roadside	82.7	82.7	26.7	20.5	24.1	22.0	21.7
39	450434	337781	Roadside	100	100	25.5	18.6	21.1	20.5	18.6
56	450570	337851	Roadside	100	100	23.4	18.7	19.6	19.8	18.1
40	450632	337929	Roadside	100	100	32.0	23.6	27.4	25.8	24.0
41	450555	337909	Roadside	100	100	30.9	23.5	26.0	25.3	23.5
43	452733	336962	Urban Background	100	100	18.3	13.8	14.9	14.2	12.2
48	450817	337592	Roadside	100	100	30.4	25.4	27.8	28.4	26.6
58	448588	338940	Roadside	100	100	-	19.4	21.8	20.7	18.4
59	448602	338965	Roadside	100	100	-	19.1	21.0	20.3	18.2

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2022 (%) (2)	2019	2020	2021	2022	2023
60	453075	336311	Roadside	100	100	-	-	-	16.8	15.8
61, 62 and 63	448607	339026	Roadside	100	100	-	-	-	21.7	19.4
64	447720	345443	Roadside	92.3	92.3	-	-	-	14.2	12.6
65	449482	344888	Roadside	82.7	82.7	-	-	-	12.6	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**.

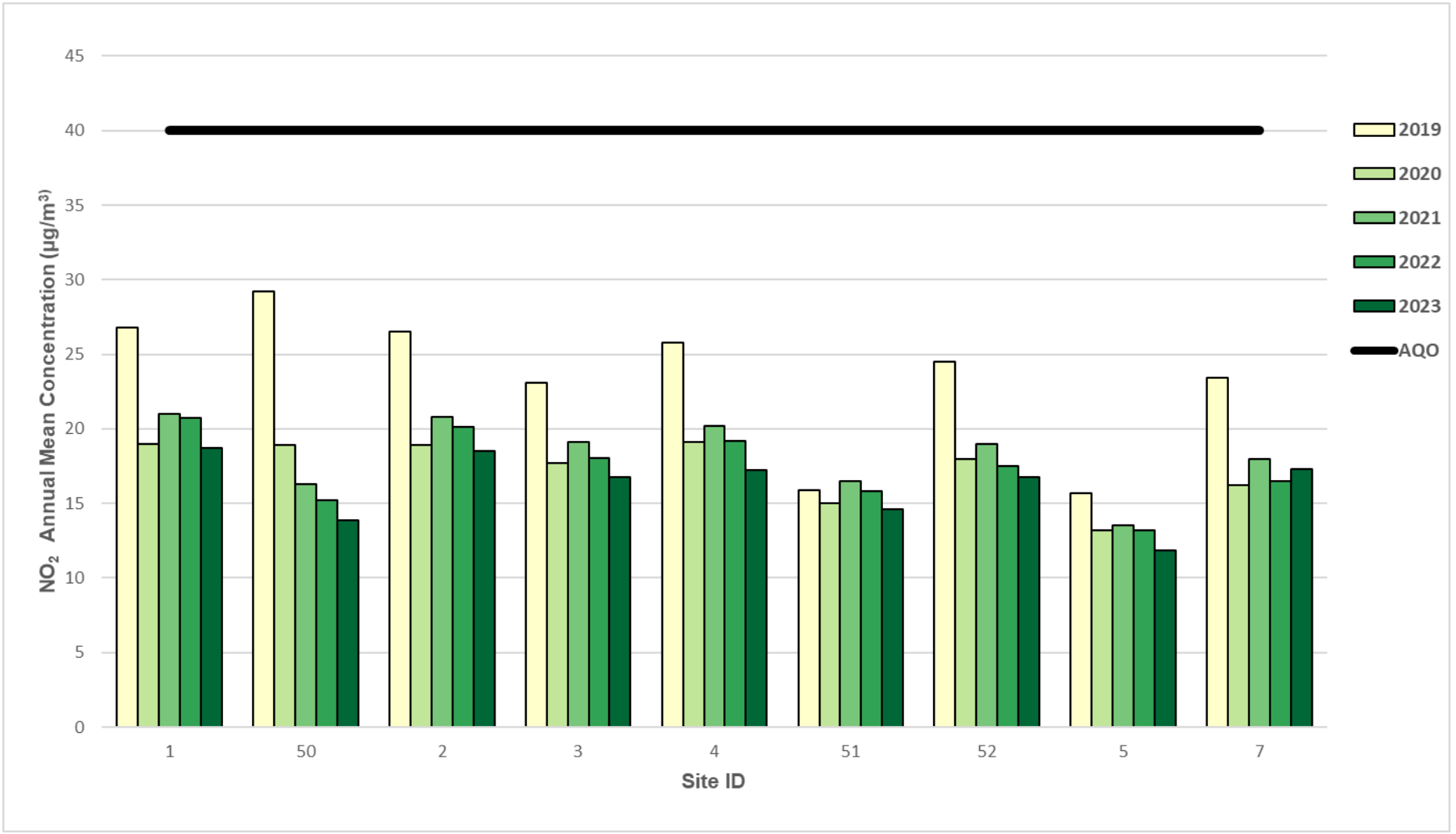
Means for diffusion tubes have been corrected for bias. All means have been "annualised" as per LAQM.TG22 if valid data capture for the full calendar year is less than 75%. See Appendix C for details.

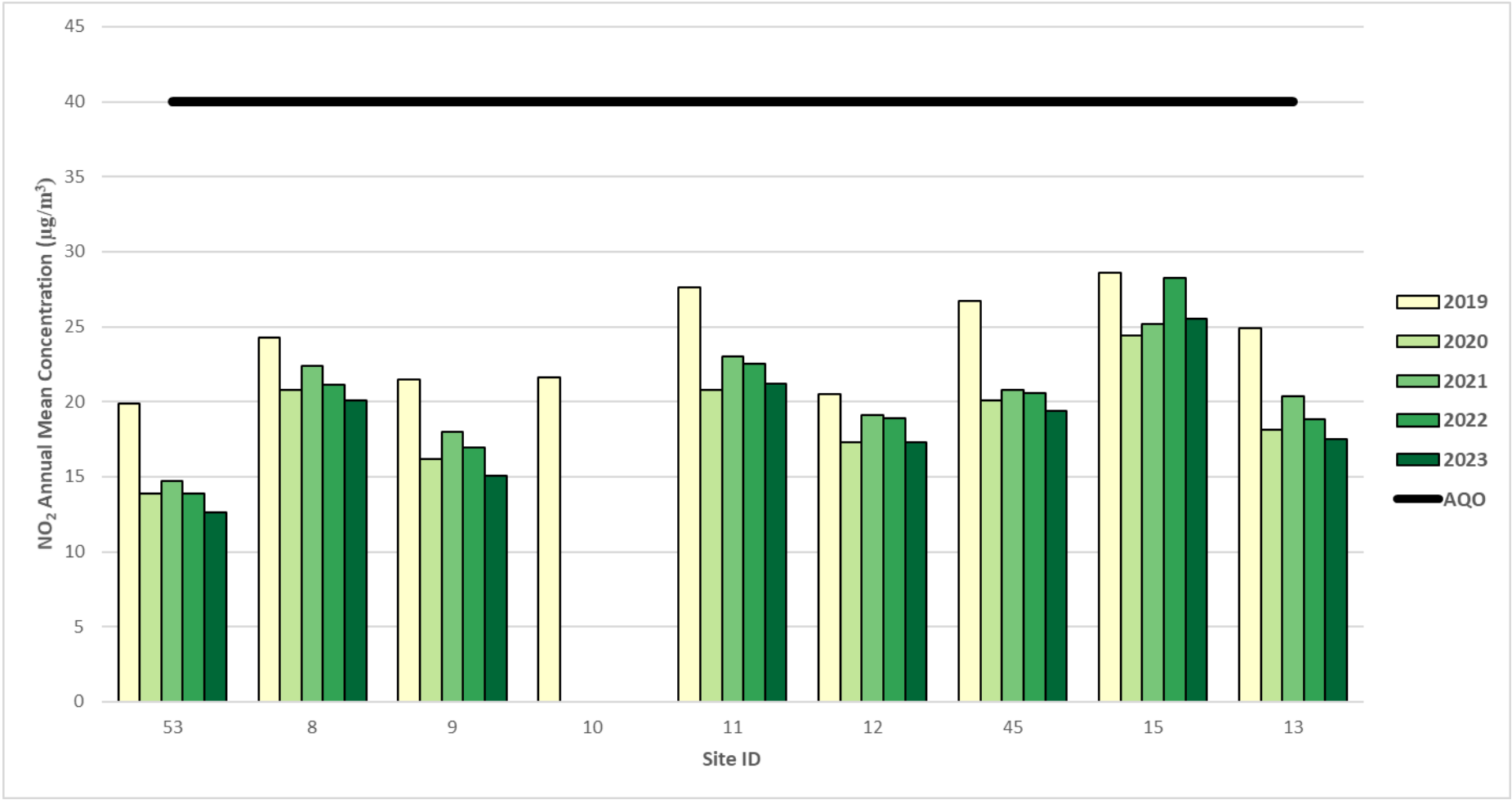
Concentrations are those at the location of monitoring and not those following any fall-off with distance adjustment.

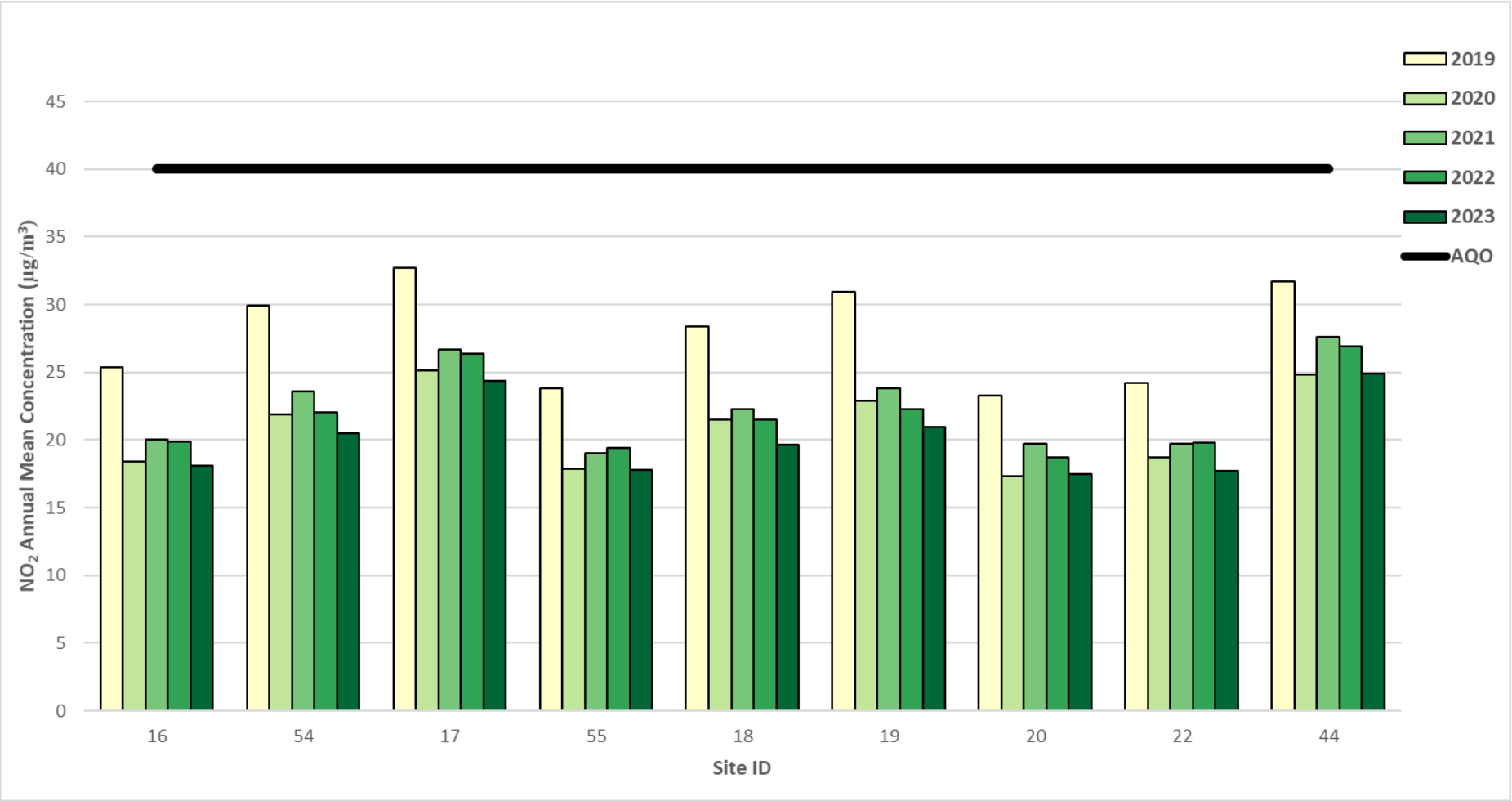
(1) Data capture for the monitoring period, in cases where monitoring was only carried out for part of the year.

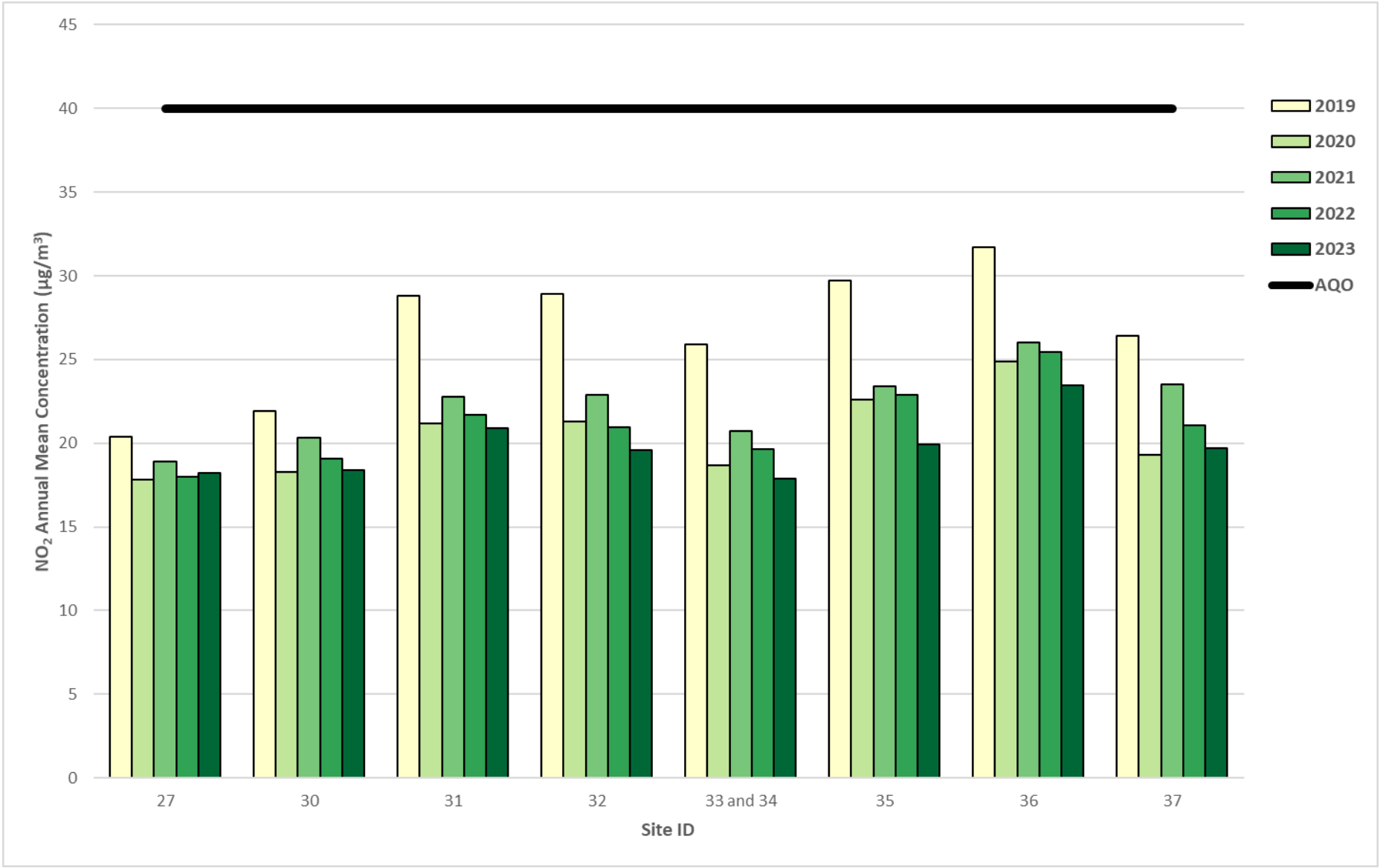
(2) Data capture for the full calendar year (e.g. if monitoring was carried out for 6 months, the maximum data capture for the full calendar year is 50%).

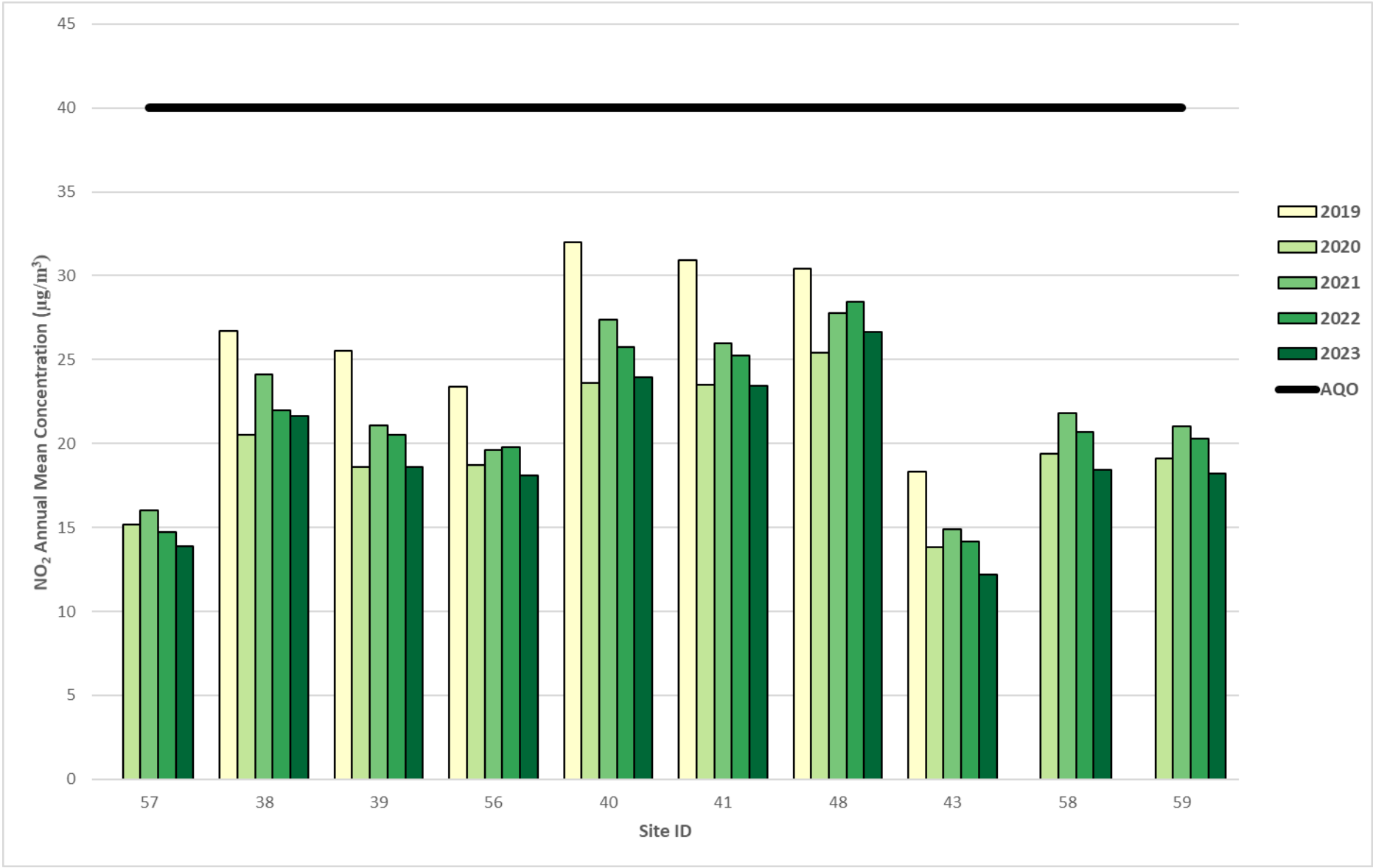
Figure A.1 – Trends in Annual Mean NO_2 Concentrations




45
40
35
30
25
20
15
10
5
0
NO2 Annual Mean Concentration (µg/m3)
53
8
9
10
11
12
45
15
13
Site ID
2019
2020
2021
2022
2023
AQO


2019
2020
2021
2022
2023
AQO
45
40
35
30
25
20
15
10
5
0
NO2 Annual Mean Concentration (µg/m3)
16
54
17
55
18
19
20
22
44
Site ID


45
40
35
30
25
20
15
10
5
0
NO2 Annual Mean Concentration (µg/m3)
2019
2020
2021
2022
2023
AQO
27
30
31
32
33 and 34
35
36
37
Site ID


45
40
35
30
25
20
15
10
5
0
NO2 Annual Mean Concentration (µg/m3)
2019
2020
2021
2022
2023
AQO
57
38
39
56
40
41
48
43
58
59
Site ID

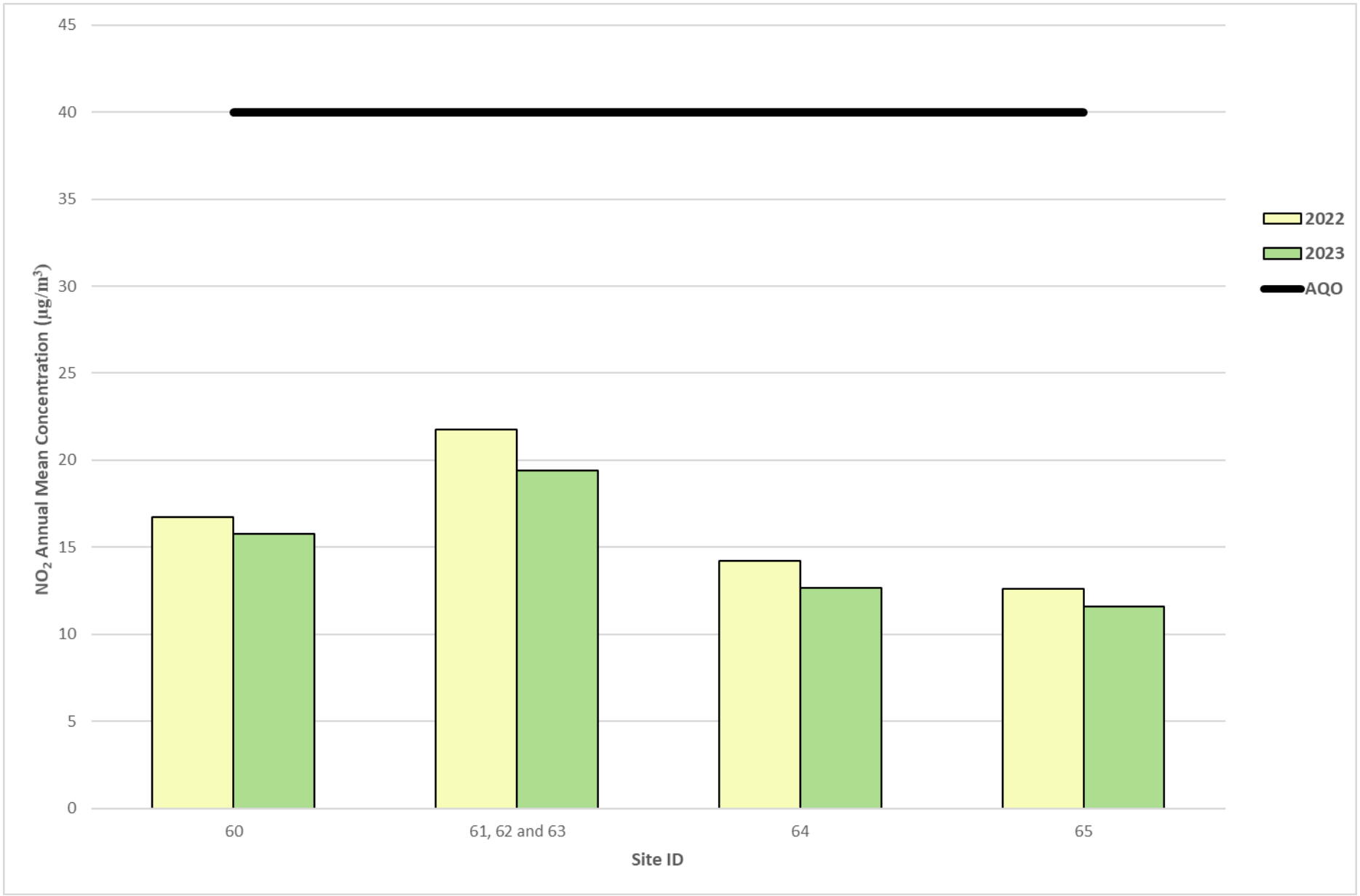

45
40
35
30
25
20
15
10
5
0
NO2 Annual Mean Concentration (µg/m3)
2022
2023
AQO
60
61, 62 and 63
64
65
Site ID

Figure A.2 – Trends in Annual Mean NO_2 Concentrations for the AQMA since 2018 to 2023

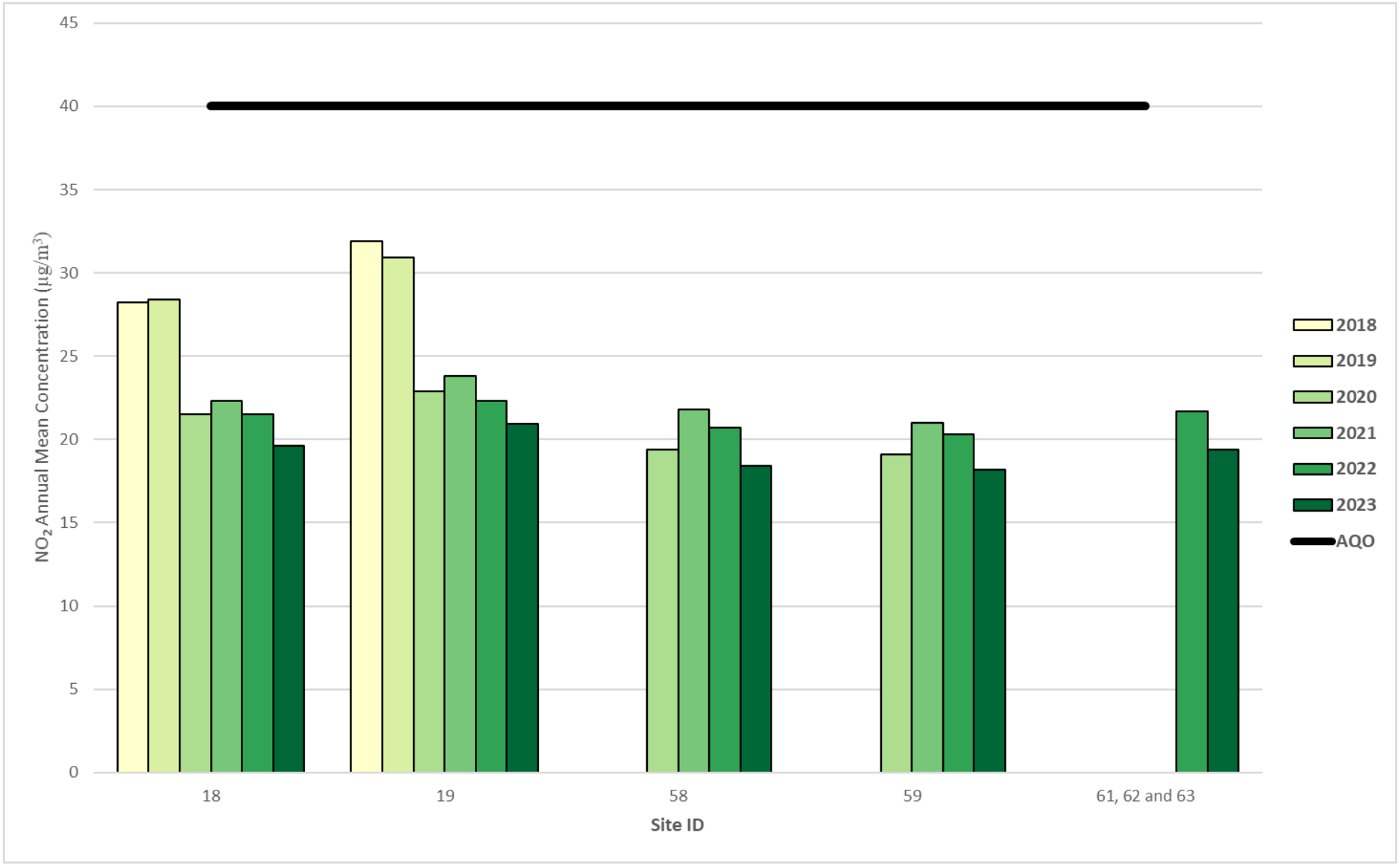


Table A.5 – 1-Hour Mean NO_2 Monitoring Results, Number of 1-Hour Means > 200µg/m^3

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
Trowell Zephyr 932	448607	339026	Roadside	100	100	-	-	-	-	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 ($\mu g/m^3$)

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
Trowell Zephyr 932	448607	339026	Roadside	100	100	-	-	-	-	12.3

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

Notes:

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

Exceedances of the PM_{10} annual mean objective of $40\mu g/m^3$ 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
Trowell Zephyr 932	448607	339026	Roadside	100	100	**-**	**-**	-	-	2

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
Trowell Zephyr 932	448607	339026	Roadside	100	100	-	-	-	-	8.0

☐ **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 (Easting)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Annualised and Bias Adjusted (0.81)	Annual Mean: Distance Corrected to Nearest Exposure	Comment
1	452527	337313	29.3	29.6	22.8	20.8	17.2	15.2	19.7	18.6	23.6	26.8	31.7	21.7	23.1	18.7	-	
50	452114	338018	22.8	22.4	17.8	16.2	13.5	12.1	12.3	14.1	15.6	20.2	24.3	14.6	17.2	13.9	-	
2	452091	338122	28.8	26.6	23.4	22.8	18.3	17.3	19.3	18.2	25.3	24.7	27.6	21.6	22.8	18.5	-	
3	453659	337412	28.6	27.4	22.8	18.9	17.6	16.4	13.6	15.9	18.3	22.6	27.2	18.6	20.7	16.7	-	
4	453361	336627	28.6	29.3	23.8	20.6	16.6	16.4	16.4	17.1	21.1	23.3		20.6	21.3	17.2	-	
51	453537	336100	25.1	23.8	18.5	15.5	12.7	12.2	15.0	14.7	18.8	20.5	25.5	14.5	18.1	14.6	-	
52	453287	336349	30.6	28.3	21.8	18.3	16.1	14.3	13.9	15.7	19.8	20.6	30.5	18.6	20.7	16.8	-	
5	451782	335320		20.9	15.8	12.4	10.3		10.3	11.6	14.5	17.4	23.9	9.6	14.7	11.9	-	
7	450756	334328	30.1	26.4	21.4	19.2	15.0	14.4	16.5	17.2	21.8	24.6	29.3	20.1	21.4	17.3	-	
53	450360	334982	22.6	20.9	16.4	13.9	12.4	10.2	10.9	12.4	14.4	18.4	21.8	13.2	15.6	12.7	-	
8	450422	334243	30.6	29.3	25.0	25.2	23.8	23.2	20.0	18.9	26.6	27.2	28.5	19.7	24.8	20.1	-	
9	449876	334804	24.7	23.1	19.3	18.4	15.8	14.0	13.3	15.9	20.1	20.3	23.7	14.8	18.6	15.1	-	
11	449694	335501	32.7	32.9	25.8	25.9	20.8	21.3	24.1	21.5	28.1	28.6	29.3	22.7	26.1	21.2	-	
12	449615	335664	28.0	27.6	20.6	21.2	19.5	16.4	13.2	17.4	21.9	24.2	30.0	15.9	21.3	17.3	-	
45	449467	336220	32.5	28.7	24.2	22.6	19.4	18.9	19.5	19.7	25.6	26.4	28.0	21.9	23.9	19.4	-	
15	449406	336135	36.8	35.3	31.1	36.0	27.1	27.2	28.7	26.4	35.4	33.4	34.1	27.2	31.6	25.6	-	

DT ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Easting)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Annualised and Bias Adjusted (0.81)	Annual Mean: Distance Corrected to Nearest Exposure	Comment
13	449266	336075	26.0	27.1	22.6	22.4	23.1	20.5	13.2	18.4	20.6	23.7	26.7	14.9	21.6	17.5	-	
16	449516	336216	28.1	26.2	23.1	23.0	19.0	18.5	17.7	18.9	24.5	24.5	25.0	19.2	22.3	18.1	-	
54	448467	336591	31.0	29.4	28.4	27.8	23.2	22.7	18.7	20.3	27.2		29.7	20.1	25.3	20.5	-	
17	448890	337190	39.1	37.3	31.5	28.8	25.3	23.0	24.4	23.7	31.8	32.3	38.1	25.3	30.1	24.3	-	
55	449814	338471	28.9	29.4	22.6	20.8	18.3	15.9	16.9	16.7	22.3	24.6	27.9	19.5	22.0	17.8	-	
18	448560	338889	32.6	28.2	24.5	20.9	19.9	17.6	21.9	22.2	25.4	24.2	30.3	22.7	24.2	19.6	-	
19	448586	339023	33.5	33.8	26.9	23.4	20.7	18.5	23.0	21.5	26.0	25.0	32.3	25.4	25.8	20.9	-	
20	448652	339652	21.5	21.4	22.0	25.2		26.4	15.5	17.5	21.0	23.3	25.4	17.6	21.5	17.4	-	
22	448832	340098	23.6	20.1	26.5	25.5	20.3	24.5	19.2	18.1	24.0	23.6	20.9	16.4	21.9	17.7	-	
44	446509	347091	35.6	35.2	34.0	32.4	28.8	28.3	25.9	25.4	30.4	32.7	33.0	27.3	30.8	24.9	-	
27	446465	346985	26.5	26.8	21.6	23.2	19.6	19.2	17.3	18.0			30.5		22.5	18.2	-	
30	448544	345241	32.2	26.4	22.8	20.6	17.0	16.6	17.8	17.7	23.5	25.3	29.8	23.2	22.7	18.4	-	
31	448826	344883	32.5	32.4	26.5	23.6	19.0	17.7	23.6	23.2	27.6	26.4	31.4		25.8	20.9	-	
32	450122	344658	18.6	30.2	26.4	25.5	23.9	24.0	17.4	19.8	25.8	27.5	30.5	20.9	24.2	19.6	-	
33	451631	344526	33.1	24.4	22.8	22.3	18.0	19.0	15.4	17.1	25.7	23.7	25.5	21.5	-	-	-	Duplicate Site with 33 and 34 - Annual data provided for 34 only
34	451631	344526	25.6	24.9	24.9	21.6	17.9	19.5	17.8	16.9	24.3	22.9	26.3	19.6	22.1	17.9	-	Duplicate Site with 33 and 34 - Annual data provided for 34 only
35	451728	344440	25.0	27.2	27.0	21.1	19.2	18.8	25.5	23.2	26.1	25.9	29.7	26.3	24.6	19.9	-	
36	452232	344033	37.3	33.1	30.0	25.6	18.2	21.9	28.2	25.0	32.1	30.8	34.4	30.8	28.9	23.4	-	
37	452331	343910	31.0		24.1	23.8	24.3	23.6	16.9	21.5	23.6	23.9	30.8		24.3	19.7	-	

DT ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Easting)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Annualised and Bias Adjusted (0.81)	Annual Mean: Distance Corrected to Nearest Exposure	Comment
57	451413	341424	24.6	22.6	16.5	15.3	13.2	11.3	12.6	14.5	17.6	19.0	23.4	15.1	17.1	13.9	-	
38	450389	337866	31.9	30.3	26.4	30.4	27.5	27.0	17.1	21.8	25.1	29.2	32.6	21.7	26.8	21.7	-	
39	450434	337781	24.1	25.7	24.0	25.2	24.3	24.6	15.0	19.5	26.4	24.2	26.3	16.4	23.0	18.6	-	
56	450570	337851	28.1	29.3	25.0	19.3	19.4	16.8	17.3	18.7	22.3	24.2	27.6	20.5	22.4	18.1	-	
40	450632	337929	33.9	35.3	30.5	32.4	30.2	24.8	22.7	25.7	31.5	31.8	33.8	22.1	29.6	24.0	-	
41	450555	337909	32.9	35.0	31.4	29.1	26.5	27.4	25.0	23.9	30.6	28.6	33.2	23.9	29.0	23.5	-	
48	450817	337592	39.7	40.1	32.0	27.7	27.5	26.7	31.8	26.9	35.7	35.3	39.2	32.1	32.9	26.6	-	
43	452733	336962	21.5	20.4	14.3	14.8	10.0	9.9	10.1	11.1	14.6	18.6	21.9	13.8	15.1	12.2	-	
58	448588	338940	31.4	30.0	21.7	20.0	18.1	16.2	19.7	20.2	22.4	23.1	29.1	21.3	22.8	18.4	-	
59	448602	338965	31.7	29.2	22.7	20.0	18.1	16.4	18.6	19.3	22.5	23.8	27.7	19.5	22.5	18.2	-	
60	453075	336311	24.9	23.4	20.9	20.0	16.4	16.4	12.6	15.2	18.9	23.6	25.5	15.7	19.5	15.8	-	
61	448607	339026	33.1	32.8	24.4	21.2	17.1	16.1	20.2	20.0	24.7	25.4	30.9	23.7	-	-	-	Triplicate Site with 61, 62 and 63 - Annual data provided for 63 only
62	448607	339026	34.0	32.4	23.5	21.5	18.1	16.9		20.0	24.1	24.2	28.1	23.2	-	-	-	Triplicate Site with 61, 62 and 63 - Annual data provided for 63 only
63	448607	339026	35.7	31.2	24.5	21.2	18.3	16.5	19.7	20.1	24.5	25.3	28.1	23.4	24.0	19.4	-	Triplicate Site with 61, 62 and 63 - Annual data provided for 63 only
64	447720	345443	22.2	18.6		14.0	9.2	10.5	11.7	10.6	16.7	17.6	23.4	17.2	15.6	12.6	-	
65	449482	344888	28.6	17.6	13.9	11.5	8.5	8.7	9.7	10.1	13.4	15.9	20.3	13.9	14.3	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.**

☒ **Broxtowe Borough Council 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.

(a) Missing tubes

(b) Result not valid

(C) Found on the Floor

(D) Tube returned with no grids in

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

New or Changed Sources Identified Within Broxtowe Borough Council During 2023

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

Additional Air Quality Works Undertaken by Broxtowe Borough Council During 2023

Broxtowe Borough Council has not completed any additional works within the reporting year of 2023.

QA/QC of Diffusion Tube Monitoring

BBC diffusion tubes are supplied and analysed by Gradko Ltd. Since April 2008, BBC has entered into a contract with Gradko along with all Nottinghamshire Local Authorities to ensure that any deviations within different laboratory practices are ruled out. This enables data to be easily compared between the County authorities. The tubes are prepared using a 20% solution of triethanolamine (TEA) in de-ionised water. The tubes are exposed for one month before being returned for laboratory analysis. All of the tubes in 2023 were deployed in line with the Defra Calendar. The latest results for Gradko from the AIR PT/WASP Scheme are 100% of the results submitted were determined to be satisfactory.

Diffusion Tube Annualisation

All diffusion tube monitoring locations within Broxtowe Borough Council recorded data capture of 75% and above. Therefore, it was not required to annualise any monitoring data. In addition, any sites with a data capture below 25% do not require annualisation.

Diffusion Tube Bias Adjustment Factors

The diffusion tube data presented within the 2024 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.

Although Broxtowe Borough Council have applied a National bias adjustment factor of 0.81 to the 2023 monitoring data. The Local bias adjustment factor has also been calculated as shown in Table C.2. The decision was made to use the National bias adjustment factor, as opposed to using the local bias adjustment factor, although the local bias adjustment factor had good overall precision and good data capture for several reasons, which are;

- The National bias adjustment factor is higher than the local bias adjustment factor (0.81 as opposed to 0.65). Therefore, using the National bias adjustment factor would be using the 'worst case' bias adjustment factor to correct the data with.

- Section 7.221 in TG22 states that the Local bias adjustment factor should not be calculated using real time sensors, but rather a chemiluminescence analyser. BBC has a Zephyr which is a real time sensor and not a chemiluminescence analyser.

A summary of bias adjustment factors used by Broxtowe Borough Council over the past five years is presented in Table C.1.

Table C.1 – Bias Adjustment Factor

Year	Local or National	If National, Version of National Spreadsheet	Adjustment Factor
2024	National	03/24	0.81
2023	National	03/23	0.83

Year	Local or National	If National, Version of National Spreadsheet	Adjustment Factor
2021	National	03/22	0.84
2020	National	03/21	0.81
2019	National	03/20	0.93

Figure C.1 – The National Diffusion Tube Bias Adjustment Factor Spreadsheet showing the calculated bias correction factor used by Broxtowe Borough Council.

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 (To undo your selection, choose (All) from the pop-up list)	Year[2] (To undo your selection, choose (All))	Site Type	Local Authority	Length of Study (months)	Diffusion Tube Mean Conc. (Dm) (µg/m³)	Automatic Monitor Mean Conc. (Cm) (µg/m³)	Bias (B)	Tube Precision[5]	Bias Adjustment Factor (A) (Cm/Dm)
Gradko	20% TEA in Water	2023	R	Monmouthshire County Council	11	33	26	26.5%	G	0.79
Gradko	20% TEA in water	2023	R	Blackburn With Darwen Bc	12	23	16	43.8%	G	0.70
Gradko	20% TEA in water	2023	R	Lancaster City Council	10	35	27	28.6%	G	0.78
Gradko	20% TEA in water	2023	R	Eastleigh Borough Council	12	33	26	26.4%	G	0.79
Gradko	20% TEA in water	2023	R	Eastleigh Borough Council	12	22	19	12.5%	G	0.89
Gradko	20% TEA in water	2023	R	Plymouth City Council	12	35	26	38.3%	S	0.72
Gradko	20% TEA in water	2023	R	Plymouth City Council	10	39	31	24.2%	S	0.80
Gradko	20% TEA in water	2023	UC	Belfast City Council	10	26	19	38.3%	G	0.72
Gradko	20% TEA in water	2023	R	Cheshire West And Chester	12	35	32	10.0%	G	0.91
Gradko	20% TEA in water	2023	R	Cheshire West And Chester	10	32	28	14.6%	G	0.87
Gradko	20% TEA in water	2023	R	Dudley Mbc	12	27	23	17.1%	G	0.85
Gradko	20% TEA in water	2023	UB	Dudley Mbc	12	19	13	45.4%	G	0.69
Gradko	20% TEA in water	2023	R	Dudley Mbc	12	40	37	7.7%	G	0.93
Gradko	20% TEA in water	2023	R	Gateshead Council	12	23	20	17.7%	G	0.85
Gradko	20% TEA in water	2023	R	Gateshead Council	11	23	18	26.9%	G	0.79
Gradko	20% TEA in water	2023	R	Gateshead Council	12	27	22	20.7%	G	0.83
Gradko	20% TEA in water	2023	R	Gateshead Council	12	29	23	25.9%	G	0.79
Gradko	20% TEA in water	2023	R	Gateshead Council	12	30	33	-7.8%	G	1.08
Gradko	20% TEA in water	2023	KS	Marylebone Road intercomparison	11	45	38	20.3%	G	0.83
Gradko	20% TEA in water	2023	B	South Holland District Council	10	8	7	12.4%	G	0.89
Gradko	20% TEA in water	2023	R	Worcestershire	12	12	11	17.4%	G	0.85
Gradko	20% TEA in Water	2023	R	Ards And North Down Borough Council	12	33	21	60.2%	G	0.62
Gradko	20% TEA in Water	2023	R	Lisburn & Castlereagh City Council	11	24	20	22.1%	G	0.82
Gradko	20% TEA in water	2023		**Overall Factor[3] (23 studies)**				Use		0.81

The Local bias adjustment factor for the Zephyr was also calculated as shown in Table C.2 below.

Table C.2 – Local Bias Adjustment Calculation

	Local Bias Adjustment Input 1
Periods used to calculate bias	12
Bias Factor A	0.65 (0.62 - 0.68)
Diffusion Tube Bias B	53% (47% - 60%)
Diffusion Tube Mean (µg/m³)	24.0

	Local Bias Adjustment Input 1
Mean CV (Precision)	2.3%
Automatic Mean (µg/m^3)	15.6
Data Capture	99%
Adjusted Tube Mean (µg/m^3)	16 (15 - 16)

NO_2 Fall-off with Distance from the Road

No diffusion tube NO_2 monitoring locations within Broxtowe Borough Council required distance correction during 2023.

QA/QC of Automatic Monitoring

Although the Zephyr measurements are not normally reported in the ASR as they are real time sensor and not a chemiluminescence analyser Broxtowe Borough Council felt that it was appropriate to include the data within the ASR but the data should be treated as indicative.

BBC's data from the Zephyr is managed by Geoff Broughton from Air Quality Data Management (AQDM) and any Local Site Operator (LSO) duties for the Zephyr are undertaken by Kate Ratcliffe at BBC.

As the Zephyr is not a chemiluminescence analyser the data are not ratified like the reference instruments because there are no calibrations. Therefore, the PAS 4023, LAQM TG22 and AURN methodologies have been used instead and the obvious anomalies have been removed

The live and historic data for BBC zephyr is available through the website; https://www.ukairquality.net/

There were no significant problems with the data or the real time sensor in 2023.

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

The type of PM_{10}/$PM_{2.5}$ monitor utilised within Broxtowe Borough Council do not require the application of a correction factor.

Automatic Monitoring Annualisation

All automatic monitoring locations within Broxtowe Borough Council recorded data capture of greater than 75% therefore it was not required to annualise any monitoring data.

NO_2 Fall-off with Distance from the Road

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

No automatic NO_2 monitoring locations within Broxtowe Borough Council required distance correction during 2023.

Appendix D: Map of all Monitoring Locations within the Borough of Broxtowe.

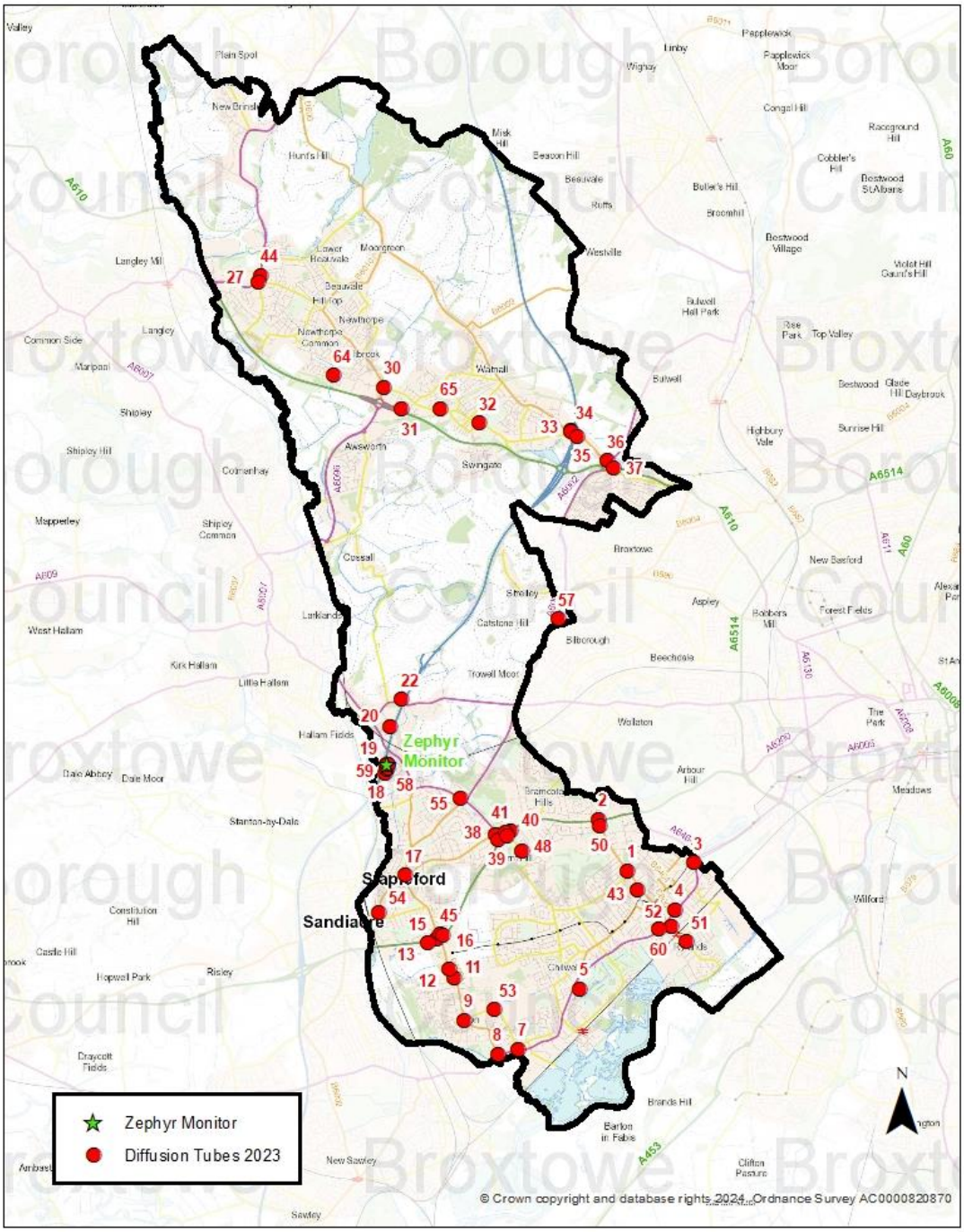


Figure D.1 – 2023 Diffusion Tube Locations and the location of the Zephyr Monitor.

Appendix E: Map of AQMA in Trowell.

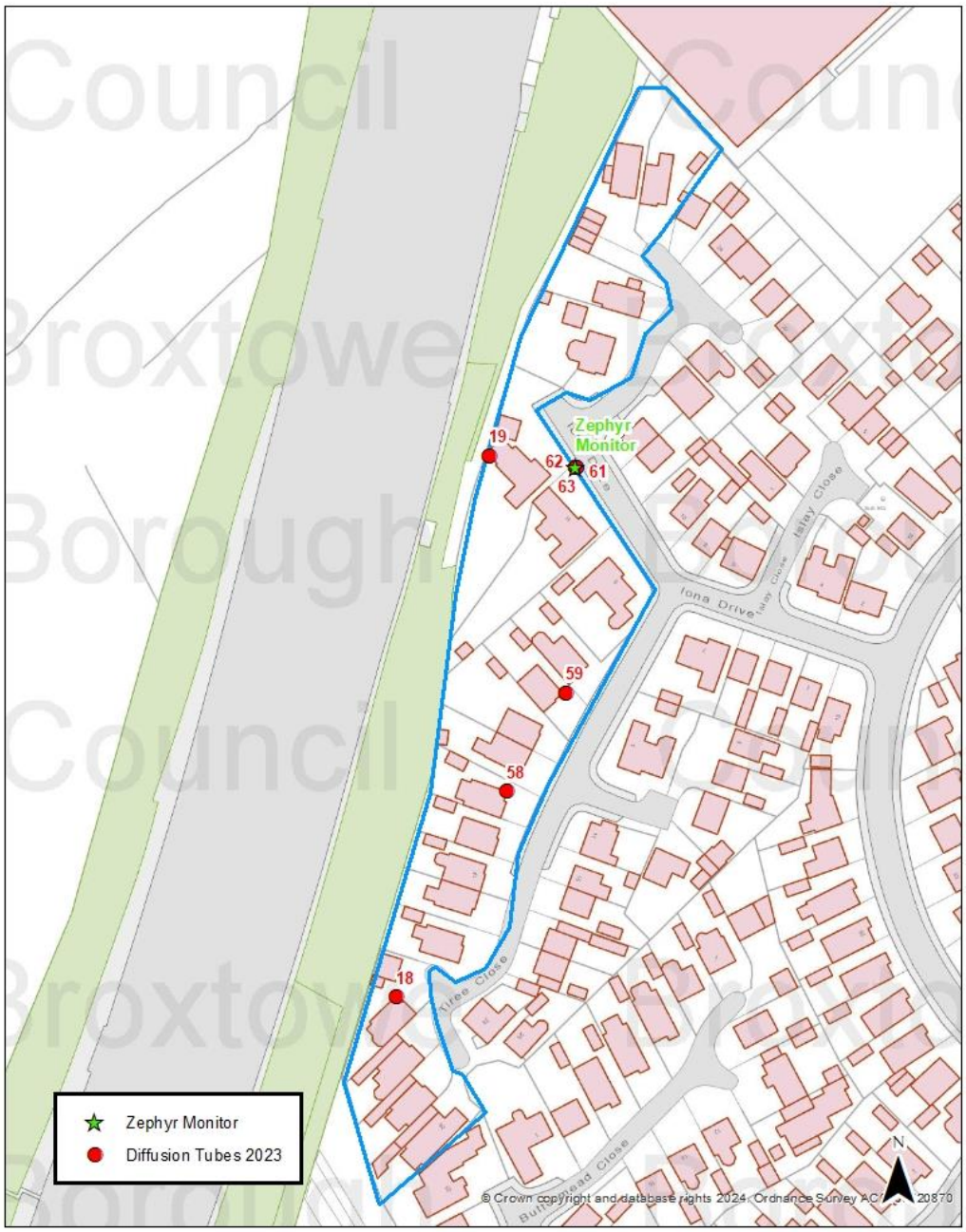


Figure E.1 - AQMA 1 encompassing twenty properties on parts of Iona Drive and Tiree Close next to the M1 motorway and the Trowell Park estate (boundary marked in blue).

Appendix F: Map of A610/B600 Nuthall Island showing the Monitoring Locations.

Figure F.1 – Nuthall Island and Diffusion Tube Location.

Appendix G: Map of Bramcote Island, Derby Road and Town Street showing the Monitoring Locations.

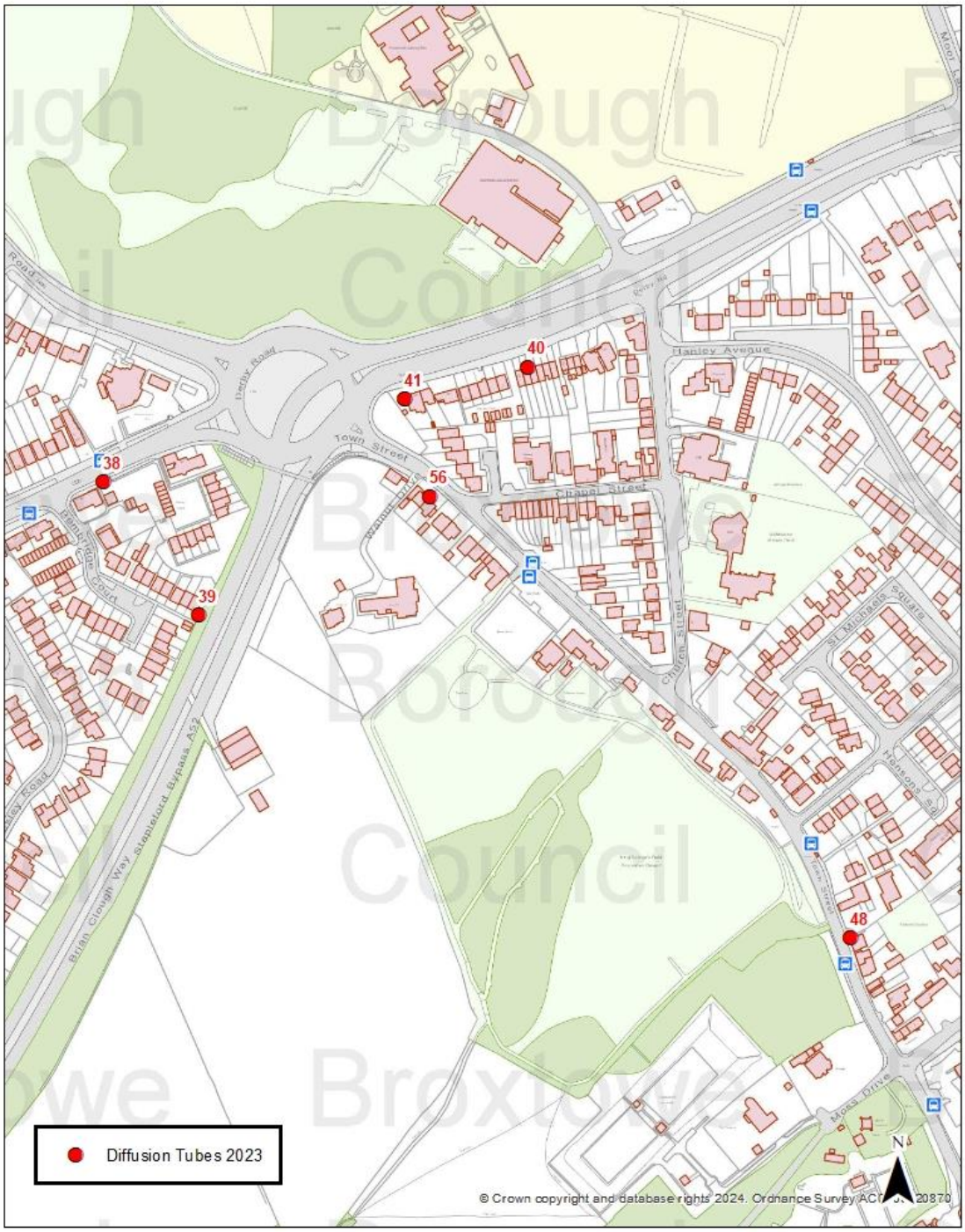


Figure G.1 – Map of Bramcote Island and Town Street Diffusion Tube Location

Appendix H: Map of the Borough showing the 2023 modelled background levels of $PM_{2.5}$.

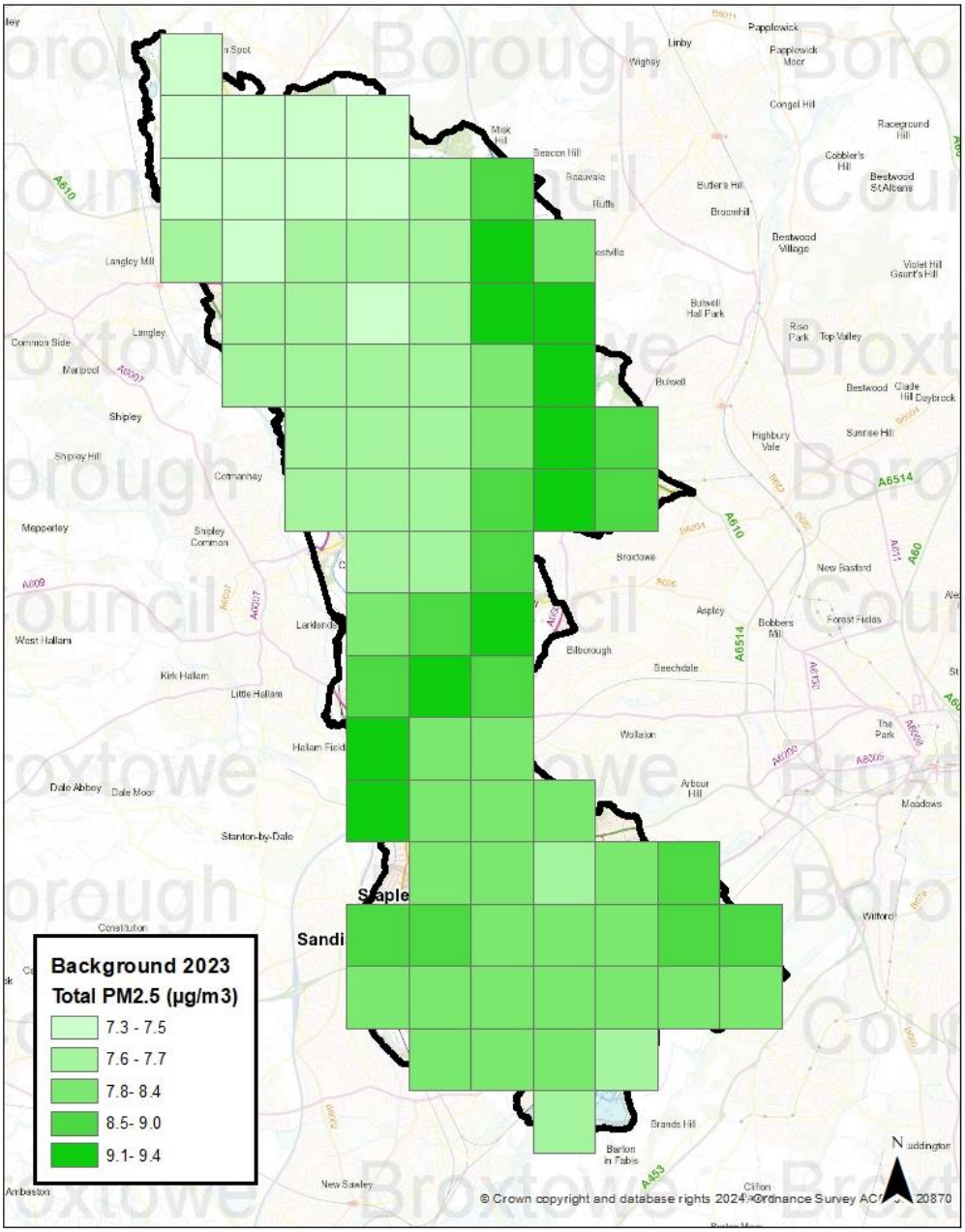


Figure H.1- Map of the Borough showing the 2023 modelled background levels of $PM_{2.5}$.

Appendix I: Summary of Air Quality Objectives in England

Table I.1 – Air Quality Objectives in England[11]

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

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

Glossary of Terms

Abbreviation	Description
AQAP	Air Quality Action Plan - A detailed description of measures, outcomes, achievement dates and implementation methods, showing how the local authority intends to achieve air quality limit values'
AQMA	Air Quality Management Area – An area where air pollutant concentrations exceed / are likely to exceed the relevant air quality objectives. AQMAs are declared for specific pollutants and objectives
ASR	Air Quality Annual Status Report
ATF	Active Travel Fund
AURN	Automatic Urban and Rural Network
BBC	Broxtowe Borough Council
BSIP	Bus Service Improvement Plan
CAZ	Clean Air Zone
COMEAP	Committee on the Medical Effects of Air Pollution
CV	Coefficient of Variation
Defra	Department for Environment, Food and Rural Affairs
Derv	Diesel Engine Road Vehicle
DCC	Derbyshire County Council
DCiC	Derby City Council
DfT	Department for Transport
D2N2	Local Enterprise Partnership for Derby, Derbyshire, Nottingham and Nottinghamshire
EMAQN	East Midlands Air Quality Network
EMCCA	East Midlands Combine County Authority
EU	European Union
EVCC	Electric Vehicle Cable Channels
EVI	Electric Vehicle Infrastructure

FDMS	Filter Dynamics Measurement System
FTZ	Future Transport Zones
GNSP	Greater Nottingham Strategic Plan
HGV's	Heavy Goods Vehicles
HS2	High Speed Train 2
HVO	Hydrotreated Vegetable Oil
ITSO	Integrated Transport Smartcard Organisation
LAQM	Local Air Quality Management
LAQM.PG(16)	LAQM Policy Guidance 2016
LAQM.TG(16)	LAQM Technical Guidance 2016
LCWIP	Local Cycling and Walking Infrastructure Plan
LEV	Low Emission Vehicles
LGA	Local Government Association
LSTF	Local Sustainable Transport Fund
µg/m^3	Microgrammes of pollutant per cubic metre of air
MOT	Multi Operator Ticket in relation to travel on buses and trams
NEPWG	Nottinghamshire Environmental Protection Working Group
NET	Nottingham Express Transit
NCT	Nottingham City Transport
NH	National Highways
NHS	National Health Service
NO	Nitric Oxide
NO_2	Nitrogen Dioxide
NO_x	Nitrogen Oxides
NCiC	Nottingham City Council
NCC	Nottinghamshire County Council
O_3	Ozone

OHID	Office for Health Improvement & Disparities used to be Public Health England
OLEV	Office for Low Emission Vehicles
OZEV	Office of Zero Emission Vehicles
PHOF	Public Health Outcomes Framework
PM	Particulate Matter
PM_{10}	Airborne particulate matter with an aerodynamic diameter of 10µm (micrometres or microns) or less
$PM_{2.5}$	Airborne particulate matter with an aerodynamic diameter of 2.5µm or less
PT	Public Transport
PTP	Personalised Travel Planning
QA/QC	Quality Assurance and Quality Control
R&A	Review and Assessment
SAFED	Safe And Fuel Efficient Driving
SEDBUK	Seasonal Efficiency of a Domestic Boiler in the UK
SO_2	Sulphur Dioxide
SQPS	Statutory Quality Partnership Schemes
TEA	Triethanolamine
UK	United Kingdom
ULEVs	Ultra Low Emission Vehicles
WASP	Workplace Analysis Scheme for Proficiency
WHO	World Health Organisation
WPL	Workplace Parking Levy

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