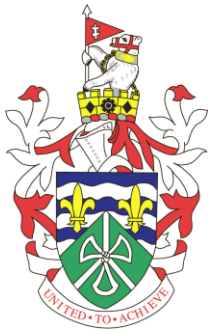
Nuneaton & Bedworth



2021 Air Quality Annual Status Report (ASR)

In fulfilment of Part IV of the Environment Act 1995

Local Air Quality Management

December 2021

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Executive Summary: Air Quality in Our Area

Air Quality in Nuneaton and Bedworth

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[1,2].

The mortality burden of air pollution within the UK is equivalent to 28,000 to 36,000 deaths at typical ages[3], with a total estimated healthcare cost to the NHS and social care of £157 million in 2017[4].

The main sources of air pollution within Nuneaton and Bedworth are from road traffic contributing to elevated concentrations of nitrogen dioxide (NO_2), PM_{10} and $PM_{2.5}$. Currently, there are two designated Air Quality Management Areas (AQMAs) in the borough, both of which have been declared in relation to exceedances of the AQS annual mean objective for NO_2 and both are adjacent to busy roads and interchanges within Nuneaton. The boundaries of the two AQMAs can be viewed online at https://uk-air.defra.gov.uk/aqma/local-authorities?la_id=189 , details are provided in Table 2.1 and maps are presented in Figures D1 and D2 (Appendix D). Air quality has improved in Nuneaton and Bedworth, and a review of the two AQMAs has indicated that the Leicester Road Gyratory AQMA could be revoked. Pollutant concentrations remained above the objective within the Midland Road/ Corporation Street AQMA up until 2019, although exceedances were restricted to the section of Midland Road between Manor Court Road and Stanley Road.

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[1] Public Health England. Air Quality: A Briefing for Directors of Public Health, 2017

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

[3] Defra. Air quality appraisal: damage cost guidance, July 2020

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

Actions to Improve Air Quality

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

The 2019 Clean Air Strategy[5] sets out the case for action, with goals even more ambitious than EU requirements to reduce exposure to harmful pollutants. The Road to Zero[6] sets out the approach to reduce exhaust emissions from road transport through a number of mechanisms; this is crucial given that the majority of Air Quality Management Areas (AQMAs) are designated due to elevated concentrations related to transport emissions, including those in Nuneaton.

In 2021, a revised Action Plan for Nuneaton and Bedworth, which has been through Environmental Overview and Scrutiny Panel and Cabinet, for approval for consultation, outlines actions that have been developed to both address the nitrogen dioxide air quality objective exceedance along Midland Road in Nuneaton, but also to address more strategic issues to try and reduce emissions of both nitrogen dioxide and $PM_{2.5}$ across the borough in order to improve health in a more equitable way. The measures can be considered under five broad topics:

- Support and Collaborate with Warwickshire County Council on Traffic Management Measures Directly Impacting Midland Road;
- Promotion of Behaviour Change away from Single Occupancy Private Vehicle Use;
- Promotion of the Use of Alternatively Fuelled Vehicles;
- Developing Policies to Support Better Air Quality; and
- Controlling Domestic Emissions.

The Plan recognises that concentrations of nitrogen dioxide are reducing, and therefore, in order to be proportionate, focusses on actions which can be implemented within the next few years, with costs that are proportionate to the level of exceedance.

The Action Plan was written in collaboration with a Steering Group which included Warwickshire County Council, as Highways Authority, planning and climate change

[5] Defra. Clean Air Strategy, 2019

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

colleagues and the Consultant in Public Health, Warwickshire. The Transforming Nuneaton team were also consulted with.

Conclusions and Priorities

In 2020, measured concentrations were below relevant air quality objectives, although it is acknowledged that the health impacts of air pollution exposure occur, even below the objectives. It should also be noted that annual mean NO_2 concentrations were substantially lower in 2020 than in previous years, given the impact of COVID-19 restrictions on road transport. Our priorities are therefore to ensure that the air quality objectives continue to be met along Midland Road in Nuneaton, largely through traffic management measures as well as encouragement of alternatively-fuelled vehicles (in particular electric cars and buses). Secondly, the action plan aims to reduce emissions more generally across the borough through collaborative working with other policy areas such as County transport, public health, planning and work underway to tackle the Climate Emergency declared in Nuneaton and Bedworth. We will ensure that air quality is considered within transport schemes, the Borough Plan and within other policy areas which are looking to reduce vehicle use, either by encouraging active travel, by reducing travel demand, encouraging freight onto different modes, or increasing the use of non-diesel and petrol vehicles. By taking this more strategic approach, air quality and the associated health outcomes should improve more generally across the district.

Local Engagement and How to get Involved

The main source of air pollution within Nuneaton and Bedworth originates from road traffic emissions. Therefore, the best way for members of the public to help improve air quality within the Borough is to adjust travel patterns to more sustainable methods of transport. There are online tools available to help you plan your journey, including Warwickshire County Council's car share database (https://carsharewarwickshire.liftshare.com/default.asp), How You Move' website https://www.warwickshire.gov.uk/activetravel, Twitter https://twitter.com/ChooseMoveCW and Facebook page https://www.facebook.com/ChooseMoveCW/, walkit.com and cyclestreets.net. The following are suggested alternatives to private travel

- Use public transport where available – This reduces the number of private vehicles in operation, thereby reducing pollutant concentration through the number of vehicles and reducing congestion;
- Walk or cycle if your journey allows – From choosing to walk or cycle for your journey the number of vehicles is reduced and also there is the added benefit of keeping fit and healthy. In addition, many of the cycle routes are off-road meaning you are not in close proximity to emissions from road traffic sources;
- Car/lift sharing – Where a number of individuals are making similar journeys, such as travelling to work or to school, car sharing reduces the number of vehicles on the road and therefore the amount of emissions being released. This can be promoted via travel plans through the workplace and within schools;
- Alternative fuel / more efficient vehicles – Choosing a vehicle that meets the specific needs of the owner. Fully electric, hybrid fuel and more fuel-efficient cars are available and all have different levels benefits by reducing the amount of emissions being released; and
- Home working – Choosing to work from home can help to alleviate congestion on the roads during peak times and therefore reduce the amount of emissions being released.

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1 Local Air Quality Management

This report provides an overview of air quality in Nuneaton and Bedworth in 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 Nuneaton and Bedworth to improve air quality and any progress that has been made.

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

2 Actions to Improve Air Quality

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 two AQMAs declared by Nuneaton and Bedworth can be found in Table 2.1. Maps of the AQMAs, and the air quality monitoring locations in relation to the AQMAs, are shown in Appendix D: Maps of Monitoring Locations and AQMAs; the AQMA boundaries can also be viewed online at http://uk-air.defra.gov.uk/aqma/local-authorities?la_id=189. Both AQMAs are designated for exceedances of the annual mean NO_2 air quality objective.

Annual mean NO_2 concentrations were substantially lower in 2020 than in previous years at all monitoring sites across Nuneaton and Bedworth, given the impact of COVID-19 restrictions on road transport. As it is broadly expected that traffic levels will return to pre-pandemic levels in the future, any review of designated AQMAs should take into account longer term trends in concentrations.

Exceedances of the annual mean NO_2 objective were measured prior to 2020 within the existing Midland Road/Corporation Street AQMA (AQMA 2). It is, therefore, recommended that AQMA 2 remains designated in the absence of longer-term trends in monitoring data. An update to the Air Quality Action Plan has been undertaken, which has been through Environmental Overview and Scrutiny Panel and now has approval from Cabinet for consultation.

NO_2 concentrations measured in the Leicester Road Gyratory AQMA (AQMA 1) have not been within 10% of the annual mean objective since 2016; concentrations in 2020 were all below 75% of the annual mean objective. Revocation of AQMA 1 was recommended by Defra upon review of the 2018 ASR, although this decision was delayed due to growth in house building to the north of Nuneaton, which may impact upon the road network within the AQMA. Currently this revocation is still pending.

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 - Leicester Road Gyratory, Nuneaton	01/03/2007	NO_2 Annual Mean	An area of Nuneaton centred on the Leicester Road Gyratory system and incorporating sections of the Leicester, Old Hinckley and Weddington Roads	No	43	25	Nuneaton and Bedworth Borough Council, Air Quality Action Plan, 2011 (NB Action Plan currently under review)	Link to AQAP
AQMA 2 - Midland Road / Corporation Street, Nuneaton	01/10/2009	NO_2 Annual Mean	Centred on Midland Road and Corporation Street but also includes parts of Central Avenue and Manor Court Road	No	53	34	Nuneaton and Bedworth Borough Council, Air Quality Action Plan, 2011 (NB Action Plan currently under review)	Link to AQAP

☒ **Nuneaton and Bedworth confirm the information on UK-Air regarding their AQMAs is up to date.**

☒ **Nuneaton and Bedworth confirm that all current AQAPs have been submitted to Defra.**

Progress and Impact of Measures to address Air Quality in Nuneaton and Bedworth

Nuneaton and Bedworth Borough Council (NBBC) has taken forward a number of direct measures during 2020 in pursuit of improving local air quality. The most significant of these is an update to the Air Quality Action Plan, which has been undertaken in consultation with Warwickshire County Council, and a number of officers across Nuneaton and Bedworth. Details of the measures included within the Action Plan, in progress or planned are set out in Table 2.2, with the type of measure and the progress Nuneaton and Bedworth Borough Council has 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 the updated Action Plan, which has been made available through statutory public consultation..

NBBC expects the following measures to progress over the course of the next reporting year: a series of highway improvements which, together, will assist development to support the wider Transforming Nuneaton Programme, help improve air quality in existing Air Quality Management Areas (AQMAs), enhance existing cycling infrastructure along with creating new infrastructure therefore encouraging more sustainable travel, and relieve existing localised pinch points and congestion. Ongoing work to promote active travel and alternatively fuelled vehicles will also be undertaken in the next year. Ongoing implementation of the Supplementary Planning Document (SPD) to ensure that air quality is considered fully and consistently within the development control process will also be undertaken over the next year and beyond. NBBC’s priorities are to ensure that the air quality objectives continue to be met along Midland Road in Nuneaton, through the above priority action. Secondly, the Plan aims to reduce emissions more generally across the borough through collaborative working with other policy areas such as County transport, public health, planning and work underway to tackle the Climate Emergency declared in Nuneaton and Bedworth. The principal challenges and barriers to implementation that NBBC is currently facing are staffing issues, which has made progress on completing the draft AQAP slower than expected.

Nuneaton and Bedworth Borough Council anticipates that the measures stated above and in Table 2.2 will achieve compliance in AQMA 2.

Details of the progress made on the measures in the existing Action Plan, as outlined in the 2020 ASR, have also been provided in the second part of Table 2.2. Many of the ongoing measures in the existing Action Plan are to be undertaken under the updated Action Plan, resulting in some degree of overlap in the table below.

The demolition of the Old Hinckley Road Rail Bridge, identified in the 2020 ASR and a key measure, was completed just prior to the introduction of Covid-19 restrictions, which aims to improve traffic circulation in the area, including of heavy vehicles.

Table 2.2 – Progress on Measures to Improve Air Quality

Measure No.	Measure	Category	Classification	Year Measure Introduced	Estimated / Actual Completion Year	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Barriers to Implementation
2021 Air Quality Action Plan Measures															
1	Support and Collaborate with Warwickshire County Council on Traffic Management Measures Directly Impacting Midland Road	Traffic Management	Strategic Highway Improvements	2021 onwards	2023	WCC and NBBC	Developer contributions, Transforming Nuneaton project	No	Dependant on specific schemes required	>£10 million (including existing programme)	In planning phase	Reductions large enough to achieve the annual mean NO_2 at all relevant monitoring locations	Traffic flows on Midland Road, Nuneaton, and resulting nitrogen dioxide concentrations	Some on going traffic management projects, eg rephasing of traffic lights	Upgrades to the Ring Road are high cost, costs for any other traffic management measures are unknown at this stage, being dependant on initial investigation
2	Promote Behaviour Change away from Single Occupancy Private Vehicle Use	Promoting Travel Alternatives	Encourage/ facilitate home working, intensive active travel campaign & infrastructure, Personalised Travel Planning, Promotion of Cycling, Promotion of Walking, School Travel Plans, Workplace Travel Planning	Ongoing and 2021 onwards	Ongoing for the measure as a whole, late 2021 for WCC Local Cycling and Walking Infrastructure Plan	WCC and NBBC	WCC	Possible	Ongoing	>£10 million for all aspects of the measure	Ongoing projects	n/a – strategic measure which will also assist in achievement of air quality objective in AQMA	Monitoring strategy for LTP	Ongoing work with schools and businesses, and travel plans through planning system. Local Cycling and Walking Infrastructure plan being drafted	A number of initiatives across the borough to encourage walking and cycling, but at the moment none on Midland Road. Not costed specifically as wider measures to reduce emissions.
3	Promote the use of Alternatively Fuelled Vehicles	Promoting Low Emission Transport	Priority Parking for LEVs, procuring alternative refuelling infrastructure to promote Low Emission Vehicles, EV recharging, Gas fuel recharging, taxi emission incentives, taxi licensing conditions	Ongoing and 2021 onwards	Ongoing with aim to become carbon neutral by 2030	WCC and NBBC	DfT, Office for Low Emission Vehicles (OLEV), Energy Savings Trust (EST), WCC	Possible	Ongoing	£1-10 million	Ongoing – some EV charging points already completed	n/a – strategic measure which will also assist in achievement of air quality objective in AQMA	Proportion of alternatively fuelled vehicles in the fleet on Warwickshire's roads	EV charging points increasing in NBBC as funding will allow	EV charging infrastructure to be implemented over next few years in line with Carbon Reduction Strategy. High cost, but grants and private sector funding available and will be actively targeted.
4	Develop Policies to Support Better Air Quality	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance, Low emission strategy, other policy, regional groups	Ongoing and 2021 onwards	n/a – ongoing collaborative working	NBBC	Mainly from existing budgets at both Borough and County level. Planning system generates funding, which could be used for measures within this Action Plan.	Possible	Ongoing	<£10K unless significant projects are progressed	Ongoing, SPD already completed	n/a – strategic measure which will also assist in achievement of air quality objective in AQMA	n/a as no specific projects identified as yet	Air Quality SPD adopted and being implemented. Working closely with Warwickshire Public Health, mainly through the Warwickshire and Coventry Air Quality Alliance	Non statutory function will require additional resources to implement. No specific budget for this work as ongoing collaborative work.
5	Control Domestic Emissions	Promoting Low Emission Plant	Regulations for fuel quality for stationary and mobile sources	2022	n/a	NBBC	NBBC	Possible		<£10K unless a significant project on solid fuel burning is progressed		n/a – strategic measure which will also assist in achievement of air quality objective in AQMA	Level of solid fuel burning	Insultation of homes through Green Homes Grant Scheme to increase energy rating of homes with EPC rating of E, F or G	Very difficult to quantify any change without detailed survey work. Cost of measure already within existing budgets.
Existing Air Quality Action Plan Measures															
AQAP 1	Identify and bring forward traffic management improvements in Nuneaton Town Centre	Traffic Management	Strategic Highway Improvements / Road User Charging	Ongoing	Ongoing	WCC and NBBC	WCC and NBBC	No	See measure 1 in 2021 AQAP	>£10 million (including existing programme)	Ongoing	1 – 2 µg/m^3	Traffic flows	WCC are assessing transport implications of Borough Plan growth proposals and have identified a number of transport schemes[7] to mitigate the traffic growth impacts across the Borough including in the town centre. The town centre transport schemes link to the Transforming	Availability of funding

[7] https://www.nuneatonandbedworth.gov.uk/downloads/21026/transport

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
2021 Air Quality Action Plan Measures															
														Nuneaton Town Centre scheme. A business case was submitted to Coventry and Warwickshire Local Enterprise Partnership as part of Growth Deal 3. The bid was successful and a significant sum has been secured towards developing the scheme. Funding will also be sought through S106/CIL contributions. WCC is submitting a bid to the National Productivity and Investment Fund for the A47 between Leicester Rd Bridge and Eastboro Way/Long Shoot[8]. This scheme aims to address congestion issues, remove pinch points and provide pedestrian and cycle facilities	
	Demolition of Old Hinckley Road Rail Bridge to ease congestion	Transport Planning and Infrastructure	Public Transport Improvements – Interchanges, Station and Services	2020	2020	WCC and NBBC	NBBC and S106 contributions	n/a	n/a	-	Implemented	n/a	Air quality monitoring data	Measure completed	Works completed shortly before Covid-19 related restrictions were implemented.
AQAP 2	Identify measures to reduce the impact of HGV movements within the area	Freight and Delivery Management / Traffic Management	Route Management / Traffic Reductions	Ongoing	Ongoing	WCC and NBBC	WCC and NBBC	n/a	Ongoing	Unknown	Ongoing	0.2 – 0.5 µg/m^3	Traffic flows	The county-wide Lorry Map is kept under regular review by WCC	Availability of alternative routes – the presence of strategic A and B roads (such as A555 and B4114) within the AQMAs mean it is difficult to direct heavy vehicles away from them
AQAP 3	Work in partnership with WCC and Sustrans to deliver further improvements for pedestrians and cyclists	Transport Planning and Infrastructure / Promoting Travel Alternatives	Cycle Network / Promotion of Cycling / Promotion of Walking	Ongoing	Ongoing	WCC, NBBC and Sustrans	WCC / N&BBC	No	Ongoing	Unknown	Ongoing	n/a	Identification of areas and routes for pedestrians and cycle paths Metres of paths improved/developed for pedestrians and cyclists in Nuneaton, particularly in AQMAs		
AQAP 4	Potential for additional electric buses within Nuneaton	Promoting Low Emission Transport / Vehicle Fleet Efficiency	Company Vehicle Procurements / Promoting Low Emissions Public Transport	2019	Ongoing	Transport for West Midlands WCC NBBC	A Better Deal for Bus Users programme	No	Bids for funding have been submitted	>£10 million for all aspects of the measure	Ongoing	n/a	Additional low emission buses in fleet	A bid has been made for funding for electric charging infrastructure and buses across Warwickshire	Availability of funding

[8] https://warwickshire.gov.uk/npif

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
2021 Air Quality Action Plan Measures															
AQAP 5	Increase uptake and implementation of School and Workplace Travel Plans (STP and WTP) particularly where they are likely to impact on the AQMAs	Promoting Travel Alternatives	School Travel Plans / Workplace Travel Planning	Ongoing as opportunities arise	Ongoing	WCC and NBBC	WCC and NBBC	No	Ongoing	Unknown	Ongoing	0.2 – 0.5 µg/m^3	Usage figures	Ongoing as opportunities arise, and through the development process.	None
AQAP 6	Continue to develop, implement, and monitor its Travel Plan policy, including the potential for the operation of a car club in Nuneaton	Alternatives to Private Vehicle Use / Promoting Travel Alternatives	Car Clubs / Personalised Travel Planning	Ongoing	Ongoing	NBBC	NBBC	No	Ongoing	Unknown	Ongoing	0 – 0.2 µg/m^3	Usage figures	Travel Plan in place. Implementation and ongoing monitoring arrangements to be agreed.	None
AQAP 7	Include planning policies within the Borough Plan that seek to improve air quality, sustainable transport links and secure Travel Plan agreements. Identify as part of the Borough Plan Infrastructure Delivery Plan specific infrastructure required within the AQMAs or that could relieve the AQMAs. These can then be prioritised alongside the Borough's other infrastructure demands for external funding and developer contributions	Policy Guidance and Development Control	Air Quality and Planning Guidance	2019	Ongoing	NBBC	NBBC	No	-	Unknown	Ongoing	0 – 0.2 µg/m^3	-	The published Local Plan has allowed NBBC to identify schemes and initiatives to improve sustainable transport provision and improve the management of traffic on the network. These will be pursued as funding streams become available. Policy HS2 of the published Local Plan is specific to Air Quality. The Nuneaton and Bedworth Borough Council Infrastructure Delivery Plan contains schemes which have been identified through the Strategic Transport Assessment. The Council has also completed assessments of the impact of the Borough Plan on Air Quality within the Borough.	Availability of funding
	Encourage developers to take part in pre-application discussions to ensure air quality is considered when formulating a planning application. Developers should ensure good design as a part of their proposals and actively endorse travel planning to minimise and mitigate the impacts of new development upon the AQMA. Where appropriate, development proposals should be	Policy Guidance and Development Control	Air Quality and Planning Guidance	2011	Ongoing	NBBC	NBBC	No	-	Unknown	Ongoing	0 – 0.2 µg/m^3	-	The SPD has generally encouraged developers to take part in pre-app discussions ensuring that air quality is considered when planning applications are being formulated and the required information is submitted.	Availability of funding

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2021 Air Quality Action Plan Measures															
	accompanied by air quality assessments.														
	Production of Air Quality Supplementary Planning Document (SPD) as part of the 'Air Quality Alliance' made up of Public Health, Planning, Environmental Health and Transport Planners.	Policy Guidance and Development Control	Air Quality and Planning Guidance	2019	2019	NBBC	NBBC	No	-	None	Ongoing	n/a	Air quality assessments for planning applications	Air Quality SPD available to download here: https://www.nuneatonandbedworth.gov.uk/download/downloads/id/3446/air_quality_spd_2019.pdf. Air Quality assessments of certain scale require completion of Damage Costs Calculations putting an obligation on developers to offset increases in emissions with commensurate mitigation.	None
AQAP 8	Continue to work with WCC and other partners to deliver improvements in emissions standards, where practicable	Promoting Low Emission Transport / Vehicle Fleet Efficiency	Public Vehicle Procurement / Fleet Efficiency and Recognition Schemes / Promoting Low Emission Public Transport / Vehicle Retrofitting Programmes / Other	Ongoing	Ongoing	WCC, NBBC, public transport operators	WCC, NBBC, public transport operators	No	Bids for funding have been submitted	Unknown	Ongoing	1 – 2 µg/m^3	-	WCC promote sustainable travel modes via their website www.warwickshire.gov.uk/activetravel showing: WCC car share database, Nuneaton cycle guide, public transport maps and timetables. A bid has been made for funding for electric charging infrastructure and buses across Warwickshire	Availability of funding
AQAP 9	Make details of the air quality measures and annual progress reports available on its website to ensure accessibility to the consultation and implementation process	Policy Guidance and Development Control	Air Quality and Planning Guidance	Ongoing	Ongoing	NBBC	NBBC	n/a	n/a	None	Ongoing	0 µg/m^3	-	To be uploaded to website annually at the appropriate time	None
AQAP 10	Continue to work in partnership with WCC and other Warwickshire district authorities on air quality and travel awareness campaigns to raise the profile of air quality in the borough and county-wide	Public Information	Other	Ongoing	Ongoing	WCC, NBBC, other Warwickshire local authorities	WCC, NBBC, other Warwickshire local authorities	n/a	Ongoing	Unknown	Ongoing	0 – 0.2 µg/m^3	Website visitor numbers / member registrations for car share schemes	WCC promote sustainable travel modes via their website www.warwickshire.gov.uk/activetravel showing WCC car share database, Nuneaton cycle guide, public transport maps and timetables	None
AQAP 11	Continue the commitment to undertake air quality monitoring within the Borough to ensure a high standard of data is achieved to assess against air quality objectives	Policy Guidance and Development Control	Other	Ongoing	Ongoing	NBBC	NBBC	No	Ongoing	£2500.00	Ongoing	0 µg/m^3	Data capture	Monitoring continues across the Borough – data capture for 2020 was good at all passive locations	None
AQAP 12	Continue to enforce industrial pollution	Environmental Permits	Other	Ongoing	Ongoing	NBBC	NBBC	n/a	Ongoing	Officer time	Ongoing	0 – 0.2 µg/m^3	Number of inspections	NBBC will continue to proactively enforce	Limitations on the accessibility to be able to

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
2021 Air Quality Action Plan Measures															
	control and nuisance legislation to minimise pollutant emissions from these sources													industrial control and nuisance legislation to minimise pollutant emissions from these sources in the Borough.	carry out inspections of Permitted Processes due to Covid-19 restrictions and business closures.
AQAP 13	Continue to work together with partners to promote and implement energy efficiency measures in the Borough	Promoting Low Emission Plant	Other	Ongoing	Ongoing	NBBC, BEIS under the Green Homes / Local Grant Schemes	NBBC, BEIS under the Green Homes / Local Grant Schemes	No	Ongoing	£1-10 million	Ongoing	0 – 0.2 µg/m^3	Number of renovations	2019-20 saw the completion of 108 external wall insulations, 321 central heating systems replacements and 8 loft insulations to properties. Energy efficiency measures now being promoted via the Energy Company Obligation (ECO) Help to Heat programme and the national Local Authority Flexible Eligibility scheme	Availability of future funding.

$PM_{2.5}$ – 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.

The 2018-based background maps published by Defra[9], which predict concentrations on 1 km x 1 km grid, show that concentrations of $PM_{2.5}$ are well below the annual mean air quality objective of 25 µg/m^3. The highest concentration is predicted to be 12.0 µg/m^3 (in 2018), located in Bedworth close to the junction of the A444 and the M6.

The Public Health Outcomes Framework tool[10], compiled by Public Health England, quantifies the fraction of mortality attributable to particulate air pollution in England on a county and local authority basis. The fraction of mortality attributable to particulate air pollution in Nuneaton and Bedworth in 2019 was 5.5%, slightly higher than the England average of 5.1%.

Nuneaton and Bedworth are working to reduce emissions of air pollution across the Borough, with many of the measures designed to reduce emissions of NO_2 also reducing emissions of PM_{10} and $PM_{2.5}$. The following pollutant emission reduction measures included within Nuneaton and Bedworth's updated AQAP are also likely to reduce emissions of $PM_{2.5}$:

- Traffic management measures targeted at Midland Road;
- Behaviour Change away from Single Occupancy Private Vehicle Use;
- Promote the use of Alternatively Fuelled Vehicles;
- Developing Planning Policies to Support Better Air Quality; and
- Controlling Domestic Emissions.

[9] Defra. Local Air Quality Management Support Website (2021). Available: https://laqm.defra.gov.uk/review-and-assessment/tools/background-maps.html

[10] Public Health England. Public Health Outcomes Framework (2021). Available: https://fingertips.phe.org.uk/profile/public-health-outcomes-framework/data

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

This section sets out the monitoring undertaken within 2020 by Nuneaton and Bedworth 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 trends to be identified and discussed.

Summary of Monitoring Undertaken

3.1.1 Automatic Monitoring Sites

Nuneaton and Bedworth Borough Council no longer undertakes automatic (continuous) monitoring. Due to the continued decline and stabilisation in NO_2 concentrations within AQMA 1 below the annual mean NO_2 objective, the automatic monitoring station was decommissioned at the end of 2016.

3.1.2 Non-Automatic Monitoring Sites

Nuneaton and Bedworth Borough Council undertook non-automatic (i.e. passive) monitoring of NO_2 at 37 monitoring sites during 2020 (including one duplicate site). Table A.1 in Appendix A presents the details of the non-automatic sites.

Monitoring at 90 Corporation Street (NB27) was discontinued at the end of 2019, due to new occupiers of the property removing the diffusion tube fixtures. It is intended that monitoring at this, or a similar, location is recommenced in 2021. No new monitoring sites were commissioned in 2020.

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, are included in Appendix C.

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.

3.1.3 Nitrogen Dioxide (NO_2)

Table A.2 in Appendix A compares the ratified and adjusted monitored NO_2 annual mean concentrations for the past five years with the air quality objective of 40 µg/m^3. Note that the concentration data presented represents the concentration at the location of the monitoring site, following the application of bias adjustment (i.e. the values are exclusive of any consideration to fall-off with distance adjustment). No monitoring site required annualisation in 2020.

For diffusion tubes, the full 2020 dataset of monthly mean values is provided in Appendix B. Annual mean concentrations at all monitoring sites were substantially lower in 2020 due to the impact of the COVID-19 pandemic on road transport. Furthermore, there were no exceedances of the annual mean objective at any monitoring site in 2020.

The highest concentrations in 2020 were recorded at sites NB29 and NB30 within the Midland Road/Corporation Street AQMA (AQMA 2), which measured 33.7 µg/m^3 and 33.0 µg/m^3 respectively. These two sites have previously measured exceedances of the annual mean objective, and it is therefore recommended that the AQMA remains designated.

The highest concentration within the Leicester Road Gyratory AQMA (AQMA 1) was 24.5 µg/m^3 at duplicate site AQM. The highest concentration in 2019 was 31.0 µg/m^3 at site NB23. Concentrations have been below the objective since 2016 within AQMA 1. It has therefore been recommended that this AQMA is revoked, but this revocation is still pending.

Figure A.1 and A.2 present the annual mean NO_2 concentrations at monitoring sites within AQMA 1 and AQMA 2 respectively. Figure A.3 presents the annual mean NO_2 concentrations at the remaining sites located outside of the AQMAs.

No monitoring site measured an annual mean NO_2 concentration greater than 60 µg/m^3 in 2020, indicating that an exceedance of the 1-hour mean objective was highly unlikely.

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)
AQM	AQ Monitor, Leicester Rd	Roadside	436844	292251	NO2	YES – AQMA 1	1.5	4.2	No	1.3
NB01	42 Norman Avenue	Urban Background	435969	291303	NO2	NO			No	
NB02	5 Conifer Close	Urban Background	436427	287646	NO2	NO			No	2.1
NB04	Leisure Ctr 72 Coventry Rd	Suburban	435793	286545	NO2	NO	0.0	3.6	No	3.2
NB06	Tudor Ct Bowling Green Ln	Roadside	434313	285292	NO2	NO	11.0	0.9	No	2.9
NB07	115 Newtown Rd Bedworth	Roadside	435345	286992	NO2	NO	6.0	4.4	No	2.4
NB09	Church, Manor Ct Rd	Roadside	435634	292280	NO2	YES – AQMA 2	1.5	2.2	No	2.4
NB15	Bridge Grove, Leicester Rd	Roadside	436883	292302	NO2	YES – AQMA 1	8.0	1.4	No	2.3
NB17	Balti Hut, 41 Bond Gate	Roadside	436393	291987	NO2	NO	0.0	1.3	No	2.3
NB18	Wheat St	Roadside	436525	291863	NO2	NO	23.0	4.0	No	2.3

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)
NB20	17 Old Hinckley Rd	Roadside	436604	292202	NO2	YES – AQMA 1	0.0	6.9	No	2.0
NB21	36 Old Hinckley Rd	Roadside	436691	292271	NO2	YES – AQMA 1	0.0	8.6	No	2.0
NB22	58 Old Hinckley Rd	Roadside	436810	292306	NO2	YES – AQMA 1	0.0	8.8	No	1.9
NB23	46 Leicester Rd Nuneaton	Roadside	436841	292280	NO2	YES – AQMA 1	0.0	4.5	No	2.1
NB24	Lodge, 31 Leicester Rd	Roadside	436812	292196	NO2	YES – AQMA 1	0.0	11.0	No	2.2
NB25	25 Central Avenue	Roadside	435814	292274	NO2	YES – AQMA 2	0.0	6.4	No	2.1
NB26	26 Central Avenue	Roadside	435759	292311	NO2	YES – AQMA 2	0.0	4.6	No	2.1
NB28	138 Corporation St	Roadside	435893	292205	NO2	YES – AQMA 2	0.0	4.7	No	2.4
NB29	16 Midland Road	Roadside	435626	292343	NO2	YES – AQMA 2	0.0	4.0	No	2.1
NB30	52 Midland Road	Roadside	435554	292378	NO2	YES – AQMA 2	0.0	3.8	No	2.1
NB31	376 Longford Road	Roadside	435146	284563	NO2	NO	0.0	12.7	No	2.5
NB35	60 Watling St	Roadside	439268	293457	NO2	NO	0.0	11.7	No	1.9
NB36	78 Coventry Rd Exhall	Roadside	435217	285246	NO2	NO	0.0	2.3	No	2.3

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)
NB37	19 Croft Road Nuneaton	Roadside	435051	291594	NO2	NO	0.0	5.8	No	2.0
NB38	115 Highfield Rd	Roadside	437198	290732	NO2	NO	0.0	7.2	No	1.8
NB41	11 Newtown Rd (Salon)	Roadside	435619	287042	NO2	NO	0.0	4.8	No	2.0
NB42	18 George Street Bedworth	Roadside	435655	287135	NO2	NO	0.0	8.3	No	1.8
NB43	43 Hanover Glebe	Roadside	436303	290796	NO2	NO	0.0	11.6	No	2.0
NB44	503 Heath End Rd	Roadside	434298	290930	NO2	NO	2.0	2.3	No	2.2
NB45	80 Heath End Rd	Roadside	435593	290728	NO2	NO	4.6	2.5	No	2.4
NB46	30 Bermuda Rd	Roadside	435135	290583	NO2	NO	0.0	9.2	No	2.0
NB47	6 The Bridleway	Roadside	435452	290087	NO2	NO	0.0	4.6	No	2.0
NB48	288 Heath End Rd	Roadside	435066	290689	NO2	NO	0.0	8.5	No	2.1
NB49	Co-op Coventry Rd	Roadside	435231	285236	NO2	NO	0.0	4.2	No	2.5
NB50	66 Coventry Rd Exhall	Roadside	435201	285198	NO2	NO	0.0	8.3	No	2.3
NB51	Abbey Green School	Roadside	435638	292357	NO2	YES – AQMA 2	0.0	5.0	No	2.2

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)
NB52	Bridge St, Mower Shop	Roadside	436147	290868	NO2	NO	3.0	7.2	No	2.2

Notes:

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

(2) N/A if not applicable.

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

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2020 (%) (2)	2016	2017	2018	2019	2020
AQM	436844	292251	Roadside	92.0	92.0	30.4	30.6	29.9	30.2	24.5
NB01	435969	291303	Urban Background	92.0	92.0	20.4	19.2	18.5	19.3	14.6
NB02	436427	287646	Urban Background	92.0	92.0	19.2	19.2	18.1	18.9	14.3
NB04	435793	286545	Suburban	92.0	92.0	34.7	34.3	30.9	30.1	26.2
NB06	434313	285292	Roadside	92.0	92.0	34.9	25.7	32.0	31.0	25.1
NB07	435345	286992	Roadside	92.0	92.0	31.9	27.5	32.1	30.9	26.0
NB09	435634	292280	Roadside	92.0	92.0	30.3	27.4	28.5	29.9	22.8
NB15	436883	292302	Roadside	84.1	84.1	29.8	23.7	29.2	26.9	21.7
NB17	436393	291987	Roadside	92.0	92.0	32.5	30.9	29.3	28.4	21.5
NB18	436525	291863	Roadside	92.0	92.0	32.8	26.3	32.9	31.6	24.9
NB20	436604	292202	Roadside	92.0	92.0	28.5	27.2	27.7	26.8	21.3
NB21	436691	292271	Roadside	92.0	92.0	30.0	29.6	27.9	27.0	22.2
NB22	436810	292306	Roadside	92.0	92.0	24.9	25.2	24.9	24.8	18.4

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2020 (%) (2)	2016	2017	2018	2019	2020
NB23	436841	292280	Roadside	84.1	84.1	32.9	33.3	31.2	31.0	24.4
NB24	436812	292196	Roadside	84.6	84.6	24.5	24.3	24.4	23.9	18.0
NB25	435814	292274	Roadside	92.0	92.0	32.2	32.1	31.1	30.5	24.0
NB26	435759	292311	Roadside	92.0	92.0	31.4	29.5	29.8	28.5	22.9
NB28	435893	292205	Roadside	92.0	92.0	36.7	37.2	35.2	35.7	28.5
NB29	435626	292343	Roadside	92.0	92.0	**43.8**	**44.6**	**41.0**	**41.0**	33.7
NB30	435554	292378	Roadside	92.0	92.0	**40.0**	39.3	**41.1**	**42.4**	33.0
NB31	435146	284563	Roadside	92.0	92.0	34.3	32.1	30.2	29.1	23.5
NB35	439268	293457	Roadside	92.0	92.0	24.8	23.2	22.9	23.0	16.7
NB36	435217	285246	Roadside	92.0	92.0	37.6	36.8	33.8	33.4	26.6
NB37	435051	291594	Roadside	92.0	92.0	33.0	31.9	31.3	32.3	24.8
NB38	437198	290732	Roadside	92.0	92.0	30.5	30.0	28.9	27.4	22.2
NB41	435619	287042	Roadside	92.0	92.0	31.2	32.8	32.4	30.5	24.9

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
NB42	435655	287135	Roadside	92.0	92.0	28.1	26.2	25.0	26.7	20.5
NB43	436303	290796	Roadside	92.0	92.0	26.9	26.3	26.7	25.0	18.6
NB44	434298	290930	Roadside	92.0	92.0	30.5	27.1	30.0	29.2	22.5
NB45	435593	290728	Roadside	92.0	92.0	29.6	28.1	34.8	32.6	26.6
NB46	435135	290583	Roadside	92.0	92.0	19.8	18.7	19.8	18.1	13.8
NB47	435452	290087	Roadside	92.0	92.0	18.9	18.6	19.1	18.0	14.4
NB48	435066	290689	Roadside	92.0	92.0	25.2	25.6	23.2	22.7	18.3
NB49	435231	285236	Roadside	92.0	92.0		32.4	29.2	29.1	23.7
NB50	435201	285198	Roadside	92.0	92.0		32.7	30.6	30.9	25.3
NB51	435638	292357	Roadside	92.0	92.0		26.3	26.5	27.4	19.7
NB52	436147	290868	Roadside	92.0	92.0				32.1	26.2

☒ **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 µg/m^3.

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

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 NO_2 Concentrations – Leicester Road Gyratory AQMA 1

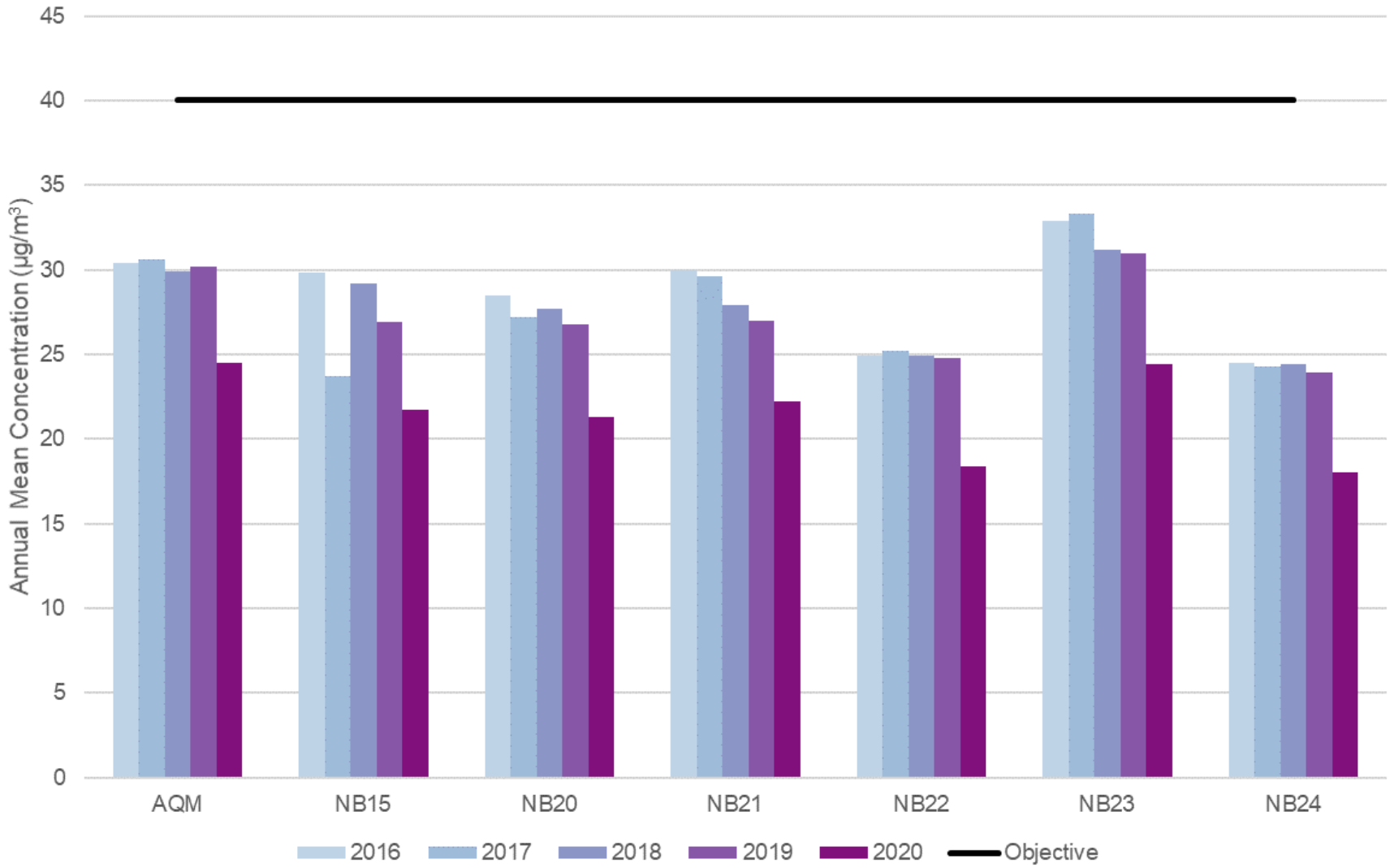


Figure A.2 – Trends in Annual Mean NO_2 Concentrations – Midland Road/Corporation Street AQMA 2

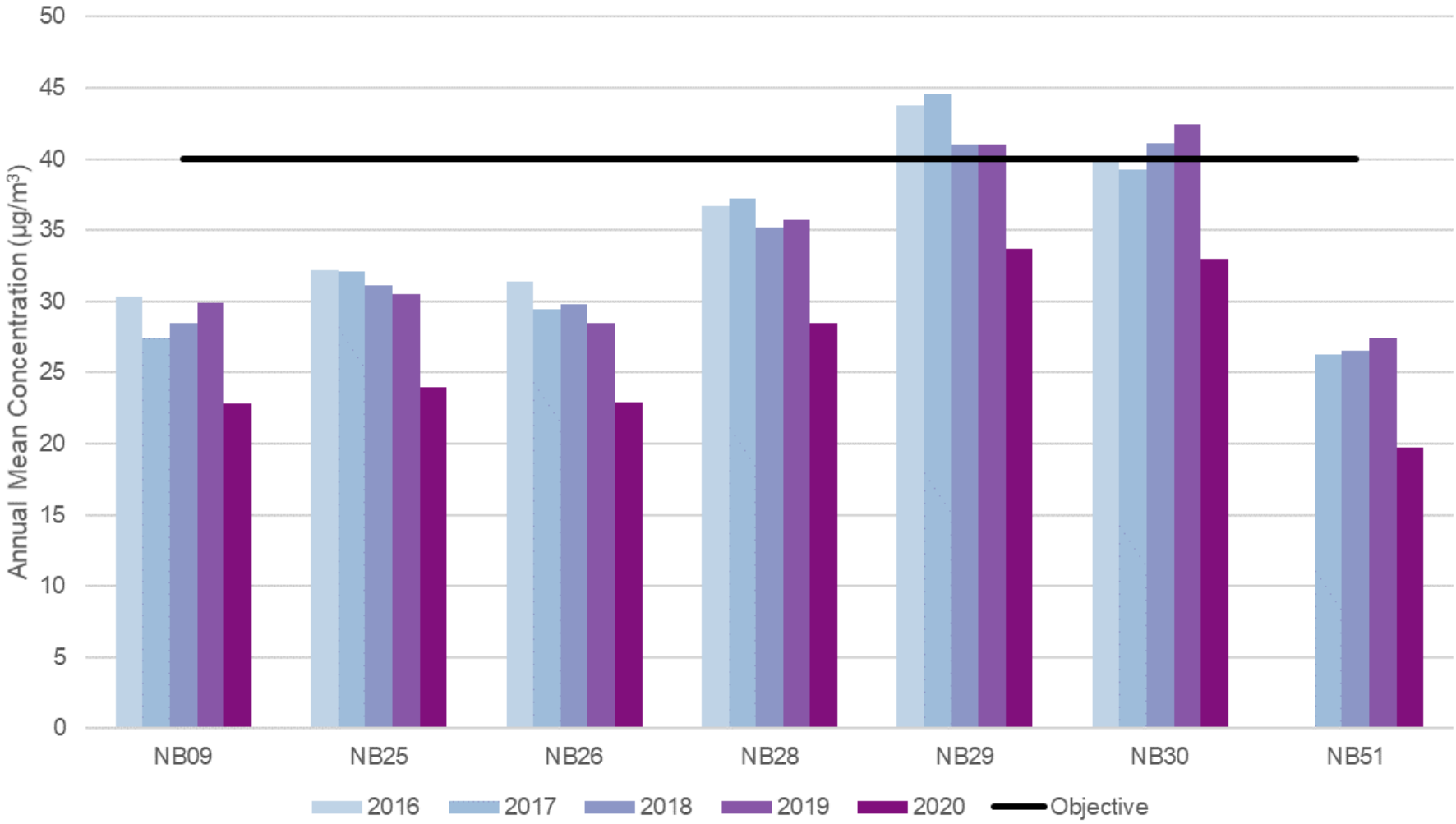
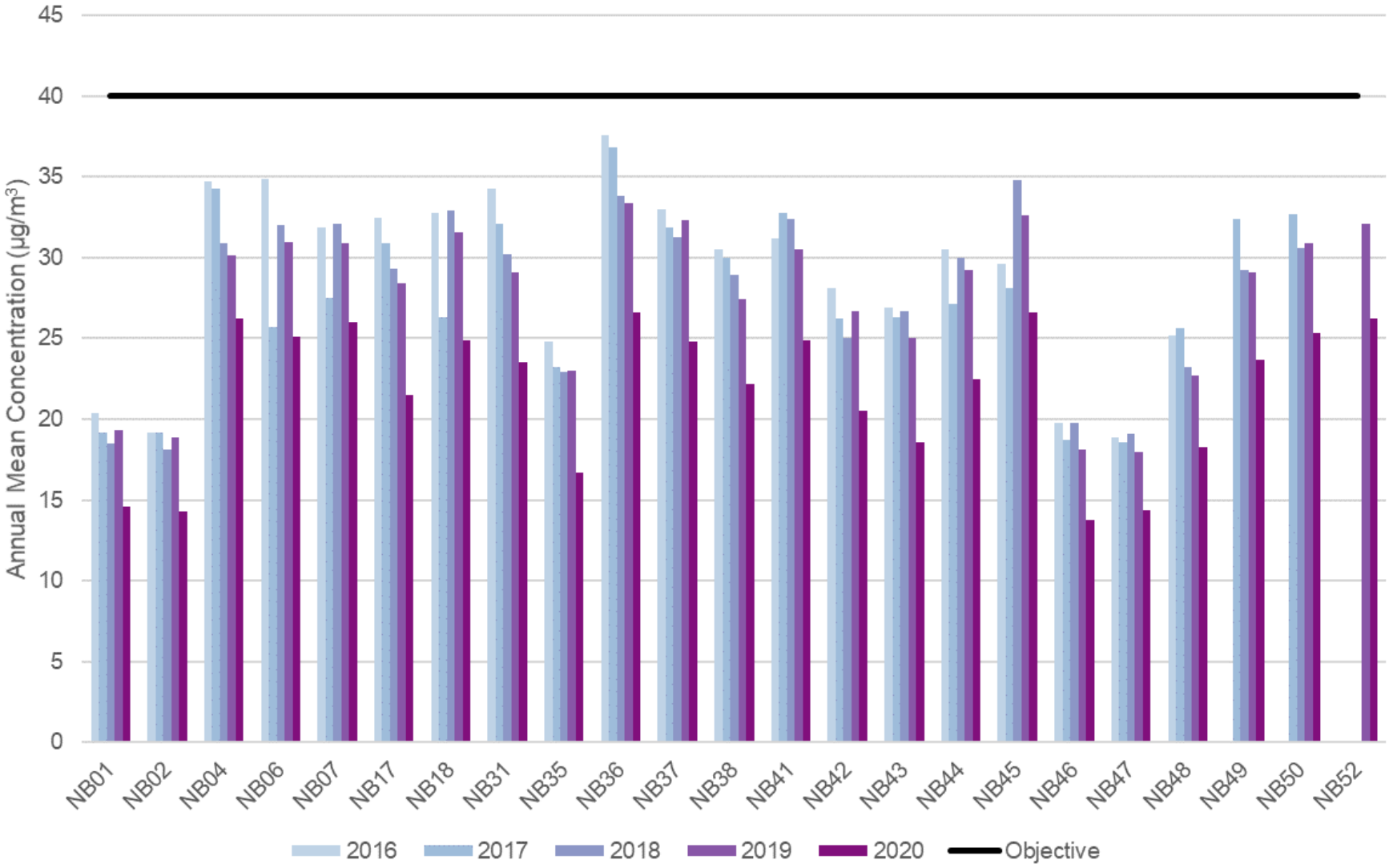


Figure A.3 – Trends in Annual Mean NO_2 Concentrations – Outside of AQMAs



Appendix B: Full Monthly Diffusion Tube Results for 2020

Table B.1 – NO_2 2020 Diffusion Tube Results (µg/m^3)

DT ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Annualised and Bias Adjusted (0.81)	Annual Mean: Distance Corrected to Nearest Exposure	Comment
AQM01	436844	292251	40.4	33.8	28.2	21.0	-	22.8	25.1	26.8	33.9	32.2	38.0	31.8	-	-	-	Duplicate Site with AQM01 and AQM02 - Annual data provided for AQM02 only
AQM02	436844	292251	39.5	32.7	30.2	21.0	-	23.5	25.1	26.3	34.9	29.6	35.7	31.9	30.2	24.5	-	
NB01	435969	291303	25.0	20.3	16.8	13.1	-	12.8	10.1	13.9	17.4	19.0	25.7	24.3	18.0	14.6	-	
NB02	436427	287646	26.0	20.3	16.6	11.2	-	9.6	10.5	12.6	18.4	18.3	26.1	24.8	17.7	14.3	-	
NB04	435793	286545	40.0	32.1	32.0	23.7	-	28.5	22.4	26.3	34.9	33.6	42.2	39.8	32.3	26.2	-	
NB06	434313	285292	40.9	32.5	29.8	20.2	-	24.0	26.6	30.6	34.9	31.1	42.2	28.4	31.0	25.1	-	
NB07	435345	286992	40.8	35.0	31.7	23.5	-	26.4	21.0	29.0	25.1	32.6	40.7	46.6	32.0	26.0	-	
NB09	435634	292280	40.1	31.5	28.0	20.1	-	20.9	19.4	23.3	30.0	29.7	36.6	29.8	28.1	22.8	-	
NB15	436883	292302	41.9		26.7	17.0	-	19.1	20.4	20.6	26.3	29.1	37.1	29.2	26.7	21.7	-	
NB17	436393	291987	31.5	30.3	24.5	19.9	-	21.4	16.0	27.3	29.3	24.6	33.6	33.8	26.6	21.5	-	
NB18	436525	291863	39.6	35.0	30.0	19.3	-	21.0	26.8	25.9	32.1	34.0	38.7	36.2	30.8	24.9	-	
NB20	436604	292202	32.5	28.0	28.7	22.1	-	21.2	18.6	23.2	27.9	25.8	32.6	28.7	26.3	21.3	-	
NB21	436691	292271	35.4	27.9	24.5	18.4	-	25.0	19.8	25.6	28.7	28.2	35.8	32.3	27.4	22.2	-	
NB22	436810	292306	28.7	26.8	21.1	14.5	-	17.7	16.0	21.5	25.1	21.5	30.7	25.7	22.7	18.4	-	
NB23	436841	292280	43.2	34.0	30.2	19.3	-	22.7	27.5	26.0		33.2	33.9	31.3	30.1	24.4	-	
NB24	436812	292196		25.6	22.6	14.7	-	16.3	17.9	20.1	26.1	25.0	27.2	26.2	22.2	18.0	-	
NB25	435814	292274	41.3	34.3	27.1	18.6	-	21.7	26.1	26.2	32.8	30.0	36.3	31.4	29.6	24.0	-	
NB26	435759	292311	33.7	26.7	27.9	23.9	-	24.5	21.3	26.9	31.2	29.8	34.0	30.5	28.2	22.9	-	

DT ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Annualised and Bias Adjusted (0.81)	Annual Mean: Distance Corrected to Nearest Exposure	Comment
NB28	435893	292205	44.6	38.8	32.9	24.7	-	27.5	28.1	34.2	38.4	34.5	42.0	41.5	35.2	28.5	-	
NB29	435626	292343	55.9	46.5	38.3	29.0	-	36.2	38.9	40.5	37.0	44.7	49.5	40.8	41.6	33.7	-	
NB30	435554	292378	57.3	40.3	35.0	27.8	-	36.2	34.8	38.0	42.9	43.7	48.6	43.9	40.8	33.0	-	
NB31	435146	284563	36.7	27.6	29.4	23.3	-	27.6	21.9	27.3	32.0	26.6	34.6	31.6	29.0	23.5	-	
NB35	439268	293457	27.5	23.2	20.8	16.7	-	17.7	14.3	18.0	20.1	16.8	27.5	25.0	20.7	16.7	-	
NB36	435217	285246	42.8	30.5	30.8	22.3	-	27.3	24.8	28.3	37.6	34.2	42.7	39.6	32.8	26.6	-	
NB37	435051	291594	40.2	33.6	30.8	24.2	-	27.4	26.8	11.7	35.7	35.1	36.7	34.4	30.6	24.8	-	
NB38	437198	290732	36.1	31.6	26.7	18.7	-	21.5	20.7	23.8	29.5	30.8	32.9	29.3	27.4	22.2	-	
NB41	435619	287042	36.1	28.0	32.0	24.6	-	27.8	18.5	30.5	37.9	29.5	37.9	35.2	30.7	24.9	-	
NB42	435655	287135	33.4	25.1	24.1	19.8	-	20.3	15.6	20.8	29.3	24.9	36.2	28.5	25.3	20.5	-	
NB43	436303	290796	30.6	25.2	24.4	14.2	-	16.6	16.2	18.6	25.4	24.5	28.7	28.8	23.0	18.6	-	
NB44	434298	290930	31.3	23.2	28.2	25.2	-	26.2	19.9	28.6	31.5	29.1	33.5	29.2	27.8	22.5	-	
NB45	435593	290728	42.7	34.0	31.8	24.5	-	26.5	23.0	29.2	34.9	36.2	44.0	33.8	32.8	26.6	-	
NB46	435135	290583	21.5	17.5	16.9	14.1	-	14.0	9.8	14.5	17.0	16.9	23.6	21.2	17.0	13.8	-	
NB47	435452	290087	22.0	18.1	18.5	15.0	-	13.9	9.0	15.9	17.8	17.7	25.3	22.8	17.8	14.4	-	
NB48	435066	290689	28.7	25.2	21.4	15.9	-	18.6	16.9	20.0	24.0	24.3	29.6	24.1	22.6	18.3	-	
NB49	435231	285236	38.4	28.3	26.5	20.8	-	24.2	21.1	26.9	31.0	31.3	37.7	35.7	29.3	23.7	-	
NB50	435201	285198	43.6	34.3	18.6	21.9	-	27.8	21.9	29.2	35.1	34.5	42.2	34.8	31.3	25.3	-	
NB51	435638	292357	33.7	28.0	23.8	17.8	-	19.3	17.8	19.6	21.2	21.2	34.7	30.8	24.3	19.7	-	
NB52	436147	290868	39.9	33.2	30.9	28.1	-	28.7	22.3	31.9	33.9	32.1	41.7	33.8	32.4	26.2	-	

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

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

☒ **Nuneaton and Bedworth Borough Council confirm that all 2020 diffusion tube data has been uploaded to the Diffusion Tube Data Entry System.**

Notes:

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

See Appendix C for details on bias adjustment and annualisation.

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

New or Changed Sources Identified Within Nuneaton and Bedworth Borough Council During 2020

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

Additional Air Quality Works Undertaken by Nuneaton and Bedworth Borough Council During 2020

Other than the update to the Air Quality Action Plan, as already described, and appraisals of planning applications with regards to air quality, there has been no additional specific air quality works undertaken by Nuneaton and Bedworth Borough Council in 2020.

New Developments

Several new developments have either received planning permission, or are currently within the planning system, for example at the pre-application stage. The following have received planning permission within the reporting period.

Planning app reference	Site	Number of dwellings	Notes	Planning permission granted
36870	Black Horse Road, Hawkesbury, Exhall	204 (500)	Air quality assessment conducted November 2020. Application is for 204 dwellings, but AQ assessment considers the impacts of the full housing allocation of 500 dwellings. Negligible Impacts. Strategic housing allocation HSG12.	10/05/2021
36873	Land rear of 28-44 The Long Shoot, Nuneaton	75	Air quality assessment conducted Sept 2018. Negligible impacts. Situated to north of Nuneaton, an extension to Housing allocation HSG1.	Full Planning Permission 14/09/2020

37112	Land off Golf Drive	621	Air Quality assessment conducted June 2020. Moderate adverse impact on receptor in Midland Rd/Corporation St AQMA (school). Housing Allocation HSG9	Not yet determined.
34615	Callendar Farm, Nuneaton	850	Air quality assessment conducted. Remaining dwellings in housing allocation HSG1 (North of Nuneaton). Air quality assessment is reference '034615-2017-01-26 P034615-21 Planning Statement.pdf' on the planning portal. Negligible Impacts.	Outline permission granted 29/09/2019.
35037	Gipsy Lane, Nuneaton	575	Air quality assessment conducted July 2017. Air quality assessment is reference '035037-2017-08-04 P035037-07 Planning Statement.pdf' on the planning portal. Strategic Housing Allocation HSG3. One slight and one moderate adverse impact but not in AQMA.	Outline permission granted 11/01/2021
35503	School Lane	150	Air quality assessment conducted March 2018 (not on planning portal).	Outline permission granted 20/12/2019
33926	Land off East Borough Way	360	Outline planning application was granted 28/08/2018. Reserved matters 037631 have not yet been granted but are progressing. Air Quality Assessment showed negligible Impacts. Strategic Housing Allocation HSG10.	Outline permission granted 28/08/2018
35338	Higham Lane, Nuneaton	up to 200	Outline planning permission. Air Quality assessment to discharge condition 19. AQ assessment dated March 2020. Slight adverse impact on receptor in Leicester Rd Gyratory AQMA Forms part of Strategic Housing Allocation HSG1 (North of Nuneaton)	Site under construction
36050	North Warwickshire and South Leicestershire College,	up to 195	Outline application was refused but granted permission at appeal, 09/11/2020. Air quality assessment completed Nov 2018. Negligible Impacts.	Outline permission granted 9/11/2020

	Hinckley Road, Nuneaton			

There have been a number of applications where air quality assessments have been required. The above list includes all the recent relevant applications (note than some are prior to 2020 and therefore not strictly within the reporting period for the ASR, but included for additional information).

QA/QC of Diffusion Tube Monitoring

Diffusion tubes throughout 2020 were supplied and analysed by Gradko using the 20% TEA in water preparation method. Gradko is a UKAS accredited laboratory and participates in the AIR-PT Scheme (a continuation of the Workplace Analysis Scheme for Proficiency (WASP)) for NO_2 diffusion tube analysis and the Annual Field Inter-Comparison Exercise. Strict performance criteria are required to be met by participating laboratories, ensuring reported NO_2 data are of a high standard. In the latest AIR-PT laboratory summary performance report, between January 2019 and October 2020, Gradko scored 100% in three of the six rounds (AR031, AR033 and AR034) and 75% in the other three rounds (AR030, AR036 and AR040). The percentage score reflects the results deemed to be satisfactory based upon a z-score of $< \pm 2$. Gradko also follows the procedures set out in the Harmonisation Practical Guidance.

All diffusion tube changeovers occurred within two days of the dates of the 2020 Diffusion Tube Monitoring Calendar, except for May 2020 where no data were collected due to the impacts of the COVID-19 pandemic.

All results in Table A.2 have been bias adjusted using the national adjustment factor; further details are described below.

Diffusion Tube Annualisation

All diffusion tube monitoring locations within Nuneaton and Bedworth recorded data capture above 75% and therefore it was not required to annualise any monitoring data.

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/NO_2 continuous analysers. However, Nuneaton and Bedworth Borough Council do not undertake any automatic monitoring with which to derive a local bias adjustment factor. As a result, a bias adjustment factor was taken from the national database of diffusion tube co-location surveys.

Nuneaton and Bedworth Borough Council diffusion tube monitoring is analysed using the 20% TEA in water method by Gradko. The national bias adjustment factor of 0.81 has therefore been applied to the monitoring data, as derived from the national bias adjustment calculator (spreadsheet version number: 09/21, based on 27 studies). A summary of bias adjustment factors used by Nuneaton and Bedworth 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	06/21	0.81
2019	National	06/20	0.91
2018	National	03/19	0.89
2017	National	03/18	0.94
2016	National	03/17	0.88

NO_2 Fall-off with Distance from the Road

Wherever possible, local authorities should ensure that monitoring locations are representative of exposure. However, where this is not possible, the NO_2 concentration at the nearest location relevant for exposure should be estimated using the Diffusion Tube Data Processing Tool/NO_2 fall-off with distance calculator available on the LAQM Support website.

No diffusion tube NO_2 monitoring locations within Nuneaton and Bedworth required distance correction during 2020.

Appendix D: Maps of Monitoring Locations and AQMAs

Figure D.1 – Monitoring Locations – Leicester Road Gyratory AQMA (AQMA 1)

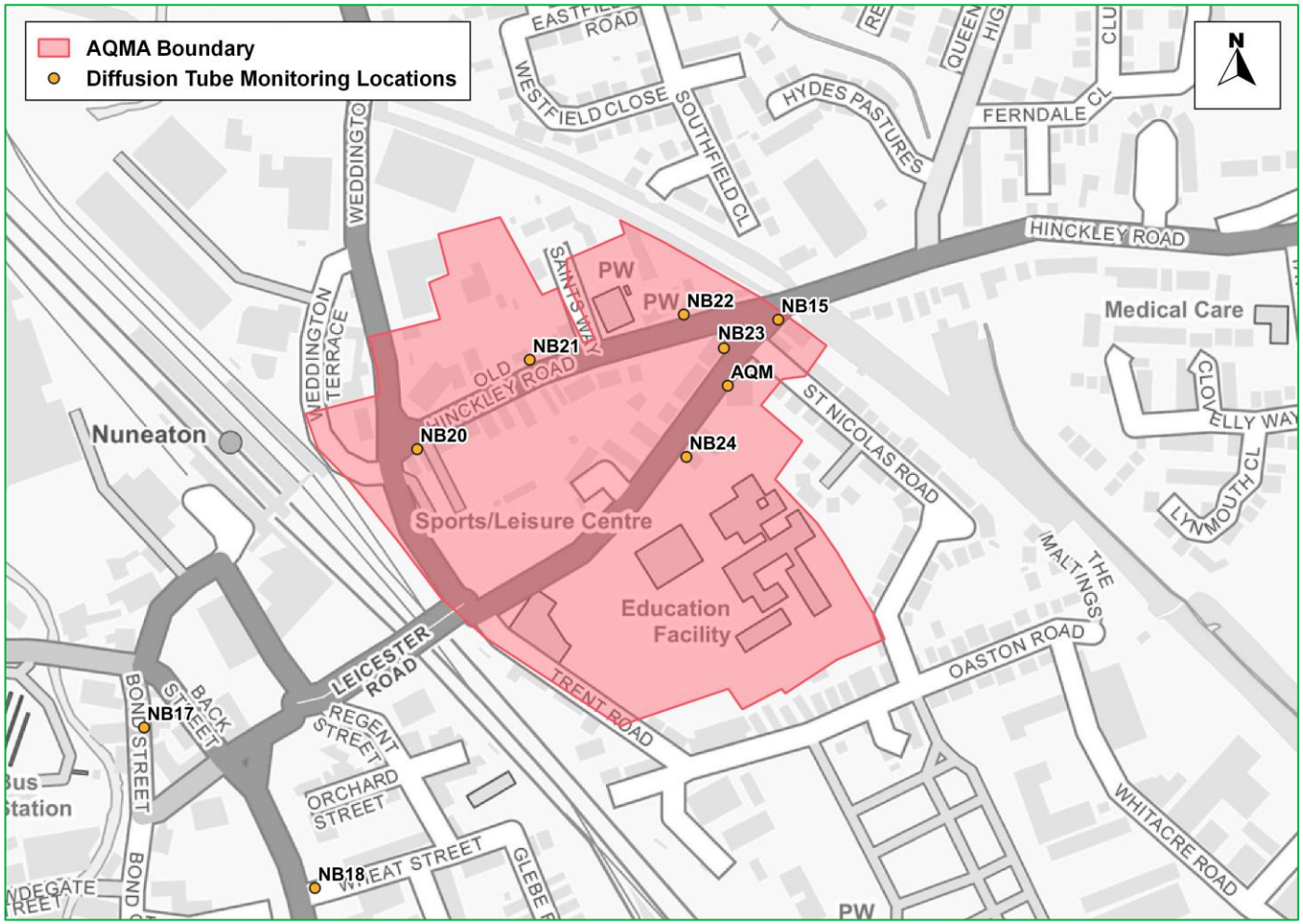


Figure D.2 – Monitoring Locations – Midland Road/Corporation Street AQMA (AQMA 2)

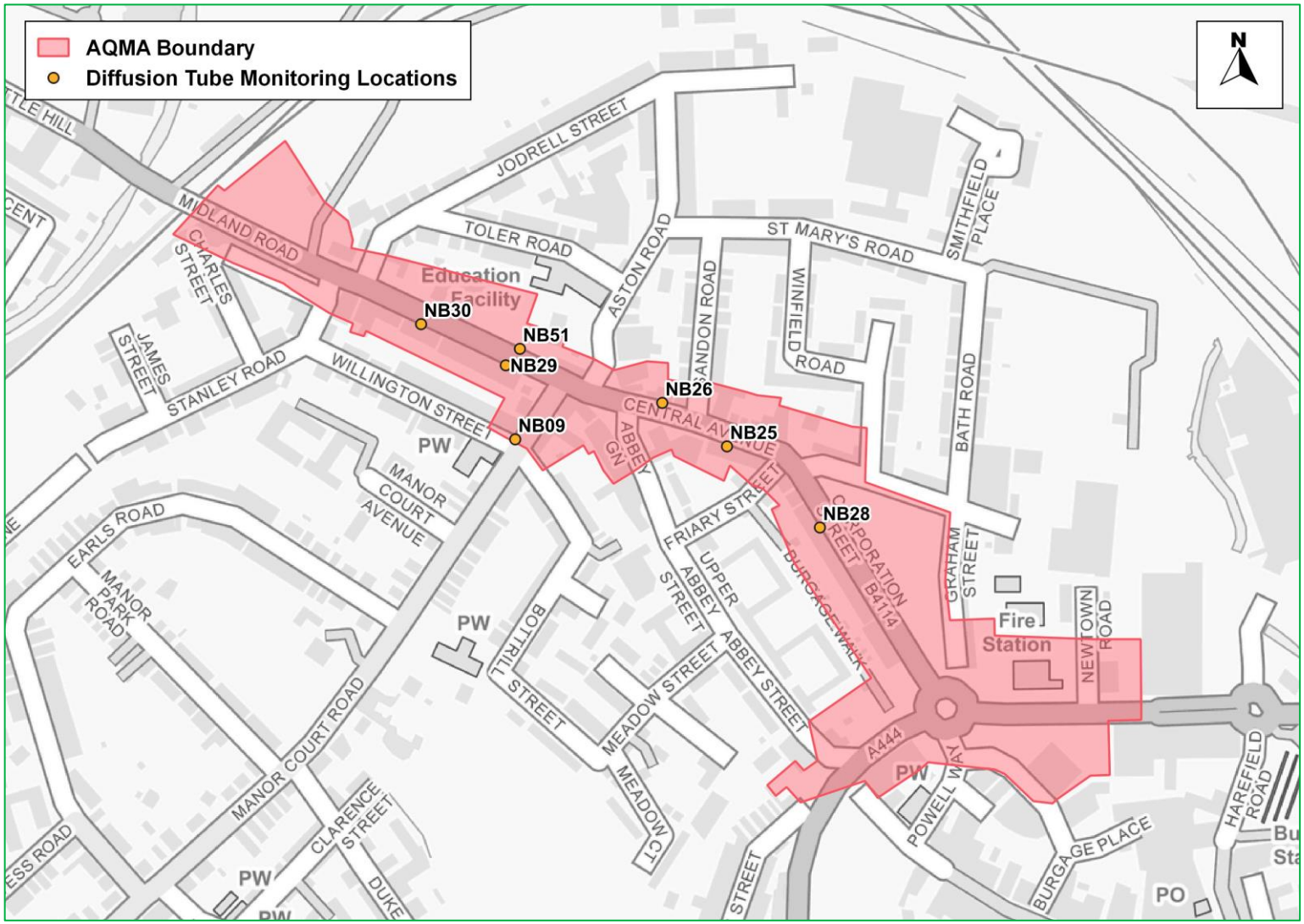


Figure D.3 – Monitoring Locations – South Nuneaton

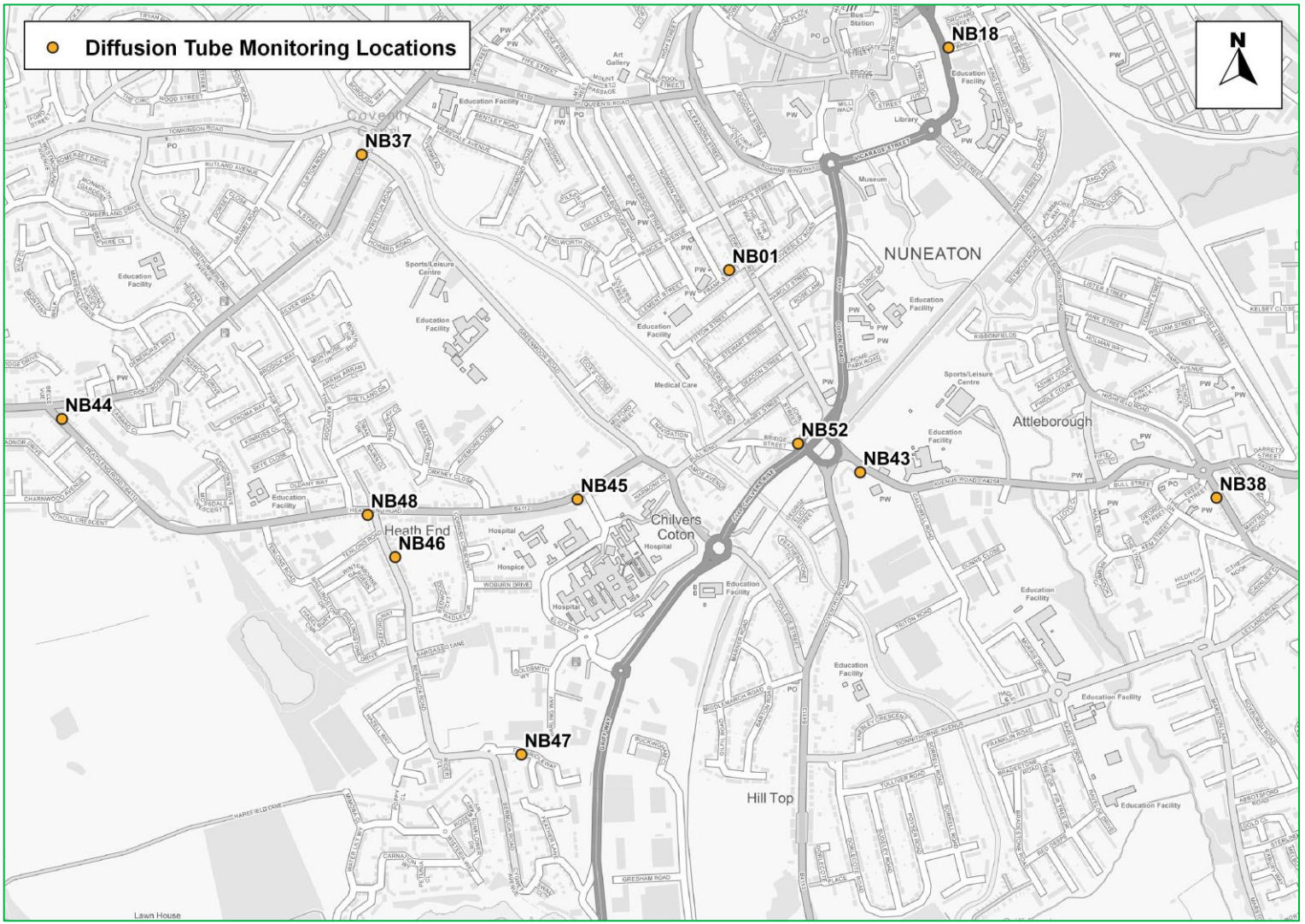


Figure D.4 – Monitoring Location NB35

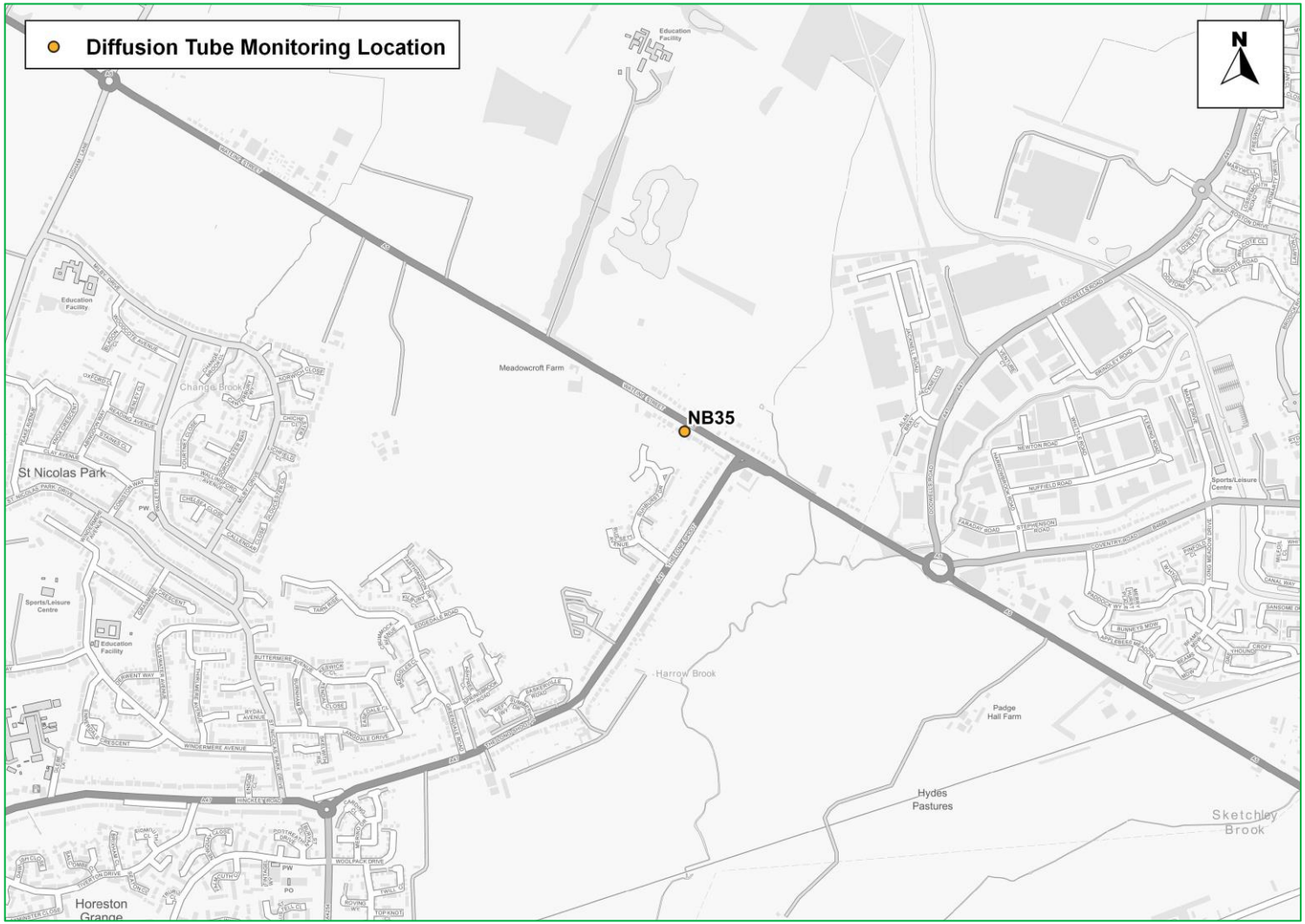
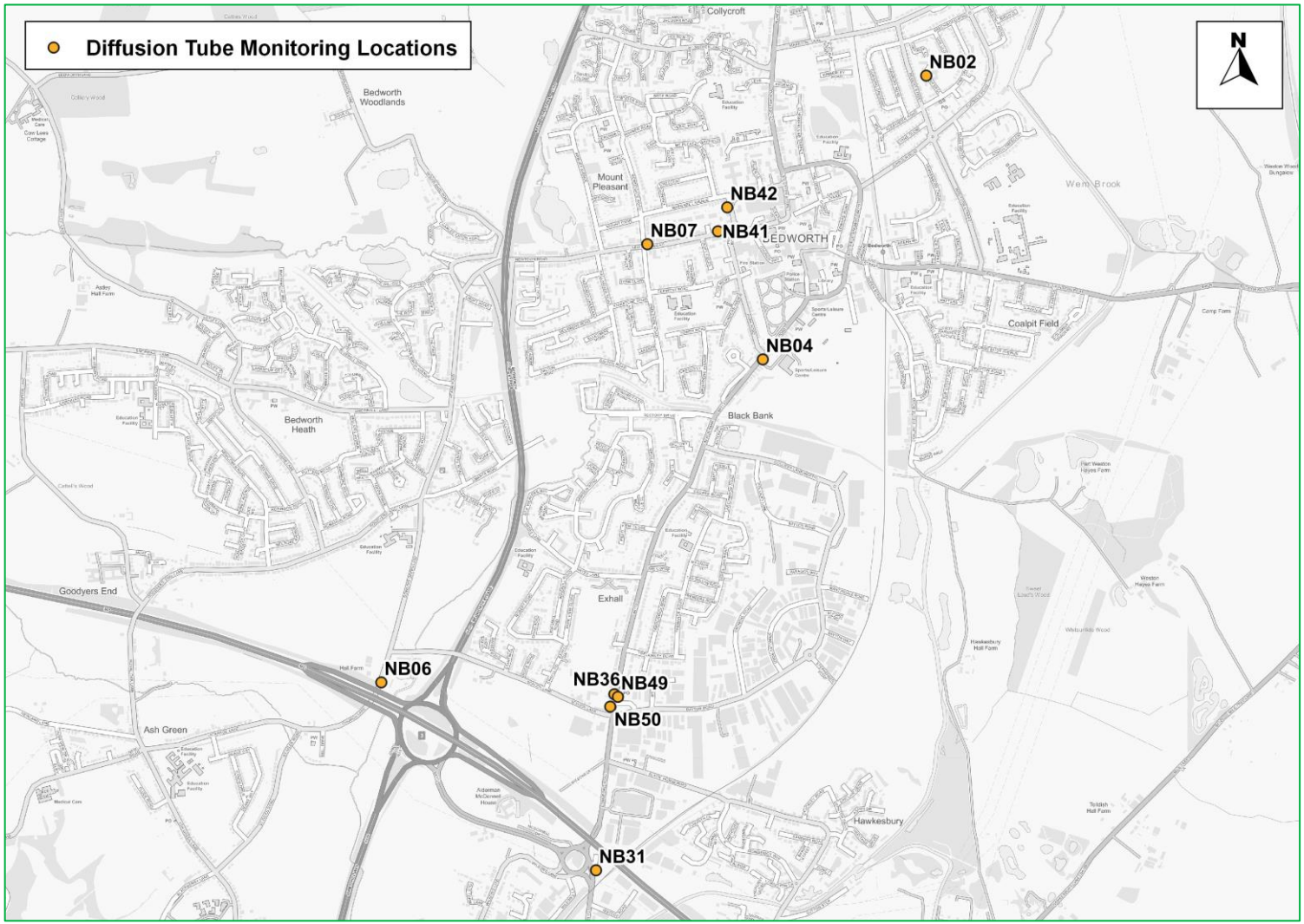


Figure D.5 – Monitoring Locations – Bedworth



Appendix E: Summary of Air Quality Objectives in England

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

Pollutant	Air Quality Objective: Concentration	Air Quality Objective: Measured as
Nitrogen Dioxide (NO_2)	200 µg/m^3 not to be exceeded more than 18 times a year	1-hour mean
Nitrogen Dioxide (NO_2)	40 µg/m^3	Annual mean
Particulate Matter (PM_{10})	50 µg/m^3, not to be exceeded more than 35 times a year	24-hour mean
Particulate Matter (PM_{10})	40 µg/m^3	Annual mean
Sulphur Dioxide (SO_2)	350 µg/m^3, not to be exceeded more than 24 times a year	1-hour mean
Sulphur Dioxide (SO_2)	125 µg/m^3, not to be exceeded more than 3 times a year	24-hour mean
Sulphur Dioxide (SO_2)	266 µg/m^3, not to be exceeded more than 35 times a year	15-minute mean

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

Appendix F: 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 (NO_2) 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) data[12] 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)[13] has estimated that during the initial lockdown period in 2020, within urbanised areas of the UK reductions in NO_2 annual mean concentrations were between 20 and 30% relative to pre-pandemic levels, which

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

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

represents an absolute reduction of between 10 to 20 µg/m^3 if expressed relative to annual mean averages. During this period, changes in $PM_{2.5}$ concentrations were less marked than those of NO_2. $PM_{2.5}$ 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 $PM_{2.5}$ concentrations during the initial lockdown period are of the order 2 to 5 µg/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 Nuneaton and Bedworth Borough Council

The impact of COVID-19 on local air quality can be observed in the marked decrease in annual mean NO_2 concentrations at all monitoring sites in 2020, beyond any reduction that would have been expected based on trends over previous years. On average, concentrations in Nuneaton and Bedworth were 21% lower in 2020 than in 2019. Whilst the effect of seasonal variation cannot be completely separated from the measurements, concentrations of NO_2 were notably lower during April and June 2020 (there were no measurements in May 2020 as diffusion tubes were not deployed as a result of the pandemic). This is particularly noticeable in monitoring sites within the AQMAs, particularly during the month of April.

Compliance with the annual mean NO_2 objective was measured at all monitoring sites within the Midland Road/Corporation Street AQMA (AQMA 2) for the first time in 2020, with an average reduction of 21.9% compared to 2019. However, as there were measured exceedances in recent years, it is recommended that the AQMA designation remains until a longer-term trend in concentrations can be established.

With respect to the Leicester Road Gyratory AQMA (AQMA 1), compliance with the annual mean NO_2 objective has been recorded at all sites prior to 2020. Concentrations in 2020 were 21.2% lower on average than in 2019.

Opportunities Presented by COVID-19 upon LAQM within Nuneaton and Bedworth Borough Council

No LAQM related opportunities have arisen as a consequence of COVID-19 within Nuneaton and Bedworth Borough Council.

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

Diffusion tubes were not exposed during May 2020 due to accessibility and travel restrictions. However, monitoring continued for the remaining months of 2020, and the impact on data capture was therefore minimal. The impact rating is defined as ‘none’ as aligned with the criteria as defined in Table F 1, with professional judgement considered as part of their application.

Staff within the Environmental Protection Team were required to help implement and enforce the Covid Regulations, which meant that resources were further stretched for local air quality management work.

Table F 1 – Impact Matrix

Category	Impact Rating: None	Impact Rating: Small	Impact Rating: Medium	Impact Rating: Large
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'
AQEG	Air Quality Expert Group
AQMA	Air Quality Management Area – An area where air pollutant concentrations exceed / are likely to exceed the relevant air quality objectives. AQMAs are declared for specific pollutants and objectives
ASR	Annual Status Report
AURN	Automatic Urban and Rural Network
Defra	Department for Environment, Food and Rural Affairs
EST	Energy Savings Trust
EU	European Union
EV	Electric Vehicle
LAQM	Local Air Quality Management
NBBC	Nuneaton and Bedworth Borough Council
NHS	National Health Service
NO_2	Nitrogen Dioxide
NO_x	Nitrogen Oxides
OLEV	Office for Low Emission Vehicles
PM_{10}	Airborne particulate matter with an aerodynamic diameter of 10µm or less
$PM_{2.5}$	Airborne particulate matter with an aerodynamic diameter of 2.5µm or less
QA/QC	Quality Assurance and Quality Control
SPD	Supplementary Planning Document
WCC	Warwickshire County Council

References

- Local Air Quality Management Technical Guidance LAQM.TG16. April 2021. Published by Defra in partnership with the Scottish Government, Welsh Assembly Government and Department of the Environment Northern Ireland.
- Local Air Quality Management Policy Guidance LAQM.PG16. May 2016. Published by Defra in partnership with the Scottish Government, Welsh Assembly Government and Department of the Environment Northern Ireland.