



Friday, 4 June 2021

Dear Sir/Madam

A meeting of the Environment and Climate Change Committee will be held on Monday, 14 June 2021 in the Council Chamber, Council Offices, Foster Avenue, Beeston NG9 1AB, commencing at 7.00 pm.

Should you require advice on declaring an interest in any item on the agenda, please contact the Monitoring Officer at your earliest convenience.

Yours faithfully

Chief Executive

To Councillors: L A Ball BEM
M Brown
S Dannheimer
S Easom
L Fletcher
T Hallam
R I Jackson

R D MacRae
G Marshall
S Paterson
H E Skinner (Chair)
D K Watts (Vice-Chair)
R D Willimott

AGENDA

1. APOLOGIES

To receive any apologies and notification of substitutes.

2. DECLARATIONS OF INTEREST

Members are requested to declare the existence and nature of any disclosable pecuniary interest and/or other interest in any item on the agenda.

3. MINUTES

(Pages 1 - 4)

To approve the minutes of the previous meeting held on 1 February 2021.

4. AIR QUALITY STATUS REPORT 2021 (Pages 5 - 108)
- To advise Members of, and to seek approval for, the latest Air Quality Status Report which is to be submitted to the Department of Food Environment and Rural Affairs.
5. CLEAN GREEN UPDATE (Pages 109 - 112)
- To update Members on the progress of the 'Clean and Green' initiative.
6. CLIMATE CHANGE AND GREEN FUTURES PROGRAMME STRAND UPDATE (Pages 113 - 120)
- To provide members with an update on the progress of the following strands in the Climate Change and Green Futures programme:
- Water courses
 - Meadow planting/wildflower corridors
 - Tree planting.
7. LITTER STRATEGY (Pages 121 - 152)
- To seek approval for the Litter Strategy.
8. INHAM NOOK RECREATION GROUND - PROPOSED LEASE WITH PHOENIX INHAM FOOTBALL CLUB (Pages 153 - 156)
- To advise members of a proposal from Phoenix Inham Football Club to enter into 10-year lease with the Borough Council for the pavilion at Inham Nook Recreation Ground.
9. NOTING REPORTS
- Items 9.1, 9.2 and 9.3 are reports for noting by the Committee and are circulated separately with this agenda.
10. WORK PROGRAMME (Pages 157 - 158)
- To consider items for inclusion in the Work Programme for future meetings.

ENVIRONMENT AND CLIMATE CHANGE COMMITTEE

MONDAY, 1 FEBRUARY 2021

Present: Councillor H E Skinner, Chair

Councillors: L A Ball BEM
S Easom
D A Elliott
R I Jackson
P Lally
H Land
R D MacRae
G Marshall
J P T Parker
P Roberts-Thomson
D K Watts
R D Willimott

Apologies for absence were received from Councillors L Fletcher and T Hallam

51 DECLARATIONS OF INTEREST

Councillor D K Watts declared an interest in item 4 as his daughter plays for a football team that rents a pitch from Broxtowe Borough Council, minute number 53 refers. Both Councillor DK Watts and Councillor H Land declared an interest in item 6 that they each own an electric car, minute number 55 refers.

52 MINUTES

The minutes of the meeting held on 23 November 2020 were confirmed as a correct record.

53 BUSINESS PLANS AND FINANCIAL ESTIMATES 2021/22 - 2023/24

The Committee considered proposals for business plans, detailed revenue budget estimates for 2021/22, capital programme for 2021/22 to 2023/24 and proposed fees and charges for 2021/22 in respect of the Council's priority areas.

The Council's business and financial planning framework identified key service and spending pressures and prioritised resources accordingly, taking into account national and local priorities. The targeted outcomes from these key issues and the anticipated impact on service performance were set out within the business plans that also included financial information, proposals for reducing business costs and increasing income for the priority area of Environment.

RESOLVED that the Environment Business Plan be approved and RECOMMENDED that the Finance and Resources Committee recommends to Council that the following be approved:

- a) The detailed revenue budget estimates for 2021/22 (base) including any revenue development submissions.**
- b) The capital programme for 2021/22 to 2023/24**
- c) The fees and charges for 2021/22**

54 AIR QUALITY ACTION PLAN

Members welcomed the Air Quality Action Plan and its inclusion into the Climate Change and Green Futures Action Plan. Councillors praised the officers for the detailed 40-point action plan that will provide extra measures to improve air quality within Broxtowe. This report will be submitted annually to the Department for Environment, Food and Rural Affairs.

Discussions ensued around encouraging and promoting people to drive electric cars including taxi drivers, access to charging points including the associated charges and reducing idling traffic including taxis and buses to promote cleaner air.

RESOLVED that

- a) The Air Quality Action Plan be approved**
- b) The inclusion of the Air Quality Action plan into the Quality Strand of the Climate Change and Green Futures Action Plan be approved.**

55 NOTING REPORTS

The Committee noted the following reports:

- Broxtowe Parks Standard
- Environment Bill Update
- Fuel and Transport and Fleet Strategy
- Green Number Plates
- Climate Change and Green Futures Programme Update.

55.1 TEN POINT PLAN FOR A GREEN INDUSTRIAL REVOLUTION

The Committee noted the Ten Point Plan for a Green Industrial Revolution.

A recommendation was proposed by Councillor G Marshall and seconded by Councillor D K Watts that Officers should write to the Government to oppose some of the Ten Point Plan.

It was suggested that the Council should be opposing new coal development and burning of fossil fuels, Support Green Finance Innovation and ethical investments in Local Government Pension Funds.

Further suggestions to this recommendation included ceasing nuclear power and exploring growth within wind and solar energy including On shore wind technology. With the addition of supporting Greener buildings and Green Investment Banks.

As the next Committee is in June it was further recommended to bring the report to the next Policy and Performance Committee.

RESOLVED that a written response to Government be prepared in relation to the Council's position on:

- **Coal and Fossil Fuel Extraction**
- **Use of Nuclear Fuel**
- **Onshore Wind Technology**
- **Greener Housing Infrastructure**
- **Green Investment Banks**
- **Ethical Investments in Local Government Pension Funds**

and be presented to the Policy and Performance Committee to be approved.

56 WORK PROGRAMME

The Committee considered the work programme.

RESOLVED that the Work Programme, be approved.

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Report of the Chief Executive

AIR QUALITY STATUS REPORT 20211. Purpose of report

To advise Members of, and to seek approval for, the latest Air Quality Status Report which is to be submitted to the Department of Food Environment and Rural Affairs (DEFRA).

2. Detail

Each year, DEFRA requires all local authorities in England to produce an Annual Status Report (ASR) in respect of air quality. The production of an ASR is intended to aid local transparency, increase accessibility of air quality to the wider public audience and encourage buy-in to delivering air quality improvement measures by those best placed to assist (e.g. directors of public health, transport managers etc.) The format of the report is specified by DEFRA.

The latest Annual Status Report to be submitted by Broxtowe Borough Council is attached as an appendix. There are currently some incomplete sections but this is due to a change in the requirements from DEFRA, advice on which wasn't received until late April. Also, the bias correction factors aren't released until June.

Some of the positive aspects contained in the report include the following:

- The 2020 nitrogen dioxide results show that the air quality levels are below the objective of $40\mu\text{g}/\text{m}^3$ for all of the monitoring locations throughout the Borough.
- Broxtowe Borough Council has produced an additional Air Quality Report "Improving the Air We Breathe" in 2020. The report details 41 measures that the Council can implement to improve the Air Quality within the Borough. 31 of these are new measures were devised in 2020. These measures are additional to the measures that are undertaken by Nottinghamshire County Council and Highways England who are responsible for the roads within the borough.
- Despite the Covid-19 Lockdowns and Restrictions the Council have continued to monitor the air quality and meet the recommended data capture set by Defra.

Recommendation

The Committee is asked to RESOLVE that the 2021 Air Quality Status Report for submission to DEFRA be approved.

Background papers

Nil

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**Broxtowe
Borough
COUNCIL**

DRAFT

**2021 Air Quality Annual Status
Report (ASR) for Broxtowe Borough
Council**

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

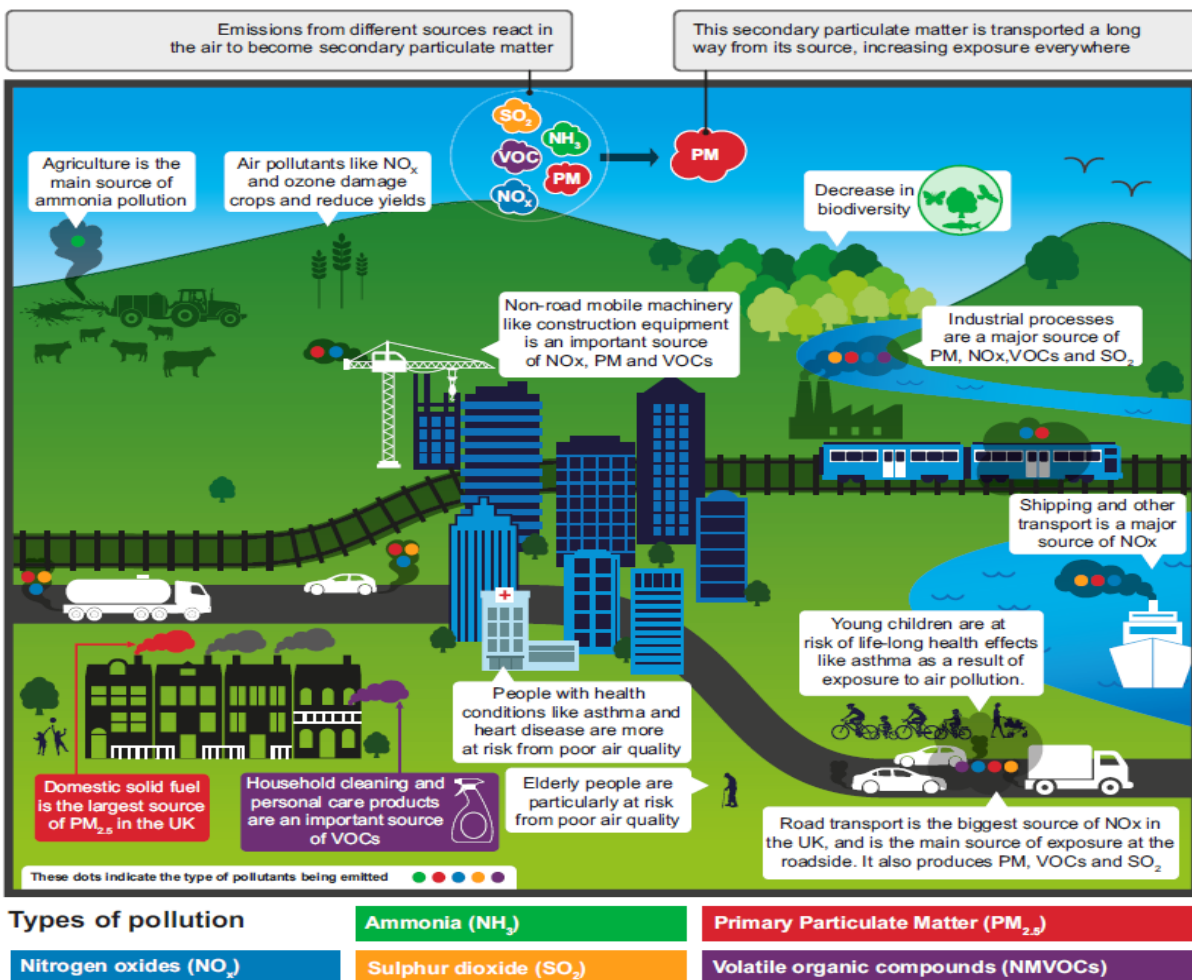
June, 2021

Information	Broxtowe Borough Council Details
Local Authority Officer	Kate Ratcliffe
Department	Environmental Health
Address	Council Offices Foster Avenue Beeston Nottingham NG9 1AB
Telephone	0115 9177777
E-mail	health@broxtowe.gov.uk
Report Reference Number	BBC/AQ/ASR/2021
Date	June 2021

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

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/770715/clean-air-strategy-2019.pdf

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 (NO₂) and Particulate Matter (PM₁₀ 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 NO₂. Nitrogen Monoxide is a colourless gas with the chemical formula NO. Collectively NO₂ and NO are known as Oxides of Nitrogen and the chemical formula is NO_x.

As mentioned previously NO_x 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 NO_x release NO_x in the form of NO₂ into the atmosphere, these are known as primary sources of NO₂, which are mainly emitted from vehicle exhausts. It was previously believed that it was petrol vehicles that were the main source of NO₂ however the use of diesel particulate filters within the exhaust systems of diesel vehicles have resulted in high concentrations of NO₂ being emitted into the atmosphere.

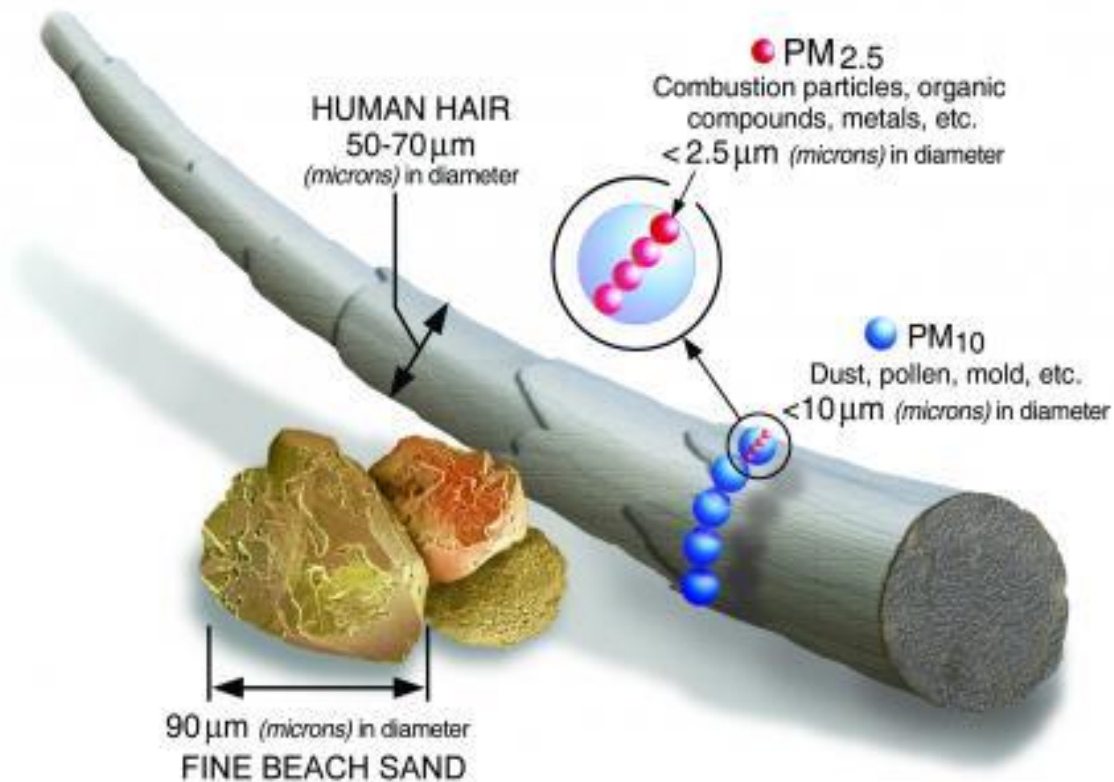
Another source of NO₂ in the atmosphere is due to a chemical reaction in the atmosphere between NO and Ozone (O₃). This is classed as a secondary source of NO₂. However, if concentrations of O₃ are low near to the source of NO then NO₂ will not be formed.

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: USEPA - <https://www3.epa.gov/pm/basic.html>

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' (PM₁₀). The particles are measured in size and referred to as microns (µm). PM₁₀ 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 health cost to society of the impacts of particulate matter alone in the UK is estimated to be around £16 billion³.

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 Environmental equity, air quality, socioeconomic status and respiratory health, 2010

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

³ Defra. Abatement cost guidance for valuing changes in air quality, May 2013

Where air pollutants go in our bodies and what they do

A few hours of PM_{2.5} over 35 µg/m³ or NO₂ over 200 µg/m³ irritates the eyes, nose and throat.

PM can cause strokes. Ultrafine PM has been found in samples of brain and central nervous system tissue.

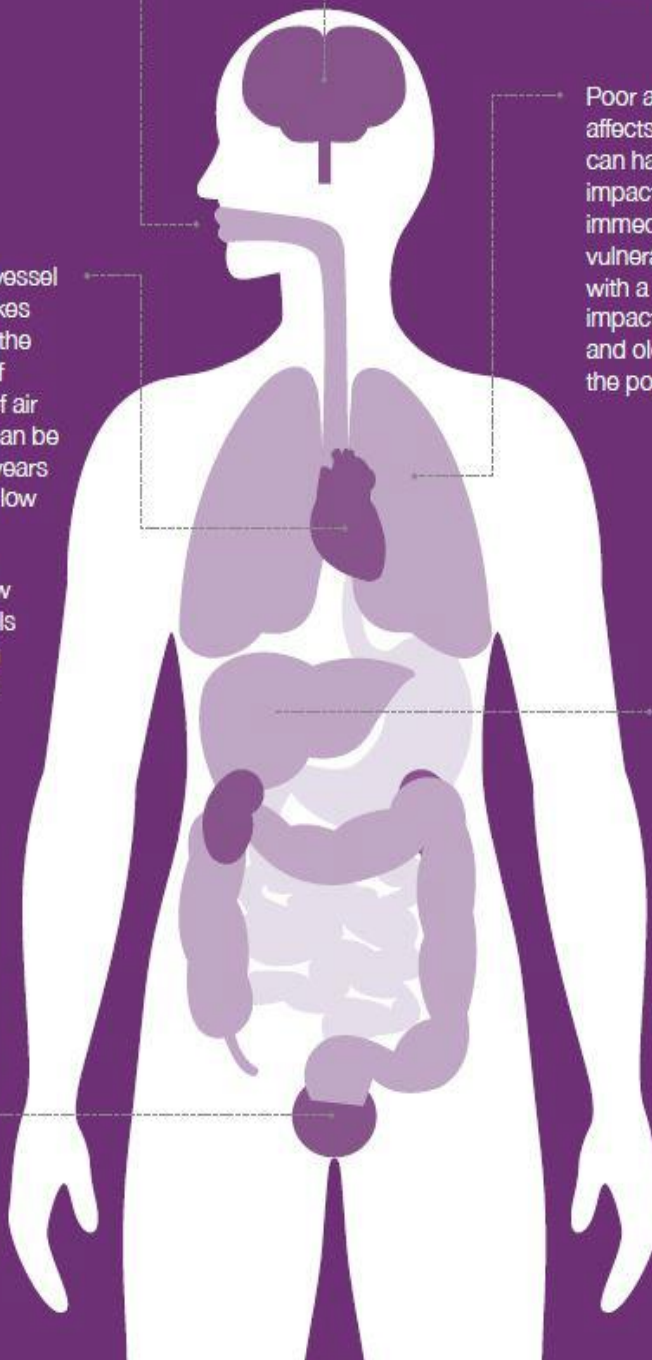
Heart and blood vessel diseases like strokes and hardening of the arteries are one of the main effects of air pollution. These can be caused by a few years exposure to even low levels of PM_{2.5}.

Poor air quality affects everyone. It can have long term impacts on all and immediate effects on vulnerable people, with a disproportionate impact on the young and old, the sick and the poor.

Exposure for a few hours to high levels of PM_{2.5} can bring on existing illness or strokes and heart attacks in ill people.

Ultrafine PM can get into the blood then throughout the body. Ultrafine particles have been found in body organs.

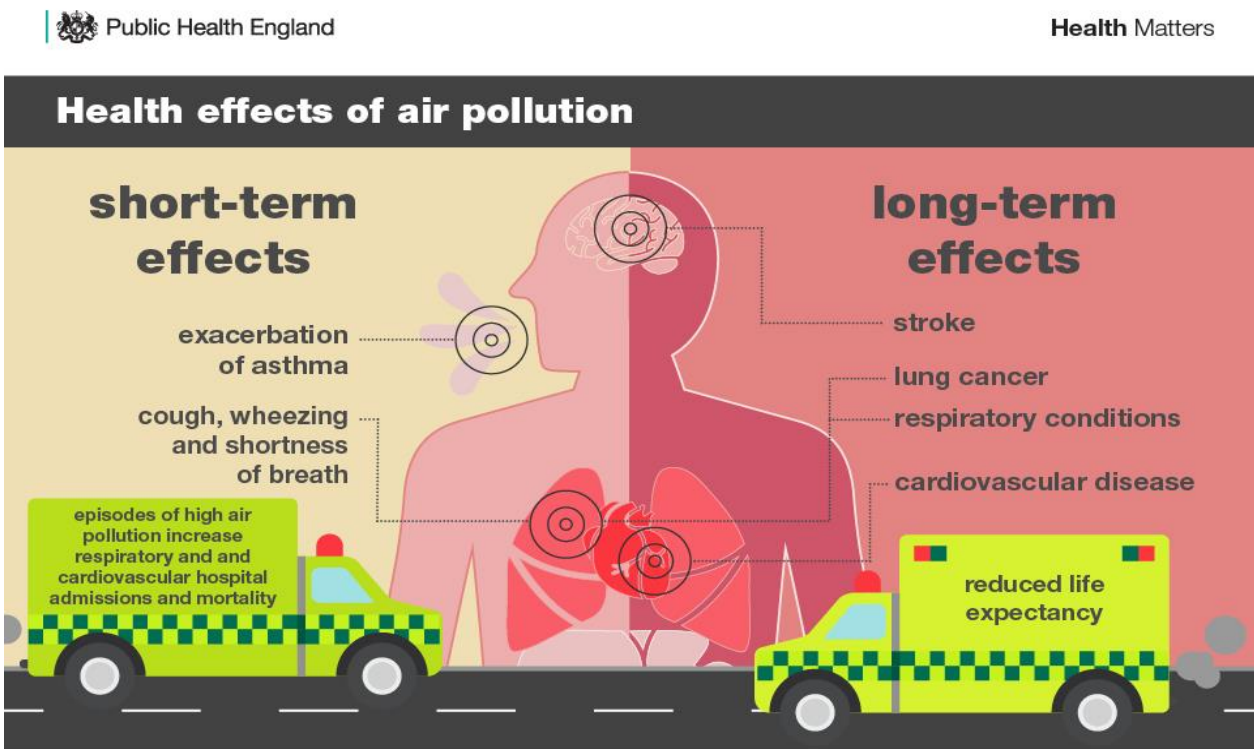
PM has been found in the reproductive organs and in unborn children.



Source - Air Quality: A Briefing for Directors of Public Health, March 2017
<https://laqm.defra.gov.uk/assets/63091defraairqualityguide9web.pdf>

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, Public Health England

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 NO₂ 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 2019 due to NO₂ 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 Aug18)
East Midlands	3,052	30,878
Nottingham City	171	2,004
Ashfield	87	851
Newark and Sherwood	82	805
Bassetlaw	82	797
Broxtowe Borough Council	82	787
Mansfield	79	764
Gedling	78	807
Rushcliffe	74	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, 82 of these are attributable to NO₂ 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 mortality⁴. Public Health England (PHE) 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 2018 of human made PM_{2.5} air pollution.

Air Quality in Broxtowe Borough Council

Air pollution is associated with a number of adverse health impacts. 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, the elderly, and those with existing heart and lung conditions. There is also often a strong correlation with equalities issues because areas with poor air quality are also often less affluent areas^{5,6}.

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

⁵ Public Health England. Air Quality: A Briefing for Directors of Public Health, 2017

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

The mortality burden of air pollution within the UK is equivalent to 28,000 to 36,000 deaths at typical ages⁷, with a total estimated healthcare cost to the NHS and social care of £157 million in 2017⁸.

The main air quality issue within the Borough is due to the M1 and the A52, which 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 pollutant of concern within the Borough is Nitrogen Dioxide, which is emitted from vehicle exhausts and is prevalent in areas where there are congested roads. 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.

Broxtowe Borough Council participates in the United Kingdom Nitrogen Dioxide diffusion tube network and has 45 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 Chapter 2.1 of this report.

The 2020 nitrogen dioxide results show that the air quality levels are below the objective of 40µg/m³ for all of the monitoring locations throughout the Borough. The results and trends are discussed in greater detail in Chapter 3.2.1 of this report.

⁷ Defra. Air quality appraisal: damage cost guidance, July 2020

⁸ Public Health England. Estimation of costs to the NHS and social care due to the health impacts of air pollution: summary report, May 2018

In respect of particulates, the modelled background level provided by Defra for the Borough of Broxtowe indicated levels between $7.6\mu\text{g}/\text{m}^3$ and $9.7\mu\text{g}/\text{m}^3$ for 2020, with the annual mean for 2020 being $8.5\mu\text{g}/\text{m}^3$. The World Health Organisation (WHO) guideline level for $\text{PM}_{2.5}$ is $10\mu\text{g}/\text{m}^3$.

Broxtowe Borough Council has a close working relationship with Highways England and Nottinghamshire County Council Highways Department. Highways England manages the M1 Motorway and the A52, which run through the Borough. Nottinghamshire County Council Highways Department manage the remaining roads that run through the Borough; this includes the A610/B600 Nuthall Roundabout.

The Council works with Highways England 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 colleagues in the Planning department at the Council. 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 2019 Clean Air Strategy⁹ sets out the case for action, with goals even more ambitious than EU requirements to reduce exposure to harmful pollutants. The Road to Zero¹⁰ sets out the approach to reduce exhaust emissions from road transport through a number of mechanisms; this is extremely important given that 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.

PUT IN ACTIONS HERE

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

Include a brief summary of core actions (and in particular good practice examples, success stories or lessons learned) to target sources of pollution within your area over the past reporting year. Has the implementation of measures or any recent actions resulted in a change in monitoring concentrations? Detail which partnership organisations you are collaborating with to achieve delivery of actions. Indicate any quantitative improvements from actions taken (if known) and include a summary of progress on any grant funded projects.

Conclusions and Priorities

The 2020 nitrogen dioxide results show that the air quality levels are below the objective of 40µg/m³ 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:

⁹ Defra. Clean Air Strategy, 2019

¹⁰ DfT. The Road to Zero: Next steps towards cleaner road transport and delivering our Industrial Strategy, July 2018

- Review the NO₂ 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. Extensive monitoring will allow Broxtowe Borough Council to identify and focus on ‘problem’ areas.
- Continue to reduce the levels of NO₂ in the Borough by working with Highways England and Nottinghamshire County Council.
- Continue to be a member of the East Midlands Air Quality Network (EMAQN), to liaise with colleagues in Public Health and other local authorities.
- 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 Strategic Needs Assessment for the County and any future work that involves air quality issues.
- 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 NO₂ and particulate matter.
- Broxtowe Borough Council to continue as an active member in the Air Quality Strategy Task Group.
- Ensure that the new Nottinghamshire Air Quality Strategy is promoted and used once more as a valuable working document.

- Review the measures in Broxtowe Borough Council's Air Quality Action Plan and to continue to report on them in the next ASR as well as all the measures that are being implemented in the Borough to reduce air pollution levels.
- Continue to attend regional HS2 meetings to ensure that suitable mitigation measures are made during the construction phase and when HS2 is operational.

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 Highways England and is not under the control of Broxtowe Borough Council. Although Broxtowe Borough Council have a close working relationship with Highways England it is unable to impose or make any changes to the M1 to improve the air quality within the neighbouring residential areas. However, Highways England 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. **UPDATE -The second challenge is the limited funding currently available to County Councils for significant walking and cycling improvements, which was exacerbated when funding available for integrated transport improvements was substantially reduced from 2015/16 onwards (to only £3.9m per year for all safety, capacity, active travel, parking, bus and traffic management infrastructure improvements) and has remained at the same level since then. This significantly reduces the funding available for transport improvements that will deliver air quality improvements.**

The monitoring of PM₁₀ and PM_{2.5} is very expensive to undertake due to the costs and the maintenance of the equipment. However, the possibility of sharing equipment is being investigated. Although monitoring is not currently carried out, 'modelled' figures are received from Defra. See Section 2.3 of this report for further information

Local Engagement

Since the 2020 Annual Status Report (ASR) Broxtowe Borough Council has continued to be in the East Midlands Air Quality Network (EMAQN), which reviews current air quality issues for the area. EMAQN is run by Public Health England. EMAQN has collectively produced a report to assist local authorities and developers when determining whether an air quality assessment is needed during the planning application process. The aim of EMAQN is to engage decision makers from different disciplines to assist in reducing AQ levels as a whole in the East Midlands. This also enables neighbouring counties to communicate more openly, which is vital for Broxtowe Borough Council due to it being next to Derbyshire because the A52 is a major source of air pollution, which runs through Derbyshire and Nottinghamshire.

Defra have identified Derby and Nottingham as exceeding the air quality objective therefore, they are mandated to implement a Clean Air Zone (CAZ). However, Nottingham City Council subsequently undertook air quality modelling of several potential CAZ options (charging and non-charging) alongside planned actions (e.g. measures to provide and promote sustainable transport infrastructure) to determine if they would deliver the required air quality objectives. This modelling has identified that air quality objectives are anticipated to be met without the introduction of a charging CAZ.

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 will be published online and sent to all Nottinghamshire Councils to be endorsed by them in 2020.

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.

- 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 <https://www.nottinghamshire.gov.uk/travelchoice/journey-planner> and <http://www.traveline.info/> Details on travelling on school buses to Nottinghamshire schools and assistance available to do so, can be found at <http://www.nottinghamshire.gov.uk/education/travel-to-schools>. The tram timetable is available at <http://www.thetram.net/> The Big Wheel promotes sustainable travel within the Nottingham urban area (including parts of Broxtowe); it assists people and businesses with journey planning and advice. Further information can be found at <http://www.thebigwheel.org.uk/>
- Car share – The Nottinghamshire car share scheme, '*nottinghamshare*', is available to anyone <https://liftshare.com/uk/community/nottinghamshare> 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 <http://www.nottinghamshire.gov.uk/transport/public-transport/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.

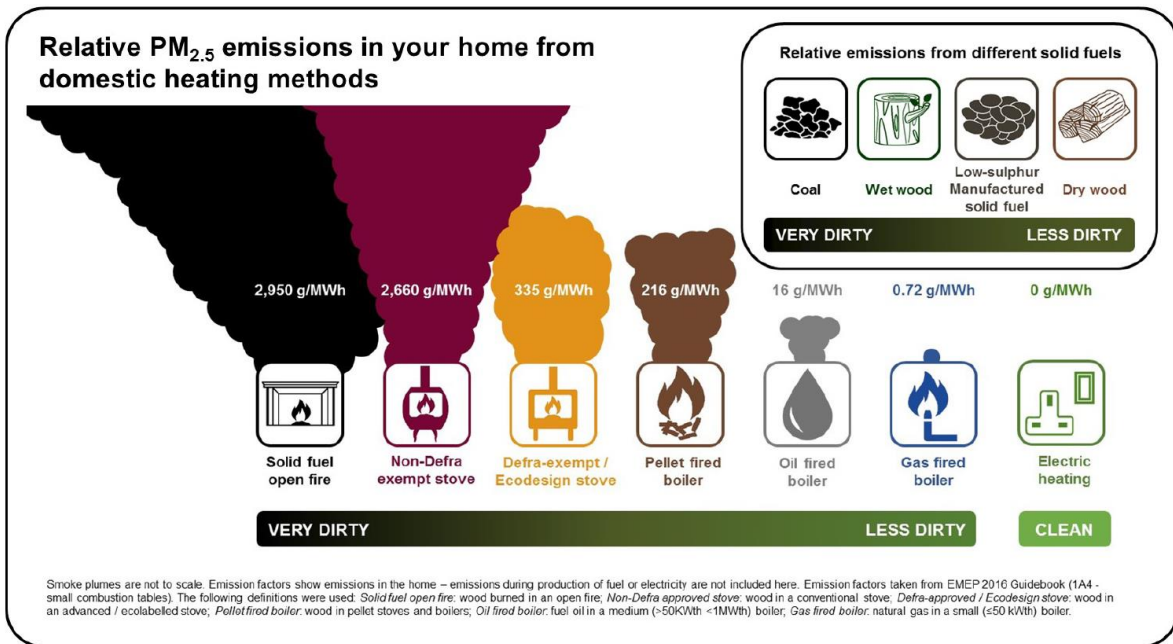
- Information on walking networks in Nottinghamshire can be found at <http://www.nottinghamshire.gov.uk/planning-and-environment/walking-cycling-and-rights-of-way/walking> and <http://www.nottinghamcity.gov.uk/transport-parking-and-streets/rights-of-way-walking-and-cycling/walking-in-nottingham/> and a planning tool for deciding your route when walking can be found at <http://walkit.com/>
- 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 <http://www.nottinghamshire.gov.uk/education/travel-to-schools>.

Cycling –

Use the extensive cycle routes that are available throughout Nottinghamshire. Maps and cycling journey planners that cover all of Nottinghamshire, including the city and further afield are available at <http://www.nottinghamshire.gov.uk/planning-and-environment/walking-cycling-and-rights-of-way/cycling>. Maps of just the city cycle routes for Nottingham are available at <http://www.nottinghamcity.gov.uk/cycling>. Sustrans is a charity that promotes sustainable travel and further information can be found at <http://www.sustrans.org.uk/> 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 <http://www.ridewise.org.uk/ride/index.php>

- 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 <http://www.energysavingtrust.org.uk/travel/driving-advice>.
 - 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 <http://goultralownottingham.org.uk/>
- 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 <https://smokecontrol.defra.gov.uk/index.php> 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

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/770715/clean-air-strategy-2019.pdf

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1 Local Air Quality Management

This report provides an overview of air quality in Broxtowe Borough Council during 2020. It fulfils the requirements of Local Air Quality Management (LAQM) as set out in Part IV of the Environment Act (1995) 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 pursuit of the objectives. 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 H.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 12 months setting out measures it intends to put in place in pursuit of compliance with the objectives.

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 that is currently designated within Broxtowe Borough Council. The AQMA was designated as the levels at the time of designation were above the NO₂ annual mean of 40µg/m³. 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 one remaining AQMA declared by Broxtowe Borough Council can be found in Table 2.1. Further information related to declared or revoked AQMAs, including maps of AQMA boundaries are available online at <https://www.broxtowe.gov.uk/for-you/noise-pollution-and-pests/air-quality/>

Table 2.1 – Declared Air Quality Management Areas

AQMA Name	Date of Declaration	Pollutants and Air Quality Objectives	One Line Description	Is air quality in the AQMA influenced by roads controlled by Highways England?	Level of Exceedance: Declaration	Level of Exceedance: Current Year	Name and Date of AQAP Publication	Web Link to AQAP
AQMA 1 Trowell	Declared 1 st 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	20.5µg/m ³ *	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 monitoring sites 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 Council have provided a very detailed discussion of the NO₂ trends within the borough. In addition to this they discuss the trends in relation to locations as well as providing NO₂ concentrations alongside this. This is extremely useful and this approach to data discussion is encouraged in future reports. – **BBC will continue to report data in this manner.***

- ❖ *The Council have continued to see no exceedances of national air quality objectives in 2019 and concentrations in the Trowell AQMA continue to fall. The Council have stated that they plan to implement further measures to ensure NO₂ concentrations are below the AQOs and will not revoke the AQMA until it is consistently below 36 µg/m³ for three or more consecutive years. Should NO₂ concentrations be below 36 µg/m³ in 2020 (marking 3 years of compliance), it is advised for the Council to consider undertaking another detailed assessment to evaluate whether revocation of the AQMA is appropriate. However, in saying this, it should be noted there may be implications from the current Covid-19 situation on air quality within the borough. Therefore, concentrations next year may skew long term NO₂ trends within the borough and this should be considered. -**See Section 2.4 of this report for an update on the AQMA and AQAP.***

- ❖ *It is promising to see that the Council are continuing to review their monitoring locations and discontinue sites where the annual air quality levels are below the objective. The Council have stated that rather than decommission sites they will relocate tubes to new areas within the borough to identify potential 'hotspot' or 'problem' areas. This is encouraging to see as it demonstrates the Council's active engagement in monitoring air quality within the borough. – **BBC will continue to do this.***

- ❖ *Alongside providing a detailed discussion of priorities the Council wish to address in the coming year, they also discuss the challenges and barriers to implementation they anticipate facing. This is good to see, and the Council are encouraged to continue including this in future ASRs. – BBC will continue to detail any challenges and barriers.*
- ❖ *Overall the report is detailed, concise, satisfies the criteria of relevant standards and continues to be an example of good practice. The Council should continue their good work and submit an Annual Status Report in 2021. – BBC has done this.*

Broxtowe Borough Council has taken forward a number of direct measures during the current reporting year of 2020 in pursuit of improving local air quality. Details of all measures completed, in progress or planned are set out in Table 2.2. **UPDATE** 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 2020 presented. Where there have been, or continue to be, barriers restricting the implementation of the measure, these are also presented within Table 2.2.

More detail on these measures can be found in their respective Action Plans **UPDATE**
Key completed measures are: **UPDATE**

Broxtowe Borough Council expects the following measures to be completed over the course of the next reporting year: **UPDATE** Broxtowe Borough Council's priorities for the coming year are **UPDATE**

The principal challenges and barriers to implementation that Broxtowe Borough Council anticipates facing are **UPDATE**

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

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 and enable the revocation of AQMA 1 Trowell.

Table 2.2 – Progress on Measures to Improve Air Quality UPDATE WITH NOTTS COUNTY COUNCIL MEASURES

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	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	2023	BBC Planning Policy Department – Planning Policy Team Leader	LA-BBC	No	Funded	Within existing resources	Planning	Reduced Emissions of NO2 and PM	Reduced emissions	<p>Possible measures could involve:</p> <ul style="list-style-type: none"> • 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. 	<p>New Measure devised in late 2020</p> <p>This measure will be taken to BBC Committee in 2021 and the findings will be reported on in the 2022 ASR.</p>
2	To contribute to Nottinghamshire Air Quality Strategy (NAQS)	Public Information	Other	2018	2020	NCC/NCiC/ Borough and District councils	N/A	No	Not Funded	N/A	Complete	Reduced Emissions from raising awareness	Improving Air Quality, reduced Emissions and Raising awareness	<ul style="list-style-type: none"> • 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 	<p>Complete</p> <p>Complete</p>
3	To promote the Nottinghamshire Air Quality Strategy	Public Information	Via the Internet	2020	On-going	BBC Public Protection – Environmental Health Technical Officer	N/A	No	Not Funded	N/A	On-going	Reduced Emissions from raising awareness	Improving Air Quality, reduced Emissions and Raising awareness	<ul style="list-style-type: none"> • The NAQS has been endorsed by portfolio holders in 2020 and it will be promoted on BBCs website. 	<p>Complete</p>
4	Inspection of	Environmental	Other Measures	On-going	On-going	BBC Public	N/A	No	Not	N/A	On-going	Reduced	Reduction in	Due to Covid -19.	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
	Permitted Processes	Permits	through permit systems and economic instruments			Protection – Environmental Health Technical Officer			Funded			Emissions	air borne pollutants from the various processes throughout the Borough.	Defra advised that face to face inspections not required unless there were significant issues or changes to the process. Therefore, all permitted processes scheduled for an inspection where contacted via alternative means in 2020 (as per DEFRA advice) to ensure that contact was maintained and that the processes remained unchanged and that the risk rating for these businesses remained unchanged	
5	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 air borne pollutants from the various processes throughout the Borough.	The risk rating did not change in 2020, and all permitted processes were fully compliant..	On-going
6	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 air borne particulates from the crushers used throughout the Borough.	% of crushers inspected.	All notified crushers on demolition sites were inspected in 2020	On-going
7	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 Protection Officers	N/A	No	Not Funded	N/A	On-going	Reduction in air borne 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 2020	On-going
8	To raise awareness of anti-idling legislation with	Vehicle Fleet Efficiency	Fleet efficiency and recognition schemes	2020	2021	BBC Public Protection – Environmental Health Technical Officer	N/A	No	Not Funded	N/A	Planning	Reduced Emissions from raising awareness	Improving Air Quality, reduced Emissions and Raising	All local bus companies and taxis that operate within the borough will be notified of anti-idling	2021

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
	local bus companies and Taxi's that operate within the borough												awareness	legislation and the associated health affects	
9	To reschedule the dry recycling waste rounds to reduce fuel consumption and improve efficiency	Vehicle Fleet Efficiency	Fleet efficiency and recognition schemes	2020	2021	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. Further investigation for rescheduling is planned for 2021/22	New Measure devised in late 2020 2021/2022
10	To reschedule the green waste rounds to reduce fuel consumption and improve efficiency	Vehicle Fleet Efficiency	Fleet efficiency and recognition schemes	2020	2021	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	New Measure devised in late 2020
11	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	BBC Transport and Stores Manager	LA-BBC and External grant – Grant provider not currently known	No	-	£500k - £1 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. This will all be costed with a proposal submitted to BBC Committee in 2021	New Measure devised in late 2020.
12	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 NO ₂ and PM	Reduction in NO ₂ and PM due to cleaner vehicle technology	<ul style="list-style-type: none"> All new fleet vehicles at BBC are Euro6 emissions compliant. There are 90+ fleet vehicles and they are on a 10 year replacing rolling programme. BBC has purchased three new Euro 6 vehicles in 2017/2018 replacing three older vehicles. <ul style="list-style-type: none"> Two new Euro 6 vehicles purchased in 2019 / 2020 BBC have procured two electric vans in 2019 Subject to satisfactory trials another two 	2024 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
														vehicles will be purchased in 2021 at a cost of £45k.	Complete 2021
13	Electric Vehicle Fleet Procurement for small vans below 2 tonnes	Vehicle Fleet Efficiency	Other	2019	2021-2024	BBC Transport and Stores Manager	LA-BBC	No	Funded	£10k - £50k	On-going	Reduced Emissions of NO2 and PM	Reduction in NO ₂ and PM due to cleaner vehicle technology and the procurement of two electric fleet vehicles.	<ul style="list-style-type: none"> The Council currently has a fleet of 8 small vans (below 2 Tonnes). Two of these vehicles have been replaced with electric vehicles at a cost of £45k. From 2021 to 2024 the remaining 6 vehicles where practical and economic (As they reach a life of 12 years) will be replaced with 1 electric vehicles. 	2024
14	To use the on board Vehicle Monitoring IT System data for fleet vehicles (e.g. it records harsh braking, excessive speeding etc. On the basis of this data a programme of driver training will be created to address safety, fuel economy, extended vehicle life and reduced emissions	Vehicle Fleet Efficiency	Driver training and ECO driving aids	2020	2021-2022	BBC Transport and Stores Manager	LA-BBC	No	Funded	Within existing resources	On-going	Reduction in NO ₂ and PM due to improved driving efficiency .	Number of employees that have undergone driver training.	The data obtained over the next few months will allow a driver training program to be established in 2021/22 to address the common themes within driving performance. Where it is evident that there are also drivers who are not driving as environmentally and economically as they could these will also be addressed on an individual basis. This will ensure the continuation of safe economical driving as well reducing the of whole life vehicle cost and improving the Councils green performance.	2021/2022
15	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	<ul style="list-style-type: none"> The Capital Vehicle Fleet replacement programme for HGV's (Refuse Freighters 26 Tonnes) identified for replacement will be replaced with Euro standard engines (Euro 6 onwards). £750k per annum Before purchasing, consideration will be given based on practicality and 	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	
															economics of the adoption of new technologies that have come to market. This includes Electric and Hydrogen Propulsion methods.	
16	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 (98 road vehicles including 20 LGV's) 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.	On-going	
17	To encourage cycling and walking as alternatives to using private vehicles	Promoting Travel Alternatives	Promotion of Walking and cycling	2020	On-going	BBC Head of Public Protection and HR	LA - BBC	No	Not Funded	Within existing resources	Not yet started	Reduction in NO ₂ and PM due to increase in people travelling by cycle or by foot.	No of campaigns	Annual walking and cycling awareness will be promoted on BBCs website.	New Measure devised in late 2020. Progress will be updated in 2022 ASR.	
18	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 • 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.	On-going		
19	To investigate the feasibility of increased provision for cycle parking in the Borough	Alternatives to private vehicle use	Other	2020	2023	BBC Head of Public Protection and HR	LA - BBC	No	Not yet identified	Not yet calculated	Not yet started	Reduced Emissions of NO ₂ and PM	No of cycle parking spaces in the borough	Progress will be updated in 2022 ASR.	New Measure devised in late 2020	
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	BBC Parking services – Parking Manager	Notts CC	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	Due to the National Lockdowns and reduction in traffic volumes this has resulted in fewer patrols needed.	

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
														flow of traffic.	
21	Increase the number of Electric Vehicle Charging Points in the Borough	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	On-going	Reduction in NO ₂ and PM due to increased use of electric vehicles.	% Usage of EVCP	<ul style="list-style-type: none"> 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 being installed at Victoria Street car park Stapleford in 2021, BBC will dedicate 4 spaces for Electric Vehicle use. 	Due for completion in 2021
22	To contribute to Nottingham Go-Ultra Low programme - introduction of area wide EV charging network	Promoting Low Emission Transport	Procuring alternative Refuelling infrastructure to promote Low Emission Vehicles, EV recharging, Gas fuel recharging	2016	2020	NCiC/NCC/BBC	OLEV funding	No	Funded	£6.1 Million	Implemented	Reduction in NO ₂ and PM due to increased use of low emission vehicles.	On-going take-up of cleaner vehicles	<ul style="list-style-type: none"> £6.1m funding secured for 2016-2020 through the Go Ultra Low programme 123 locations in the county have been investigated for the potential provision of EV charge points as part of GUL project - 24 in Broxtowe; of which five were currently feasible; providing one rapid and 20 fast charge points within car parks in four towns within the borough (Beeston, Eastwood, Kimberley and Stapleford). 	Funding for the programme ended in 2020; additional funding to continue the programme is being sought.
23	Promoting on the Council Webpage the Council's Electric Vehicle Charging Points Network within the Borough	Public Information	Via the Internet	2020	On-going	BBC Parking services – Parking Manager	LA - BBC	No	Not Funded	Within existing resources	On-going	Reduction in NO ₂ and PM due to raising awareness of where people can use the charge points for their electric vehicles	28 EVCP are currently promoted on BBC's website.	<ul style="list-style-type: none"> The Council currently has 28 electric vehicle charging points in 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 to be add and promoted in 2021 once installed. 	2021
24	To continue investigating the installation of Electric Vehicle Charging Points for staff and	Promoting Low Emission Transport	Other	2020	2020 On-going	BBC	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	<ul style="list-style-type: none"> Investigation into this has been undertaken and the infrastructure and power supply has already been installed within Devonshire 	Infrastructure and power supply 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
	visitors to the Council to use												use.	Avenue car park. Funding opportunities for further charging points need to be explored.	On-going
25	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	Planning	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 additional 2 rapid Electric Vehicle charging spaces from January 2021, totalling 30 spaces. • To be discussed in Committee in 2021, as it is currently not free to park and this would need consideration by members. Any free provision would have to be managed by limiting time, otherwise it would reduce the availability of spaces for Electric Vehicles.	To be taken to BBC's Committee in 2021 for consideration.
26	Review of off-street car parking charging	Traffic Management	Emission based parking or permit charges	2020	2020	BBC Parking services – Parking Manager	LA - BBC	No	Funded	<10K	Completed	Reduction in NO ₂ and PM	Reduced Emissions	•BBC is currently consolidating all of their Off-Street Parking Orders into one Order which will be made legal in 2020. •Charges will also be reviewed on an adhoc basis with the next review being due in 2021 for the 2021/22 charges. This review will also include the use of electric vehicle charging points.	Complete On-going annually. The policy document is updated only when there is significant legislation or council policy changes.
27	To contribute to Bus infrastructure	Transport Planning and Infrastructure	Public transport improvements- interchanges stations and services	?	On-going	BBC and NCC	integrated transport block funding	No	Funded	?	On-going	Reduced emissions due to increased bus patronage.	Increased bus patronage	•An annual programme of updates and maintenance of all stops including updating network maps to ensure all information is current and accurate is on-going. In 2019/20 this included the North Broxtowe Infrastructure Improvements - bus stop infrastructure improvements on strategic corridors to tie in with growth areas	

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
														and operator investment. <ul style="list-style-type: none"> •Implementation on-going. •BBC provides 50% of the funds for the installation of new bus shelters and real time bus information at bus stops. 	
28	Sustainable Travel information for the Public	Public Information	Via leaflets	2010	On-going	BBC Head of Public Protection and HR	LA-BBC	No	Not Funded	Within existing resources	On-going	Reduced Emissions of NO ₂ and PM	Increased use of public transport	<ul style="list-style-type: none"> •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
29	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	2022 On-going	BBC Capital Works Manager	LA-BBC	No	Funded	£10k - £50k	Implementation	Reduced emissions due to more efficient boilers	Number of boilers replaced	<ul style="list-style-type: none"> •The replacement of the remaining less efficient units (less than 1%) is planned over the next 18 months -22 replaced during 2020/21. •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. 	
30	To investigate and consider new heating technologies that are more efficient, effective and produce lower emissions	Other	Other	2020	2021 and ongoing 2021	BBC 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	<ul style="list-style-type: none"> •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 is currently being undertaken for fitting air source heat pumps in 2 new builds. The success of this will be reported on. 	Due for completion in 2021

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
31	To investigate and consider suitable alternative replacements for the remaining electrically heated Council properties	Other	Other	2020	2024 On-going consideration	BBC Capital Works Manager	N/A	No	N/A	N/A	Success of the trials for cleaner heating technology	Reduced emissions due to more efficient and cleaner technologies to heat the council properties	Efficiency rating of new heating replacements.	<ul style="list-style-type: none"> Initially these systems will primarily be replaced with high heat retention storage heaters. Air source heat pumps will also be considered at suitable properties where a retro fit solution is possible. 	Update on surveys to be provided in 2022 ASR
32	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 cars normally older than 8 years will be licensed as a taxi within the borough.	On-going
33	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 license 1 Electric vehicle and 23 Hybrid vehicles out of the 129 Vehicles that are licensed to operate as Taxis.	On-going
34	To Investigate the feasibility of incentives for Taxi Drivers to purchase low emission or electric vehicles	Promoting Low Emission Transport	Taxi emission incentives	2020	2023	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.	Progress will be updated in 2022 ASR.	New Measure devised in late 2020
35	To consult with Taxi Trade about Increasing the number of Low Emission and Electric vehicles licensed	Promoting Low Emission Transport	Other	2020	2023	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	Progress will be updated in 2022 ASR.	New Measure devised in late 2020
36	To amend the Taxi Policy as required following consultation on Increasing the number of low emission and electric vehicles licensed	Policy Guidance and Development Control	Other policy	2020	2023	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	Progress will be updated in 2022 ASR.	New Measure devised in late 2020
37	To provide all allotments within the borough with	Other	Other	2020	On-going	BBC Environment – Head of Environment	LA-BBC	No	Not Funded	Within existing resources	Planning	Reduction in Particulates due to reduction of bonfires on site	Reduction in bonfires from allotments within the borough.	<ul style="list-style-type: none"> Multi team meeting taken place to discuss the feasibility of this. Several 	New Measure devised in late 2020

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
	green waste recycling collections													<p>factors need resolving to determine whether this is a viable option.</p> <ul style="list-style-type: none"> One allotment holders group has been written too, in order to ascertain the extent of the waste produced. 	
38	To communicate with all allotment providers in the borough to discourage the use of bonfires to dispose of garden waste	Public Information	Other	2020	On-going	BBC Public Protection - Chief Environmental Health 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.	Progress will be updated in 2022 ASR.	New Measure devised in late 2020
39	Encouraging the use of Hybrid or Electric vehicles for BBC staff	Promoting Low Emission Transport	Other	2020	On-going	BBC Head of Public Protection and HR	LA-BBC	No	Funded	Within existing resources	Not yet started	Reduction in NO ₂ and PM	Number of staff using hybrid or electric vehicles	<ul style="list-style-type: none"> To encourage employees of BBC to purchase hybrid vehicles and electric vehicles for their personal and business use. Three employee used a personal Electric vehicle and five used ULEV in 2020. 	
40	Flexible working arrangements	Promoting Travel Alternatives	Encourage/Facilitate Home Working	2012	On-going	NCC/BBC	N/A	No	Not Funded	N/A	On-going	Reduction in NO ₂ and PM due to employees not commuting	<p>Restrain average journey times in the morning peak to a 1% increase per year</p>	<ul style="list-style-type: none"> NCC operates flexible working arrangements for all its staff. BBC New Ways of Working was introduced in 2019, which allows and encourages employees to work from home when practical to do so. Due to Covid-19 restrictions This will be continued, to some extent, going forward. 	<p>On-going</p> <p>On-going</p> <p>On-going</p>
41	Cycle to work Scheme	Promoting Travel Alternatives	Promotion of cycling	2009	On-going	BBC Head of Public Protection and HR	N/A	No	Not Funded	Within existing resources	System in place	Reduction in NO ₂ and PM	No of bikes purchased through scheme	<ul style="list-style-type: none"> Cycle to work Scheme – to assist and give tax relief on bike purchases for employees of BBC. Five employees used this scheme in 2020. Since the scheme started 170 	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
														employees have purchased bikes through the scheme.	
42	Investigate the feasibility of a Council staff car sharing	Alternatives to Private Vehicle Use	Car Clubs	2020	2023	BBC Head of Public Protection and HR	N/A	No	Not Funded	N/A	Not yet started	Reduction in NO2 and PM	No of staff car sharing	Progress will be updated in 2022 ASR.	New Measure devised in late 2020
43	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	Complete	Reduction in NO2 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
44	Developer requirements to provide of EV charging points at new development	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	Complete	Reduction in NO2 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 floorspace. This policy was adopted in September 2019.	Complete
45	Public sector LEV procurement	Vehicle Fleet Efficiency	Fleet efficiency and recognition schemes	2015	2024 and On-going	NCC/BBC	?	No	?	?	On-going	Reduction in NO ₂ and PM due to increased use of low emission vehicles.	Reduction in vehicle emissions due to less polluting vehicles replacing older more polluting vehicles	<ul style="list-style-type: none"> •NCC upgraded its pool vehicles to lower emission diesel vehicles. •All new fleet vehicles at BBC are Euro6 emissions compliant. 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

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
46	Cycle parking facilities	Transport Planning and Infrastructure	Cycle network	2015	On-going	NCC/BBC; integrated transport block/developer contributions	Integrated transport block/developer contributions	No	Funded	?	On-going	Reduced Emissions of NO ₂ and PM	Increased cycling trips	<ul style="list-style-type: none"> •Cycle hub installed in 2015 to integrate with bus/rail services •Ad-hoc parking provided where required Potential barrier: Lack of future revenue funding	Complete On-going
47	Workplace travel plans	Promoting Travel Alternatives	Workplace Travel Planning	On-going	On-going	BBC Planning Policy Department – Planning Policy Team Leader and NCC	LA – BBC and NCC	No	Not Funded	N/A	Complete	0.2µg/m ³	Restrain average journey times in the morning peak to a 1% increase per year	<ul style="list-style-type: none"> •Broxtowe Part 2 of the Local Plan (2018-2028) which includes Policy 2 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 by reviewing Lease cars, car allowances and workplace parking. Produce 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 Complete Complete
48	Fleet vehicle tracking system	Vehicle Fleet Efficiency	Driver Training and ECO driving aids	2015-2017	2017	BBC Transport and Stores Manager and NCC	LA – BBC and NCC	No	Not Funded	Within existing resources	Complete	Reduction in NO ₂ and PM due to improved driving efficiency and efficient routes.	Reduced emissions	<ul style="list-style-type: none"> •All BBC and NCC fleet vehicles are fitted with a vehicle tracking system, which records vehicle speed and idling time. •A review of the journeys undertaken will ensure that if necessary measures can be implemented e.g. staff training, to improve fleet efficiency. 	Complete Complete
49	Zoning of refuse collections	Vehicle Fleet Efficiency	Fleet efficiency and recognition schemes	2016-2017	2017	BBC Transport and Stores Manager	LA - BBC	No	Not Funded	Within existing resources	Complete	Reduction in NO ₂ and Particulate Matter as there is one less fleet vehicle used.	Reduced emissions	<ul style="list-style-type: none"> •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 	Complete The Refuse round restructure is now complete

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

As detailed in Policy Guidance LAQM.PG16 (Chapter 7), local authorities are expected to work towards reducing emissions and/or concentrations of PM_{2.5} (particulate matter with an aerodynamic diameter of 2.5µm or less). There is clear evidence that PM_{2.5} has a significant impact on human health, including premature mortality, allergic reactions, and cardiovascular diseases.

As BBC does not currently monitor PM_{2.5} the only methods that can be used to try and determine what the potential levels of PM_{2.5} in the Borough are is to review the nearest relevant Automatic Urban and Rural Network (AURN) site which monitors PM_{2.5} and to identify the modelled background levels for the Borough from Defra's webpages.

The nearest AURN site is in Nottingham City and for 2020 the annual mean concentration is 8.7µg/m³ for the City Centre site. The modelled background level provided by Defra for the Borough of Broxtowe are modelled to be between 7.6µg/m³ and 9.7µg/m³ for 2020, with the annual mean for 2020 being 8.5µg/m³.

The Air Quality Objective (AQO) for PM_{2.5} is an annual mean of 25µg/m³. However, the World Health Organisation guideline value are more stringent for PM_{2.5}, as it is currently 10µg/m³ therefore the modelling results show that the Borough are also meeting WHO guideline.

As well as reviewing the modelled background and the nearest AURN to identify PM_{2.5}, it is also important to review the Public Health Outcomes Framework (PHOF), which is published by Public Health England (PHE) 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 2019 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 believed to be 64 deaths attributable to human-made air pollution this figure needs to be put into context as deaths that are attributable to smoking and alcohol consumption are far higher. For example, Nottingham City had 133 deaths attributable to human-made air pollution (PM and NO₂), but there are 1408 deaths attributable to smoking¹¹ and 153 deaths related to alcohol consumption¹².

Table 2.3 – Estimated Effects of Annual Mortality in 2019 of human-made PM_{2.5} Air Pollution.

Council/Area	Attributable fraction	Attributable deaths aged 30+* (2019 deaths ONS)	Associated Life-years Lost due to PM based on 29,000 nationally (COMEAP 2010)
Nottingham City	5.7	133	1559
Ashfield District	5.3	68	662
Newark and Sherwood District	5.3	64	626
Bassetlaw District	5.1	64	620
Gedling Borough	5.4	60	628
Broxtowe Borough	5.5	64	612
Rushcliffe Borough	5.3	57	528
Mansfield District	5.3	61	594

Source: Estimating Local Mortality Burdens associated with particulate air pollution, PHE, 2019.

¹¹ Tobacco Control Profiles 2015-2017, Public Health England. <http://fingertipsreports.phe.org.uk/health-profiles/2017/e06000018.pdf>

¹² Local Alcohol Profiles for England, 2017. <https://fingertips.phe.org.uk/profile/local-alcohol-profiles/data#page/4/qid/1938132832/pat/6/par/E12000004/ati/102/are/E06000018/iid/91382/age/1/sex/4>

*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.

However, 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 are working towards reducing the PM_{2.5} levels by taking the following measures:

- 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 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 assist and advice consultants working on the proposed HS2 project. This ensures that suitable dust control measures will be used throughout the project.
- **UPDATE – PUT IN NEW MEASURES FROM THE AQ TFG**

2.4 Update on the 2008 Air Quality Action Plan

2.4.1 The history of Broxtowe Borough Council's Air Quality Action Plan.

Part IV of the Environment Act 1995 requires all local authorities to review and assess the current and future air quality in their area against objectives set out for eight key pollutants, under the provisions of the Air Quality Regulations 2000 and the Air Quality (Amendment) Regulations 2002.

Where an exceedance of the objectives is likely, the local authority is under a duty to declare an Air Quality Management Area (AQMA) to improve air quality.

Following detailed work reviewing and assessing the air quality in Broxtowe in 2006, it was predicted that the annual mean nitrogen dioxide (NO₂) concentrations in certain locations would not achieve the air quality objective of 40µg/m³ or less by the end of 2005.

Broxtowe Borough Council (BBC) declared four Air Quality Management Areas (AQMA) within the borough along the M1 corridor. A NO₂ reduction of around 6µg/m³ was required in order to achieve the objective.

In line with its statutory duty, Broxtowe Borough Council produced an Air Quality Action Plan (AQAP) in 2008 to manage the air quality throughout the borough to try to ensure the air quality standards and objectives were met.

2.4.2 Limitations to the Air Quality Action Plan

The primary source of NO₂ within the AQMA is from vehicle emissions from the M1 Motorway. Unfortunately, the motorway's control is outside the Council's management as the responsibility lies with Highways England. However, BBC considered various motorway strategies, taking into account factors such as whether the Council has the ability to implement the options identified, cost, feasibility and non-air quality benefits.

The conclusion of the AQAP was that whilst the primary source of NO₂ within the AQMAs is outside the Council's management, BBC had identified other measures that would have an effect on the contributing levels of NO₂ to improve the air quality both in the AQMAs, as well as the rest of the borough, whilst also continuing to work alongside Highways England.

2.4.3 Update on the four AQMAs.

Broxtowe Borough Council used to have four AQMAs, however three of these have now been revoked and the one remaining AQMA is situated in Trowell. Table 2.4 below shows the four AQMAs, their locations, the date they were declared and the dates that the three were revoked.

Although AQMAs 1, 2 and 3 have been revoked, a decision was made to continue to monitor the air quality at these locations to ensure that the air quality objectives are still being met, which they are. All of the AQMAs are due to the M1 Motorway, which is managed and maintained by Highways England.

Table 2.4 – The four AQMAs in the Borough.

AQMA Name	Location	Date Declared	Date Revoked
AQMA 1	Trowell – Iona Drive & Tiree Close	2006	-
AQMA 2	Trowell – Derbyshire Avenue	2006	2010
AQMA 3	Trowell – Nottingham Road	2006	2010
AQMA 4	Nuthall - Nottingham Road	2006	2017

2.4.4 The NO₂ Annual Mean Concentrations for the remaining AQMA.

When AQMA 1 in Trowell (which will now be referred to as “the AQMA” was declared in 2006, it was an area that had been identifying as exceeding the AQO of 40µg/m³. The data

showed that within this area in 2006 the annual mean was $45\mu\text{g}/\text{m}^3$ and therefore exceeding the AQO by $5\mu\text{g}/\text{m}^3$.

Since 2012, there has been a general decreasing trend with the concentrations being below the air quality objective since 2016. Table 2.4.1 shows the annual mean concentrations for nitrogen dioxide from 2012 to 2020. This data is also shown as a trend chart in Figure A.2 in the Appendices.

In January 2016 a second monitoring location was added (site ID 18), which is situated in Tiree Close. In addition to Site 18 and Site 19, 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. Therefore, in March 2020 two new monitoring locations were added in Tiree Close Site ID 44 and 45. The 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.

Table 2.4.1 – Results for AQMA in Trowell 2012 – 2020.

Site ID	NO_2 Annual Mean Concentration ($\mu\text{g}/\text{m}^3$)								
	2012	2013	2014	2015	2016	2017	2018	2019	2020
18	-	-	-	-	34.3	32.9	28.2	28.4	17.9
BX11/19	42.2	38.7	38.1	42.3	37.6	37.2	31.9	30.9	21.5
44	-	-	-	-	-	-	-	-	24.8
45	-	-	-	-	-	-	-	-	20.1

Although the data in Table 2.4.1 shows that for all of the monitoring sites bar Site 44 and Site 45 (as the only have one years worth of data, as they are new sites), there has been a steady decrease year on year. However, the 2015 data did show an increase in NO_2 at Site19. 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. The SMART Motorway scheme will be discussed in greater detail in Section 2.4.5.

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), as the NO₂ levels have reduced by 16.4µg/m³ from 2016 to 2020 for site 18 and 16.1µg/m³ from 2016 to 2020 for site 19. Site 18 in 2020 is 22.1µg/m³ below the AQO, Site 19 in 2020 is 18.5µg/m³ below the AQO, Site 44 in 2020 is 15.2µg/m³ below the AQO and Site 45 in 2020 is 19.9µg/m³ below the AQO.

The results in Table 2.4.1 show that for five consecutive years the AQO has been met within the remaining AQMA and for three years the data has been below 36µg/m³ which is a 10% reduction of the 40µg/m³ AQO. However, due to the prevalence of Covid -19 in the UK, National lockdowns and an increase in working from home the amount of vehicles on the road has reduced. Therefore, the 2020 should be regarded as an anomaly and will not be used to make decisions or changes to the current monitoring sites.

2.4.5 SMART Motorway Scheme

The SMART Motorways is a scheme that was introduced by Highways England with the aim of relieving congestion by making the hard shoulder available for use by traffic. On some SMART motorways, the hard shoulder is opened at busy times. On others it is permanently converted into a traffic lane (known as all-lane running). Regularly spaced refuge areas are used for emergencies.

SMART motorways use technology to:

- monitor traffic levels
- change the speed limit to smooth traffic flow, reduce frustrating stop-start driving and improve journey times

- activate warning signs to alert you to traffic jams and hazards up ahead
- close lanes – for example to allow emergency vehicles through

Highways England has been implementing this scheme on the M1 within the boundary of the borough of Broxtowe and the stretch of the M1 to the north and south of the borough. Table 2.4.2 shows the junctions in which this scheme has been introduced and the period in which it was completed. This identifies where there is likely to be congestion issues as the number of lanes of the M1 were reduced to allow the work to be undertaken safely. This will have had an effect upon the air quality within the area. This information may explain why there was an increase in 2015 within the AQMA.

Table 2.4.2 – SMART Motorway Scheme on the M1 between Junctions 23a – 35a.

Junctions of the M1 Motorway	Start Date	Completion Date
23a to 25	Feb 2017	Feb 2019
25 to 28	Jan 2007	Dec 2010
28 to 31	Oct 2014	Dec 2015
32 to 35a	Jan 2015	Mar 2017

Further information about the Smart Motorway scheme can be found on the Highways England website: <https://highwaysengland.co.uk/programmes/smart-motorways/>

2.4.6 Defra's recommendations for Broxtowe Borough Council.

Every year the Council analyses the results, and discuss their findings and observed trends in the ASR. This includes the results for the monitoring sites located within the remaining AQMA. The annual ASR has also included all of the actions that BBC are implementing to reduce the background air quality within the borough and also any measures that Nottinghamshire County Council are also implementing. These measures are displayed in Table 2.2 and discussed throughout the report. The ASR once completed is then submitted to Defra for approval.

Defra as well as approving the ASR also provide recommendations for the Council to implement and to be discussed in the next ASR.

The recommendations that BBC have received from Defra are:

- ❖ The borough has made some good progress towards developing their AQAP and implementing AQAP measures in the last year, which is commended.
- ❖ The borough has stated that they will continue to monitor and keep the AQMA under review whilst the effects of the SMART motorway scheme are being determined, and until a significant decreasing trend can be demonstrated. This is supported, and it is suggested that the AQMA could be considered for revocation after demonstrating compliant NO₂ concentrations below 36 µg/m³ for three consecutive years.
- ❖ There have been no exceedances of national air quality objectives in 2018 and concentrations in the Trowell AQMA continue to fall. The Council have stated that they plan to implement measures to ensure NO₂ concentrations are below the AQOs and when long-term compliance is achieved they will revoke the AQMA. If current NO₂ trends continue and concentrations decline, then the revocation of the AQMA is strongly supported.

Although for the past four consecutive years, the data has been below the AQO the data has only been below 36 µg/m³ for three consecutive years. Therefore, BBC will not revoke the AQMA until it is consistently below 36 µg/m³ for three or more consecutive years (not including 2020 Data due to Covid-19 restrictions).

2.4.7 Agreed Methodology for not producing a new AQAP.

As the measures in the 2008 Air Quality Action Plan (AQAP) are to reduce the background NO₂ concentrations and the results are below the AQO within the remaining AQMA, and Defra has also recommended revoking the AQMA. BBC contacted the LAQM helpdesk to discuss the need for revising the Air Quality Acton Plan in 2019.

BBC proposed that instead of producing a new AQAP, that the measures that BBC are implementing to improve the air quality are continued to be discussed annually in the ASR instead and are shown in Table 2.2 until the AQMA is revoked within the next couple of years.

The LAQM Helpdesk discussed the proposal with BBC in 2019 and it was agreed that if BBC would follow and action these measures, then there would not be a need to produce a new AQAP. Defra having reviewed these measures in the 2020 ASR have agreed that they are adequate.

The measures are;

1. To undertake a detailed monitoring study, by increasing the number of diffusion tubes within the AQMA to identify whether the AQMA designation is required. – ***Since March 2020, two additional monitoring locations have been added within the AQMA.***
2. To send the LAQM helpdesk the latest results on a regular basis rather than providing an annual figure – ***BBC are sending updated data to LAQM.***
3. To identify any factors that would contribute to the anomaly in 2015 when there was an increase in NO₂ levels. ***BBC identified that it was likely to have been the SMART motorway scheme.***

BBC will continue to monitor NO₂ levels in this area and work alongside Highways England to improve air quality levels, the Council will continue to review and implement measures stated within Table 2.2 of this and future ASR's .

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

This section sets out the monitoring undertaken within 2020 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 2016 and 2020 to allow monitoring trends to be identified and discussed.

3.1 Summary of Monitoring Undertaken

3.1.1 Automatic Monitoring Sites

BBC does not currently utilise any automatic air quality monitoring within the Borough

3.1.2 Non-Automatic Monitoring Sites

Broxtowe Borough Council undertook non- automatic (i.e. passive) monitoring of NO₂ at 45 sites during 2020. Table A. 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 (NO₂)

Error! Reference source not found. in Appendix A compare the ratified and adjusted monitored NO₂ annual mean concentrations for the past five years with the air quality objective of 40µg/m³. 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 2020 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.

Although there are no exceedances of the NO₂ objective there is still one AQMA within the Borough, which is situated in Trowell. The monitoring results from the diffusion tubes sited in the AQMA will be discussed in greater detail below.

As well as discussing the results from the recently revoked AQMA in Nuthall and the current AQMA. 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 2012 the levels of NO₂ are consistently below the objective of 40µg/m³ for all three sites.

Table 3.1 – Results for the Revoked AQMA in Nuthall 2012 – 2020.

Site ID	NO ₂ Annual Mean Concentration (µg/m ³)								
	2012	2013	2014	2015	2016	2017	2018	2019	2020
BX01 or 33	30.5	32.7	29.1	27.8	29.5	28.7	23.0	25.4	18.2
BX05 or 34	31.1	32.0	32.0	28.5	28.8	26.7	28.0	26.4	19.2
BX13 or 35	35.0	33.5	33.7	34.1	32.2	33.6	30.0	29.7	22.6

Monitoring will continue to be undertaken at these three sites and the results will be reported in the 2022 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. 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 44 and 45), 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 NO₂ 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.

The diffusion tube monitoring results from 2012 to 2020 are shown below. Please see Figure A.2 in the appendices for a trend chart showing the data below.

Table 3.2 – Results for AQMA in Trowell 2012 – 2020.

Site ID	NO ₂ Annual Mean Concentration (µg/m ³)								
	2012	2013	2014	2015	2016	2017	2018	2019	2020
18	-	-	-	-	34.3	32.9	28.2	28.4	17.9
BX11/19	42.2	38.7	38.1	42.3	37.6	37.2	31.9	30.9	21.5
44	-	-	-	-	-	-	-	-	24.8
45	-	-	-	-	-	-	-	-	20.1

Although the data in Table 3.2 shows that for all of the monitoring sites bar Site 44 and Site 45 (as the only have one years worth of data, as they are new sites), there has been a steady decrease year on year. However, the 2015 data did show an increase in NO₂ 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.

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), as the NO₂ levels have reduced by 16.4µg/m³ from 2016 to 2020 for site 18 and 16.1µg/m³ from 2016 to 2020 for site 19. Site 18 in 2020 is 22.1µg/m³ below the AQO, Site 19 in 2020 is 18.5µg/m³ below the AQO, Site 44 in 2020 is 15.2µg/m³ below the AQO and Site 45 in 2020 is 19.9µg/m³ below the AQO.

The results in Table 3.2 show that for five consecutive years the AQO has been met within the remaining AQMA and for three years the data has been below 36µg/m³ which is a 10% reduction of the 40µg/m³ AQO. However, due to the prevalence of Covid -19 in the UK, National lockdowns and an increase in working from home the amount of vehicles on the road has reduced. Therefore, the 2020 should be regarded as an anomaly and will not be used to make decisions or changes to the current monitoring sites.

BBC will continue to monitor NO₂ levels in this area and work alongside Highways England to improve air quality levels. Please view Section 2.4 of this report on an Update on the Air Quality Action Plan for this AQMA.

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 NO₂ 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 2012 to 2015 are shown for the 'old' site and the 2016 to 2020 results for the 'new' sites are shown below.

Table 3.3 – Results for Nuthall Island 2012 – 2020.

Site ID	NO ₂ Annual Mean Concentration (µg/m ³)								
	2012	2013	2014	2015	2016	2017	2018	2019	2020
BX 22	41.7	41.1	39.2	41.1	-	-	-	-	-
36	-	-	-	-	35.2	35.2	32.8	31.7	24.9
37	-	-	-	-	32.2	29.5	28.9	26.4	19.3

The results above show that that the original site did not provide a true representation of NO₂ levels at the façade of the properties. However, the two 'new' sites are showing that the levels are below the air quality objective by 15.1µg/m³ for site 36 and 20.7µg/m³ for site 37 in 2020 and are showing a decreasing trend. However, consideration needs to be given to the 2020 data being an anomaly due to Covid-19. Therefore, BBC will continue to monitor NO₂ levels at these sites and provide an update in the 2022 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/m³. 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 2012 – 2020.

Site ID	NO ₂ Annual Mean Concentration (µg/m ³)								
	2012	2013	2014	2015	2016	2017	2018	2019	2020
BX 04	42.2	37.8	41.8	40.7	-	-	-	-	-
40	-	-	-	-	37.5	32.7	34.0	32.0	23.6
41	-	-	-	-	37.4	35.6	34.1	30.9	23.5

The table above shows that in 2020 Site 40 is 23.6µg/m³, which is a reduction of 8.4µg/m³ and Site 41 is 23.5µg/m³, which is a reduction of 7.4µg/m³ in comparison to the 2019 results. However, consideration needs to be given to the 2020 data being an anomaly due to Covid-19.

Although this is an overall downward trend for both sites from 2016 and they are below the objective level. There is a slight increase by 1.3µg/m³ at Site 40 in 2018. This could have been 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.

BBC will continue to monitor and report on the NO₂ levels in this area, to note any works that are being undertaken and to continue to work alongside Highways England 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.

The new site started in January 2017 and the exact location was picked as the street is narrowed due to residents parking outside their properties, which tends to cause a 'bottle neck' situation in rush hour (See Appendix G for the Map identifying the monitoring location). The siting of the tube has been 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.

Table 3.5 – Results for Town Street 2016 – 2020.

Site ID	NO ₂ Annual Mean Concentration (µg/m ³)				
	2016	2017	2018	2019	2020
48	-	37.5	35.7	30.4	25.4
56	-	-	25.1	23.4	18.7

Above is the result for the sites for 2017 to 2020. The result for 2017 is 37.5µg/m³. The result at site 48 for 2020 is 25.4µg/m³ which is a reduction of 12.1µg/m³ in comparison to the 2017 results, which shows a downward trend. However, consideration needs to be given to the 2020 data being an anomaly due to Covid-19.

Due to the result in 2017, 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. The result at site 56 for 2020 is $18.7\mu\text{g}/\text{m}^3$ which is a reduction of $4.7\mu\text{g}/\text{m}^3$ in comparison to the 2019 result. Although, consideration needs to be given to the 2020 data being an anomaly due to Covid-19, the 2019 data does enforce the theory that the results are higher on site 48 due to the 'Bottle neck' situation.

BBC will continue to monitor NO_2 levels at these sites and provide an update in the 2022 ASR. BBC will continue to work alongside Nottinghamshire County Council to improve air quality levels.

The Results and Trends for all Monitoring Sites in 2020.

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 2016 to 2020.

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 2016 – 2019. 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 46 sites that are identified in the trend charts in Figure A.1 in the Appendices, 35 have been in use since 2016. In 2017 one additional site was added, in 2018 seven additional sites were added and in 2020 there were a further three additional sites. In 2020 site 10 was discontinued due to the consistently low readings and the tube was moved to site 57.

The trend charts have identified that out of the 46 sites, fifteen are showing a consistent downward trend year on year. Twelve sites are showing an overall downward trend. Eleven sites showed an increase in the 2019 data in comparison to the 2018 data. Two sites have had the same concentration for two years running. Two of the sites have shown a slight year on year increase. Four of the sites will not have the data discussed as out of the four, three of the sites were started in 2020 (Sites 57, 58 and 59) so a trend cannot be

identified yet and the remaining site out of the four (site 10) was discontinued in 2020. Therefore, the remaining 42 sites and their trends will be discussed in greater detail below.

Fifteen of the 42 sites are showing a consistent downward trend year on year (site 2, site 4, site 51, site 5, site 8, site 12, site 16, site 17, site 55, site 36, site 37, site 38, site 56, site 41 and site 48).

Twelve of the 42 sites are showing an overall downward trend of the data and that in 2019 there was a reduction in concentration in comparison to 2018 data these sites are; site 9, site 13, site 20, site 44, site 27, site 30, site 34, site 35, site 39, site 40, site 43 and site 19.

Eleven of the 42 sites showed an increase in the 2019 data in comparison to the 2018 data. Out of the eleven sites, six have increased by less than $0.9\mu\text{g}/\text{m}^3$ (site 1, site 7, site 53, site 45, site 54 and site 18), three have increased between $1\mu\text{g}/\text{m}^3$ to $1.6\mu\text{g}/\text{m}^3$ (site 50, site 52 and site 11) and site 31 and site 33 have showed an increase between $2.4\mu\text{g}/\text{m}^3$ to $3.1\mu\text{g}/\text{m}^3$. As nine of the eleven sites only show a slight increase of between $0.1\mu\text{g}/\text{m}^3$ to $1.6\mu\text{g}/\text{m}^3$ for one year this can be due to many factors such as meteorology, traffic disruption due to road works etc. However, the two sites that show an increase between $2.4\mu\text{g}/\text{m}^3$ to $3.1\mu\text{g}/\text{m}^3$ will be closely monitored and will be reported on in the 2022 ASR.

Out of the eleven sites that showed an increase in the 2019 data in comparison to the 2018 data that have been discussed above, four of these sites (site 1, site 7, site 11 and site 18) have shown an overall downward trend since monitoring has been undertaken at the sites. A trend cannot be established for site 50, site 52, site 53 and site 54 due to the sites only being in use since 2018 and the 2020 data is not being seen as a 'normal' year. The remaining three sites out of the eleven (site 45, site 31 and site 33) have not shown a consistent trend from 2016 to 2019 (with 2020 being discredited). However, with continuous yearly data being collected it is hoped that a clear trend can be identified in future years.

Two of the 42 sites (site 22 and site 32) have had the same concentration for the last two consecutive years (2018 and 2019). Site 22 had a 0.2 µg/m³ difference between the 2017 and 2018/19 data. Site 32 had a 0.3 µg/m³ difference between the 2017 and 2018/19 data. Therefore, these sites have shown a consistent trend in the data for the past three years.

The two remaining sites (site 3 and site 15) out of the 42 sites has shown that for the past two years the annual concentration has risen year on year. These sites are discussed below.

Site 3 Queens Road East, Beeston.

Table 3.6 below shows the results for 8 Queens Road East in Beeston for 2016 to 2020, the data shows that the highest concentration was in 2016 at 26.0µg/m³. In 2017 it had decreased greatly by 4.0µg/m³. In 2018 it increased by 0.5µg/m³ and an additional 0.6µg/m³ in 2019. Although there has been a very slight increase for the past two years (2018 and 2019), and the reason is unknown, the site is still below the air quality objective of 40µg/m³.

Table 3.6 – Results for 8 Queens Road East, Beeston 2016 – 2020.

Site ID	NO ₂ Annual Mean Concentration (µg/m ³)				
	2016	2017	2018	2019	2020
3	26.0	22.0	22.5	23.1	17.7

The 2020 data shows that the concentration has decreased by 5.4µg/m³ but consideration needs to be given to the 2020 data being an anomaly due to Covid-19.

This site is located on the façade of the property and is situated near the junction of the A6005 Queens Road East as it becomes the A6005 University Boulevard that links Beeston with Nottingham. This is a route which is used by commuters going in and coming out of Nottingham City. There was also a residential development being built in 2019, which may have resulted in an increase in vehicles to the area. Although the data is below

the air quality objective of $40\mu\text{g}/\text{m}^3$, this site will be closely monitored and an update will be provided in the 2022 ASR.

Site 15 George Spencer Academy, Stapleford

Table 3.7 below shows the results for George Spencer Academy in Stapleford for 2016 to 2020, the data shows that the highest concentration was in 2016 at $35.6\mu\text{g}/\text{m}^3$. In 2017 it had decreased greatly by $9.9\mu\text{g}/\text{m}^3$. In 2018 it increased by $2.5\mu\text{g}/\text{m}^3$ and an additional $0.4\mu\text{g}/\text{m}^3$ in 2019. Although there has been a slight increase for the past two years (2018 and 2019) and the reason is unknown, the site is still below the air quality objective of $40\mu\text{g}/\text{m}^3$.

Table 3.7 – Results for George Spencer Academy, Stapleford 2016 – 2020.

Site ID	NO ₂ Annual Mean Concentration ($\mu\text{g}/\text{m}^3$)				
	2016	2017	2018	2019	2020
15	35.6	25.7	28.2	28.6	24.4

The 2020 data shows that the concentration has decreased by $4.2\mu\text{g}/\text{m}^3$ but consideration needs to be given to the 2020 data being an anomaly due to Covid-19.

The location of this site is closer to the A52 than the main academy buildings, this is to ensure that the monitoring data is consistently collected, as previously diffusion tubes have been removed. This location also allows BBC to determine the worst case scenario for the academy. However, this site will be closely monitored and an update will be provided in the 2022 ASR.

3.2.2 Particulate Matter (PM₁₀)

BBC does not currently monitor PM₁₀ within the Borough. However, discussions are currently taking place with Nottinghamshire District and Borough Authorities and Nottinghamshire County Council, to collectively buy and maintain particulate monitors in the future. The outcome of this will be discussed in the 2022 ASR.

3.2.3 Particulate Matter (PM_{2.5})

BBC does not currently monitor PM_{2.5} within the Borough. However, discussions are currently taking place with Nottinghamshire District and Borough Authorities and Nottinghamshire County Council, to collectively buy and maintain particulate monitors in the future. The outcome of this will be discussed in the 2022 ASR.

3.2.4 Sulphur Dioxide (SO₂)

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 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	1^	N	1.9
50	309 Wollaton Road, Beeston	Roadside	452114	338018	NO ₂	No	0	16^	N	1.7
2	166 Derby Road, Beeston	Roadside	452091	338122	NO ₂	No	0	7^	N	1.8
3	8 Queens Road East, Beeston	Roadside	453659	337412	NO ₂	No	0	12^	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)
4	226 Queens Road, Beeston	Roadside	453361	336627	NO ₂	No	0	6^	N	1.8
51	36 Meadows Road, Beeston	Roadside	453537	336100	NO ₂	No	0	4^	N	1.7
52	228 Station Road Beeston	Roadside	453287	336349	NO ₂	No	0	4^	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	10^	N	1.9
53	1 Calverton Close, Chilwell	Roadside	450360	334982	NO ₂	No	0	5^	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)
8	The Manor Pub, 350 Nottingham Road, Toton	Roadside	450422	334243	NO ₂	No	0	5^	N	1.8
9	Toton branch Surgery, 2 Banks Road, Toton	Roadside	449876	334804	NO ₂	No	0	8^	N	1.8
10	1 Katherine Drive, Toton	Roadside	449748	335472	NO ₂	No	0	13^	N	1.7
11	269 Stapleford Lane, Toton	Roadside	449694	335501	NO ₂	No	0	7^	N	1.8
12	Lamppost, Stapleford Lane, Toton	Roadside	449615	335664	NO ₂	No	0	2^	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	16^	N	1.8
15	George Spencer Academy, Stapleford	Roadside	449406	336135	NO ₂	No	0	9^	N	1.9
13	George Spencer Lower School, Toton	Roadside	449266	336075	NO ₂	No	0	16^	N	1.8
16	24 Brampton Drive, Stapleford	Roadside	449516	336216	NO ₂	No	0	11^	N	1.7
54	195 Derby Road,	Roadside	448467	336591	NO ₂	No	0	4^	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)
	Stapleford									
17	Lampost 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	11 [^]	N	1.8
18	20 Tiree Close, Trowell	Roadside	448560	338889	NO ₂	Yes AQMA 1	0	26	N	1.7
19	15 Iona Drive, Trowell	Roadside	448586	339023	NO ₂	Yes AQMA 1	0	23	N	1.9
20	30 Derbyshire Avenue, Trowell	Roadside	448652	339652	NO ₂	No	0	39	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)
22	81 Nottingham Road, Trowell	Roadside	448832	340098	NO ₂	No	0	33	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	6^	N	1.8
30	560 Nottingham Road, Giltbrook	Roadside	448544	345241	NO ₂	No	0	3^	N	1.9
31	15 Hayley Close, Kimberley	Roadside	448826	344883	NO ₂	No	0	11^	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)
32	59b Main Street, Kimberley	Roadside	450122	344658	NO ₂	No	0	5^	N	1.8
33	19a Nottingham Road, Nuthall*	Roadside	451631	344526	NO ₂	No	0	42	N	1.7
34	19a Nottingham Road, Nuthall*	Roadside	451631	344526	NO ₂	No	0	42	N	1.7
35	20 Nottingham Road, Nuthall	Roadside	451728	344440	NO ₂	No	0	32	N	1.9
36	113 Nottingham Road, Nuthall	Roadside	452232	344033	NO ₂	No	0	20^	N	1.7
37	114	Roadside	452331	343910	NO ₂	No	0	27^	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)
	Nottingham Road, Nuthall									
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	1^	N	1.8
39	9 Bembridge Court, Bramcote	Roadside	450434	337781	NO ₂	No	0	6^	N	1.6
56	10 Town Street, Bramcote	Roadside	450570	337851	NO ₂	No	0	10^	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)
40	153 Derby Road, Bramcote	Roadside	450632	337929	NO ₂	No	0	14^	N	1.7
41	169 Derby Road, Bramcote	Roadside	450555	337909	NO ₂	No	0	11^	N	1.8
48	Near 73 Town Street, Bramcote	Roadside	450817	337592	NO ₂	No	0	2	N	1.8
43	Broxtowe Borough Council Offices	Urban Background	452733	336962	NO ₂	No	0	10^	N	1.8
58	10 Tiree Close, Trowell	Roadside	448588	338940	NO ₂	Yes AQMA 1	0	40	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)
59	4 Tiree Close, Trowell	Roadside	448602	338965	NO ₂	Yes AQMA 1	0	47	N	1.7

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 to nearest road relate to the M1 which is the primary source of NO₂ throughout the borough unless indicated using the ^ symbol

(*) Co-located tube

Table A.2 – Annual Mean NO₂ Monitoring Results: Non-Automatic Monitoring (µg/m³)

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2020 (%) ⁽²⁾	2016	2017	2018	2019	2020
1	452527	337313	Roadside	100	100	29.9	27.8	25.6	26.8	19.0
50	452114	338018	Roadside	100	100	-	-	28.2	29.2	18.9
2	452091	338122	Roadside	100	100	30.8	28.5	26.6	26.5	18.9
3	453659	337412	Roadside	100	100	26.0	22.0	22.5	23.1	17.7
4	453361	336627	Roadside	92	92	29.6	28.4	26.0	25.8	19.1
51	453537	336100	Roadside	100	100	-	-	18.3	15.9	15.0
52	453287	336349	Roadside	100	100	-	-	22.9	24.5	18.0
5	451782	335320	Urban Background	100	100	20.4	18.8	16.7	15.7	13.2
6	451482	334936	Roadside	-	-	26.4	24.7	-	-	-
7	450756	334328	Roadside	100	100	26.8	26.4	23.0	23.4	16.2
53	450360	334982	Roadside	100	100	-	-	19.3	19.9	13.9
8	450422	334243	Roadside	100	100	30.9	28.7	27.1	24.3	20.8

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2020 (%) ⁽²⁾	2016	2017	2018	2019	2020
9	449876	334804	Roadside	100	100	24.4	20.9	21.9	21.5	16.2
10	449748	335472	Roadside	92	92	26.0	25.6	20.8	21.6	-
11	449694	335501	Roadside	100	100	30.0	29.4	26.1	27.6	20.8
12	449615	335664	Roadside	100	100	28.9	25.3	23.6	20.5	17.3
45	449467	336220	Roadside	100	100	28.3	29.2	25.9	26.7	20.1
15	449406	336135	Roadside	75	75	35.6	25.7	28.2	28.6	24.4
13	449266	336075	Roadside	75	75	30.8	33.8	26.0	24.9	18.1
16	449516	336216	Roadside	100	100	27.9	26.3	25.9	25.4	18.4
54	448467	336591	Roadside	100	100	-	-	29.8	29.9	21.9
17	448890	337190	Roadside	100	100	37.3	34.8	33.0	32.7	25.1
55	449814	338471	Roadside	100	100	-	-	24.6	23.8	17.9
18	448560	338889	Roadside	100	100	34.3	32.9	28.2	28.4	21.5
19	448586	339023	Roadside	100	100	37.6	37.2	31.9	30.9	22.9

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2020 (%) ⁽²⁾	2016	2017	2018	2019	2020
20	448652	339652	Roadside	100	100	26.0	23.6	24.1	23.3	17.3
22	448832	340098	Roadside	100	100	26.8	24.0	24.2	24.2	18.7
23	448195	342287	Roadside	100	100	23.9	22.4	-	-	-
24	448230	344446	Roadside	92	92	26.4	24.1	-	-	-
44	446509	347091	Roadside	92	92	36.0	33.2	33.7	31.7	24.8
27	446465	346985	Roadside	92	92	25.8	23.7	24.1	20.4	17.8
28	44601	346920	Roadside	100	100	24.7	20.7	-	-	-
30	448544	345241	Roadside	100	100	27.4	27.9	23.1	21.9	18.3
31	448826	344883	Roadside	100	100	30.2	31.9	25.7	28.8	21.2
32	450122	344658	Roadside	92	92	30.0	28.6	28.9	28.9	21.3
33	451631	344526	Roadside	100	100	29.5	28.7	23.0	25.4	18.2
34	451631	344526	Roadside	100	100	28.8	26.7	28.0	26.4	19.2

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2020 (%) ⁽²⁾	2016	2017	2018	2019	2020
35	451728	344440	Roadside	100	100	32.2	33.6	30.0	29.7	22.6
36	452232	344033	Roadside	100	100	35.2	35.2	32.8	31.7	24.9
37	452331	343910	Roadside	92	92	32.2	29.5	28.9	26.4	19.3
57	451413	341424	Roadside	92	92	-	-	-	-	15.2
38	450389	337866	Roadside	100	100	33.7	30.5	29.8	26.7	20.5
39	450434	337781	Roadside	100	100	30.6	25.6	26.7	25.5	18.6
56	450570	337851	Roadside	92	92	-	-	25.1	23.4	18.7
40	450632	337929	Roadside	100	100	37.5	32.7	34.0	32.0	23.6
41	450555	337909	Roadside	100	100	37.4	35.6	34.1	30.9	23.5
48	450817	337592	Roadside	100	100	-	37.5	35.7	30.4	25.4
43	452733	336962	Urban Background	100	100	21.1	18.5	18.6	18.3	13.8
58	448588	338940	Roadside	100	83	-	-	-	-	19.4
59	448602	338965	Roadside	100	83	-	-	-	-	19.1

- Annualisation has been conducted where data capture is <75% and >25% in line with LAQM.TG16.
- Diffusion tube data has been bias adjusted.
- Reported concentrations are those at the location of the monitoring site (bias adjusted and annualised, as required), i.e. prior to any fall-off with distance correction.

Notes:

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

Exceedances of the NO_2 annual mean objective of $40\mu\text{g}/\text{m}^3$ are shown in **bold**.

NO_2 annual means exceeding $60\mu\text{g}/\text{m}^3$, indicating a potential exceedance of the NO_2 1-hour mean objective are shown in **bold and underlined**.

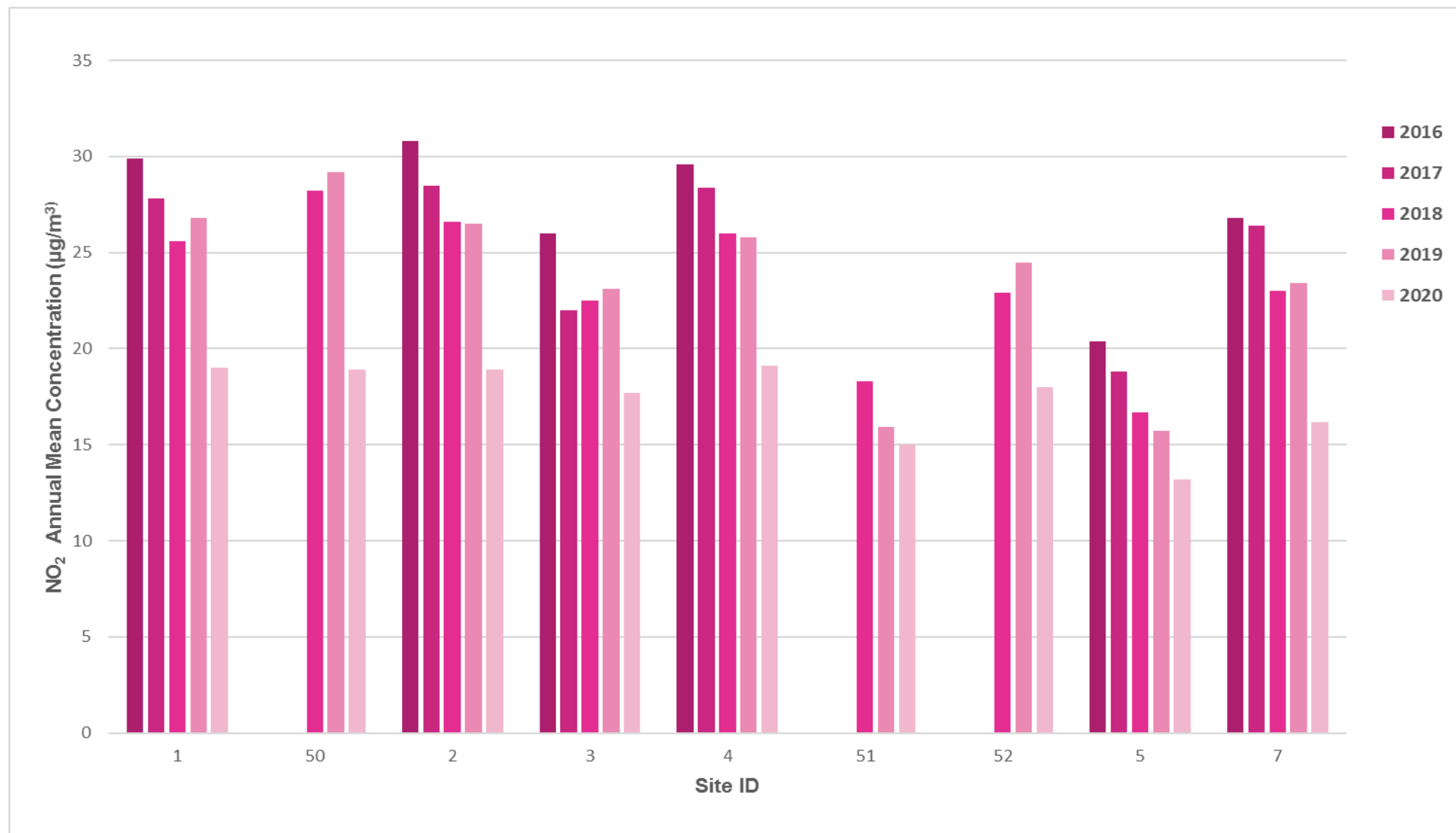
Means for diffusion tubes have been corrected for bias. All means have been “annualised” as per LAQM.TG16 if valid data capture for the full calendar year is less than 75%. See Appendix C for details.

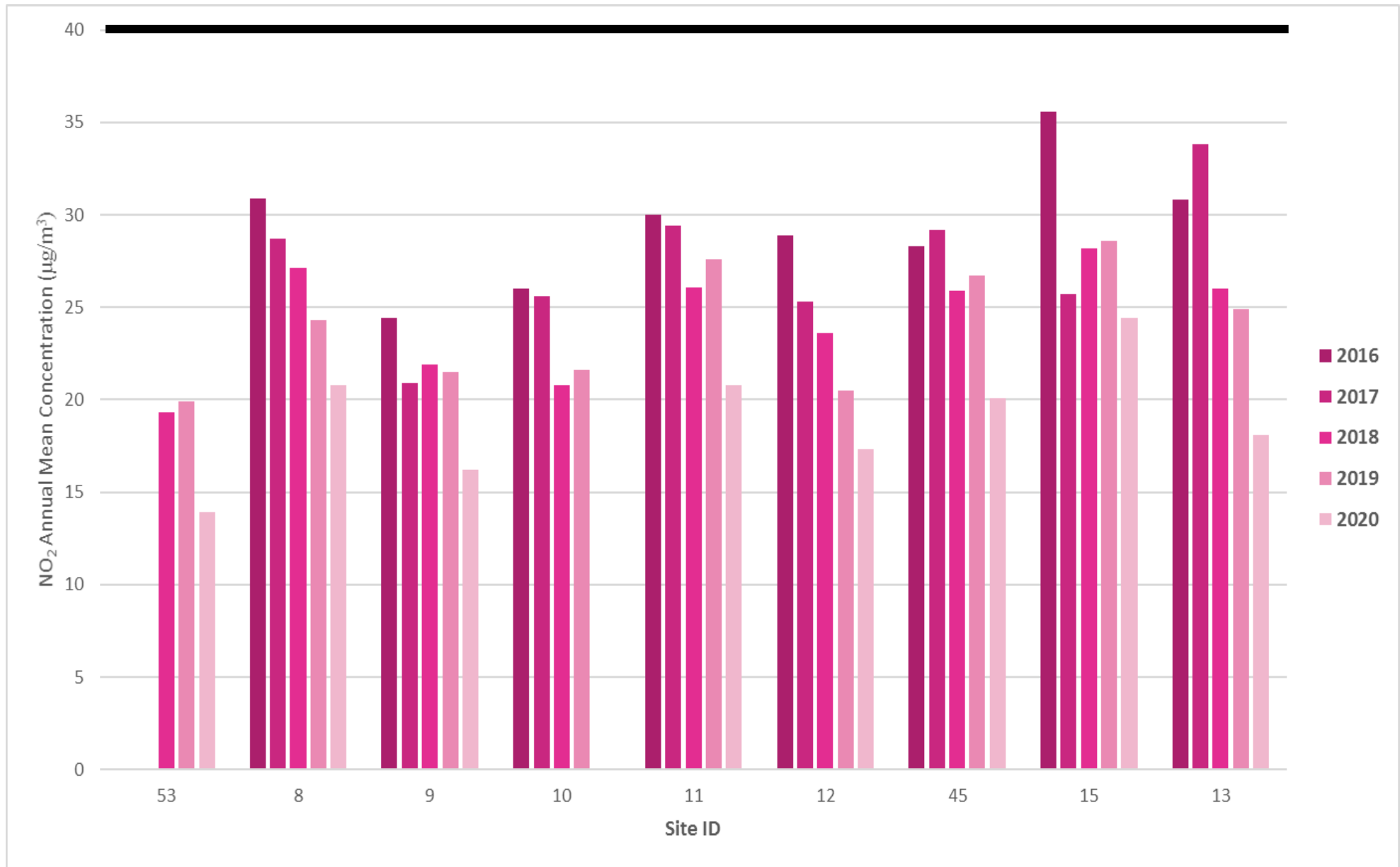
Concentrations are those at the location of monitoring and not those following any fall-off with distance adjustment.

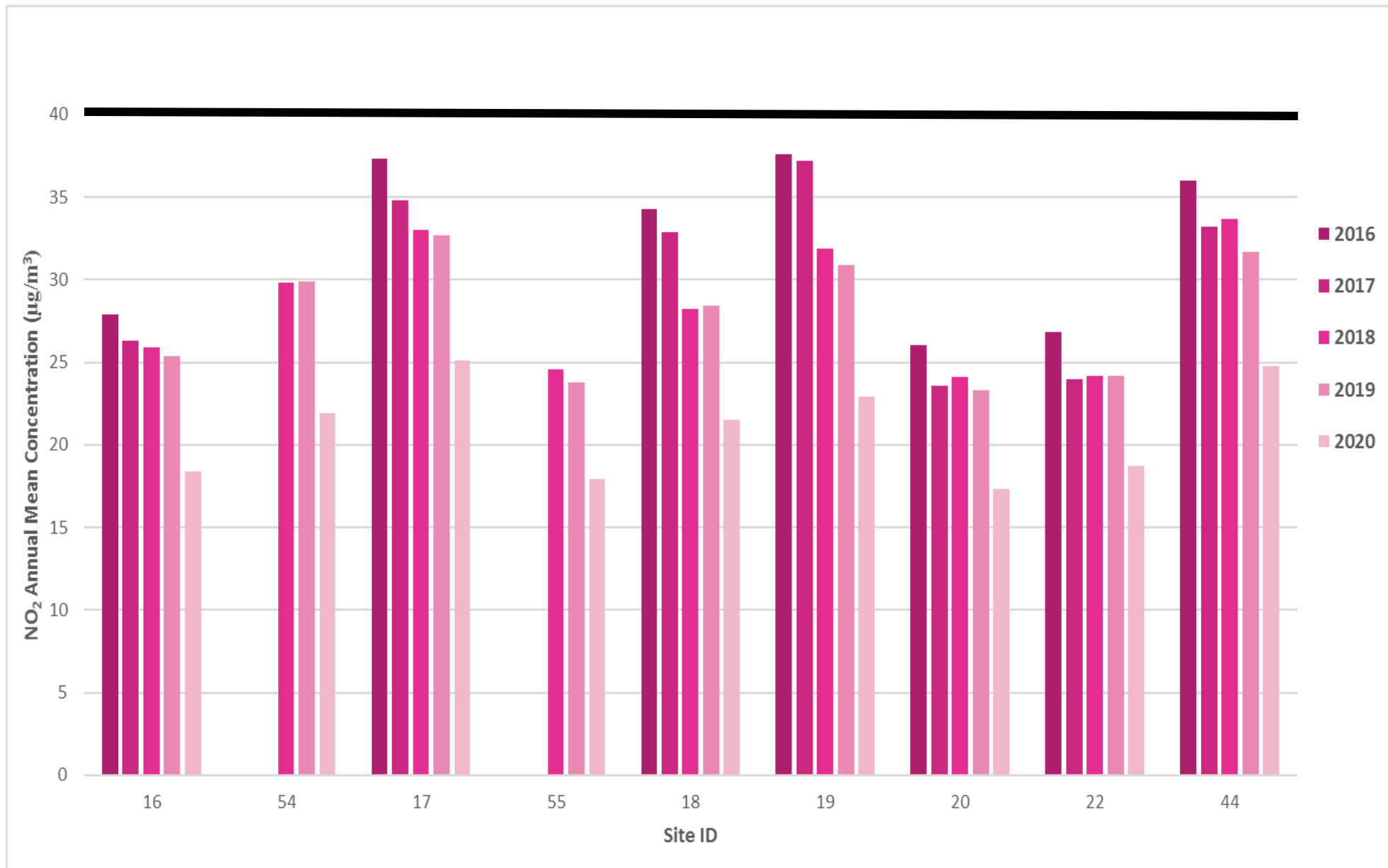
(1) Data capture for the monitoring period, in cases where monitoring was only carried out for part of the year.

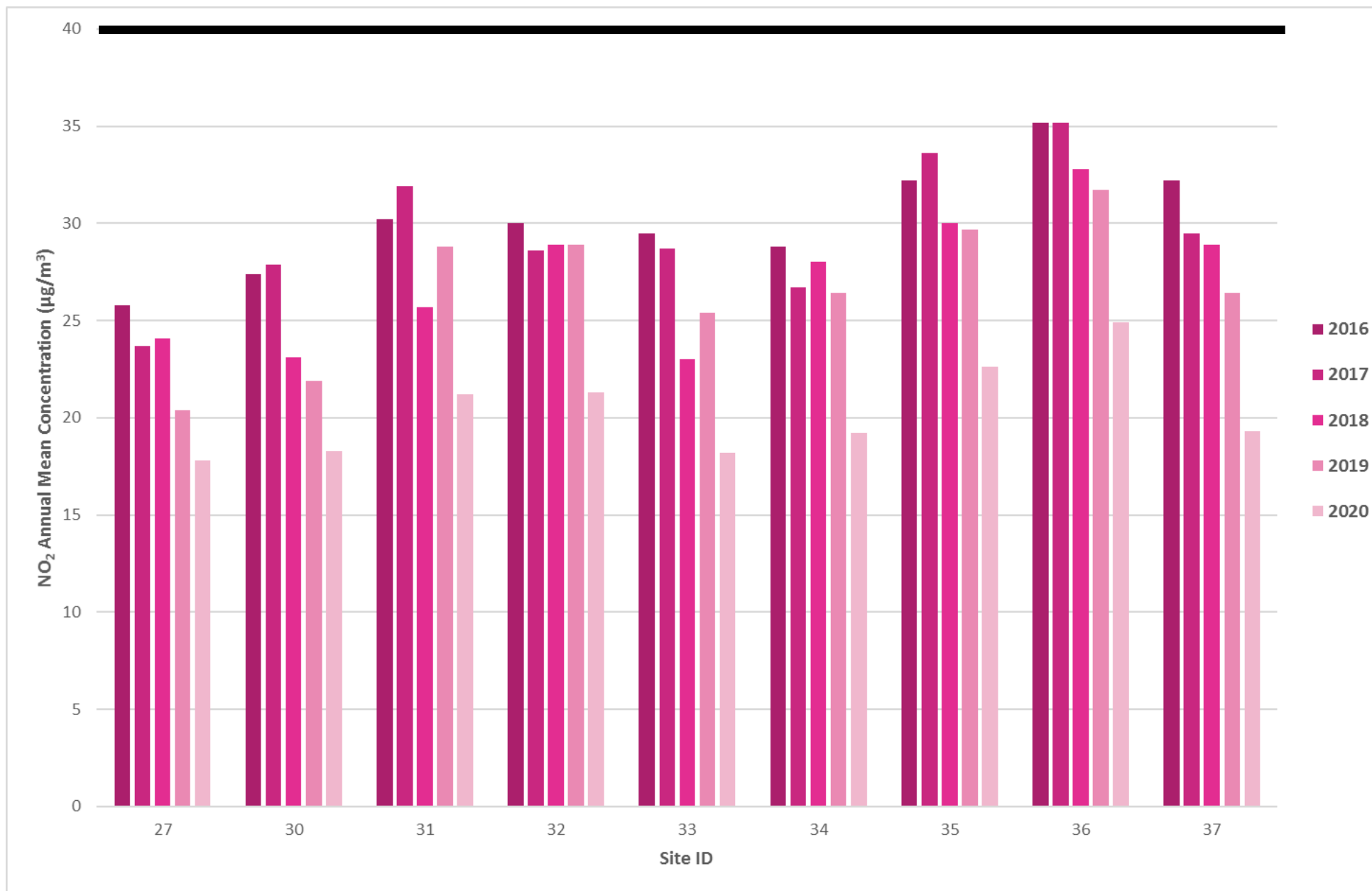
(2) Data capture for the full calendar year (e.g. if monitoring was carried out for 6 months, the maximum data capture for the full calendar year is 50%).

Figure A.1 – Trends in Annual Mean NO₂ Concentrations for all sites since 2016 to 2020.









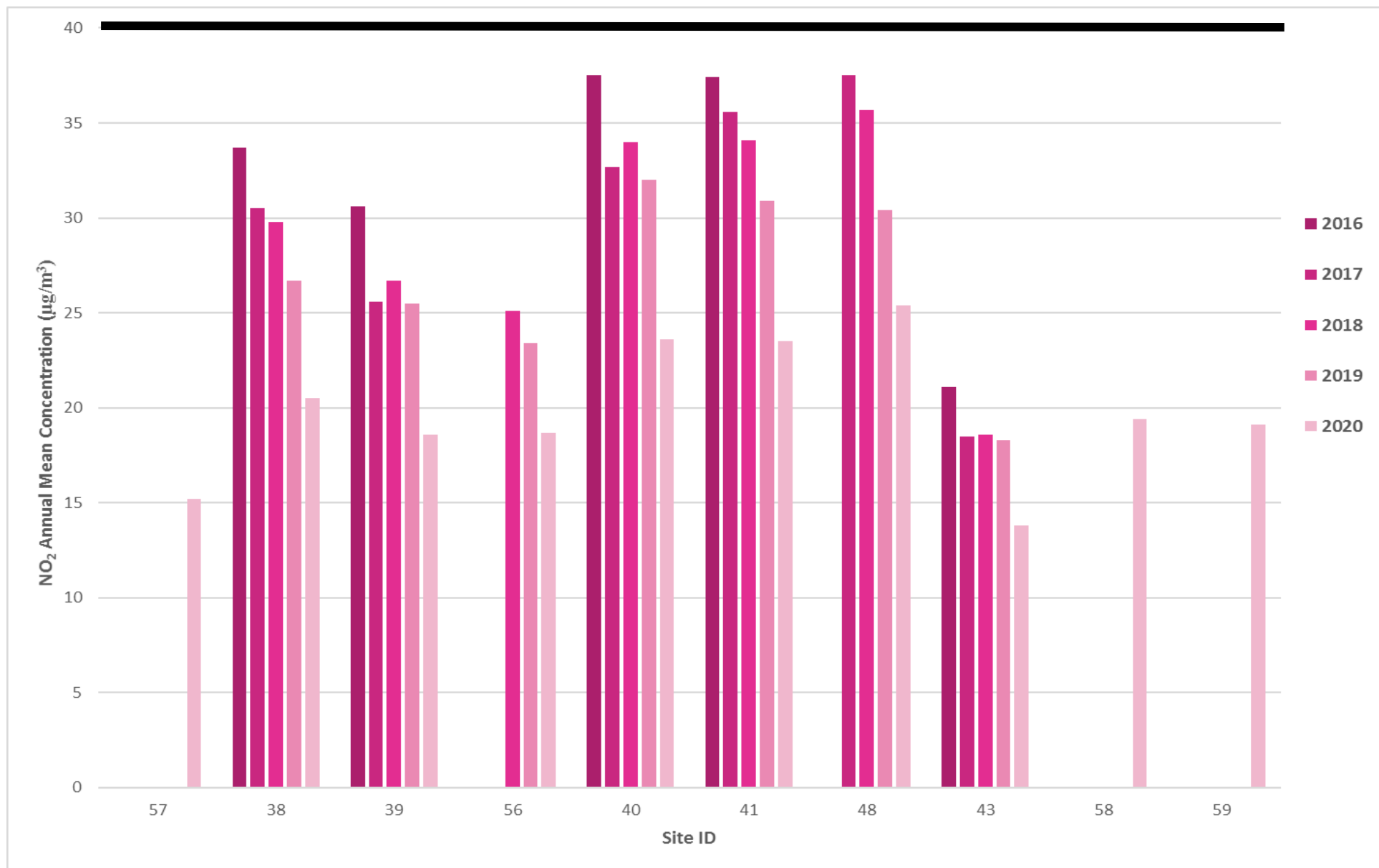
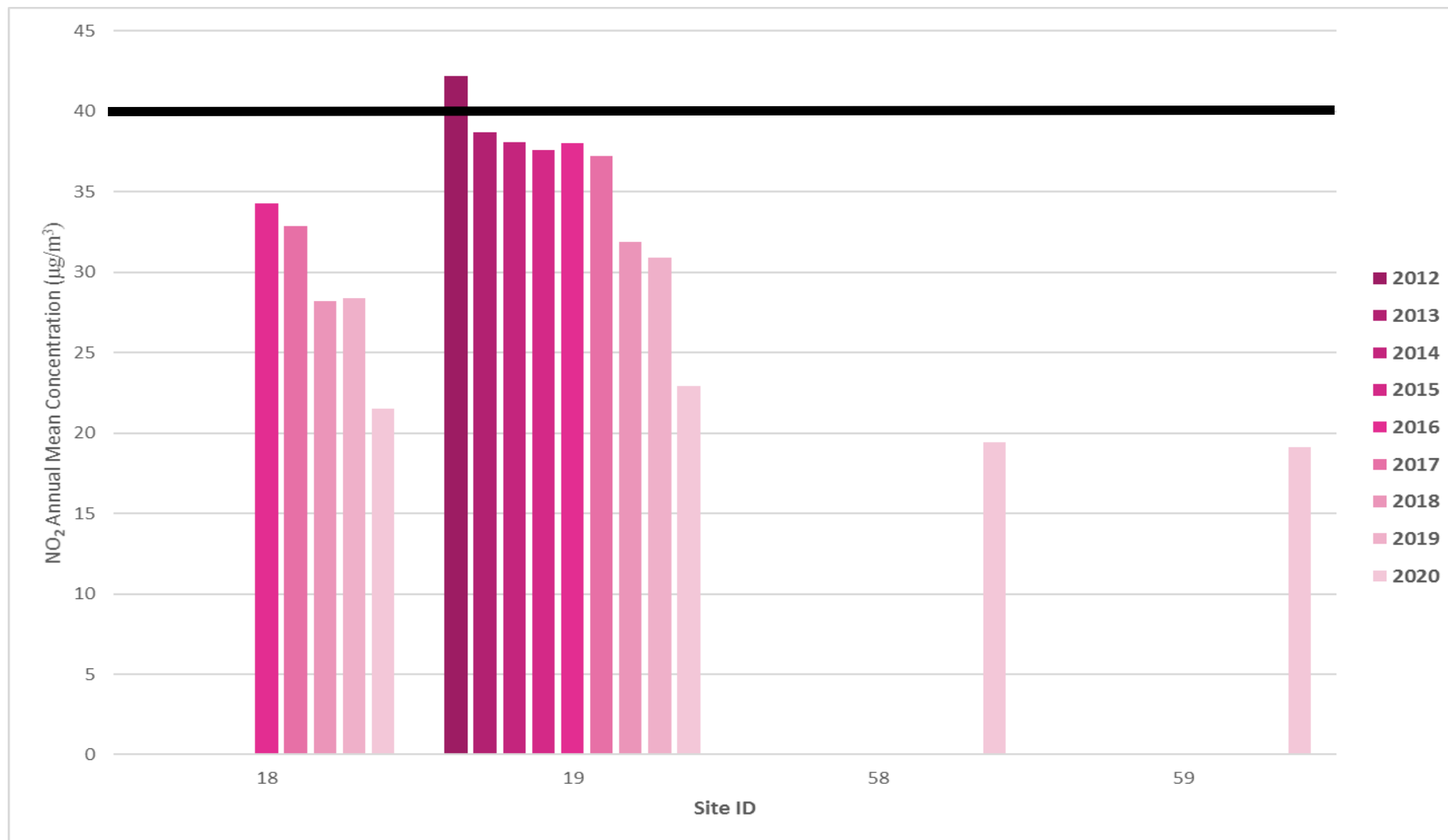


Figure A.2 – Trends in Annual Mean NO₂ Concentrations for the AQMA since 2016 to 2020.

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Appendix B: Full Monthly Diffusion Tube Results for 2020

Table B.1 – NO₂ 2020 Diffusion Tube Results (µg/m³)

DT ID	X OS Grid Ref (Eastin g)	Y OS Grid Ref (Eastin g)	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	35.6	29.3	20.2	15.9	16.5	18.1	16.5	20.3	24.5	24.5	29.2	30.7	23.4	19.0	-	
50	452114	338018	42.0	30.9	30.8	29.1	23.4	16.5	11.2	14.1	17.6	17.4	24.2	23.4	23.4	18.9	-	
2	452091	338122	32.6	27.0	20.7	16.3	15.6	18.5	14.5	21.8	25.0	25.2	32.3	30.5	23.3	18.9	-	
3	453659	337412	31.9	23.9	24.9	20.3	16.2	17.7	9.6	17.5	21.4	22.8	27.5	28.9	21.9	17.7	-	
4	453361	336627	32.6	27.9	25.0	16.4	16.7		14.8	18.1	22.4	22.8	31.3	31.2	23.6	19.1	-	
51	453537	336100	25.0	18.9	19.6	13.3	12.4	13.8	11.8	14.7	20.0	20.6	27.2	24.2	18.5	15.0	-	
52	453287	336349	31.7	28.5	25.3	15.4	15.0	15.7	12.6	15.3	21.1	24.6	32.0	29.2	22.2	18.0	-	
5	451782	335320	27.2	17.2	16.5	10.7	9.6	10.5	10.0	11.9	16.0	18.5	24.9	22.1	16.3	13.2	-	
7	450756	334328	28.9	21.2	19.4	14.5	12.2	15.5	13.1	15.6	20.2	20.5	30.0	29.2	20.0	16.2	-	
53	450360	334982	24.1	21.1	19.1	13.4	10.7	11.1	11.4	12.7	17.0	18.5	23.4	24.1	17.2	13.9	-	
8	450422	334243	33.6	25.2	25.2	19.3	18.0	24.3	19.1	26.4	30.0	25.1	31.9	29.4	25.6	20.8	-	
9	449876	334804	26.2	19.6	21.6	16.5	13.6	18.0	12.5	18.7	22.5	21.5	25.2	24.7	20.0	16.2	-	
11	449694	335501	33.6	29.8	25.5	16.8	19.7	22.7	21.5	23.9		26.1	32.1	30.3	25.7	20.8	-	
12	449615	335664	26.8	22.4	19.8	16.3	16.5	17.7	13.6	18.4	22.8	23.5	28.6	30.2	21.4	17.3	-	
45	449467	336220	38.2	30.1	26.8	16.4	16.0	18.0	17.1	21.8	25.5	27.2	32.8	27.9	24.8	20.1	-	
15	449406	336135	43.1	36.7				20.1	20.1	27.8	29.6	30.0	29.8	34.4	30.2	24.4	-	

DT ID	X OS Grid Ref (Eastin g)	Y OS Grid Ref (Eastin g)	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	26.3	22.5				16.2	14.1	18.3	24.2	23.4	30.7	24.9	22.3	18.1	-	
16	449516	336216	29.1	26.5	25.1	15.7	15.5	17.3	13.2	20.6	23.2	24.7	33.3	27.8	22.7	18.4	-	
54	448467	336591	35.2	25.1	29.1	21.0	20.5	25.7	17.6	28.3	27.4	27.4	35.4	31.8	27.0	21.9	-	
17	448890	337190	33.8	33.4	32.0	20.4	21.9	26.3	23.7	29.8	34.3	34.2	42.5	39.4	31.0	25.1	-	
55	449814	338471	32.9	24.4	21.8	15.1	16.4	16.7	16.4	18.6	23.0	21.1	30.1	28.5	22.1	17.9	-	
18	448560	338889	36.1	34.7	29.3	16.9	18.8	19.5	24.6	22.0	29.0	27.4	32.3	27.8	26.5	21.5	-	
19	448586	339023	40.6	37.5	29.0	17.1	21.1	20.1	25.8	24.5	30.6	27.7	36.4	29.5	28.3	22.9	-	
20	448652	339652	24.1	19.6	24.7	20.2	15.9	25.1	12.1	20.7	19.9	20.2	26.7	27.6	21.4	17.3	-	
22	448832	340098	31.9	23.4	25.8	18.6	15.3	26.6	11.7	24.2	20.3	22.3	28.3	27.8	23.0	18.7	-	
44	446509	347091	37.5	32.1	31.8	20.5	22.2	29.5	22.9	31.1	31.2	32.1	38.6	38.1	30.6	24.8	-	
27	446465	346985		29.0	24.2	15.9	16.9	19.6	14.0	21.0	21.9	22.4	27.8	28.4	21.9	17.8	-	
30	448544	345241	36.6	23.3	24.1	14.4	13.1	17.9	16.1	19.9	21.6		29.1	31.7	22.5	18.3	-	
31	448826	344883	39.2	30.0	26.5	16.6	17.7	20.2	21.8		27.3	26.8	32.5	29.3	26.2	21.2	-	
32	450122	344658	31.0	25.9	29.7	20.6	21.3	25.2	18.6	26.8	28.2	25.5	31.7	31.4	26.3	21.3	-	
33	451631	344526	23.2	24.3	25.7	15.8	15.4	21.0	14.7	23.3	21.6	21.9	31.5	32.0	22.5	18.2	-	
34	451631	344526	32.6	24.5	25.9	16.6	14.7	22.3	14.9	24.3	21.7	26.6	30.7	29.6	23.7	19.2	-	
35	451728	344440	39.3	36.1	28.7	16.2	19.5	21.8	27.3	25.5	29.9	28.2	33.2	29.2	27.9	22.6	-	
36	452232	344033	46.5	32.9	28.8	19.9	21.3	24.4	25.8	27.1	33.8	32.1	43.1	32.9	30.7	24.9	-	
37	452331	343910	24.8	23.7	28.3	20.5	23.5	21.7	13.6	24.3		25.1	28.3	28.5	23.8	19.3	-	

DT ID	X OS Grid Ref (Eastin g)	Y OS Grid Ref (Eastin g)	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	26.0	18.6	18.2	12.4	14.0	13.6	(b)	16.1	19.3	19.6	25.9	23.3	18.8	15.2	-	
38	450389	337866	31.7	28.8	29.8	18.1	18.2	22.0	15.9	23.0	27.9	26.3	31.5	30.0	25.3	20.5	-	
39	450434	337781	30.5	21.1	26.0	19.1	18.3	22.3	12.7	22.6	24.3	22.1	29.0	27.6	23.0	18.6	-	
56	450570	337851	32.8	26.9	24.3	(a)	16.4	16.1	18.0	18.7	22.4	24.2	26.2	27.7	23.1	18.7	-	
40	450632	337929	39.1	31.0	31.6	21.1	21.8	25.9	20.1	27.8	32.6	30.4	37.7	30.3	29.1	23.6	-	
41	450555	337909	38.0	30.6	33.4	19.1	23.7	24.6	23.4	27.4	32.4	29.2	34.4	32.6	29.1	23.5	-	
48	450817	337592	47.5	35.2	32.2	19.0	10.0	27.4	28.5	33.0	35.6	32.2	39.3	37.0	31.4	25.4	-	
43	452733	336962	24.6	19.4	18.9	12.6	19.6	11.2	7.9	11.6	15.5	17.1	21.9	24.0	17.0	13.8	-	
58	448588	338940	-	-	29.0	16.3	18.0	17.4	21.6	21.1	28.3	24.7	32.6	30.1	23.9	19.4	-	
59	448602	338965	-	-	27.3	15.1	23.0	16.0	21.5	21.2	27.8	25.4	30.1	29.1	23.6	19.1	-	

- All erroneous data has been removed from the NO₂ diffusion tube dataset presented in Table B.1.
- Annualisation has been conducted where data capture is <75% and >25% in line with LAQM.TG16.
- 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 2020 diffusion tube data has been uploaded to the Diffusion Tube Data Entry System.

Notes:

Exceedances of the NO₂ annual mean objective of 40µg/m³ are shown in **bold**.

NO₂ annual means exceeding 60µg/m³, indicating a potential exceedance of the NO₂ 1-hour mean objective are shown in **bold and underlined**.

See Appendix C for details on bias adjustment and annualisation.

- (a)** Missing tubes
- (b)** Result not valid
- (c)** Unable to collect Tubes due to Covid -19 restrictions.

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

New or Changed Sources Identified Within Broxtowe Borough Council During 2020

Broxtowe Borough Council has not identified any new sources relating to air quality within the reporting year of 2020.

Additional Air Quality Works Undertaken by Broxtowe Borough Council During 2020

Broxtowe Borough Council has not completed any additional works within the reporting year of 2020.

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.

Diffusion Tube Annualisation

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

Diffusion Tube Bias Adjustment Factors

The diffusion tube data presented within the 2021 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.TG16 provides

guidance with regard to the application of a bias adjustment factor to correct diffusion tube monitoring. Triplicate co-location studies can be used to determine a local bias factor based on the comparison of diffusion tube results with data taken from NO_x/NO₂ continuous analysers. Alternatively, the national database of diffusion tube co-location surveys provides bias factors for the relevant laboratory and preparation method.

Broxtowe Borough Council have applied a national bias adjustment factor of 0.81 to the 2020 monitoring data. 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
2020	National	03/21	0.81
2019	National	03/20	0.93
2018	National	03/19	0.93
2017	National	03/18	0.89
2016	National	03/17V2	0.90

NO₂ Fall-off with Distance from the Road

No diffusion tube NO₂ monitoring locations within Broxtowe Borough Council required distance correction during 2020.

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

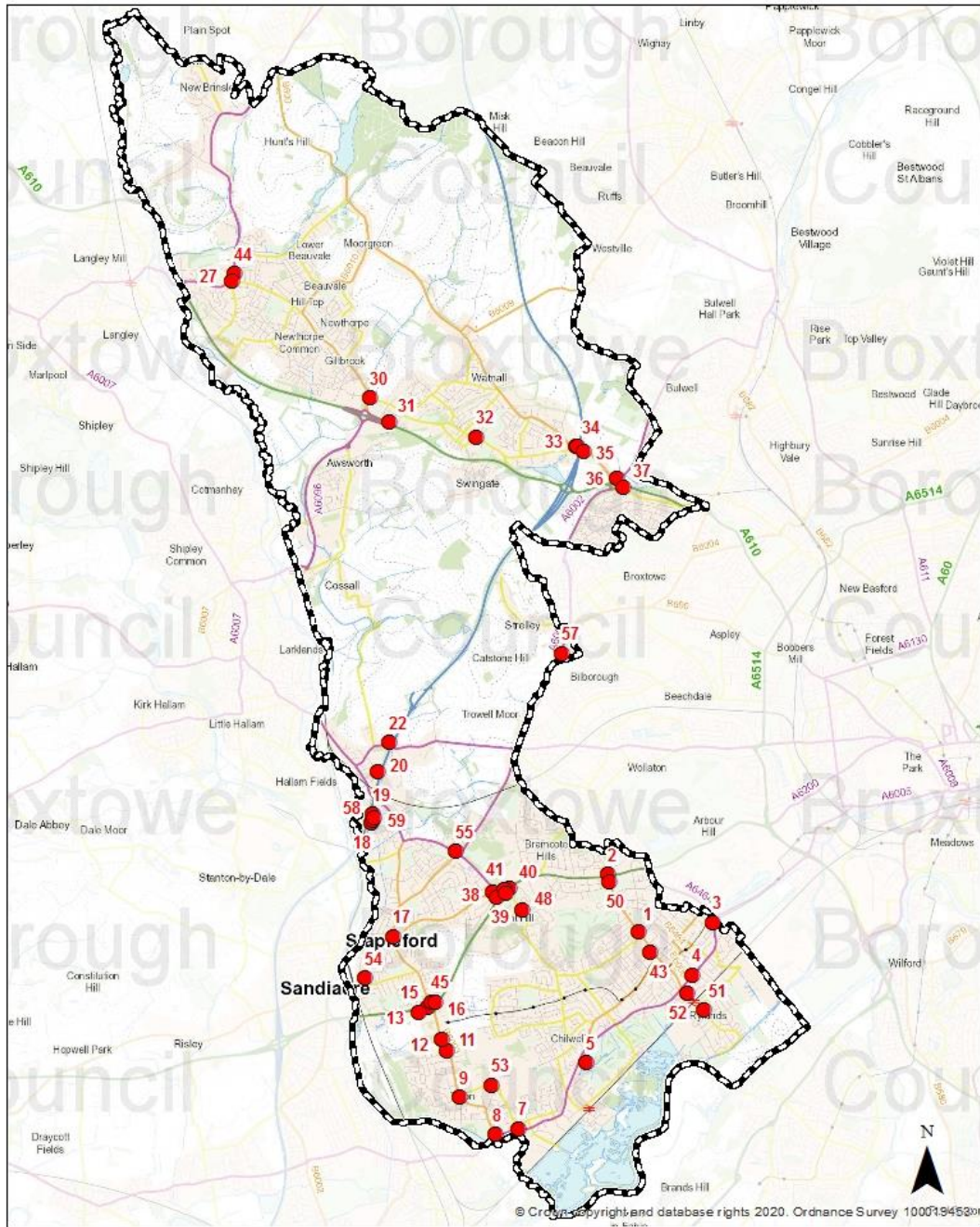


Figure D.1 – 2020 Diffusion Tube Locations.

Appendix E: Map of AQMA in Trowell.



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Figure E.1 - AQMA 1 encompassing twenty properties on parts of Iona Drive and Tieve 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.

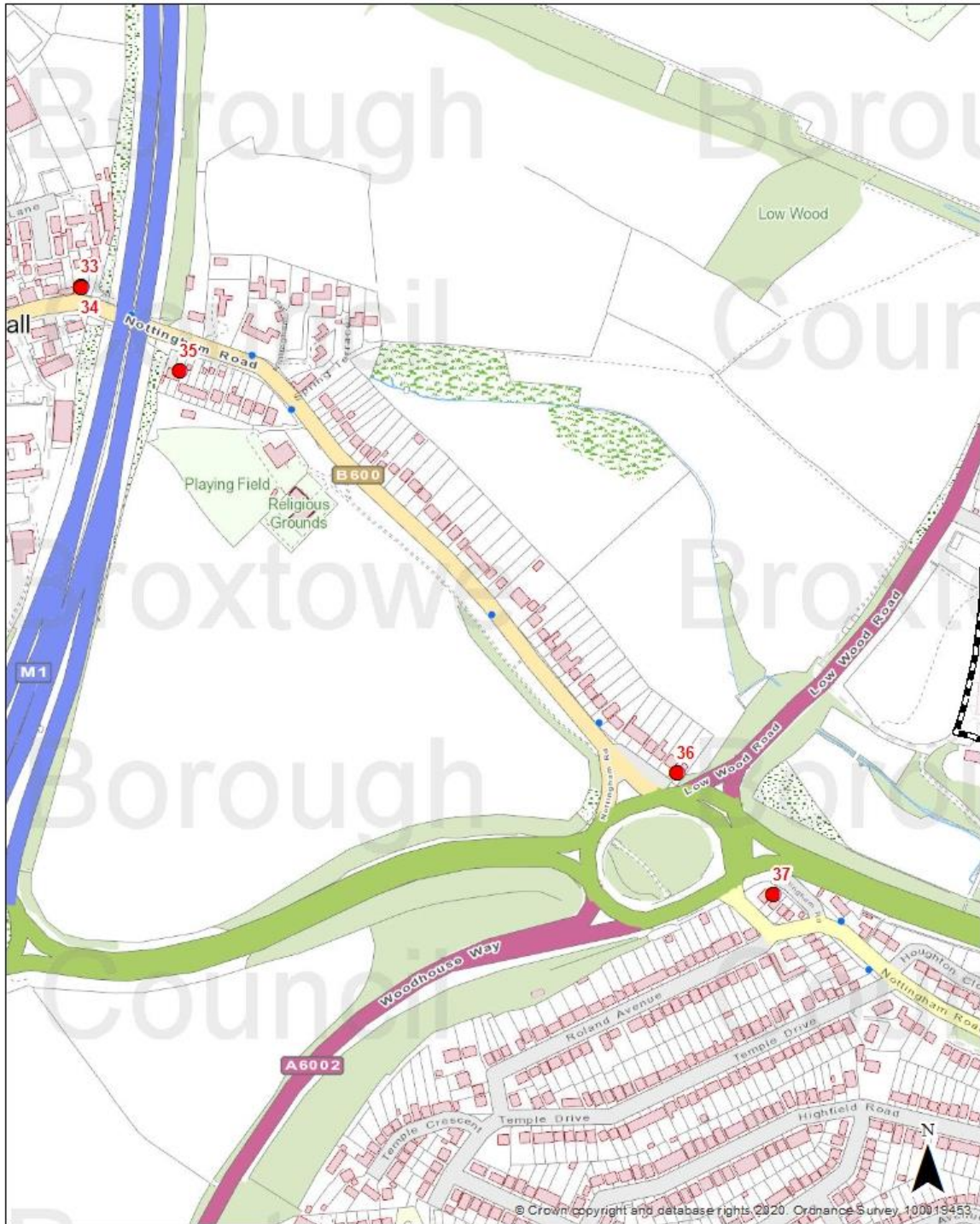
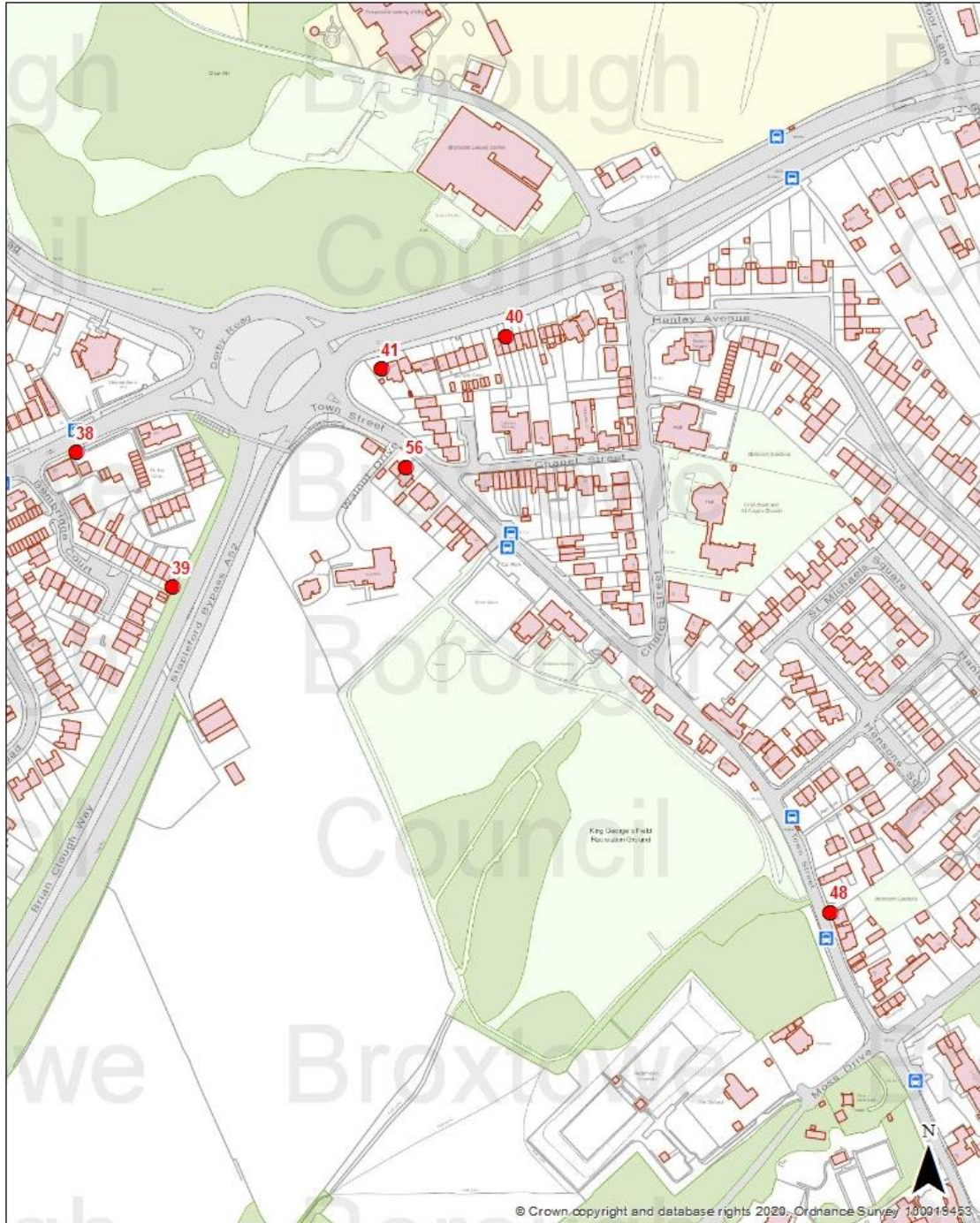


Figure F.1 – Nuthall Island and Diffusion Tube Location.

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



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

Appendix H: Summary of Air Quality Objectives in England

Table H.1 – Air Quality Objectives in England¹³

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

¹³ The units are in microgrammes of pollutant per cubic metre of air (µg/m³).

Appendix I: Impact of COVID-19 upon LAQM

COVID-19 has had a significant impact on society. Inevitably, COVID-19 has also had an impact on the environment, with implications to air quality at local, regional and national scales.

COVID-19 has presented various challenges for Local Authorities with respect to undertaking their statutory LAQM duties in the 2021 reporting year. Recognising this, Defra provided various advice updates throughout 2020 to English authorities, particularly concerning the potential disruption to air quality monitoring programmes, implementation of Air Quality Action Plans (AQAPs) and LAQM statutory reporting requirements. Defra has also issued supplementary guidance for LAQM reporting in 2021 to assist local authorities in preparing their 2021 ASR. Where applicable, this advice has been followed.

Despite the challenges that the pandemic has given rise to, the events of 2020 have also provided Local Authorities with an opportunity to quantify the air quality impacts associated with wide-scale and extreme intervention, most notably in relation to emissions of air pollutants arising from road traffic. The vast majority (>95%) of AQMAs declared within the UK are related to road traffic emissions, where attainment of the annual mean objective for nitrogen dioxide (NO₂) is considered unlikely. On 23rd March 2020, the UK Government released official guidance advising all members of public to stay at home, with work-related travel only permitted when absolutely necessary. During this initial national lockdown (and to a lesser extent other national and regional lockdowns that followed), marked reductions in vehicle traffic were observed; Department for Transport (DfT) data¹⁴ suggests reductions in vehicle traffic of up to 70% were experienced across the UK by mid-April, relative to pre COVID-19 levels.

This reduction in travel in turn gave rise to a change of air pollutant emissions associated with road traffic, i.e. nitrous oxides (NO_x), and exhaust and non-exhaust particulates (PM). The Air Quality Expert Group (AQEG)¹⁵ has estimated that during the initial lockdown period in 2020, within urbanised areas of the UK reductions in NO₂ annual mean

¹⁴ Prime Minister's Office, COVID-19 briefing on the 31st of May 2020

¹⁵ Air Quality Expert Group, Estimation of changes in air pollution emissions, concentrations and exposure during the COVID-19 outbreak in the UK, June 2020

concentrations were between 20 and 30% relative to pre-pandemic levels, which represents an absolute reduction of between 10 to 20 $\mu\text{g}/\text{m}^3$ if expressed relative to annual mean averages. During this period, changes in $\text{PM}_{2.5}$ concentrations were less marked than those of NO_2 . $\text{PM}_{2.5}$ concentrations are affected by both local sources and the transport of pollution from wider regions, often from well beyond the UK. Through analysis of AURN monitoring data for 2018-2020, AQEG have detailed that $\text{PM}_{2.5}$ concentrations during the initial lockdown period are of the order 2 to 5 $\mu\text{g}/\text{m}^3$ lower relative to those that would be expected under business-as-usual conditions.

As restrictions are gradually lifted, the challenge is to understand how these air quality improvements can benefit the long-term health of the population.

Impacts of COVID-19 on Air Quality within Broxtowe Borough Council

WRITE

Opportunities Presented by COVID-19 upon LAQM within Broxtowe Borough Council

WRITE

Challenges and Constraints Imposed by COVID-19 upon LAQM within Broxtowe Borough Council

WRITE

Table I 1 – Impact Matrix

Category	Impact Rating: None	Impact Rating: Small	Impact Rating: Medium	Impact Rating: High
Automatic Monitoring – Data Capture (%)	More than 75% data capture	50 to 75% data capture	25 to 50% data capture	Less than 25% data capture
Automatic Monitoring – QA/QC Regime	Adherence to requirements as defined in LAQM.TG16	Routine calibrations taken place frequently but not to normal regime. Audits undertaken alongside service and maintenance programmes	Routine calibrations taken place infrequently and service and maintenance regimes adhered to. No audit achieved	Routine calibrations not undertaken within extended period (e.g. 3 to 4 months). Interruption to service and maintenance regime and no audit achieved
Passive Monitoring – Data Capture (%)	More than 75% data capture	50 to 75% data capture	25 to 50% data capture	Less than 25% data capture
Passive Monitoring – Bias Adjustment Factor	Bias adjustment undertaken as normal	<25% impact on normal number of available bias adjustment colocation studies (2020 vs 2019)	25-50% impact on normal number of available bias adjustment studies (2020 vs 2019)	>50% impact on normal number of available bias adjustment studies (2020 vs 2019) and/or applied bias adjustment factor studies not considered representative of local regime
Passive Monitoring – Adherence to Changeover Dates	Defra diffusion tube exposure calendar adhered to	Tubes left out for two exposure periods	Tubes left out for three exposure periods	Tubes left out for more than three exposure periods
Passive Monitoring – Storage of Tubes	Tubes stored in accordance with laboratory guidance and analysed promptly.	Tubes stored for longer than normal but adhering to laboratory guidance	Tubes unable to be stored according to be laboratory guidance but analysed prior to expiry date	Tubes stored for so long that they were unable to be analysed prior to expiry date. Data unable to be used
AQAP – Measure Implementation	Unaffected	Short delay (<6 months) in development of a new AQAP, but is on-going	Long delay (>6 months) in development of a new AQAP, but is on-going	No progression in development of a new AQAP
AQAP – New AQAP Development	Unaffected	Short delay (<6 months) in development of a new AQAP, but is on-going	Long delay (>6 months) in development of a new AQAP, but is on-going	No progression in development of a new AQAP

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
AURN	Automatic Urban and Rural Network
BBC	Broxtowe Borough Council
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
DfT	Department for Transport
D2N2	Local Enterprise Partnership for Derby, Derbyshire, Nottingham and Nottinghamshire
EMAQN	East Midlands Air Quality Network
EU	European Union
FDMS	Filter Dynamics Measurement System
HE	Highways England
HGV's	Heavy Goods Vehicles
HS2	High Speed Train 2
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

LGA	Local Government Association
LSTF	Local Sustainable Transport Fund
$\mu\text{g}/\text{m}^3$	Microgrammes of pollutant per cubic metre of air
NEPWG	Nottinghamshire Environmental Protection Working Group
NET	Nottingham Express Transit
NCT	Nottingham City Transport
NO	Nitric Oxide
NO ₂	Nitrogen Dioxide
NO _x	Nitrogen Oxides
Notts CC	Nottingham City Council
NCC	Nottinghamshire County Council
O ₃	Ozone
OLEV	Office for Low Emission Vehicles
PHE	Public Health England
PM	Particulate Matter
PM ₁₀	Airborne particulate matter with an aerodynamic diameter of 10 μm (micrometres or microns) or less
PM _{2.5}	Airborne particulate matter with an aerodynamic diameter of 2.5 μm or less
PTP	Personalised Travel Planning
QA/QC	Quality Assurance and Quality Control
R&A	Review and Assessment
SAFED	Safe And Fuel Efficient Driving
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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Report of the Executive Director

CLEAN AND GREEN1. Purpose of report

To update Members on the progress of the 'Clean and Green' initiative.

2. Background

The Clean and Green Initiative supports the Councils corporate vision of 'a greener, safer, healthier Broxtowe where everyone prospers' and to 'protect the environment for the future'

Despite 2020/21 being a difficult year a number of initiatives have been delivered through the Clean and Green initiative. A breakdown of what has been achieved in 2020/21 is shown in the appendix.

With the easing of lockdown measures and the conception of the new norm it is envisaged that the Clean and Green Initiative will build momentum and further engagement with residents and stakeholder groups can resume.

3. Financial implications

Any financial implications of the Clean and Green initiative including the purchase of the Resident Engagement Platform (see appendix section 4) can be contained within existing budgets.

Recommendation

The Committee is asked to NOTE the Clean and Green activities which have taken place and RESOLVE that the purchase of the Resident Engagement Platform be approved.

Background papers

Nil

APPENDIX

1. Bulky Collection Weeks

As part of the Clean and Green initiative four free bulky waste week were provided over the below dates:

- w/c 7 December 2020
- w/c 25 January 2021
- w/c 1 February 2021
- w/c 22 February 2021

These weeks were extremely popular with most slots being booked up within the first day. Over the four weeks a total of 641 properties were serviced and around 55 tonnes of residual waste and 266 electrical items were collected.

As experienced across most Nottinghamshire Districts the bulky waste services has experienced increased demand in 2020/21. Therefore, the Clean and Green funds were used strategically to put in additional bulky waste collection days for the paid service to reduce the lead times down and provide an improved service for residents.

2. Litter Picking

An intermediary litter pick of the section of the A610 which spans from the layby below the motorway island to first bridge Eastwood bound was undertaken in March 2021. This stretch is prone to queuing traffic and as a results is a hotspot for litter.

Though the entire stretch of the A610 within the Borough is litter picked twice a year for 2021/22 the Clean and Green budget will be reviewed to see whether it is feasible within the budgetary constraints to expand the section litter picked as part of the intermediary works.

3. Community Clean Teams Initiative

For a significant proportion of 2020/21 lockdown measures have been in place which have restricted the community in their efforts to participate in litter picking events and taking pride in their local area. However, it is very pleasing to report that a number of local individuals and community groups have been inspiring and have rose to the challenge.

Twenty-nine individuals or groups have contacted the Council to request resources to facilitate their desire to help keep the Borough clean. The efforts of these volunteers supports the delivery of the street cleansing service allowing them to concentrate their efforts on other areas within the Borough.

Stakeholder engagement is key to making a difference to the environment where we live and work. Lockdown measures have allowed residents to experience the

real the value of the outdoor spaces and our local environment. As these measures are eased our efforts will be increased to engage with our community on keeping the Borough clean and protecting the environment for the future.

4. Resident Engagement Platform

As part of the Clean and Green initiative and linking into the Green Future Programme Communication Campaign the Council is working with other Nottinghamshire Local Authorities to investigate the provision of a Resident Engagement Platform. The mobile telephone application (APP) will allow residents to collect reward points based on changes in their own behaviour in relation to Climate Change and sustainability. Although not confirmed as yet the rewards may be used to prioritise Council environmental projects in their community e.g. Bulb Planting, Meadow Planting or Tree Planting, or may linked to local businesses where a reward may provide a discount for a cup of coffee or other item.

It is recommended that the APP be purchased on a trial basis for an initial period of one year. The cost is expected to be a maximum of £5,000 and can be accommodated with Member agreement within the existing Clean and Green budget. It is hoped that subject to the Members' decision this evening that the APP will be ready for residents to use prior to the United Nations Climate Change Conference (COP 26) starting on 1 November 2021.

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Report of the Executive Director

CLIMATE CHANGE AND GREEN FUTURES PROGRAMME STRAND UPDATE1. Purpose of report

To provide members with an update on the progress of the following strands in the Climate Change and Green Futures programme:

- Water courses
- Meadow planting/wildflower corridors
- Tree planting.

2. Background

Following the adoption of the Climate Change and Green Futures programme in September 2020, this is the second in a series of update reports coming to the Environment and Climate Change Committee. The update reports will expand on the progress of key strategic actions within the relevant strands. In this report each of the aforementioned strands is covered in the appendices.

Appendix 1 Water Courses

Appendix 2 Meadow Planting/Wildflower Corridors

Appendix 3 Tree Planting.

3. Financial implications

There are no additional financial implications relating to these 3 strands at this stage. Further reports will be brought to committee in due course, should the financial position change.

Recommendation

The Committee is asked to NOTE the 2020/21 achievements and RESOLVE that the 2021/22 proposal across the 3 strands be approved.

Background papers

Nil

APPENDIX 1

Strand Updates

This section of the report expands on some of the key achievements over the last 12 months, together with proposals for the year ahead.

1. Water Courses Strand

The responsibility for the various water pathways, be it rivers, streams, channels, drainage ditches, rests with a range of different organisations and individuals in the Borough. Maintaining, improving and enhancing these pathways involves a partnership approach involving Nottinghamshire County Council as the lead local flood authority, the Environment Agency, the Canal and River Trust, riparian owners, together with the Borough Council. The various watercourses and their differing micro-habitats are very important for wildlife with changing water levels, marginal vegetation, together with areas of standing water and ponds.

2020/21 Achievements

- A detailed assessment was made of all the brooks in the Borough with a report to this committee on 23 November 2020.
- Following this assessment, a letter was sent to all land owners with property adjacent to the brooks reminding them of their riparian responsibilities. These are maintenance of the bank, including any trees and shrubs growing on the bank, clearance of any debris and checking that any culverts are kept clear and operating efficiently.
- Site visits to all of the six brooks with the Chair of the Environment and Climate Change Committee, the Executive Director and officers from the Parks and Green Spaces team took place on Wednesday 24 February 2021. This proved very useful providing a direct assessment of the various issues relating to each brook.
- Meetings held on site with Nottinghamshire County Council as the lead local flood authority to assess site specific issues identified as part of the detailed site assessments.
- Dialogue established with the Environment Agency to understand respective roles and responsibilities at key locations.
- Significant clearance work undertaken on sections of the brook adjacent to Moorbridge Lane to help with water flow. This included cutting back vegetation, removal of obstructions and litter clearance.

- Working with Nottinghamshire Wildlife Trust and volunteer groups to undertake further wildlife assessments at various sites. Key findings include:
 - Hall Park - Kingfisher and Native White Clawed Crayfish
 - Brinsley Headstocks – Grass snake, Willow Tit, Spotted Orchid
 - Toton Fields Local Nature Reserve - Kingfisher, Great White Egret, Bee Orchid
 - Nottingham Canal – Water Vole, Grass Snake
- Management of the Brinsley Brook ponds at Brinsley Headstocks, to create a wetland refuge for wildlife during drier weather.

2021/22 Proposals

- Follow up review of the 6 brooks during the summer months to check on the issues identified during late 2020 and to make sure that riparian owners are undertaking the necessary maintenance works.
- Further meetings with Nottinghamshire County Council, Environment Agency and the Canal and River Trust.
- Continuation of clearance works to section of brooks owned by the Borough Council as identified in the site assessments.
- Liaise with the Environment Agency on the issue of water quality in the brooks and identify if there is any proactive partnership work that can be undertaken to increase landowner awareness of this key issue.
- Work with the Environment Agency to progress the Trent Gateway Project, which is looking to develop environmental and accessibility issues on the section of the River Trent within Broxtowe.
- Continue to be a key partner in the Erewash Riverside Project, which looks to bring forward, as part of the HS2 proposal, a 4-mile long green corridor from the A52 down to the River Trent, with a network of multi-user routes, biodiversity enhancements, creation of areas for water storage and increased opportunities for recreation.
- Continue with the programme of works to pollard willow trees on the banks of the Nottingham Canal and the removal of weak growth from the canal to create a more diverse and environmentally friendly habitat for fish, amphibians and insect life.
- Meet with Friends of Cromford Canal to discuss leak prevention and repairs on the Nottingham Canal. The Friends have professional experience dealing with leak issues on their canal.

APPENDIX 2

2. Meadow Planting/Wildlife Corridors Strand

Creating and enhancing the meadows and wildlife corridors has many environmental benefits, providing wildlife with important connection networks and habitats. The linking of the networks through green infrastructure also creates both economic and social benefits for the wider community to enjoy.

2020/21 Achievements

- Improvements to the existing meadow grasslands at Archers Field Recreation Ground, Stapleford, by over-seeding with a dedicated wildflower mix.
- Introduction of strategic areas of annual wildflower planting at prominent locations on highway verges and within parks and open spaces.
- Review of management regime for acid grassland at King George V Park, Bramcote.
- Introduction of grass cutting and collection regime at Colliers Wood and Brinsley Headstocks with hay bales created and stored on site. These provide a potential habitat for snakes and reptiles.
- The benefits of composting garden waste was promoted in the 2021 Allotment Newsletter and a new composting ambassador has been created at Grove Avenue Allotments.
- 40,000 bulbs were planted on green spaces, highway verges and in woodlands. In addition to their aesthetic value, these bulbs with their large drifts create different habitat areas as the grass is left uncut whilst the bulbs die back.

2021/22 Proposals

- Creation of additional strategic areas of annual wildflower plantings. This year new beds have been created at Long Lane, Attenborough, St John's Church, Beeston, Queens Road West, Chilwell, Main Road, Nuthall, Hickings Lane, Stapleford and Stapleford Road, Trowell.
- Work with the County Biodiversity Officer and Nottinghamshire Wildlife Trust to assess sites for species rich grassland that with a change of management, could become more favourable for diversity. Sites being considered include section of the Nottingham Canal and areas of Bramcote Hills Park acid grassland.

- Develop potential for linear corridors along site boundaries to improve habitat connectivity. Leyton Crescent Recreation Ground, Beeston and Inham Nook Recreation Ground Chilwell identified as possibilities
- Continue to explore opportunities for grass cutting and collection to build on the work done last summer at Brinsley Headstocks and Colliers Wood.
- Plant an additional 40,000 bulbs on green spaces and highway verges and woodlands.
- Work with the friends of Bennerley Viaduct on their Access to Nature Project. Funding has been secured by the Friends from the Severn Trent Community Fund with an award of £23,949. The project is taking place between May 2021 and April 2022 and includes:
 - Opening up a new permissive path under the viaduct, sowing of species rich grassland to attract insects and butterflies, planting 400 metres of mixed species hedgerows, planting disease resistant elm and fruit trees, installing bat boxes and bug hotels; installing an otter holt; installing a boardwalk to protect areas of wet grassland. The work will be carried out through the Friends volunteer programme, with an offer from the Borough Council to assist with sourcing plant material and other landscaping items to make use of the Councils purchasing potential and the ability to store the items at the Kimberley Depot. The extent of The Councils involvement is still being developed but this project links very positively across all 3 strands in this report.

APPENDIX 3

3. Tree Planting

Trees play an important role in absorbing carbon dioxide and storing carbon, whilst releasing oxygen into the air. They also enhance the environment through both economic, social and environmental benefits.

2020/21 Achievements

- The strategic approach to tree planting has continued with 3114 new trees planted during the winter period.
- The second tree giveaway event took place with 500 small ornamental trees delivered to residents in January.
- A new pocket orchard was created at Grove Avenue Allotments, working with plot holders on the site.
- Various new lengths of hedge were planted at Colliers Wood to provide a long term replacement for the post and wire fences around the copse areas.
- New signs were erected at strategic locations in summer 2020 explaining changes to maintenance regimes. A new interpretation board was installed at Brinsley Headstocks.
- The woodland at Hall Om Wong was enhanced with additional planting to improve age structure and diversity.
- A new woodland copse was created at Cator Lane Recreation Ground, Chilwell to compensate for the felling of 3 large Ash trees that were found to be potentially unsafe.
- 30 striking Silver Birch trees were planted in a copse at Bramcote Hills Park. The trees were planted 2 metres apart to reflect the significance this distance had on everybody's lives during the Covid-19 pandemic. This project has been very well received.

2021/22 Projects

- Continue with the strategic approach to tree planting with a target of an additional 2000 trees during 2021/22.
- In line with easing of Covid-19 restrictions look to once again engage with community groups to plant trees at various sites throughout the Borough. A project is currently being developed where young trees that have been grown by the community from acorns, will be planted in Bramcote Hills Park woodland.

- A tree giveaway event will be organised for January 2022 with a further 500 trees allocated to Broxtowe residents.
- Options for another pocket orchard are being considered, working with a local community food growing group.
- An area at Ghost Lane is being considered as a pocket park. A review of the hedge line on Ghost Lane will take place over the summer months and consultation will take place with local residents to see if a section can be improved to increase its environmental benefits. Bulbs will be planted in strategic locations.
- New signage will be installed at strategic locations to explain how sites are being managed and, where appropriate, reference to the sites history and development.
- Additional planting will be undertaken to enhance existing woodland within Bramcote Hills Park programmed for this coming winter.
- Work with Town and Parish Councils to explore the possibility of creating a community allotment on their sites.
- Following the success of the woodland Copses at Cator Lane Recreation Ground, Chilwell and Mansfield Road Recreation Ground, Eastwood a new site will be created this winter.
- A rainbow tree planting project, using flowering Cherry trees will be implemented to reflect the lives lost to Covid-19. The site proposed for this memorial planting is Mansfield Road Recreation Ground, Eastwood.

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Report of the Executive Director

LITTER STRATEGY1. Purpose of report

To seek approval for the Litter Strategy.

2. Background

The Councils corporate aim is to protect the environment for the future. A key part of this is keeping the Borough clean and free from litter.

The Council currently address littering through three measures. One part of the process is through the provision of its Street Cleansing service. This service is responsible for maintaining the cleanliness of the Borough through the functions of road and channel sweeping as well as litter picking.

The second element is the provision of the Neighbourhood Warden service which is responsible for enforcing against environmental crime including littering offences. The third part of the process, and possibly the most important element, is through communication and stakeholder engagement.

All of these three functions are intrinsically linked in promoting behaviour change and reducing litter. The aim of this strategy is to bring together under one umbrella the strategic governance of litter.

A further benefit to the adoption of a Litter Strategy is that when submitting applications for external funding in relation to improving our local environment having a formal strategy in place can be classed as a requirement of the application process.

A copy of the proposed Litter Strategy together with an Equality Impact Assessment relating to the strategy is shown in the appendix.

3. Financial implications

There are no financial implications. Any financial implications resulting from the adoption of this strategy will be reported back to Members for approval.

Recommendation

The Committee is asked to RESOLVE that the Litter Strategy be approved.

Background papers

Nil

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Broxtowe Borough Council

Litter Strategy

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1. INTRODUCTION

Litter is a longstanding environmental challenge nationally as well as for Broxtowe Borough Council. It damages important habitats, impacts the unique landscape and people's experience of it and takes significant resource to clear up. For these reasons Broxtowe Borough Council are committed to reducing litter.

As outlined in the corporate plan the Council's aim is to '**Protect the environment for the future**'.

This will be achieved by:

- Developing plans to reduce our carbon emissions to net zero and start implementing them.
- Investing in our parks and open spaces.
- Increasing recycling and composting.

In 2019 the Council demonstrated its commitment to improving the environment by declaring a Climate Change emergency. Work Strands have been developed under the strategic format of the Green Futures Programme which address and outline measures to reduce our impact on the environment and encourage sustainable behaviour. Including responsible waste management and reducing litter.

Minimising the amount of resources, energy and materials required to produce things in the first place has obvious climate benefit, which not only counts toward ending Broxtowe's contribution to climate change, but it also effectively limits the amount of waste that may end up as litter.

1.1 What litter is generated in the Borough of Broxtowe

Waste is usually defined by its source. For example, waste from domestic properties is termed as 'household waste' and that arising from businesses would be 'commercial' or 'industrial waste'. Litter is classed as household waste. Figure 1 illustrates the main sources of litter in the Borough and the parties that manage the waste.

Figure 1: Litter arising in Broxtowe

<u>Waste Type</u>		<u>Managed by</u>
Litter	→	Broxtowe Borough Council on adopted land and Council owned land
Litter	→	Private Contractors and land owners on private land

2. SCOPE OF THE LITTER STRATEGY

2.1 What is the focus of this Litter Strategy

Local Authorities have duties and responsibilities to manage municipal waste arising in their area. The relevant legislation and its affects are described in section 4. Municipal waste in this context is an umbrella term used to describe waste collected by, or on behalf of, Broxtowe Borough Council. This mostly comprises of waste and recycling arising from households (household waste) but also includes other waste streams such as fly tipped waste, waste from litter and dog bins and street sweepings. The management of litter collected from the adopted highway and the Councils Parks and Open Spaces are the primary focus of the Litter Strategy.

The Council's Waste Strategy is the main strategy which sets out the strategic approach for delivery of the waste and recycling services. However, the main focus in that strategy is the kerbside waste and recycling collections services.

This Litter Strategy will be the sister document to the main Waste Strategy and will provide the strategic direction for how the Council deals with litter and littering. The document is dynamic and will be updated accordingly in line with any changes to legislation or working practices.

2.2 The need for partnership working

Litter and waste are not issues that we can tackle alone. Whilst this plan outlines the work of Broxtowe Borough Council we will also require partners to join us in making our long term vision a reality.

Started in 2018, the Clean and Green initiative has promoted and facilitated community events aimed at improving the environment including litter picks. This will be a key driving force in the future. Volunteers are incredibly passionate about preventing litter and we will work with them to increase the opportunities available to support our vision of reducing litter.

We will equip our volunteers with the training, skills and the equipment they need not only to take part in litter picks but also to act as our front line litter prevention ambassadors, sharing our ambitions with the wider public.

We will take this approach and ensure that we have educational resources available to give detailed and hands on understanding of the impact of litter and the need to reduce waste as part of our response to the climate emergency, promoting local pride and keeping the Borough clean.

3. VISION, PRIORITY, OBJECTIVES AND AIMS

The Corporate Plan 2020-2024 sets out the Council's vision and priorities. This Litter Strategy will define the intended 'direction of travel' for addressing litter in order to achieve the corporate Vision, Priority and Objectives relating to the Environment.

3.1 Vision

The Council's vision for Broxtowe is:

'A greener, safer, healthier Borough, where everyone prospers'

3.2 Environment Priority

The Council's Priority for Environment is:

'Protecting the environment for the future'

3.3 Environment Objectives

In order to achieve this priority there are three main aims as shown below.

- Develop plans to reduce our carbon emissions to net zero and start implementing them.
- Invest in our parks and open spaces.
- Increase recycling and composting.

3.4 Aims

The aims shown in table 1 have been created to facilitate the achievement of the Corporate Vision, Priority and Objectives. The aims will be achieved through the implementation of the measures detailed later in **appendix 1**.

Table 1: Aims to facilitate achievement of Corporate Vision, Priority and Objective

Aim 1	Set in place initiatives to reduce the amount of litter in the Broxtowe
Aim 2	Increase stakeholder participation in Community Clean Team events
Aim 3	Raise awareness of waste and litter to encourage behaviour change
Aim 4	Support existing and actively explore new partnership working arrangements in pursuit of a community pride and a cleaner Borough
Aim 5	Educate all the Borough residents including undertaking school and group presentations.

4. LEGISLATION AND POLICY CONTEXT

4.1 Legislation governing litter

The key pieces of legislation that direct the Councils functions with regards litter have been summarised below:

Environmental Protection Act 1990

This act does not set out targets but is the main piece of legislation for identifying roles and responsibilities with regards to managing household, commercial and industrial waste. This piece of legislation outlines that:

- Districts Councils are classed as Principal Litter Authorities and have a legal responsibility and duty to keep relevant land free from litter
- A person is guilty of an offence for dropping litter and can be issued with a Fixed Penalty Notice

Anti-social Behaviour, Crime and Policing Act 2014

This permits an authorised person to issue a Community Protection Warning and/or Community Protection Notice if satisfied on reasonable grounds that:

- The conduct of the individual or body is having a detrimental effect, of a persistent or continuing nature, on the quality of life of those in the locality, and
- The conduct is unreasonable

Community Protection Warning and/or Community Protection Notice can be issued on land owners where land is not kept free from litter and waste

Litter Strategy for England 2017

In 2017 the Government published its National Litter Strategy. The strategy compliments the Governments 25 Year Environment Plan and outlines broad measures which are needed in support of behaviour change and reducing litter. The strategy identifies that:

- Street cleaning cost local government £778m in 2015/16. A significant portion of this will have been avoidable litter clear-up and the money could have been better spent on vital public services
- The National Crime Survey has found that 28-30% of people perceive “litter and rubbish lying around” to be a problem in their area
- 81% of people are angry and frustrated by the amount of litter lying all over the country
- In 2016 the RSPCA received over 5,000 phone calls about litter-related incidents affecting animals

4.2 Climate Change

The Council is committed to addressing environmental issues and in 2019 declared a climate change emergency. The creation and adoption of the Green Futures Programme draws together multiple work strands all with the target of reducing the Council's impact on the environment.

Reducing waste, including litter, is a key part of reducing the impact on the environment. To effectively address litter, as a society, we must prevent it before it has entered our environment. Whilst we will continue to reactively clean up litter, this strategy outlines Broxtowe Borough Council's approach to breaking the cycle of littering through prevention. In addition to being a standalone issue, litter is inextricably linked with waste reduction and by extension to our collective response to the global climate emergency.

A significant proportion of litter that is collected could be reused or recycled. Instead, items are simply discarded in a litter bin or on the ground. However, the motivation to ensure items are recycled could shortly be mandated with the introduction of the Environment Bill. It is anticipated that through this Bill a Deposit Return Scheme will be implemented across the Country with rewards offered in return for delivering items, such as plastic bottles or cans, to dedicated collection points. This piece of legislation has the potential to positively affect behaviour change, promote the circular economy for waste items, reduce the amount of litter discarded and have a positive impact on climate change.

4.3 Related Links

<https://www.legislation.gov.uk/ukpga/1990/43/contents> Environmental Protection Act 1990

<https://www.gov.uk/government/publications/litter-strategy-for-england> Litter Strategy for England 2017

<https://www.gov.uk/government/publications/litter-strategy-for-england> Anti-social Behaviour, Crime and Policing Act 2014

5. CURRENT SERVICES

5.1 Broxtowe Profile

In 2021 the profile of the Borough of Broxtowe is:

- Population: **114,003**
- Parks and Open Spaces: **50**
- Area covered: **81.08** square kilometres
- Total Bins: Litter Bins 1103, Dog Bins 292, Recycling Bins 14

5.2 Operations

The Council provides a street cleansing service whose services covers the adopted highways within the Borough and the Council's Parks and Open Spaces. The service profile is shown below:

- 2 channel street sweepers
- 2 pavement sweepers
- 5 Street cleansing teams consisting of 2-3 per team
- 3 Town Centre Attendants

The teams are area based with dedicated teams being in Beeston, Eastwood, Kimberley and Stapleford (this includes the surrounding areas to the main town centres). There is also a dedicated parks cleansing team who solely concentrate on the Council's Parks and Open Spaces. For the sweeping operations, the Borough is split into North and South with the sweeping team being allocated their area.

The purpose of area allocation is that this allows employees to become familiar with their area enabling them to deploy their time and efforts to where it is most needed.

In addition to the above there are three Town Centre Attendants that are based in Beeston, Eastwood and Stapleford. This is a dual purpose role with duties being split between litter picking and keeping the town centres clean, and, cleaning of the public conveniences. There is no Town Centre Attendant in Kimberley due to the general lower foot fall and the significant proportion of the town centre area being private land.

Each town centre is cleansed at least once a day, 6 days a week.

5.3 Bin Infrastructure

The current total number of dog and litter bins in the Borough is 1409. This number typically increases each year for example, the total number of bins in 2015/16 being 1102. Bins are emptied in accordance with their usage and positioned in strategic locations in accordance with the potential for litter to be produced. Strategic locations include:

- Bus Stops and transport hubs
- Schools routes
- Near to educational establishments

- Near to night time economy venues
- Town Centres
- Parks and Open Spaces

At the moment there is no uniformity with regards the style of bin throughout the Borough. This is particularly evident within the town centres where different bins have been installed as part of town centre redevelopments. Examples of the types of bin currently in use are shown in **appendix 2**.

Historically there has also been a preference to have separate red bins for dog waste and black bins for general litter waste. However, this approach is now being phased out with all new bins and replacement bins being a black dual purpose bin able to accept both dog waste and general litter.

In addition to bins for dog and litter waste there are also 14 recycling bins at strategic locations throughout the Borough. These bins are designed to accept the recyclables which are collected through the kerbside co-mingled scheme.

The materials collected are combined with the materials collected from the domestic kerbside collections and sorted into the different recyclables at the Materials Recovery Facility in Mansfield. It should be noted that contamination with the wrong items is a particular issue with regards the materials collected from the recycling litter bins. Examples of the recycling bins in the Borough are shown in **appendix 3**.

5.4 Tonnages

The amount of litter collected by the street cleansing teams is shown in table 2 below. The litter is collected either directly from emptying litterbins or from litter picking in the Borough.

Table 2: Litter tonnages

Year	Tonnage of litter collected
2020/21	831
2019/20	724
2018/19	688
2017/18	676
2016/17	599

As is evident there has been a gradual increase in the amount of litter collected. Whilst this may be perceived as a negative there is the potential that this may mean that people are being more responsible and using the litter and dog bins provided. In 2020/21 COVID-19 has been a factor that has resulted in an increase in the amount collected, especially on the Borough's Parks and Open Spaces, where the value of these spaces has been recognised during this period.

The litter collected through our operations is taken to the Eastcroft Energy from Waste incinerator in Nottingham where the waste is used to produce heating for local properties in Nottingham.

As well as waste from litter picking and emptying litter and dog bins the Council also has four sweepers which keep the pavements and road channels free from litter and detritus. The amount of litter and detritus collected by the sweeping teams is shown in table 3 below.

Table 3: Sweeping tonnages

Year	Tonnage of litter collected
2020/21	966
2019/20	1106
2018/19	1207
2017/18	1129
2016/17	1382

As is evident from the information the amount of litter and detritus collected is generally decreasing. This suggests that the roads and pavements are getting cleaner though an influential factor for the reduction in 2020/21 was COVID-19 where home working, and consequently an increase in the number of cars parked on the road, did restrict access to the pavements and highway channels.

The material collected by the sweepers has the non-biodegradable elements removed with remaining biodegradable element being recycled and used as landfill cover.

5.5 Budget

Each year there is an annual budget allocated for the procurement of bins. This budget enables bins which have deteriorated due to general wear and tear to be replaced or bins to be installed at new locations.

5.6 Enforcement

The Council recognises the importance of achieving and maintaining consistency in its approach to enforcement. For many areas of its enforcement activity, government guidance already exists in the form of Codes of Practice, Planning Policy Guidance, and Government Circulars etc. When considering what action should be taken, the Council will look to:

- Be proportionate to the nature of the offence and the harm caused
- Change the behaviour of the offender
- Eliminate any financial gain or benefit from non-compliance
- Address the harm caused by regulatory non-compliance, where appropriate
- Deter future non-compliance
- Be responsive and consider what is appropriate for the particular offender and regulatory issue.

The Council's position is that the first step in enforcement is to promote good practice, ensure policy compliance and prevent contravention of the law by raising awareness. However, where deemed appropriate Fixed Penalty Notices can be issued for littering and prosecution cases can be taken forward by the Council.

6. PERFORMANCE LEVELS AND TARGETS

There is no longer a need to nationally report on the level of cleanliness within the Borough. However, keeping the Borough free from litter is a priority for both the Council and local residents. In recognition of this regular cleanliness surveys of the different land types are undertaken throughout the year and the cleanliness levels within the Borough are a Key Performance Indicator within the Environmental Service's Business Plan.

The cleanliness levels are graded in accordance with the Governments Code of Practice for Refuse. The scope for the grades are explained below:

- Grade A - no litter
- Grade B - predominantly free of litter apart from small amounts
- Grade C - widespread distribution of litter with minor accumulations
- Grade D - heavily littered with significant accumulations

The grade of B is considered an acceptable level. The higher the number of areas surveyed that meet the acceptable grade, the higher the percentage score. Table 4 below shows the scores for the cleanliness of the Borough over recent years.

Table 4: Cleanliness levels

Year	Percentage of transects achieving grade B for litter	Percentage of achieving Grade B for detritus (sweepers)
2020/21	96%	96%
2019/20	96%	96%
2018/19	95%	96%
2017/18	95%	95%
2016/17	96%	96%

Analysis of the results in the above table show that over the last five years 95% to 96% of streets have achieved the required cleanliness levels. This essentially translates into the Borough being a clean place for residents to live and work.

7. STRATEGIC APPROACH TO REDUCING LITTER

In order to reduce the amount of litter it is imperative to have a strategic approach which governs the direction of travel for the resources of the Council. This section outlines the main strategic actions for consideration and the synergy between the different strategic points.

7.1 The Council's strategic approach to litter

The Council currently addresses littering through three measures. One part of the process is through the provision of its Street Cleansing service. As explained previously this service is responsible for maintaining the cleanliness of the Borough through the functions of road and channel sweeping as well as litter picking. This service also co-ordinates the installation of litter/dog bins.

The second element is the provision of the Neighbourhood Warden service which is responsible for enforcing against environmental crime including littering offences. The third part of the process, and possibly the most important element, is through communication and stakeholder engagement.

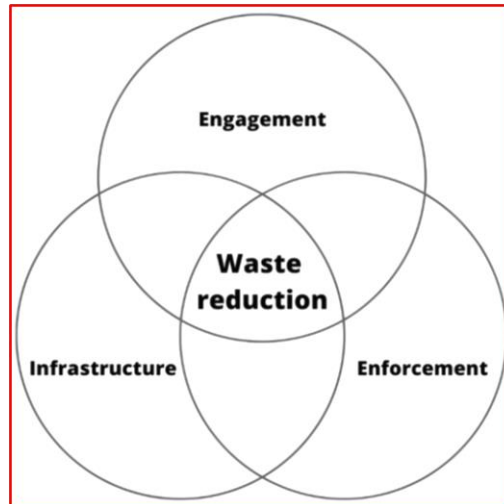
7.2 Behaviour Change

Influencing and challenging behaviour is the main focus of this strategy. To enter into this course, our strategy brings together a stepped approach to facilitate and encourage behaviour change. These are outlined below.

- Step 1: Infrastructure and Resources- This relates to the bin placement and how bins are designed to make them easy and attractive to use, but also relates to the way we design and maintain our shared spaces to discourage littering. This also relates to our employees and the use of modern plant and machinery which can be deployed effectively to address litter.
- Step 2: Education and awareness- encompasses the whole range of ways in which we and others communicate verbally or visually about litter, from large scale media campaigns to the use of small-scale messages and logos in all kinds of places. Each of those messages may be aimed broadly at raising general awareness, or targeted at specific groups of people such as children, young adults, drivers, consumers of food on-the-go or any number of other groups.
- Step 3: Enforcement - Enforcement against offenders, including issuing fixed penalties and prosecutions for littering.

Diagram 1 below shows how the above three steps are all intrinsically linked and influence behaviour and the reduction in litter and waste.

Diagram 1: Synergies for litter reduction



7.3 Communication and Stakeholder engagement

One success of the COVID-19 global pandemic has been the ignition of people’s love towards the outdoors and a desire to take pride in their local area. Whilst the Clean and Green programme in 2018 kick started the Community Clean Team concept since the lock down the numbers of local volunteer wanting to take pride in their local area and undertake litter picking has increased. Resident engagement and promoting positive messages to facilitate behaviour change is key.

The increase in engagement with stakeholders, including businesses within the Borough, is seen as an integral part of changing behaviour. Since 2018 over 1000 individuals or community groups have now been engaged with foraging partnership working in our local areas. The Council have previously worked in partnership with businesses, including multiple national companies, to address litter and we will continue to explore these opportunities in the future.

Any communications campaign which is embarked upon will apply the principles of the Government’s Behavioural Insight Team’s EAST framework to help achieve successful delivery and promote behaviour change. The principles of the Government’s EAST framework are shown in table 5 below.

Table 5: EAST Principles

Easy	Make the communication easy to understand or easy to action
Attractive	Make the communication attract attention and attractive for residents to engage in

S ocial	Make the desired outcome of the communication the social norm
T imely	Make the communications timely and relevant to what's happening

7.4 Strategic Bin Placement

Providing people with opportunities to put their litter in a bin is a fundamental part of the strategic approach to tackling litter. When a litter bin is being installed the strategic elements shown in table 6 are considered as part of the process.

Table 6: Strategic considerations for bin installations

Strategic Element	Item for considerations
Size of bin	How often is the bin likely to be full and require emptying? Is space restricted in which to place the bin?
Location	Is the bin on a high foot fall route, night time economy route, transport hub? Can the crews access the bins easily and avoid excessive manual handling when emptying? Is the bin clearly visible to users? Resident consultation to ensure no objection to the location. Is the bin likely to be subject to vandalism?
Advertising	Would the location be suitable for advertising and potentially bring in an income or allow positives messages to publicised?
Continuity	Does the bin match the current bins in the area?

8. MONITORING AND REVIEW

In order to be able to determine the success of strategic actions it is important to be able to measure and evaluate performance. The series of key indicators as shown in table 7 below will be used as the baseline to measure the success of the strategic actions.

Table 7: Key Indicators for measuring success of actions within the litter action plan

Key Performance Indicator	Baseline measure for the year 2020/21
Number of litter complaints received	171
Number of Fixed Penalty Notices issued for Litter	1
Litter tonnages by Street Cleansing Teams	831 tonnes
Litter and detritus tonnages collected from the sweepers	966 tonnes
Number of litter campaigns delivered	1
Number of presentations on litter and environmental issues undertaken	0 (COVID restricted)
Number of stakeholder groups or individuals making contact to take part in community litter picks	29
Number of litter/dog bins in the Borough	1409

9. SUPPORTING DOCUMENTATION

The aim of this Litter Strategy is to provide a strategic overview of the Council position on how it addresses the issue of litter within the Borough. The document is dynamic and will be reviewed periodically.

In support of this Litter Strategy the Council has a number of procedures and other associated documents which support the delivery of the strategic concept contained within this strategy. These documents are listed below.

1. Environmental Services Business Plan
2. Broxtowe Borough Council Waste Strategy
3. Litter Strategy for England 2017
4. Enforcement Policy
5. Climate Change and Green Futures Programme

LITTER ACTION PLAN

The measures below show strategic actions aimed at reducing litter and promoting behaviour change.

Action Number	Task	Linked to AIM	Affect	Completion Date	Officer/s Responsible
1	Reinforce corporate values for Street Cleansing teams with reference to encouraging employees to go the extra mile and taking ownership of their area	1,3	Ensure resources are deployed effectively. Improved resident satisfaction. Improved cleanliness levels.	September 2021	Refuse and Cleansing Manager
2	Providing educational material regarding litter which is easy to understand	1,2,3,4,5	Promote behaviour change and participation in community clean teams.	March 2022	Waste and Climate Change Manager Waste and Recycling Co-ordinator Communications Manager
4	Continue to provide presentations and educational talks	1,2,3,4,5	Promote behaviour change and participation in community clean teams.	March 2022	Waste and Climate Change Manager Waste and Recycling Co-ordinator
5	Explore the use of different medias in order educate and increase the	1,2,3,4,5	Promote behaviour change and participation in community clean teams.	March 2022	Waste and Climate Change Manager Waste and Recycling Co-

Action Number	Task	Linked to AIM	Affect	Completion Date	Officer/s Responsible
	engagement with residents				ordinator Communications Manager
6	Keep a watching brief on latest technological developments for plant and equipment	1	Improvement efficiency within the Street Cleansing Operations.	March 2022	Transport and Stores Manager
7	Educational campaign surrounding litter including linking to National campaigns.	1,2,3,4,5	Promote behaviour change and participation in community clean teams.	March 2022	Neighbourhood Wardens Waste and Climate Change Manager Waste and Recycling Co-ordinator Communications Manager
8	Increase the opportunity for people to recycle in the street	1,2,3	Increase the opportunity for recycling. Increase recycling rate. Affect behavioural change.	March 2022	Refuse and Cleansing Manager
9	Provide binrastructure at strategic locations to facilitate good behaviour with regards littering	1,3,	Promote behaviour change and responsible environmental behaviour.	March 2022	Refuse and Cleansing Manager
10	Visible community presence of the Neighbourhood Warden service	1,3	Promote behaviour change and responsible environmental behaviour. Appropriate enforcement where deemed necessary.	March 2022	Neighbourhood Wardens

Action Number	Task	Linked to AIM	Affect	Completion Date	Officer/s Responsible
11	Develop partnership working and stakeholder engagement	1,2,3,4	Promote behaviour change and participation in community clean teams and community pride.		Waste and Recycling Co-ordinator

Summary of Key Risks

Below are the key risks associated with the actions identified in the 'LITTER STRATEGY ACTION PLAN'.

Action Number	Risk or Threat to Key Task	Action taken/required to mitigate /minimise the risk or threat
1,2,3,4,5,6,7,8,10,11	Availability of staff resources	Assess priorities, develop workforce, manage expectations.
1,2,3,4,5,6,7,8,9,10,11	Availability of financial resources	Look for external funding opportunities, assess priorities.

Litterbins in the Borough



Decorative bin located within the town centre



Square bin located at the Crematorium



Round bin located on the parks

APPENDIX 3



Recycling bin within the Town Centre.

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EQUALITY IMPACT ASSESSMENT (EIA)

Directorate: **Strategic Director**

Lead officer responsible for EIA: **Paul Wolverson**

Name of the policy or function to be assessed: **Litter Strategy**

Names of the officers undertaking the assessment: **Paul Wolverson**

Is this a new or an existing policy or function? **New Strategy**

1. What are the aims and objectives of the policy or function?

The overall aim of the strategy is to outline the direction of travel in relation to how the Council will manage its strategic approach to dealing with litter

2. What outcomes do you want to achieve from the policy or function?

The outcomes wanting to be achieved are the approval of the strategic approach to dealing with litter and littering.

3. Who is intended to benefit from the policy or function?

It is intended that the following groups would benefit from the strategy:

1. Employees
2. Members of the public
3. The Council

4. Who are the main stakeholders in relation to the policy or function?

The main stakeholders are:

Members of the public

Employees

The Council

Third Party Organisations

5. What baseline quantitative data do you have about the policy or function relating to the different equality strands?

Equality Strands are considered as part of the overall street cleansing and enforcement process. For example bins show pictorial icons rather than words for ease of use and bins are located in positions where they are easily accessible.

6. What baseline qualitative data do you have about the policy or function relating to the different equality strands?

None available

7. What has stakeholder consultation, if carried out, revealed about the nature of the impact?

The strategy brings together existing practices into one document. Therefore any issues relating to protected characteristics should have already been taken into consideration. Any changes in service arising from this strategy will be subject to consultations as proposal are brought forward.

8. From the evidence available does the policy or function affect or have the potential to affect different equality groups in different ways?

In assessing whether the policy or function adversely affects any particular group or presents an opportunity for promoting equality, consider the questions below in relation to each equality group:

Does the policy or function target or exclude a specific equality group or community?

No

Does it affect some equality groups or communities differently? If yes, can this be justified?

No

Is the policy or function likely to be equally accessed by all equality groups or communities? If no, can this be justified?

Yes

Are there barriers that might make access difficult or stop different equality groups or communities accessing the policy or function?

No

Could the policy or function promote or contribute to equality and good relations between different groups? If so, how?

NA

What further evidence is needed to understand the impact on equality?

No further evidence is required for the implementation of the strategy. However further evidence may be needed if there are developments and actions resulting from this strategy which have not yet be determined.

9. On the basis of the analysis above, what actions, if any, will you need to take in respect of each of the equality strands?

Age: With regards littering the Council Enforcement Policy outlines that Fixed Penalty Notices will not be issued to anyone classed as a minor.

Disability: With regards to littering and enforcement consideration should be given to those with certain disabilities would be exonerate them from committing a littering offence. Consideration should also be given to the placement and style of litter bin to ensure bins are easily accessible.

Gender: NA

Gender Reassignment: NA

Marriage and Civil Partnership: NA

Pregnancy and Maternity: NA

Race: NA

Religion and Belief: NA

Sexual Orientation: NA

10. Head of Service:

I am satisfied with the results of this EIA. I undertake to review and monitor progress against the actions proposed in response to this impact assessment:

Signature of Head of Service:



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Report of the Executive Director

INHAM NOOK RECREATION GROUND – PROPOSED LEASE WITH PHOENIX INHAM FOOTBALL CLUB1. Purpose of report

To advise members of a proposal from Phoenix Inham Football Club to enter into 10-year lease with the Borough Council for the pavilion at Inham Nook Recreation Ground.

2. Background

Phoenix Inham Football Club was formed in 2015 and use Inham Nook Recreation Ground as their home ground. The club was created as a community facility to serve local people with parents and members all committed to the same community goals. Details of the club and its development are shown in the Appendix.

3. Proposal

Following the closure last year of the play group that had used the social room and kitchen in the pavilion, the football club saw an opportunity to expand their use of the building and create a community hub for local people to use. The club has submitted a formal application for a 10-year lease and the view of the Council's Estates and Legal teams on this proposal are detailed in the Appendix.

4. Financial Implications

At a meeting of the Finance and Resources Committee on 8 October 2020, it was resolved to allocate £11,000 to the football club to help them with their first phase of creating a community hub. This was for electrical works (£5,100) replacement windows and fascia (£2,700), new suspended ceiling (£1,200) and new kitchen facilities (£2,000). Covid lockdown restrictions delayed a meeting on site with the club and these works have yet to commence. However, they are subject to the Council agreeing the aforementioned lease. There are no other additional financial implications for the Council at this stage.

Recommendation

The Committee is asked to RECOMMEND to the Policy and Performance Committee that the Council, subject to agreeing Heads of Terms with Phoenix Inham Football Club, grant a 10-year lease for the pavilion at Inham Nook Recreation Ground to Phoenix Inham Football Club.

Background papers

Nil

APPENDIXThe Club: Its formation and Development

Phoenix Inham Football Club (PIFC) was formed in 2015 and is based at Inham Nook Recreation Ground, Chilwell. They have an existing agreement to utilise the two 11-a-side football pitches at the site, together with various 9-a-side and 7-a-side pitches that they mark out to meet the fixture demands on a weekly basis. The Council maintains all the outdoor facilities on the site and this would continue with this lease proposal with the club retaining responsibility for the weekly marking of the football pitches.

The club currently has over 150 members from Chilwell and the surrounding areas.

The principal aim of PIFC is to provide football for adults and children, delivered in a social and competitive environment. PIFC runs teams at several age ranges from under 8's to a newly established men's team. The club believes that, through football, it can help the community. Membership subscriptions are kept deliberately low to maximise inclusion. This inevitably leads to pressure on resources and, as a small community run-club, funding has always been the biggest hurdle to progression.

Football is at the heart of everything PIFC aims to achieve. The club believes playing football should not be exclusive, but it is becoming too expensive for a vast number of households locally. The club aims that by 2023 it will become one of the first free to play football clubs in the country. This can only be achieved by building a sustainable infrastructure with a constant flow of funds raised by the club and the local community.

The club has achieved FA "Charter Status", an award made by the FA under an accreditation scheme that recognises and rewards commitment, quality and achievement.

Request for a 10-year Pavilion lease at Inham Nook Recreation Ground

Traditionally, the pavilion has been used by 3 main groups. These were Chilwell Bowls Club, a children's play group and PIFC. Last year the playgroup, due to falling numbers and Covid restrictions, were unable to make the project viable and unfortunately had to close. More recently, the Chilwell Bowls club have advised the Council that they are no longer able to recruit sufficient members to run a team and will no longer be using the pavilion. This season there may be limited casual bowling on the green and this will be reviewed over the coming months. Whilst both of these closures are very unfortunate, they do provide a major opportunity for the club to develop the pavilion as a community hub. There may also be opportunities to look at ways in which the club can make use of the bowling green area as a multi-use outdoor sports facility. This would however, be the subject of a separate report, at a later date.

It is proposed that the lease would be for the full building with the club responsible for internal works to the building, decoration and general repairs. All works to the

building, including the works previously agreed by the Finance and Resources Committee, would need to be approved by the Council's Property Services team. The Council would continue to be responsible for the structure and insurance of the building, together with the statutory electrical and legionella checks and utility bills. The full details would be clarified in the Heads of Terms document.

Securing a 10-year lease will allow PIFC to transform the building into a community hub and safe space for all ages and backgrounds and provide community engagement in a deprived area. Proposed initiatives include:

- District Food and Clothing bank providing a useable space to store and distribute items to the local community.
- Monthly food kitchen run by a local volunteer and qualified chef to guarantee a high level of health and hygiene, as well as implementing best practices for all food preparation and service.
- Coffee mornings for the senior citizens and those socially isolated. This would be run by volunteers a couple of mornings a week as well as providing work experience to those that need it.
- Shoe Box Campaign, to help disadvantaged children all over the world.
- Activity evenings, including providing regular dance lessons for all ages and general health and fitness evenings once a week.

The community hub concept will provide the club with a regular funding stream.

During events such as weekend football matches, live sporting events and social evenings, the clubhouse will be able to provide food, drinks and entertainment. The club will focus on low risk options such as sandwiches, snacks and bottled/canned refreshments with a healthy profit margin, whilst being affordable for all. Currently, annual events such as Christmas parties and presentation nights are a big expense. Going forward, PIFC would use the pavilion and also generate funds through food and refreshment sales, raffles and other fundraising initiatives. By designing the clubhouse as a versatile, functional space, PIFC would also look at hiring the room out for birthday parties, business meetings, health and fitness groups and other groups etc. Sponsorship is already a huge part of football at all levels and the club hopes to encourage local businesses to buy sponsorship packages.

The project will be overseen and organised by PIFC members with the long term goal of launching the Phoenix Inham Community Foundation – a small team of passionate hard-working volunteers with the collective goal of making the local community a better place for all.

PIFC has obtained a number of quotes relating to the cost of developing and refurbishing the pavilion into a community use facility as referenced in the financial implications section of this report.

PIFC has provided its accounts for the year ended 31 March 2020 for scrutiny. Total income amounted to £9,361 from subscriptions and fundraising. Expenditure for the year totalled £9,398 which mainly related to pitch hire, match and league fees, referees' expenses and other running costs.

Comments from Estates and Legal

The Heads of Terms is currently being drawn up and, subject to committee approval. of the lease proposal, will form the basis of a 10-year lease which will be prepared by the Council's legal team. The lease will include an annual review of the work that PIFC are doing and an assessment of their accounts to make sure the project is viable.

The land is registered under Title number NT417747 at HM Land Registry. The land seems to have been registered as a whole/under one title to include the neighbouring residential properties including The Flatts, Wheatgrass Road and Valley Road.

There are no restrictive covenants prohibiting the Council from entering into a lease with the Club on the above basis or any restrictive covenants relating to how the land should be used.

Other considerations

Another consideration to have is to make further enquiries into the structure of the Football Club, whether, for example, it is incorporated or unincorporated and should the community hub project not be successful the potential financial impact on the Council. This should have already been considered by the Estates team when negotiating the Heads of Terms.

To conclude, from a land /restrictive covenant perspective there is nothing prohibiting the Council from entering a lease with the Club on the land. Additionally, the Club's legal structure is an important factor that need to considered before completion of the lease.

Report of the Executive Director

WORK PROGRAMME

1. Purpose of report

To consider items for inclusion in the Work Programme for future meetings.

2. Background

Items which have already been suggested for inclusion in the Work Programme of future meetings are given below. Members are asked to consider any additional items that they may wish to see in the Programme.

13 September 2021	<ul style="list-style-type: none"> • Performance Management – Review of Business Plan Progress – Environment • Climate Change and Green Futures (including Noting reports on Communications Campaign, Housing Delivery, Core Planning, Recycling, and Hospitality) • Water Courses – progress made with engagement and management arrangements • Trent Gateway Masterplan Update • Carbon Footprint • Clean and Green Update • Application of Weed Control Substances
22 November 2021	<ul style="list-style-type: none"> • Performance Management –Review of Business Plan Progress-Environment • Garden Waste Charges 2022/23 Subscription Fee • Clean and Green Update • Environment Bill • Free Tree Giveaway • Funding Stream availability for Housing Improvements • Climate Change and Green Futures Update
31 January 2022	<ul style="list-style-type: none"> • Business Plans and Financial Estimates 2022/23-2024/25 Environment • Pride in Parks Update • Clean and Green Update • Broxtowe Parks Standard • Climate Change and Green Futures Update

<u>Recommendation</u>

The Committee is asked to CONSIDER the Work Programme and RESOLVE accordingly.

Background papers

Nil

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