



Blaby District Council Air Quality Action Plan 2021-2025

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

March 2021

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Executive Summary

This Air Quality Action Plan (AQAP) has been produced as part of the Council's statutory duties required by the Local Air Quality Management framework. It outlines the action that will be taken to improve air quality in Blaby District between 2021-2025. This action plan replaces the previous action plan which ran from 2014-2019.

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 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. Blaby District Council is committed to reducing the exposure of people in the District to poor air quality in order to improve health.

There are two other documents that are relevant to reducing levels of air pollutants in the District:

- [The Air Quality Strategy 2018-2021](#)
- [The BDC Carbon Neutral Action Plan](#)

The Air Quality Strategy (AQS) contains measures and policies that relate to the District as a whole. Any actions that are directly related to the Air Quality Management Areas are included in this Air Quality Action Plan (AQAP), together with a smaller number of more widespread measures and certain elements of the Carbon Neutral Action Plan.

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

Our priorities are

1. To continue to monitor Nitrogen Dioxide at locations that represent either worst case and/or where people live;
2. To understand the traffic problems that arise in the AQMAs, through obtaining traffic data and also through direct observations;
3. To implement our program of behavioural change work so that it assists in reducing the traffic problems in the AQMAs (e.g. reducing the impact of school related traffic);
4. To implement Walk & Ride Blaby – a multi stakeholder approach to connect communities and places by creating and improving a sustainable transport network focussing on walking and cycling and improving the health and wellbeing of residents
5. To work with Leicestershire County Council to use traffic management to address the traffic problems in the AQMAs;
6. To work with Leicestershire County Council to use the other types of actions in the Network Management Plan where possible within the AQMAs. Such actions could include changes to road layouts and the timing of traffic signals.
7. To use the land use planning system to avoid adverse impacts on traffic within the AQMAs;

Other actions by Leicestershire County Council

1. Making monies available to fund passenger transport services that are not able to operate on a commercial basis and working closely with Leicester City Council to support and look at ways of improving Park and Ride services.
2. Providing a dedicated team that focuses on and promotes sustainable travel initiatives across the county, actively working with businesses and schools to support them in developing travel plans and delivering safe and sustainable travel initiatives. Typical initiatives include car sharing, E-Bike try outs, cycle and public transport awareness campaigns, Dr Bike, business grants, Bikeability cycle training for year 5 and 6 pupils, Adult cycle courses, Junior Road Safety Officer scheme and many more. All of these initiatives are

promoted under County and City Council's Choose How You Move branding

www.choosehowyoumove.co.uk.

3. Working with BDC, within the planning process to secure the necessary mitigation measures to support new development. The Enderby Relief Road, which runs from the B582 (Mill Hill) to Leicester Lane, Enderby has outline planning permission as part of the New Lubbethorpe Development. The detailed route is subject to further planning applications, which are currently being processed. However if approved, this should re-route some traffic from passing through AQMA 6 (Mill Hill).
4. Working with BDC within the planning process, to seek to ensure that development is located where there is convenient access to local amenities, public transport and walking and cycling facilities with the intention of reducing car journeys and avoiding creating future air quality problems.

A list of key priorities is given in Section 3.5.

This AQAP outlines plans to effectively tackle air quality issues within local control. However, Blaby District Council recognises that there are a large number of air quality policy areas that are outside of our influence (such as vehicle emissions standards agreed in Europe), but for which we may have useful evidence, and so we will continue to work with regional and central government on policies and issues beyond Blaby District Council's direct influence.

Responsibilities and Commitment

This AQAP was prepared by the Environmental Services Team of Blaby District Council with the support and agreement of the following officers and departments:

- Planning Department
- Health, Leisure & Tourism

This AQAP has been approved by:

- The Health, Wellbeing & Regulatory Services Portfolio Holder
- The Cabinet Executive (at its meeting on the 14th September 2020)

Leicestershire County Council, both Highways and Transportation, and Public Health, have kindly made contributions to the drafting of this Plan.

Progress on implementing this Action Plan will be reported in the Annual Status Reports (ASRs) produced by Blaby District Council, as part of our statutory Local Air Quality Management duties.

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1 Introduction

This report outlines the actions that will be delivered between 2021-2025 in order to reduce concentrations of air pollutants and exposure to air pollution; thereby positively impacting on the health and quality of life of residents and visitors to the District of Blaby.

It has been developed in recognition of the legal requirements on Blaby District Council under Part IV of the Environment Act 1995 (the requirements of the Local Air Quality Management (LAQM) regime).

This Plan will be reviewed at the latest after five years and progress on measures set out within this Plan will be reported on annually within Blaby District Council's Annual Status Report.

The Climate Change Strategy

Blaby District Council adopted a Climate Change Strategy in May 2020 (<https://w3.blaby.gov.uk/decision-making/ieListDocuments.aspx?CId=287&MId=4062>), and a Carbon Neutral Action Plan (<https://www.blaby.gov.uk/media/4538/blaby-district-council-carbon-neutral-action-plan-2020.pdf>)

The Council has developed actions that can be considered under 6 broad topics:

- Alternatives to private vehicle use
- Policy guidance and development control
- Promoting travel alternatives
- Public information
- Transport planning and infrastructure
- Traffic management

2 Summary of Current Air Quality in Blaby District

This summary may be found in Blaby District Council's Annual Status Report (ASR) for 2020, reporting on monitoring conducted in 2019. The section containing monitoring information is included in this AQAP as Appendix D.

Monitoring results for 2019 indicated no recorded exceedances of either Nitrogen Dioxide (NO₂) or Fine Particles (PM₁₀) at any location in the District. For NO₂, our diffusion tube results were subjected to a bias correction factor which substantially reduced monitored results, and so these have been commented on with caution. Results from our Air Quality Monitoring Stations (situated in AQMA2, AQMA3 and AQMA6) reported no exceedances of either pollutant.

Where monitored pollutant concentrations have been low over several years (typically 5 years), it is appropriate to consider amendments to the borders of or entire revocation of an AQMA. Revisions to the borders of AQMAs 2, 3 and 4B in light of monitoring results were approved by elected members. The revised AQMAs can be viewed in Appendix C. Orders implementing these revisions came into operation on the 20th November 2020.

The highest concentrations are noted along Hinckley Road in Leicester Forest East (AQMA3), Mill Hill in Enderby (AQMA6) and at a location in Glenfield village. With regards to Glenfield, monitoring has been extended throughout the village, including an air quality monitoring station. We are still planning to relocate another air quality monitoring station in the village of Stoney Stanton, where diffusion tube monitoring has indicated elevated levels and there are local concerns regarding traffic and possible future developments. The Council has also expanded its monitoring capabilities through the purchase and deployment of low cost sensors at 2 positions in AQMA 6 (Mill Hill, Enderby).

3 Blaby District Council's Air Quality Priorities

3.1 Public Health Context

Air quality is of growing public health concern, with strong evidence demonstrating effects on mortality, healthy life expectancy and health inequalities. The Director of Public Health Annual Report 2018 identified the need for a countywide partnership action plan for air quality and health, developed to address both acute and longer-term effects of poor air quality on health.

Leicestershire County Council Public Health is working with key stakeholders, including Blaby District Council, to improve air quality- in line with the recommendations in the Air Quality: A Briefing for Directors of Public Health, Defra, PHE, and LGA, (March 2017).

An Air Quality and Health chapter of the County Council Joint Strategic Needs Assessment 2018 – 2021 was published in May 2019, and a partnership action plan has been developed. The document may be found here: <https://www.lsr-online.org/uploads/jsna-air-quality-2019-v10-final.pdf?v=1561477116>

The plan and associated working group, chaired by a Consultant in Public Health and supported by a Strategic Lead for Wider Determinants of Health, will focus on;

- Protecting the nation's health by working with partners to reduce their contributions to poor air quality
- Planning and development through health in all policies approach
- Communicating key messages to the public and organisation

Monitoring of the main pollutants of concern in the District, Nitrogen Dioxide and Particulate Matter, is important. It helps to understand the likely public exposure, follow trends and indicate the impact of actions to improve air quality.

3.2 Planning and Policy Context

The Core Strategy

The Local Plan (Core Strategy) Development Plan Document forms the first part, and this was adopted by Council in February 2013. The Core Strategy sets out the vision, strategic objectives and the strategic planning policies for the District over the plan period (2006-2029).

The Core Strategy has numerous references to air quality and recognises it as an issue in the 'Issues, problems and challenges facing the District' section (para 4.25), with reference to the five designated Air Quality Management Areas (AQMAs) in the District at the time of its publication. The Core Strategy recognised the importance of

balancing the need for growth in the District with the impact this will have on new and existing residents in terms of air quality.

In recognition of the above, the strategic approach of the Core Strategy is to seek to reduce travel as set out in the 'Spatial Strategy' section (para 6.13):

'The strategic approach will be to seek to reduce travel. Where this is not possible opportunities to maximise more sustainable modes of transport will be sought. This approach helps to reduce the emission of CO₂ and other pollutants and reduce negative impacts on air quality. New development should deliver the range of services and facilities that will minimise the need to travel. New development will be focused in areas that have access to services and facilities and are well served by a range of transport alternatives (including public transport, walking and cycling) and are not wholly reliant on private cars.'

Policy CS1 – Strategy for locating new development in the Core Strategy broadly adopts the principle of 'urban concentration' and is consistent with current Central Government policy encouraging 'patterns of growth' which 'make the fullest possible

Policy CS10 – Transport Infrastructure, in the Core Strategy re-iterates the strategic approach of the Council to locating new development, in stating:

'In order to limit the impacts of new development on levels of vehicle movements, congestion and on the environment the preferred approach of Blaby District Council is to seek to reduce the need to travel by private car by locating new development so that people can access services and facilities without reliance on 'private motor vehicles'. In addition, the Council will seek to protect and enhance local services and facilities (including retail and employment) to reduce the need to travel.'

Policy CS10 requires Transport Statements for larger developments (e.g. on proposals for 50 or more houses), and travel plans to be submitted with planning applications for major employers and other developments that are expected to generate significant traffic.

In terms of mitigating the impacts of future developments, Core Strategy Policies CS11 and CS12 address the issue of supporting growth with the required physical, social and environmental infrastructure.

The Delivery DPD

The Council has now adopted another key document within the Blaby District Local Development Scheme (LDS), known as the Blaby District Local Plan (Delivery) Development Plan Document (DPD). This document will deliver on the strategic policies set out in the Core Strategy through allocating sites in accordance with the need set out in the Core Strategy for land uses including (but not limited to) residential and employment, as appropriate. This DPD also reviewed the boundaries of the various designations, including (but not limited to) Countryside, Green Wedges and Areas of Separation, and provides Development Management policies to guide and shape development in the District.

The Blaby District Local Plan (Delivery) Development Plan Document was adopted by Blaby District Council on 4 February 2019.

Air Quality has been considered throughout the development of the Delivery DPD, as have highway impacts, and sustainable transport measures, in relation to the Site Allocations (Chapter 3). In Chapter 4 (Development Management Policies), proposed Policy DM13 (Land Contamination and Pollution) and its supporting text includes Air Quality:

4.67 Sustaining compliance with air quality objectives is important for human health. New development, particularly within Air Quality Management Areas, will need to ensure that these objectives are not compromised. Any new development in Air Quality Management Areas will need to be consistent with the Air Quality Action Plan.

4.68 Currently, there are five Air Quality Management Areas in the District. These are all declared for the Air Quality Objectives for Nitrogen Dioxide (NO₂):

- AQMA 1: A5460 Narborough Road South
- AQMA 2: M1 corridor in Enderby and Narborough
- AQMA 3: M1 corridor between Thorpe Astley and Kirby Muxloe
- AQMA 4B: Enderby Road, Whetstone
- AQMA 6: B582 on Mill Hill, Enderby

4.69 In addition there are a number of transport corridors, including the M1 J21 area, A47 and B582 where there is potential for air quality to be an issue.

Policy Development Management Policy 13 states that:

“Development proposals will be required to clearly demonstrate that any adverse impacts related to land contamination, landfill, land stability and pollution (water, air, noise, light and soils) can be satisfactorily mitigated. For the following circumstances, development proposals will be supported where it is accompanied by a detailed investigation of the issues and appropriate mitigation measures are identified to avoid any adverse impact upon the site or adjacent areas:

c) Close to or within an air quality management area or key transport corridors that may be affected by air quality”

In Chapter 6 (Monitoring Framework), air quality is included in Policy CS10 (Transport Infrastructure) as a target for no additional AQMAs being designated.

The Council is now reviewing the existing Local Plan. The Council approved a new Local Development Scheme (LDS) in December 2020. The LDS is the “Project Plan” for the new Local Plan.

3.3 Source Apportionment

The AQAP measures presented in this report are intended to be targeted towards the predominant sources of emissions within Blaby District Council's area.

Effects of lockdown related to Covid-19

There has been some nationally based research into the effects of the lockdown on levels of pollutants. The Air Quality Expert Group published the following paper on the 1st July 2020:

https://uk-air.defra.gov.uk/assets/documents/reports/cat09/2007010844_Estimation_of_Changes_in_Air_Pollution_During_COVID-19_outbreak_in_the_UK.pdf

One of the initial conclusions in the paper is:

The most pronounced changes in UK air quality during lockdown have been in the urban environment, notably for nitrogen oxides (NO_x). Once weather effects are accounted for, mean reductions in urban NO_x averaged over the lockdown period considered have been typically 30-40%, with mean NO₂ reductions of 20-30%. In general, NO_x and NO₂ reductions have been greater at roadside than at urban background sites. These reductions would typically correspond to decreases in concentrations of 10-20 µg/m³ if expressed relative to annual averages.

In Blaby District, an early comparison of data showed for Nitrogen Dioxide there was little change at Blaby 1, but the other 3 stations showed a marked reduction in April. The greatest reduction was at Blaby 4. For Particulate Matter, Blaby 1 showed a marked reduction. We started monitoring PM_{2.5} at Blaby 2 in February 2020 so we could not make a direct comparison for PM at Blaby 2, at the time that this table was produced. The 2020 data had not been subject to data management and was viewed with some caution.

Table 3.1 – Early Annual Mean NO₂ and PM Monitoring Results showing effects of Covid-19 Lockdown

Month	Blaby 1 NO ₂	Blaby 1 PM ₁₀	Blaby 2 NO ₂	Blaby 2 PM ₁₀ /PM _{2.5}	Blaby 3 NO ₂	Blaby 4 NO ₂
Mar-19	11.6	29.9	16.2	25.7	21.7	30.4
Apr-19	14.7	23.5	21.8	42.4	26.2	96.4
				* PM _{2.5}		
Mar-20	13	14.9	8.6	27.4*	22.9	26.4
Apr-20	14	12.2	8.6	18.7*	16.7	21.7

The 2021 ASR will include a consideration of the monitoring results for 2020. It is due to be considered by Council on the 18th May 2021.

AQMA 1

This AQMA is located at the northern extremity of the A5460 (Narborough Road South, Braunstone Town) and the boundary with Leicester City Council. The dominant source is the local road network, but there is not considered to be a particular problematic element of the traffic flow in this AQMA. The actions for this AQMA are therefore focussed on the congestion that typically occurs at this location, particularly at peak times. The longer term effects of the lockdown period for Covid 19 are yet to be determined.

AQMAs 2 and 3

A source apportionment exercise was carried out by Blaby District Council in 2013 for AQMAs 2 and 3. This information was used in the preparation of the previous Air

Quality Action Plan 2014 (<https://www.blaby.gov.uk/media/1618/blaby-air-quality-action-plan-may-2014.pdf>). At that time, the M1 motorway was considered to be a significant contributory source to AQMAs 2 and 3. Monitoring in the last few years indicates that this is no longer the case. The M1 was removed as a source for these AQMAs, and therefore no actions are included in this AQAP. However, the Air Quality Strategy still includes more generalised actions for Highways England to collaborate on. The remaining dominant road sources are the local road network, including the A47 (Hinckley Road, Leicester Forest East). There is not considered to be a particular problematic element of the traffic flow in this AQMA, although this will be reconsidered as part of the action relating to acquisition of local knowledge. The actions for these AQMA are therefore focussed on the congestion that typically occurs in them, particularly at peak times. The longer term effects of the lockdown period for Covid 19 are yet to be determined.

AQMA 4B

This AQMA is located on B582, Enderby Road, Whetstone, including the junction with Victoria Road. There is not considered to be a particular problematic element of the traffic flow in this AQMA. The actions for this AQMA are therefore focussed on the congestion that typically occurs at this location at peak times. The longer term effects of the lockdown period for Covid 19 are yet to be determined.

AQMA 6

There is severe congestion on the B582, Mill Hill at peak hours, with a significant proportion of the traffic being HGVs. The road is on a gradient, with a high brick wall on the north side, and residential properties on the south side. There is a significant canopy of trees over the length of the road close to the traffic lights, which is the length that is subject to the monitored exceedances. Further work is to be undertaken to confirm the exact make-up of the traffic. Some information is contained in the Environmental Statement for the Enderby Logistics Park proposal and the associated Enderby Relief Road. The related planning application is 19/0164/OUT.

3.4 Required Reduction in Emissions

The table below is from the 2020 ASR and shows the current levels of NO₂ in the AQMAs. Reference has been made to the Technical Guidance LAQM.TG16 Chapter 7.

AQMA Name	Date of Declaration	Pollutants and Air Quality Objectives	One Line Description	Level of Exceedance (maximum monitored/modelled concentration at a location of relevant exposure)			
				At Declaration		Now	
AQMA 1: A5460 Narborough Road South	Declared September 2000; Amended January 2018	NO2 Annual Mean	Residential properties along a small section of Narborough Road South to the extent of Blaby District	50	µg/m ³	23	µg/m ³
AQMA 2: M1 corridor in Enderby and Narborough	Declared September 2000; amended May 2020	NO2 Annual Mean	Residential properties adjacent to the M1, between around 1.5 km and 3 km south of Junction 21.	50	µg/m ³	31	µg/m ³
AQMA 3: M1 corridor between Thorpe Astley and Leicester Forest East	Declared September 2000; Amended April 2005; amended May 2020	NO2 Annual Mean	Residential properties adjacent to the M1 and A47 between Thorpe Astley and Leicester Forest East	62	µg/m ³	38	µg/m ³
AQMA 4B: Enderby Road, Whetstone	Declared April 2005; amended May 2020	NO2 Annual Mean	Residential properties along Enderby Road, Whetstone	50	µg/m ³	28	µg/m ³
AQMA6: Mill Hill, Enderby	Declared January 2018	NO2 Annual Mean	Residential properties along Hall Walk and Mill Hill, Enderby	43	µg/m ³	37	µg/m ³

- **As can be seen from this table, there were no exceedances in 2019 in any of the AQMAs;**
- The value for AQMA 3 (38) and AQMA 6 (37) are not far within the Objective level, and actions should be taken to reduce the value by a further 4 $\mu\text{g}/\text{m}^3$. This would reduce the risk of future exceedances;
- For AQMAs 1, 2 and 4B, the current levels are below 35 $\mu\text{g}/\text{m}^3$, and so a future exceedance is less likely. However, any reductions in levels is welcome and so actions are included to this end.

3.5 Key Priorities

- Priority 1 – AQMAs 3 and 6, where current levels are just below the Air Quality Objective Level
- Priority 2 – AQMA 2, where the current level is 31 $\mu\text{g}/\text{m}^3$
- Priority 3 – AQMAs 1 and 4B, where current levels are below 30 $\mu\text{g}/\text{m}^3$
- Priority 4 – Wider measures in the Air Quality Strategy and the Carbon Neutral Action Plan

4 Development and Implementation of Blaby District Council's AQAP

4.1 Consultation and Stakeholder Engagement

In developing this AQAP, we have worked with other local authorities, agencies, businesses and the local community to improve local air quality. Schedule 11 of the Environment Act 1995 requires local authorities to consult the bodies listed in Table 4.1. In addition, we will be undertaking the following stakeholder engagement, following approval by the Cabinet Executive of this AQAP as a draft:

- Website
- Use of existing Blaby District Council My Account holders expressing interest
- Consultation with parish councils and elected Members
- Letters distributed directly to households in the AQMAs;
- Other interested parties that have contacted us previously about air quality

This consultation will be in autumn 2020 and the response to our consultation stakeholder engagement will be given in Appendix A.

Table 4.1 – Consultation Undertaken

Yes/No	Consultee
Yes	the Secretary of State
Yes	the Environment Agency
Yes	the highways authority (Leicestershire County Council)
Yes	all neighbouring local authorities
Yes	other public authorities as appropriate, such as Public Health colleagues
No	bodies representing local business interests and other organisations *

* we used an item in Blaby District Council's business newsletter ('Blaby Business Boost') instead to reach businesses directly.

There will need to be further, more detailed, consultation at various times during the life of this Plan, depending on the action under consideration. Those most likely to be affected by that action would be contacted, including residents in the AQMA(s).

4.2 Working Group

A small Working Group of officers will be established, including representatives from Environmental Services and Planning Policy (Blaby District Council); Highways and Public Health (Leicestershire County Council). The Group will meet regularly to support the implementation of the AQAP, and co-ordinate work on shared projects.

4.3 Monitoring

The monitoring of this AQAP will be undertaken by the Environmental Services team, with activities recorded on a Tracker Spreadsheet. Progress updates will be included in the Annual Status Report which is considered by Full Council before submission to Defra.

5 AQAP Measures

Table 5.1 shows the Blaby District Council AQAP measures. It contains:

- a list of the actions that form part of the plan
- the responsible individual and departments/organisations who will deliver this action
- estimated cost of implementing each action (overall cost and cost to the local authority)
- expected benefit in terms of pollutant emission and/or concentration reduction
- the timescale for implementation
- how progress will be monitored

NB: Please see future ASRs for regular annual updates on implementation of these measures

Table 5.1 – Air Quality Action Plan Measures

Measure No.	Measure	EU Category	EU Classification	Lead Authority	Planning Phase	Implementation Phase	Key Performance Indicator	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
AQMA 1											
1	Gather information from local sources and interrogate air quality monitoring data to inform actions and support bids for funding.	Traffic Management	UTC, Congestion management, traffic reduction	BDC	Spring 2021	Summer 2021	Clearer picture of traffic flows and effects on air quality	Not applicable		September 2021	Study of latest traffic data to understand issues. Opportunity for community to provide local information
2	Integrate traffic management (e.g. SCOOT) with air quality monitoring	Traffic Management	UTC, Congestion management, traffic reduction	LCC	2021	To be determined	Systems integrated	1 µg/m3		2025	LCC's current Network Management Plan includes this
3	Improve driver e.g. signs and active signs	Traffic Management	UTC, Congestion management, traffic reduction	LCC	2021	To be determined	Signs installed	1 µg/m3		2025	LCC's current Network Management Plan includes this
AQMA 2											
4	Gather information from local sources and interrogate air quality monitoring data to inform actions and support bids for funding. To include reconsideration of source apportionment	Traffic Management	UTC, Congestion management, traffic reduction	BDC	Spring 2021	Summer 2021	Clearer picture of traffic flows and effects on air quality	Not applicable		September 2021	Study of latest traffic data to understand issues. Opportunity for community to provide local information

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Measure No.	Measure	EU Category	EU Classification	Lead Authority	Planning Phase	Implementation Phase	Key Performance Indicator	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
5	Integrate traffic management (e.g. SCOOT) with air quality monitoring	Traffic Management	UTC, Congestion management, traffic reduction	LCC	2021	To be determined	Systems integrated	1 µg/m3		2025	LCC's current Network Management Plan includes this
6	Improve driver information about air quality e.g. signs and active signs	Traffic Management	UTC, Congestion management, traffic reduction	LCC	2021	To be determined	Signs installed	1 µg/m3		2025	LCC's current Network Management Plan includes this
AQMA 3											
7	Gather information from local sources and interrogate air quality monitoring data to inform actions and support bids for funding. To include reconsideration of source apportionment	Traffic Management	UTC, Congestion management, traffic reduction	BDC	Spring 2021	Summer 2021	Clearer picture of traffic flows and effects on air quality	Not applicable		September 2021	Study of latest traffic data to understand issues. Opportunity for community to provide local information
8	Deliver Braunstone Crossroads junction improvement	Traffic Management	Strategic highway improvements	LCC/Devel opers	Dependant on planning associated with Lubbesthorpe development	To be determined	Junction improved	2 µg/m3	Improvement approved as part of Lubbesthorpe development, but detail subject to planning approval	2025	
9	Integrate traffic management (e.g. SCOOT) with air quality monitoring	Traffic Management	UTC, Congestion management, traffic reduction	LCC	2021	To be determined	Systems integrated	1 µg/m3		2025	LCC's current Network Management Plan includes this

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Measure No.	Measure	EU Category	EU Classification	Lead Authority	Planning Phase	Implementation Phase	Key Performance Indicator	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
10	Improve driver information about air quality e.g. signs and active signs	Traffic Management	UTC, Congestion management, traffic reduction	LCC	2021	To be determined	Signs installed	1 µg/m3		2025	LCC's current Network Management Plan includes this
AQMA 4B											
11	Gather information from local sources and interrogate air quality monitoring data to inform actions and support bids for funding.	Traffic Management	UTC, Congestion management, traffic reduction	BDC	Spring 2021	Summer 2021	Clearer picture of traffic flows and effects on air quality	Not applicable		September 2021	Study of latest traffic data to understand issues. Opportunity for community to provide local information
12	Integrate traffic management (e.g. SCOOT) with air quality monitoring	Traffic Management	UTC, Congestion management, traffic reduction	LCC	2021	To be determined	Systems integrated	1 µg/m3		2025	LCC's current Network Management Plan includes this
13	Improve driver information about air quality e.g. signs and active signs	Traffic Management	UTC, Congestion management, traffic reduction	LCC	2021	To be determined	Signs installed	1 µg/m3		2025	LCC's current Network Management Plan includes this
14	Increased air quality monitoring on Enderby Road, Whetstone	Traffic Management	UTC, Congestion management, traffic reduction	BDC	2021	To be determined	Additional Monitor (s) installed	Not applicable	£10,000 Section 106 funding already agreed from Cork Lane Glen Parva housing development once triggered	2025	Alternative funding sources may include BDC Capital and Air Quality Grant
AQMA 6											

Appendix A
Blaby District Council

Measure No.	Measure	EU Category	EU Classification	Lead Authority	Planning Phase	Implementation Phase	Key Performance Indicator	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
15	Gather information from local sources and interrogate air quality monitoring data to inform actions and support bids for funding.	Traffic Management	UTC, Congestion management, traffic reduction	BDC	Spring 2021	Summer 2021	Clearer picture of traffic flows and effects on air quality	Not applicable		September 2021	Study of latest traffic data to understand issues. Opportunity for community to provide local information
16	Increased air quality monitoring	Traffic Management	UTC, Congestion management, traffic reduction	BDC	Completed	Autumn 2020	Additional Monitors installed	Not applicable	Locations for the monitors agreed. Installation to follow	October 2020	
17	Integrate traffic management (e.g. SCOOT) with air quality monitoring	Traffic Management	UTC, Congestion management, traffic reduction	LCC	2021	To be determined	Systems integrated	1 µg/m3		2025	LCC's current Network Management Plan includes this
18	Improve driver information about air quality e.g. signs and active signs	Traffic Management	UTC, Congestion management, traffic reduction	LCC	2021	To be determined	Signs installed	1 µg/m3		2025	LCC's current Network Management Plan includes this
19	Delivery of Enderby Relief Road	Traffic Management	Strategic highway improvements	LCC/Devel opers	Dependant on planning associated with Lubbethorpe development	To be determined	Relief Road operational	2 µg/m3	Improvement approved as part of Lubbethorpe development Detailed plans currently being processed	2025	The detailed plans are linked to the proposed Enderby Logistics Park
Wider measures											

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Measure No.	Measure	EU Category	EU Classification	Lead Authority	Planning Phase	Implementation Phase	Key Performance Indicator	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
20	Secure investment through The LLEP and Transforming Cities funding to improve our walking and cycling routes. To develop key routes across the district. To work with colleagues in Leicester City, Leicestershire County Council and Sustrans on improvements to our cycle routes. Promotion of our walking and cycling routes to increase usage and a change in residents behaviour Implementation of a Walk and ride Connectivity strategy	Promoting Travel Alternatives	Promotion of walking	BDC	Autumn 2020	2021 onwards	Project completed	1 µg/m ³	Funding bids submitted	2025	Action overlaps with CNAP – Walk & Ride Blaby – multi stakeholder approach to connect communities and places by creating and improving a sustainable transport network focussing on walking and cycling and improving the health and wellbeing of residents.
21	Behavioural change project with businesses in vicinity of AQMA	Promoting Travel Alternatives	Workplace Travel Planning	BDC	Summer 2020	Autumn 2020 onwards	Completion of project	1 µg/m ³	This work has been in progress since 2019	December 2021	The project has included Beat The Streets. It is partly funded by Air Quality Grant and is delivered in conjunction with LCC
22	Behavioural change project with schools	Promoting Travel Alternatives	School Travel Plans	BDC	Summer 2020	Autumn 2020 onwards	Completion of project	1 µg/m ³	This work has been in progress since 2019	December 2021	The project has included Beat The Streets. It is partly funded by Air Quality Grant and is delivered in conjunction with LCC

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Measure No.	Measure	EU Category	EU Classification	Lead Authority	Planning Phase	Implementation Phase	Key Performance Indicator	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
23	Develop a partnership to create a charging network across the district (public and private car parks, petrol stations, on street)	Promoting Low Emission Transport	Procuring alternative Refuelling infrastructure to promote Low Emission Vehicles, EV recharging, Gas fuel recharging	BDC	Summer 2020	September 2020	Completion of Project	1 µg/m ³	This project is underway. Locations identified and funding application submitted	March 2021	This is an action that overlaps with the Carbon Neutral Action Plan
24	Engage with the taxi drivers to encourage the switch to electric vehicles.	Promoting Low Emission Transport	Promoting Low Emission Public Transport	BDC	Autumn 2020	2021	Completion of project	1 µg/m ³	Awaiting launch of second funding scheme by OLEV	2022	This is an action that overlaps with the Carbon Neutral Action Plan 'Ultra Low Emission Taxi Infrastructure Scheme'
25	Improve air quality information on BDC website	Public Information	Via the Internet	BDC	Spring 2021	Summer 2021	Improved webpage	Unable to predict that which can be directly attributed to this action	Revisions of website underway	End of July 2021	
26	Use the Pan Regional Transport Model (PRTM) to build a Air quality model to be able to assess proposed physical mitigation provide the evidence to bid for funding etc	Traffic Management	UTC, Congestion management, traffic reduction	LCC	Spring 2021	2021	Clearer picture of traffic flows and effects on air quality	Not applicable	A model was developed for the junction 21 area as part of the Feasibility Study in 2018	December 2021	The model would be informed by the information gathered referred to in actions 1, 4,7, 11 and 15 above

Appendix A: Response to Consultation

Table A.1 – Summary of Responses to Consultation and Stakeholder Engagement on the AQAP

Consultee	Category	Response
Defra	Secretary of State	Accepted the draft AQAP. Recommended improvements to the AQAP which have now been incorporated where possible
Public Health (Leicestershire County Council)	Public Authority	Provided updated text for section 3.1. Supports the AQAP.
Highways Authority (Leicestershire County Council)	Local Authority	Provided an updated Network Management Plan, which has been used to revise the appropriate actions in Table 5.1. Supports the AQAP. Supported implementation of EV charging points, which is within the Carbon Neutral Action Plan; supported use of Green Infrastructure to address air quality.
Highways England	Highways Authority	No comments received. However the M1 has been removed as a road source from AQMAs 2 and 3, following their comments on revision of the boundaries to those AQMAs.
Public Health England	Public Authority	Comments received which support the AQAP, and guidance on behavioural change work. Happy to see link with County Public Health, and the JSNA. PHE strongly supports the continued efforts of the council to improve air quality in its area and reduce public exposure to air pollution.
Environment Agency	Public Authority	Advised that they were not aware of any waste facilities or other industrial installations regulated by the Environment Agency in the Blaby District Council area that are causing or contributing to failures of air quality standards. It is recognised that Blaby District Council will need to work with others on the implementation of the measures necessary to address poor air quality as the matter is not confined to one planning authority area, and development is often governed by separate regulatory regimes and

		legislation, such as building regulations and environmental permitting. We are pleased to note that the Blaby District Council regularly participates in the Leicester, Leicestershire and Rutland air quality forum with representatives from adjacent boroughs
Businesses in the District	Commercial	No replies from the article that was placed in Blaby Business Boost.
Members	Blaby District Council elected Members	Support for EV Charging Points, which is within the Carbon Neutral Action Plan. Asked for AQMA 1 to be extended to cover the full length of the A5460 Narborough Road South/Fosse Park – this AQMA has been previously reduced from this size based upon monitoring results. The effects of Covid-19 on traffic should be tracked. These matters would be covered by the Annual Status Report. Would support more actions on mitigating the effects of air quality, and behavioural change work. Also use of Green Infrastructure. Further actions are found in the documents cited in sections 1 and 3 of this AQAP.
Narborough Journal	Media	Asked for further information on the Bias Correction Factor used in 2020. This has now been added in Appendix E.
Kilby Parish Council	Local Council	Supported AQAP, but asked for action to be taken in rural areas which are not AQMAs. This is addressed by the other documents cited in sections 1 and 3 of this AQAP.
Braunstone Town Council	Local Council	The Town Council would like to thank the District Council for its ongoing commitment to improving air quality and looks forward to working in partnership with the District Council over the lifetime of the action plan and beyond. Supported increased partnership working on monitoring and EV charging points. Supported securing of Section 106 funding. Drew attention to the need to monitor impact of further development in Fosse Park Area. This is addressed by the other documents cited in sections 1 and 3 of this AQAP.

Glenfield Resident and local Parish Councillor	Individual	Would support action, including campaigns to address idling vehicles, in conjunction with partners (e.g. those associated with Glenfield Primary School). The actions in this AQAP provides scope to do this.
Local Resident	Individual	Supports work on behavioural change, including increased cycling (e.g. Bikeability). The actions in this AQAP provides scope to do this.
Local Resident	Individual	Would support work to tackle idling vehicles at the level crossing in Narborough. There is currently no monitoring data that shows a particular issue at this location, but other initiatives are available.
Blaby Parish Council	Local Council	Would support increased air quality monitoring alongside local road network to address potential impact of the Whetstone Pastures development. This is addressed by the Air Quality Strategy (annual review of air quality monitoring).
Huncote Parish Council	Local Council	Wished to make no comments
Cosby Parish Council	Local Council	Wished to make no comments
Leicester Forest East Parish Council	Local Council	The new AQAP and especially AQMA3 must seriously address the potential for increasing pollution and ensure measures are in place not just to make minor improvements but deliver a sustainable and ever improving quality of air for the community. Supported action to increase local knowledge of air quality issues. The parish council states that the plan should be more ambitious in reducing pollution levels. Once the levels have reached targets, what is the ongoing strategy for 'continuous improvement'? 2020 was an exceptional year due to COVID and reduced traffic but BDC must plan for the likely return of traffic into normal / increasing levels. Though there was a decrease in car use it is noticeable that freight usage has dramatically increased in 2020 /21. Drew attention to the potential impact of housing developments along the A47 corridor. All of these issues are addressed by the AQAP and its associated review and reporting processes, together with the other documents cited in sections 1 and 3 of this AQAP

Appendix B: Reasons for Not Pursuing Action Plan Measures

Table B.1 – Action Plan Measures Not Pursued and the Reasons for that Decision

Action category	Action description	Reason action is not being pursued (including Stakeholder views)

There are no actions that are not being pursued.

Appendix C: Air Quality Management Areas

Maps showing the AQMA boundaries are found below (Figure 1 to Figure 5).

- AQMA 1: A5460 Narborough Road South
- AQMA 2: M1 corridor in Enderby and Narborough
- AQMA 3: M1 corridor between Thorpe Astley and Leicester Forest East
- AQMA 4B: Enderby Road, Whetstone
- AQMA 6: Mill Hill, Enderby

AQMA 1: A5460 Narborough Road South

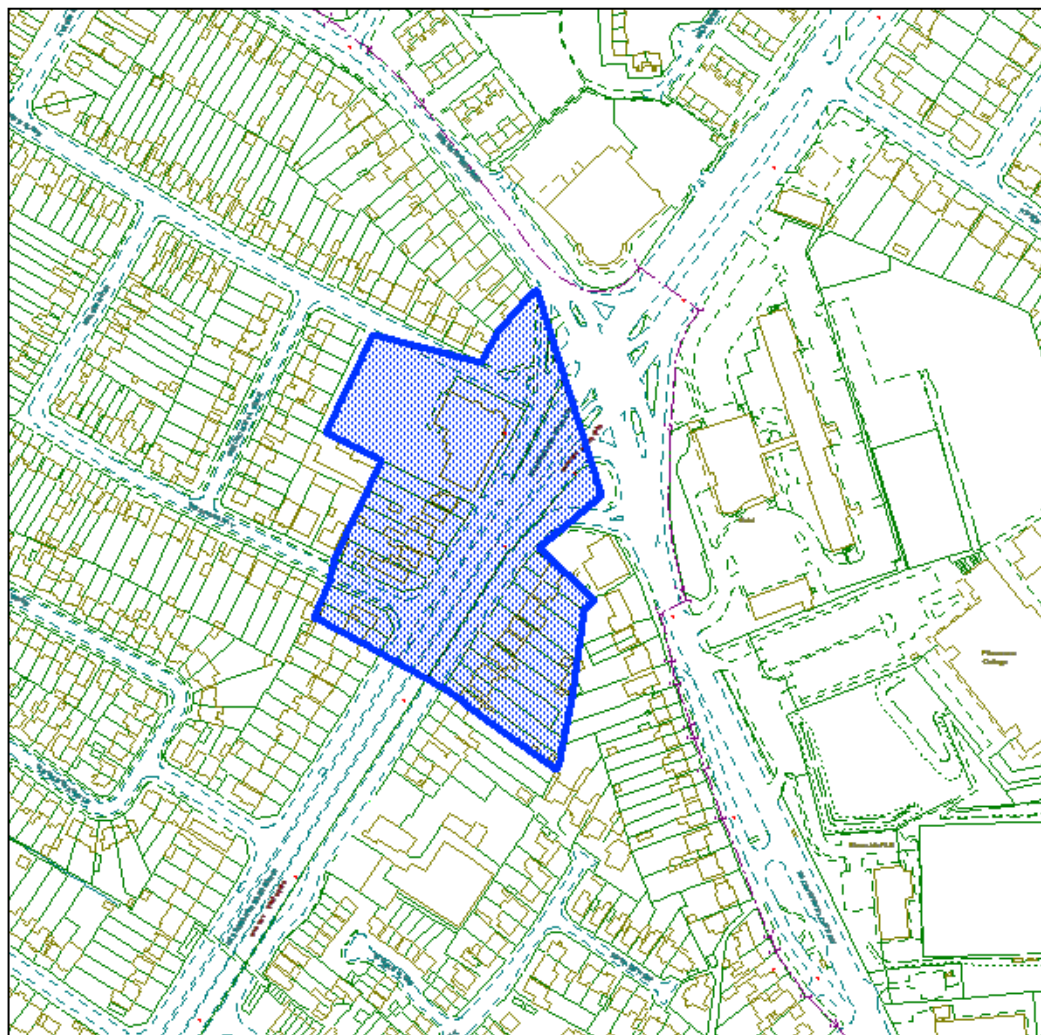


Figure 1 - Map showing the boundary for AQMA 1 along Narborough Road South. AQMA boundary shown in blue. © Crown copyright. All rights reserved.

AQMA 2: M1 corridor in Enderby and Narborough

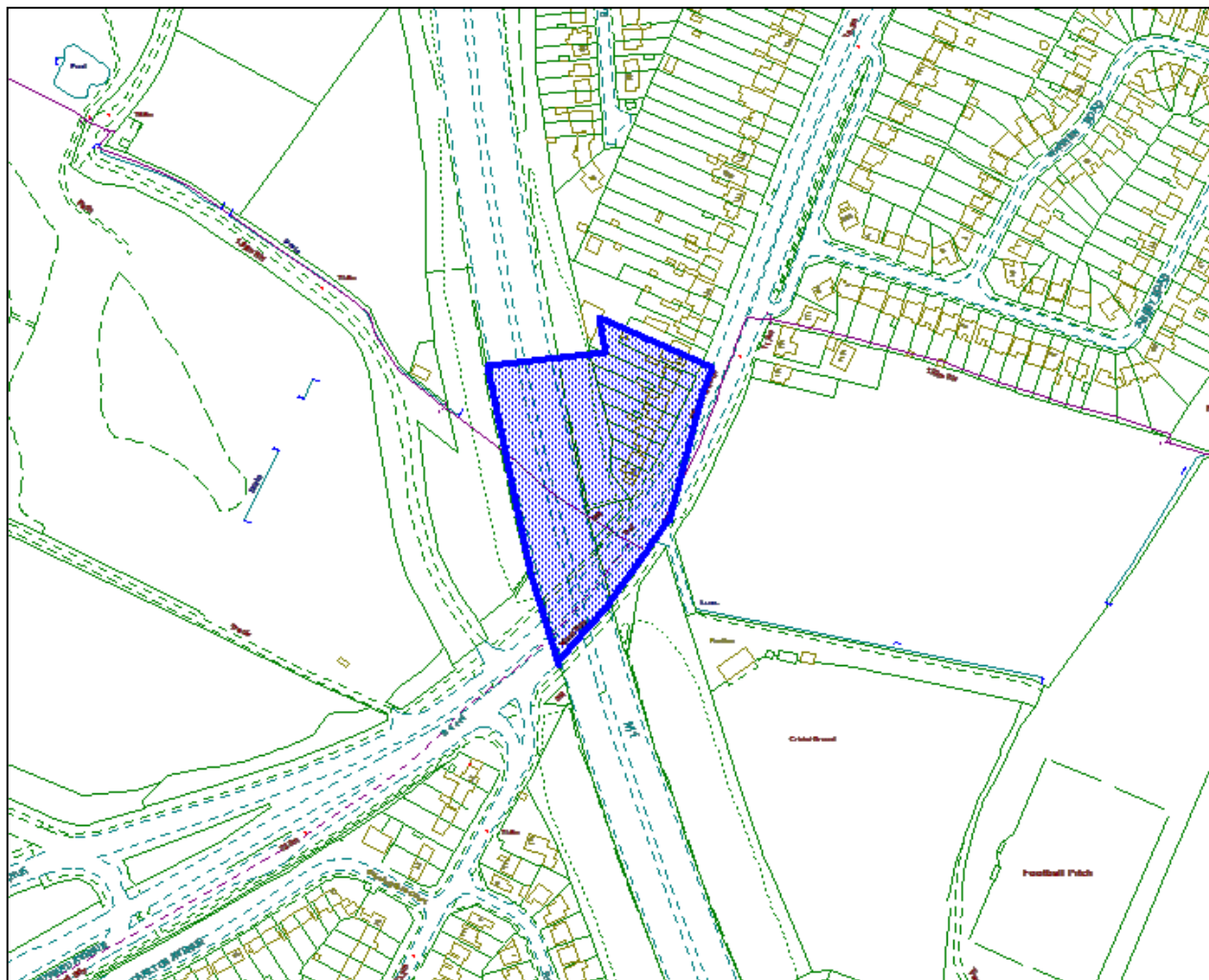


Figure 2- Map showing the boundary for AQMA 2 along the M1 corridor in Enderby and Narborough. AQMA shown in blue. © Crown copyright. All rights reserved.

AQMA 3: M1 corridor between Thorpe Astley and Leicester Forest East

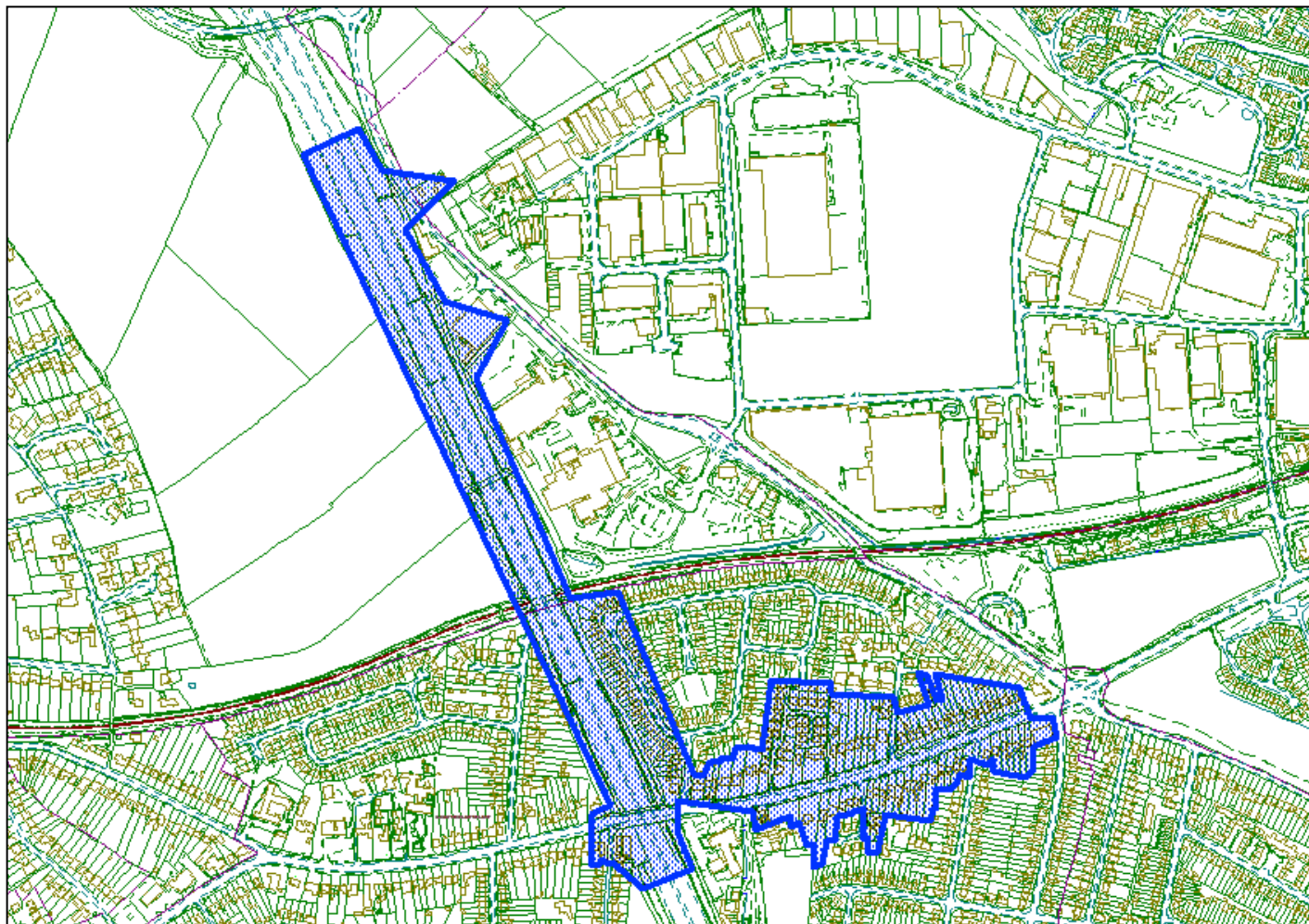


Figure 3 - Map showing the revised boundary for AQMA 3 along the M1 corridor between Thorpe Astley and Leicester Forest East. AQMA shown in blue. © Crown copyright. All rights reserved.

AQMA 4B: Enderby Road, Whetstone

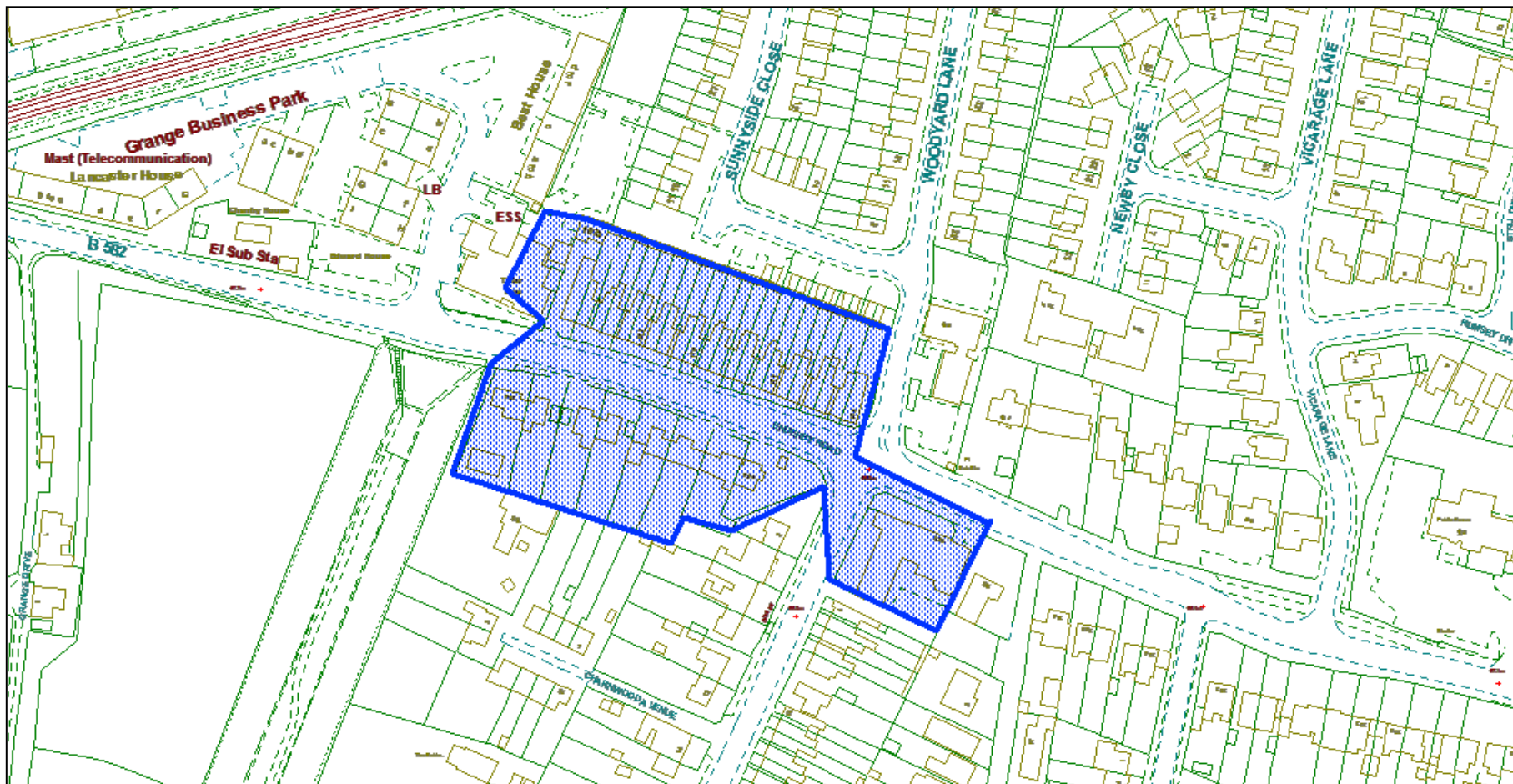


Figure 4 - Map showing the revised boundary for AQMA 4B along Enderby Road in Whetstone. AQMA shown in blue. © Crown copyright. All rights reserved.

AQMA 6: Mill Hill, Enderby

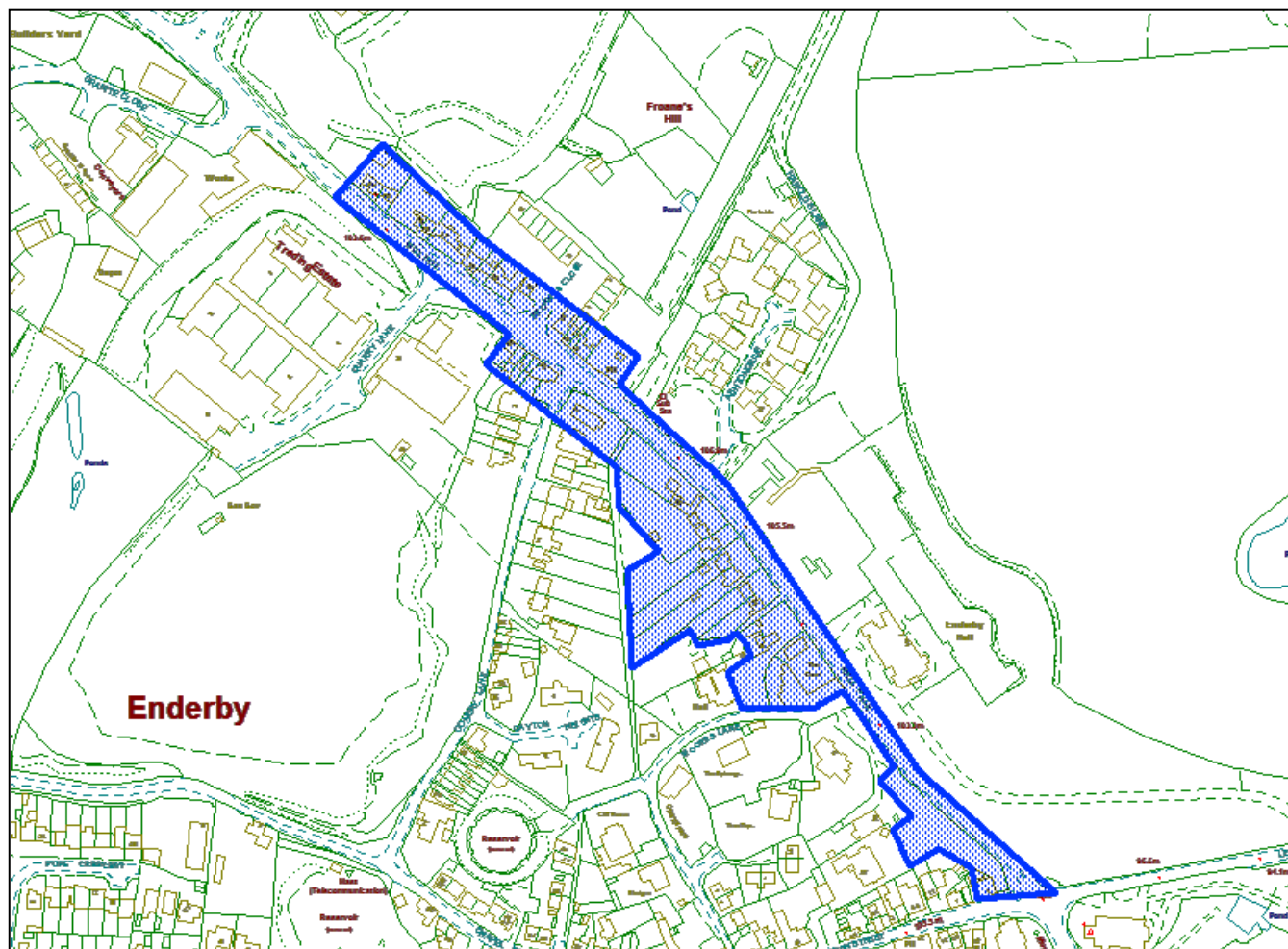


Figure 5 - Map showing the boundary for AQMA6 along Mill Hill in Enderby. AQMA shown in blue. © Crown copyright. All rights reserved.

Appendix D: Monitoring Information from Annual Status Report 2020

Table D1 – Details of Automatic Monitoring Sites

Site ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA?	Monitoring Technique	Distance to Relevant Exposure (m) ⁽¹⁾	Distance to kerb of nearest road (m) ⁽²⁾	Inlet Height (m)
CM1	Blaby 1 (Packhorse Drive)	Roadside	454482	298573	NO ₂ ; PM ₁₀	YES	Chemiluminescent; Gravimetric (TEOM)	12.6	0.65	3
CM3	Blaby 3 (Hinckley Road, LFE)	Roadside	453185	303310	NO ₂	YES	Chemiluminescent	38	0.1	1.5
CM4	Blaby 4 (Hinckley Road, LFE)	Roadside	453492	303315	NO ₂	YES	Chemiluminescent	4	1	1.5
CM5	Blaby 2 (Mill Hill, Enderby)	Roadside	453594	299549	NO ₂ ; PM ₁₀	YES	Chemiluminescent; Gravimetric (TEOM)	4	1	1.5

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 D2 – Details of Non-Automatic Monitoring Sites

Site ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA?	Distance to Relevant Exposure (m) ⁽¹⁾	Distance to kerb of nearest road (m) ⁽²⁾	Tube collocated with a Continuous Analyser?	Height (m)
DT1	Kingsway	Roadside	455970	301146	NO2	YES	11	1.5	NO	2.2
DT4	Hall Walk, Moores Lane	Roadside	453606	299557	NO2	NO	0	1.5	NO	1.8
DT5	204 Leicester Road, Glen Parva	Roadside	457011	299627	NO2	NO	21.6	3.4	NO	1.8
DT9	Branting Hill	Roadside	453735	307234	NO2	YES	15.9	1.6	NO	2.3
DT11	Nox Box A	Other	454482	298573	NO2	YES	12.6	0.65	YES	2.7
DT12	Nox Box B	Other	454482	298573	NO2	YES	12.6	0.65	YES	2.7
DT13	Nox Box C	Other	454482	298573	NO2	YES	12.6	0.65	YES	2.7
DT15	1 Newbridge Road	Other	456786	298547	NO2	NO	0	7.8	NO	2.8
DT16	The Cottage, Ratby Lane	Roadside	453220	304273	NO2	YES	15	5.4	NO	1.3
DT17	St Andrews Church, Hinckley Road	Roadside	453137	303321	NO2	YES	15	19.4	NO	1.8
DT18	64 Packer Avenue	Other	453488	303637	NO2	YES	0	22.7	NO	1.4
DT20	159 Enderby Rd	Roadside	455819	297954	NO2	YES	0	4.7	NO	1.7
DT21	Enderby Rd	Roadside	456148	297833	NO2	YES	11.1	2.7	NO	2.1
DT22	8 Coventry Road	Roadside	448004	291660	NO2	NO	3.9	1	NO	2

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DT25	7 Narborough Road South	Roadside	456470	301903	NO2	YES	0	7	NO	1.8
DT26	Junction of Victoria Rd	Roadside	455817	297937	NO2	YES	15.5	2.2	NO	2
DT29	258 Blaby Road	Roadside	454988	298619	NO2	NO	0	15	NO	1.5
DT30	55 Hinckley Road, Sapcote	Roadside	448481	293549	NO2	NO	19.3	2.3	NO	1.8
DT31	5 Hinckley Road, Sapcote	Roadside	448876	293447	NO2	NO	0	1.9	NO	1.8
DT32	CO-OP Croft Rd	Roadside	454554	294803	NO2	NO	2.3	1.5	NO	1.9
DT35	2 Narborough Rd. South	Roadside	456521	301896	NO2	YES	0	13.2	NO	1.9
DT39	Sapcote Working Mens Club	Roadside	448847	293462	NO2	NO	0	4.2	NO	1.8
DT40	Conery Lane/ Mill Hill Road	Roadside	453468	299737	NO2	NO	7.6	1.6	NO	1.9
DT41	9 Mill Hill Road	Roadside	453439	299740	NO2	NO	0	3.8	NO	1.9
DT43	2 Blaby Rd	Roadside	453780	299360	NO2	NO	1.4	1.35	NO	1.7
DT44	1 Mill Hill Rd	Roadside	453706	299455	NO2	NO	1.2	1.6	NO	1.8
DT48	98 Leicester Rd, Enderby	Roadside	454519	298148	NO2	YES	0	8.7	NO	1.8
DT49	10 Hall Walk, Enderby	Roadside	453565	299609	NO2	YES	0	13	NO	2
DT51	257 Hinckley Road, LFE	Roadside	452234	302753	NO2	NO	0	11.3	NO	1.9
DT53	2 Webb Close, LFE	Roadside	453648	302974	NO2	YES	6.8	2	NO	1.8
DT54	71 Hinckley Rd, LFE	Roadside	453592	303415	NO2	YES	0	32.9	NO	1.5
DT56	Avalon, 9 Hinckley Rd, LFE	Roadside	454079	303535	NO2	YES	0	20	NO	1.8
DT57	6 Ratby Lane, LFE	Roadside	454096	303599	NO2	NO	12.1	2.4	NO	1.7
DT58	122 Enderby Rd, Whetstone	Roadside	455995	297859	NO2	YES	0	17.2	NO	1.7

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DT61	92 Leicester Rd, Narborough	Roadside	454434	297987	NO2	YES	0	14.7	NO	1.8
DT63	Millfield School, Braunstone	Other	455381	301453	NO2	NO	29	21.8	NO	2.2
DT64	3 Kirby Road, Glenfield	Roadside	453622	306039	NO2	NO	0	2	NO	1.9
DT65	11 Stamford Street, Glenfield	Roadside	306077	453788	NO2	NO	0	1.9	NO	1.5
DT66	The Balk, Glenfield	Roadside	306184	453834	NO2	NO	17.3	9	NO	2
DT67	Birch Lane, Glenfield	Roadside	305805	453265	NO2	NO	14.9	1.8	NO	1.5
DT68	45 Mill Hill, Enderby	Roadside	299846	453281	NO2	YES	0	5.6	NO	1.8
DT69	Station Road, Elmhurst	Roadside	447032	295877	NO2	NO	49.3	1.2	NO	1.8
DT70	5 Murby Way, Thorpe Astley	Roadside	454451	302150	NO2	NO	17.6	1.9	NO	1.8
DT71	82 Westover Road, Thorpe Astley	Roadside	455061	302718	NO2	NO	4.5	2.5	NO	1.8
DT72	8 Neal Avenue, Thorpe Astley	Roadside	455061	302883	NO2	NO	8.5	2.2	NO	1.8
DT73	New Road, Stoney Stanton	Roadside	449036	294720	NO2	NO	11.1	2.3	NO	1.8
DT74	Broughton Road, Stoney Stanton	Roadside	449105	294705	NO2	NO	3.3	2.7	NO	1.8
DT75	Long Street, Stoney Stanton	Roadside	449080	294785	NO2	NO	1.4	1.2	NO	1.8
DT76	The Pines, Kirby Muxloe	Other	452184	304813	NO2	NO	0	24.5	NO	1.8
DT77	The Chestnuts, Kirby Muxloe	Roadside	452309	304870	NO2	NO	0	12.2	NO	1.8
DT78	Aston Firs, Blaby	Roadside	446218	293831	NO2	NO	17	37.5	NO	1.8

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 D2 – Annual Mean NO₂ Monitoring Results

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2019 (%) ⁽²⁾	NO ₂ Annual Mean Concentration (µg/m ³) ^{(3) (4)}				
							2015	2016	2017	2018	2019
CM1	454482	298573	Roadside	Automatic	87.1	87.1	38.1	23	28.8	27	30.9
CM3	453185	303310	Roadside	Automatic	97	97	26.8	44	25.4	27.6	24.8
CM4	453492	303315	Roadside	Automatic	75.9	75.9	47.9	24.9	37.1	47.3	38.4
CM5	453594	299549	Roadside	Automatic	72.7	72.7	-	24.9	42.4	38.3	30.9
DT1	455970	301146	Roadside	Diffusion Tube	100	100	25	34.7	32.8	30.8	25.1
DT4	453606	299557	Roadside	Diffusion Tube	100	100	44	53.3	42.6	47.1	36.9
DT5	457011	299627	Roadside	Diffusion Tube	83	83	17	22	-	-	19.5
DT9	453735	307234	Roadside	Diffusion Tube	100	100	19	28	24.8	25.8	19.4
DT11	454482	298573	Other	Diffusion Tube	100	100	19	25.2	20	21.7	17.3
DT12	454482	298573	Other	Diffusion Tube	100	100	20	24.7	20.2	20.9	17
DT13	454482	298573	Other	Diffusion Tube	100	100	19	24	20.4	20.5	17.1
DT15	456786	298547	Other	Diffusion Tube	100	100	14	23.4	20.3	20	16.4
DT16	453220	304273	Roadside	Diffusion Tube	100	100	29	38.4	38.7	34.4	27.9
DT17	453137	303321	Roadside	Diffusion Tube	100	100	20	26	24.5	25	19.6
DT18	453488	303637	Other	Diffusion Tube	100	100	28	34.3	34.7	30.1	24.9

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DT20	455819	297954	Roadside	Diffusion Tube	100	100	21	27.8	26.8	25.7	20.6
DT21	456148	297833	Roadside	Diffusion Tube	100	100	19	23.3	21.7	22.2	17.2
DT22	448004	291660	Roadside	Diffusion Tube	100	100	20	25.2	21.3	22.2	17.1
DT25	456470	301903	Roadside	Diffusion Tube	100	100	22	29.4	28.2	29.4	23
DT26	455817	297937	Roadside	Diffusion Tube	100	100	28	34.9	33.5	31.5	27.6
DT29	454988	298619	Roadside	Diffusion Tube	100	100	16	21.9	21.8	20.5	16.5
DT30	448481	293549	Roadside	Diffusion Tube	100	100	13	14.5	-	-	15.4
DT31	448876	293447	Roadside	Diffusion Tube	100	100	13	18.9	-	-	16.4
DT32	454554	294803	Roadside	Diffusion Tube	100	100	15	21.9	20.1	23.8	16.3
DT35	456521	301896	Roadside	Diffusion Tube	100	100	22	30.1	27.3	26.1	22.2
DT39	448847	293462	Roadside	Diffusion Tube	92	92	15	16.5	-	-	15.8
DT40	453468	299737	Roadside	Diffusion Tube	100	100	23	33.1	29.2	28.7	21.9
DT41	453439	299740	Roadside	Diffusion Tube	100	100	24	37.3	31.2	32.1	26.3
DT43	453780	299360	Roadside	Diffusion Tube	92	92	22	33.1	31.3	32.5	25.2
DT44	453706	299455	Roadside	Diffusion Tube	100	100	23	32.2	29.8	33.4	24.2
DT48	454519	298148	Roadside	Diffusion Tube	100	100	-	-	35.5	34	25
DT49	453565	299609	Roadside	Diffusion Tube	100	100	-	-	35.6	22.8	18
DT51	452234	302753	Roadside	Diffusion Tube	100	100	-	-	22.6	22.4	18
DT53	453648	302974	Roadside	Diffusion Tube	92	92	-	-	19.8	22.5	16.6

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DT54	453592	303415	Roadside	Diffusion Tube	100	100	-	-	20.4	32.5	26.6
DT56	454079	303535	Roadside	Diffusion Tube	100	100	-	-	26.3	24.8	21
DT57	454096	303599	Roadside	Diffusion Tube	100	100	-	-	25.3	39	29.7
DT58	455995	297859	Roadside	Diffusion Tube	100	100	-	-	37.4	27.2	18.5
DT61	454434	297987	Roadside	Diffusion Tube	100	100	-	-	19.2	28.9	20.9
DT63	455381	301453	Other	Diffusion Tube	92	92	-	-	21.4	28.7	18.6
DT64	453622	306039	Roadside	Diffusion Tube	100	100	-	-	25.3	24.3	22.4
DT65	306077	453788	Roadside	Diffusion Tube	100	100	-	-	-	25.4	32.9
DT66	306184	453834	Roadside	Diffusion Tube	92	92	-	-	-	30.2	19.4
DT67	305805	453265	Roadside	Diffusion Tube	92	92	-	-	-	41.8	18.4
DT68	299846	453281	Roadside	Diffusion Tube	100	100	-	-	-	25.7	23.8
DT69	447032	295877	Roadside	Diffusion Tube	92	92	-	-	-	26.3	16.7
DT70	454451	302150	Roadside	Diffusion Tube	100	100	-	-	-	30.4	22
DT71	455061	302718	Roadside	Diffusion Tube	100	100	-	-	-	-	16.1
DT72	455061	302883	Roadside	Diffusion Tube	33	33	-	-	-	-	27.1
DT73	449036	294720	Roadside	Diffusion Tube	100	100	-	-	-	-	29
DT74	449105	294705	Roadside	Diffusion Tube	100	100	-	-	-	-	25.5
DT75	449080	294785	Roadside	Diffusion Tube	92	92	-	-	-	-	21.1
DT76	452184	304813	Other	Diffusion Tube	75	75	-	-	-	-	11.4

DT77	452309	304870	Roadside	Diffusion Tube	75	75	-	-	-	-	17.5
DT78	446218	293831	Roadside	Diffusion Tube	58	58	-	-	-	-	31.5

☒ Diffusion tube data has been bias corrected

☒ Annualisation has been conducted where data capture is <75%

☒ 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 adjustment

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**.

(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%).

(3) Means for diffusion tubes have been corrected for bias. All means have been “annualised” as per Boxes 7.9 and 7.10 in LAQM.TG16 if valid data capture for the full calendar year is less than 75%. See Appendix C for details.

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

Figure D1 – Trends in Annual Mean NO₂ Concentrations

Adapted from Table D3

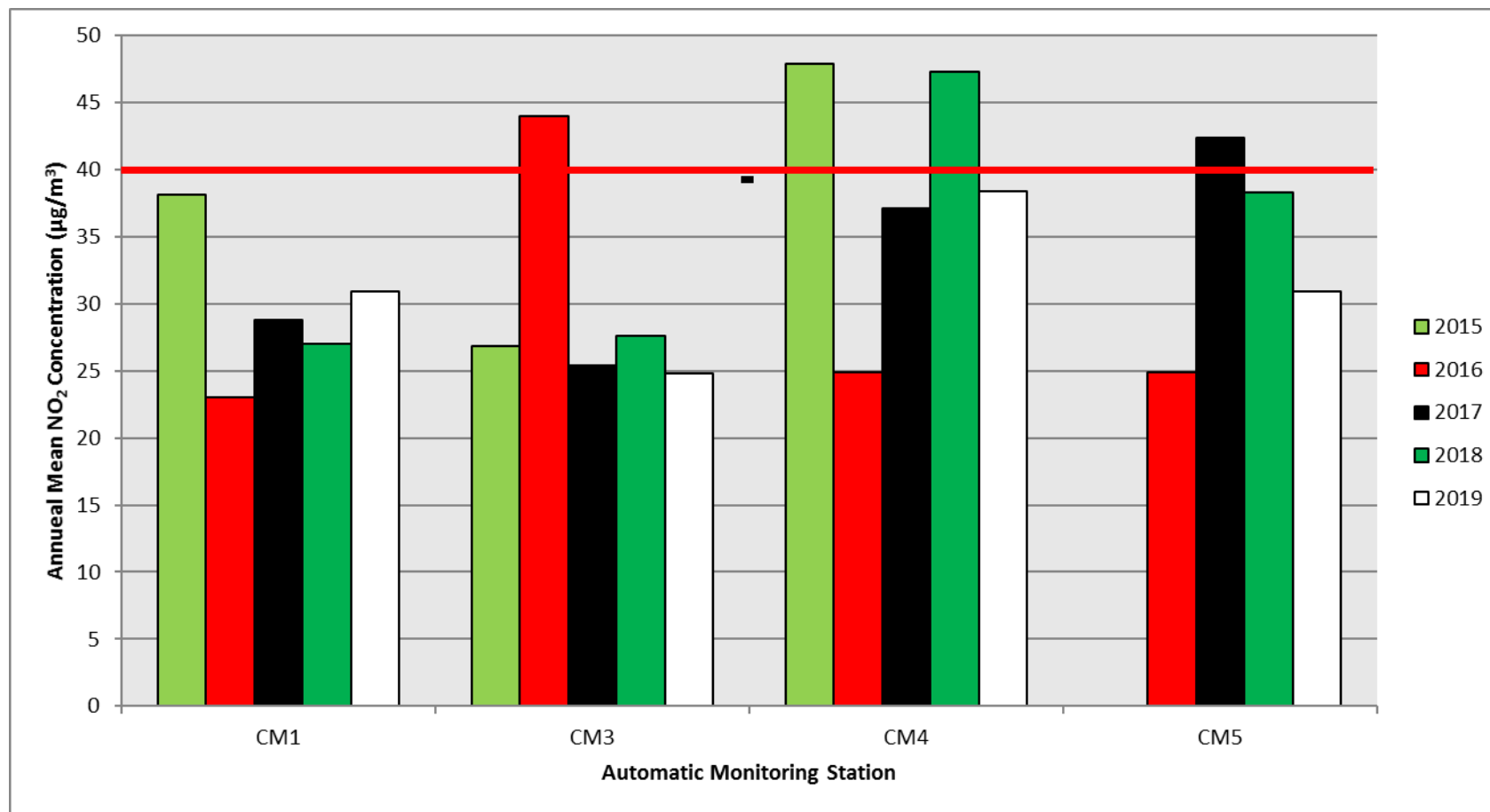


Table D3 – 1-Hour Mean NO₂ Monitoring Results

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2019 (%) ⁽²⁾	NO ₂ 1-Hour Means > 200µg/m ³ ⁽³⁾				
							2015	2016	2017	2018	2019
CM1	454482	298573	Roadside	Automatic	87.1	87.1	0	0	0	0	0
CM3	453185	303310	Roadside	Automatic	97	97	0	0	0	0	0
CM4	453492	303315	Roadside	Automatic	75.9	75.9	0	0	5	1	0
CM5	453594	299549	Roadside	Automatic	72.7	72.7	-	3	8	0	0

Notes:

Exceedances of the NO₂ 1-hour mean objective (200µg/m³ not to be exceeded more than 18 times/year) are shown in **bold**.

(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%).

(3) If the period of valid data is less than 85%, the 99.8th percentile of 1-hour means is provided in brackets.

Table D4 – Annual Mean PM₁₀ Monitoring Results

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2019 (%) ⁽²⁾	PM ₁₀ Annual Mean Concentration (µg/m ³) ⁽³⁾				
						2015	2016	2017	2018	2019
CM1	454482	298573	Roadside	87.1	87.1	15.8	12	14.8	11	11.8
CM5	453594	299549	Roadside	72.7	72.7	-	14	20.4	16	16.9

☒ Annualisation has been conducted where data capture is <75%

Notes:

Exceedances of the PM₁₀ annual mean objective of 40µg/m³ are shown in **bold**.

(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%).

(3) All means have been “annualised” as per Boxes 7.9 and 7.10 in LAQM.TG16, valid data capture for the full calendar year is less than 75%. See Appendix C for details.

Figure D2 – Trends in Annual Mean PM₁₀ Concentrations

Adapted from Table D5

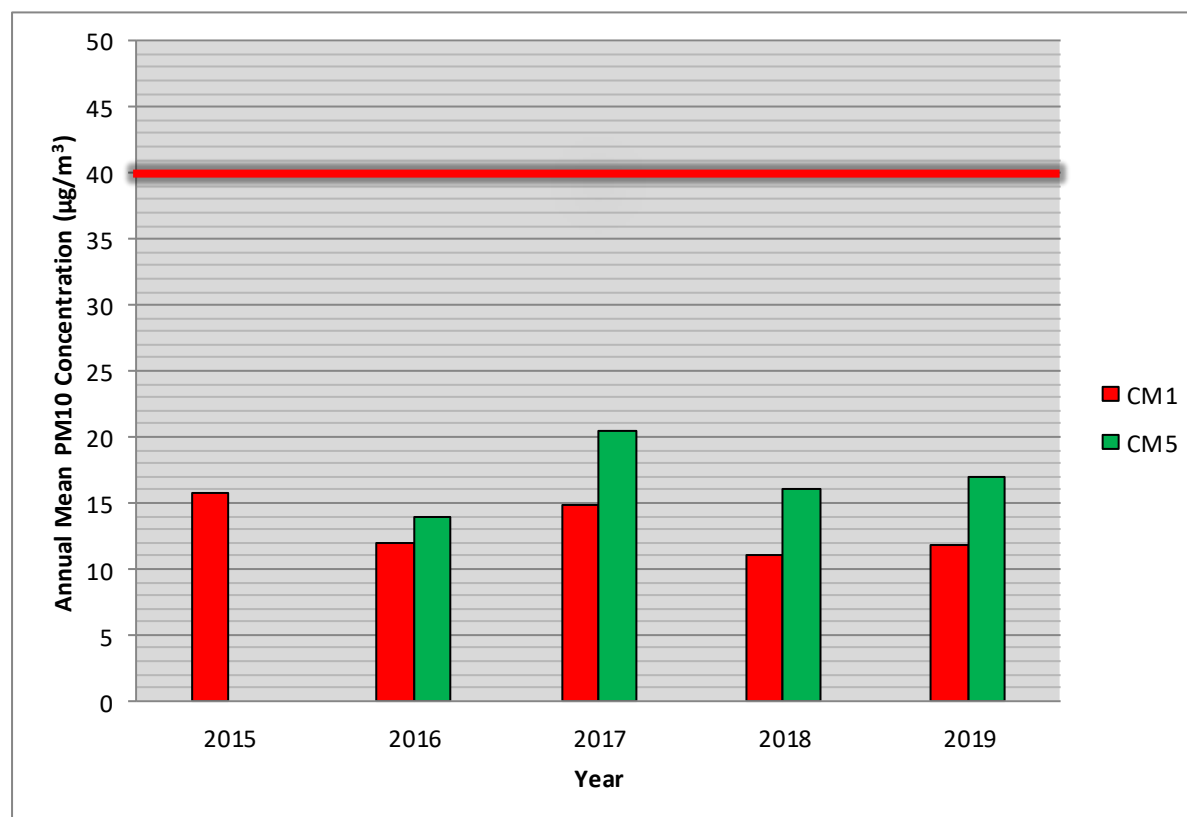


Table D6 – 24-Hour Mean PM₁₀ Monitoring Results

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2019 (%) ⁽²⁾	PM ₁₀ 24-Hour Means > 50µg/m ³ ⁽³⁾				
						2015	2016	2017	2018	2019
CM1	454482	298573	Roadside	87.1	87.1	3	0	1	0	0
CM5	453594	299549	Roadside	72.7	72.7	-	1	3	0	0

Notes:

Exceedances of the PM₁₀ 24-hour mean objective (50µg/m³ not to be exceeded more than 35 times/year) are shown in **bold**.

(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%).

(3) If the period of valid data is less than 85%, the 90.4th percentile of 24-hour means is provided in brackets.

Table D5 – PM_{2.5} Monitoring Results

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2019 (%) ⁽²⁾	PM _{2.5} Annual Mean Concentration (µg/m ³) ⁽³⁾				
						2015	2016	2017	2018	2019
CM1	454482	298573	Roadside	-	-	11.1	8.4	10.4	7.7	8.3
CM5	453594	299549	Roadside	-	-	-	9.8	14.3	11.2	11.8

PM_{2.5} is not currently monitored and concentrations have been estimated from PM₁₀ results with a conversion factor applied.

☒ **Annualisation has been conducted where data capture is <75%**

Notes:

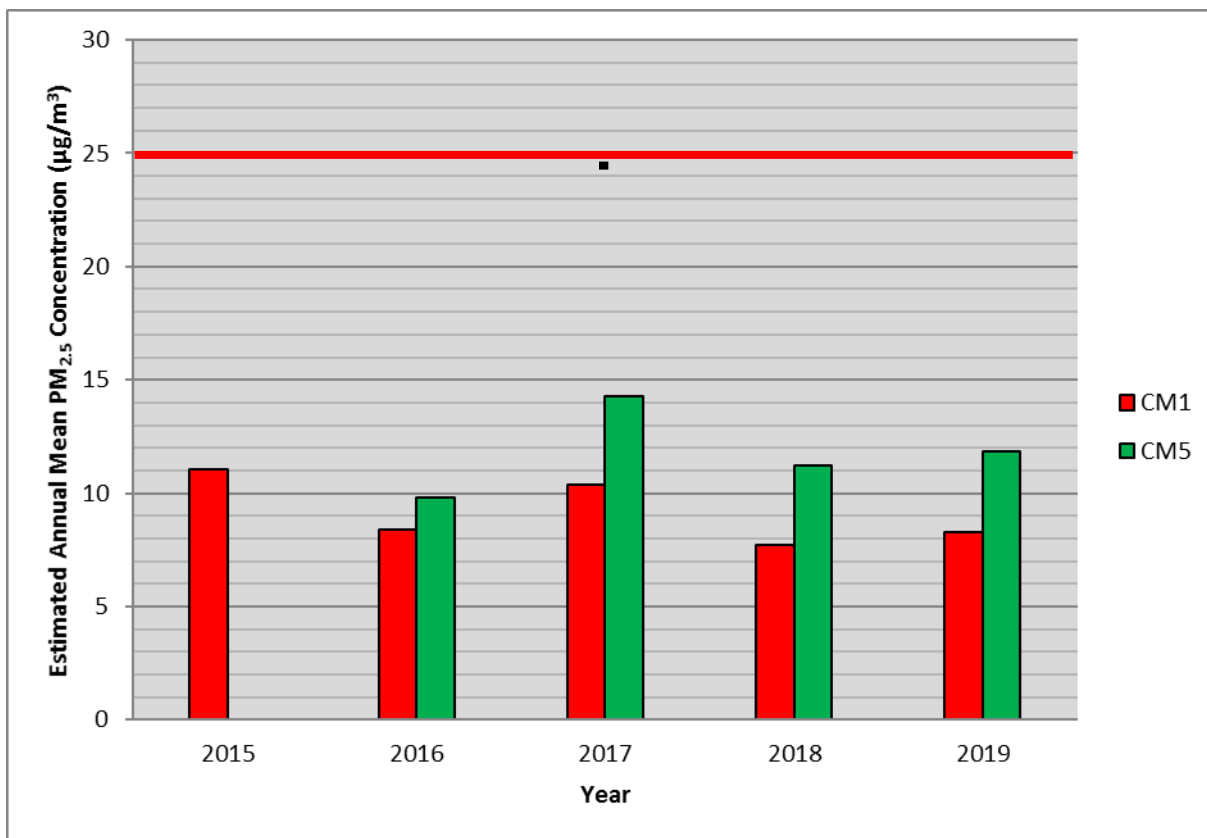
(1) Data capture for the monitoring period, in cases where monitoring was only carried out for part of the year.

(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%).

(3) All means have been “annualised” as per Boxes 7.9 and 7.10 in LAQM.TG16, valid data capture for the full calendar year is less than 75%. See Appendix C for details.

Figure D3 – Trends in Annual Mean PM_{2.5} Concentrations

Adapted from Table D7



Appendix E: Annual Status Report 2020 Monitoring Data QA/QC

QA/QC of continuous monitoring data

Calibrations of the continuous monitoring stations are carried out fortnightly by members of the Environmental Services Team at Blaby District Council. Data validation and ratification is conducted at the end of the monitoring year by those same colleagues. Monitoring station data and performance is checked regularly through a back office system and any irregularities are noted for later reference.

Data is ratified as per AURN recommended procedures. During calibrations, a zero reading is taken from the equipment using a gas of known concentration. This reading is then used to adjust any offset of the baseline of the data. A correction factor is then calculated and applied as a linear correction factor for the data subsequent to the previous calibration. After the calibration factors have been applied, the data is further screened for errors by the Environmental Services Team.

Annualisation

Where less than 75% of the data set is available, the continuous monitoring station data has been annualised as per Technical Guidance LAQM.TG16. This procedure was necessary for CM5, owed to data capture rates of 72.7% and 70.1% for NO₂ and PM₁₀ respectively. The following background stations were used:

- Coventry Allesley (NO₂)
- Leicester University (NO₂)
- Nottingham Centre (NO₂ and PM₁₀)
- Coventry Binley Road (PM₁₀)

- Leicester A594 Roadside (PM₁₀)
- Nottingham Western Boulevard (PM₁₀)

The variation in background stations used can be attributed to poor data capture at some of the chosen sites or the fact that they did not monitor the required pollutant in year 2019. LAQM.TG16 was followed as closely as possible when selecting background stations for use in annualisation.

PM₁₀ data

PM₁₀ data has been “factored” by applying a 1.3 multiplier to give “PM₁₀ Gravimetric Equivalent” values, with further data corrections using the King’s College Volatile Correction Mode. Further information on the Volatile Correction Model can be found at <http://www.volatile-correction-model.info>

Estimated PM_{2.5} concentrations

PM_{2.5} concentrations were derived by applying a conversion factor of 0.7 to the PM₁₀ data. This enabled for results to be graphed and compared against national air quality objectives. PM_{2.5} will be monitored directly in 2020 by CM5, and reported on in the 2021 ASR.

QA/QC of diffusion tube data – Bias Correction factor

Having regard to Box 7.11 in LAQM.TG(16), consideration of whether or not a locally obtained bias adjustment factor may be more representative than the relevant national factor. Our triplicate tube set is co-located with CM1, and so the following is relating to that analyser:

- Local if diffusion tubes exposure periods are not monthly – ours are monthly;
- Local if co-location is unusual in some way, for example, affected by specific large NO_x sources other than road traffic, such as local industrial installations. Ours is not affected by such unusual sources;
- Local for tubes in a similar setting to the co-location site (open/shelter, height, etc.);
- Local where the duration of the whole diffusion tubes study is less than one year – ours has a duration of one year;
- Local where the Review and Assessment Helpdesk spreadsheet contains data from fewer than five other studies using the same laboratory and preparation – 1 study used SYAQS, and therefore caution will be exercised when using this factor;
- Local where that co-location study is spread across more than one calendar year – ours are based on sequential calendar years;
- Local for “good” precision for diffusion tubes and with high quality chemiluminescence results, i.e. to national AURN standards – we are not part of the AURN;
- Combined if survey consists of tubes exposed over a range of settings, which differ from the co-location site – ours are exposed over a range of settings;
- Combined if co-location study is less than nine months, although the diffusion tube monitoring is for a longer period – all of our tubes are exposed for the same time periods;
- Combined if the automatic analyser has been operated using local, rather than national, QA/QC procedures – our automatic analysers are operated using local QA/QC procedures;
- Combined if the data capture from the automatic analyser is less than 90%, or there have been problems with data quality – the data capture for CM 1 for 2019 was 87.1;
- Combined for co-location site with “poor precision” or laboratories with predominantly “poor” precision, as set out on the LAQM Support Helpdesk website – this is discussed below

Overall, it appears reasonable to choose the Combined bias correction factor.

The bias correction factor was obtained from the DEFRA website using the South Yorkshire Air Quality Samplers (SYAQS) analysis to produce a correction factor of 0.78. This correction factor has been chosen due to the fact our diffusion tubes are analysed by this laboratory and the parameters used to calculate the factor are consistent with our own – monthly tube exposure and a year long monitoring study.

Annualisation

Where less than 75% of the data set is available, the diffusion tube and data has been annualised as per Technical Guidance LAQM.TG16. This procedure was necessary for diffusion tubes 72 and 78 due to capture rates of 33% and 58% respectively. The background station utilised was Leicester University.

Precision and Accuracy of Triplicates

Where diffusion tubes are co-located with a continuous monitoring station, a precision and accuracy analysis has been carried out using the relevant calculator obtained from the DEFRA website.

The analysis was applied to DT 11, 12 and 13 which are co-located to CM1 (colloquially known as Blaby 1). The below screenshot indicates 'Good' overall precision but 'Poor' overall data capture, the latter attributed to the low capture percentages seen in monitoring periods 5 and 6.

Checking Precision and Accuracy of Triplicate Tubes									
Diffusion Tubes Measurements									
Period	Start Date dd/mm/yyyy	End Date dd/mm/yyyy	Tube 1 μgm^{-3}	Tube 2 μgm^{-3}	Tube 3 μgm^{-3}	Triplicate Mean	Standard Deviation	Coefficient of Variation	95% CI of mean
1	09/01/2019	06/02/2019	30	33	30	31	1.7	6	4.3
2	06/02/2019	06/03/2019	25	27	26	26	1.0	4	2.5
3	06/03/2019	03/04/2019	25	23	24	24	1.0	4	2.5
4	03/04/2019	01/05/2019	17	15	17	16	1.2	7	2.9
5	01/05/2019	05/06/2019	16	15	17	16	1.0	6	2.5
6	05/06/2019	03/07/2019	18	17	19	18	1.0	6	2.5
7	03/07/2019	07/08/2019	17	16	16	16	0.6	4	1.4
8	07/08/2019	04/09/2019	18	18	18	18	0.0	0	0.0
9	04/09/2019	02/10/2019	21	23	23	22	1.2	5	2.9
10	02/10/2019	06/11/2019	25	20	27	24	3.6	15	9.0
11	06/11/2019	02/12/2019	27	29	21	26	4.2	16	10.3
12	02/12/2019	08/01/2020	28	25	26	26	1.5	6	3.8
13									

Automatic Method				Data Quality Check	
Period	Mean	Data Capture (% DC)		Tubes Precision Check	Automatic Monitor
1	43.7	98		Good	Good
2	37.3	97.5		Good	Good
3	30.9	97.3		Good	Good
4	23.1	98		Good	Good
5	28	19.6		Good	Poor Data Capture
6	31	61.9		Good	Poor Data Capture
7	29	97.8		Good	Good
8	25	91.4		Good	Good
9	31	97.9		Good	Good
10	29	97.8		Good	Good
11	28	97.9		Good	Good
12	28.5	97.9		Good	Good
13					
Overall survey -->				Good precision	Poor Overall DC

It is necessary to have results for at least two tubes in order to calculate the precision of the measurements

Site Name/ ID:	Blaby 1	Precision	12 out of 12 periods have a CV smaller than 20%	(Check average CV & DC from Accuracy calculations)
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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
AQS	Air Quality Strategy
ASR	Annual Status Report
BDC	Blaby District Council
DEFRA	Department for Environment, Food and Rural Affairs
EU	European Union
LAQM	Local Air Quality Management
LCC	Leicestershire County Council
LLITM	Leicester and Leicestershire Integrated Transport Model
NO _x	Nitrogen Oxides
PM ₁₀	Airborne particulate matter with an aerodynamic diameter of 10µm (micrometres or microns) or less
PM _{2.5}	Airborne particulate matter with an aerodynamic diameter of 2.5µm or less