2022 Air Quality Annual Status Report (ASR)

In fulfilment of Part IV of the Environment Act 1995

Local Air Quality Management

Date: 30th June 2022

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Executive Summary: Air Quality in Our Area

Air Quality in Blaby District

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].

Blaby District Council has five Air Quality Management Areas (AQMAs). All were declared after monitoring (where indicated), or modelling, indicated an exceedance of the annual mean air quality objective for nitrogen dioxide, of 40µg/m^3. These AQMAs are currently as follows:

- 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 2, AQMA 3 and AQMA 4B were reduced in size in 2020, in line with low NO_2 results from 2019 and the previous 4 years, as reported in ASR 2020. In 2021 no changes were

[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 2021

[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

made to any of the existing AQMAs as advised by DEFRA guidance due to the impact of the pandemic.

Blaby District Council has an ongoing commitment to continue its air quality monitoring and management, taking action, where possible, to reduce levels of airborne pollutants. Elected Members and Senior Managers are actively engaged in supporting the work. The Environmental Services Team is responsible for the monitoring and where appropriate regulation of air quality, environmental permitting, and climate change, which allow these areas of work to be considered collectively. The team comment on planning applications that have air quality as a potential constraint and have a good working relationship with the planning services teams. Section 106 funds have been secured from several approved developments to support air quality work.

Health, Leisure, and Tourism Services also have a close working relationship with Environmental Services, helping to deliver a programme of action funded by Air Quality Grant, engaging schools and businesses in raising awareness on air quality and ways in which air quality can be improved.

Blaby District Council continues to work closely with all Leicestershire authorities, including Leicester City Council, Leicestershire County Council (various sections including highways and transportation, public health, and sustainability), Highways England, the Environment Agency, and The UK Health Security Agency (UKHSA). It also plays an active role in the Air Quality and Health Partnership (the successor to the Steering Group for the Joint Strategic Needs Assessment (JSNA) (for air quality), which is chaired by County Public Health. The Partnership is implementing an action plan, based on the outcomes of the JSNA. This action plan is informing Blaby District Council’s air quality and climate change work and supports a joint delivery alongside our AQAP and Air Quality Grant work.

Blaby District Council also has an active role in the Leicester, Leicestershire, and Rutland Air Quality Forum, and is also a member of the East Midlands Air Quality Network. Both of these bodies improve the sharing of information, offer a space for networking and aid consistency of approach. The Air Quality Forum meets four times a year and brings together a partnership of different organisations and expertise in matters of air quality. The East Midlands Air Quality Network aims to meet every six months.

In addition to operating its own air quality monitoring stations, Blaby District Council also manages Leicestershire County Council’s Air Quality Monitoring Station, Continuous Monitor 4 (CM4) (Blaby 4) located in Leicester Forest East.

The bias correction applied to the diffusion tube data in 2021 for the laboratory that analyses our diffusion tubes is only based on one co-location study (Marylebone Road). It is acknowledged therefore that this adjustment factor should be used with caution (in accordance with national guidance). Diffusion tube data in 2021 shows little change in comparison to 2020 with no exceedances of the national objective for NO_2.

In 2021 no changes were made to any of the existing AQMAs, and monitoring continued throughout the year. Overall, there were no exceedances recorded across any of the monitoring sites and levels were below national objectives for NO_2. In 2021 there were some easing of restrictions in regard to the COVID-19 pandemic which may account for the slight increase in levels recorded in comparison to the previous year. The next ASR will be able to provide an understanding on how levels may change, given the return to pre pandemic ways of transport usage and working patterns. Furthermore, the flexibility and potential continuation of hybrid working may have a long-term reduction in air pollution and a positive impact on air quality around the district.

In **AQMA1** (A5460 Narborough Road South) levels have remained low and in 2021 have decreased from initial elevated levels in 2017. Monitoring will continue given the nearby developments, however levels remain below the national objective.

AQMA2 (M1 Corridor in Enderby and Narborough) has shown no change in levels recorded by diffusion tube monitoring, however Continuous Monitor 1 (CM1) located north of the boundary has shown an elevated value in comparison to 2020 yet remains below the national objective. Monitoring will thus continue to understand if this is part of a longer-term trend.

In **AQMA3** (M1 corridor between Thorpe Astley and Leicester Forest East), there were no exceedances of pollutants and monitoring data generally produced a similar trend of results. Continuous Monitor 4 (CM4) located within this AQMA has slightly increased, thus monitoring will continue within this area to assess if there is a long-term trend. Whilst it is possible that the increase in concentrations seen here may be attributed to local development (for example., New Lubbesthorpe), this would be difficult to ascertain as the A47 is a major route into Leicester and serves a wide area. The increase compared to 2020 is more likely attributed to the relaxation of COVID-19 restrictions in 2021, with an increase in vehicle movements noted nationally. Overall, concentrations remain below the national objective.

Levels in **AQMA4B** (Enderby Road, Whetstone) have remained low in 2021 and show no initial concerns for air quality in this area.

AQMA 6 (Mill Hill, Enderby), was determined in 2018 due to elevated levels recorded within the area. Levels since have decreased, with no exceedances in the past three years including 2021. Continuous Monitor 5 (CM5) is located within this area and monitoring data for 2021 does not raise any particular concerns, however some sites still indicate relatively elevated levels, yet remain below the national objectives for air quality. Given the extensive use of the B582 to access nearby developments, monitoring will continue to assess future outcomes.

Monitoring was increased in the areas of Glenfield Village and Stoney Stanton due to concerns of elevated levels in both areas. Overall concentrations in 2021 have not significantly changed for both areas and monitoring will continue into 2022.

Although there were proposals to relocate CM1 currently near AQMA2, to Stoney Stanton, this was not possible in 2020 due to Covid-19 restriction and in 2021 due to logistical constraints. Monitoring however was increased in 2021 with the addition of three new diffusion tubes to provide a greater insight into the area. Levels show no significant change from 2020 and monitoring will continue in 2022, we are looking to potentially include additional methods of air quality monitoring.

Monitoring in Glenfield Village, which has seen the introduction of CM7 in 2020 and two additional diffusion tubes in 2021 shows little change in comparison to the previous year, remaining below the national objective. Monitoring will continue to enable a greater understanding of initial measured concentrations surrounding local development and traffic volumes within this area.

Section 106 funds were secured to monitor air quality in the area surrounding Fosse Park following recent large-scale developments. This has enabled the purchase of an additional continuous monitor (CM 6) now positioned on Lubbesthorpe Road, representing the nearest receptor to the development. Concentrations in 2021 remain low and monitoring will continue to understand patterns over a longer period to determine the impact of the development.

The remaining monitoring sites located around Blaby District have shown no substantial changes in levels of pollutants for 2021. Monitoring efforts will continue and be reported on in the next ASR. Please visit the AQMA webpage for a list of our AQMAs.

There are a number of ongoing and proposed developments around Blaby District. It is possible that these may have an impact on local air quality and thus monitoring is being

conducted within proximity to understand background levels. A summary of the development sites are as follows:

- Lubbesthorpe Development - sustainable urban extension to the west of the M1 consisting of 4,250 homes and associated facilities (continuing development)
- Hinckley National Rail Freight Interchange Development (potential development)
- Extension to Croft Quarry (planning permission approved by Leicestershire County Council).
- HMP Fosse Way Prison, Glen Parva (under construction)
- Land north of A47 Hinckley Road, Kirby Muxloe – proposal for 885 dwellings (planning application pending consideration).

Actions to Improve Air Quality

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

The 2019 Clean Air Strategy[5] sets out the case for action, with goals 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 extremely important given that the majority of Air Quality Management Areas (AQMAs) are designated due to elevated concentrations heavily influenced by transport emissions.

A significant project to encourage active travel and car use reduction, targeting schools and then local businesses within and around the District's AQMA's is being delivered by Blaby District Council, partly in partnership with Leicestershire County Council. This project engages many of the schools in the District, together with some businesses close to Junction 21 of the M1. The project is funded by our Air Quality Grants.

Blaby District Council was awarded a further Air Quality Grant of £139,390 for 2021/22, to deliver additional work on behavioural change, and monitoring the impact of that work

[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

which includes funding for the ‘Countdown to Clean Air Project’. This project aims to cover a number of objectives:

- A Citizen Science Project involving five schools, five local youth and community groups, and parish councils.
- Behavioural change work with schools and businesses.
- Production of a computer Micro Simulation Model for Enderby.
- Production of comprehensive air quality data through ongoing monitoring during the project.
- A communications plan developed and delivered to share timely messages about poor air quality, raise awareness about its causes and impacts, and alternative cleaner and more sustainable travel options.
- A Short film produced and available online to celebrate achievements from the project, educate and raise awareness in the wider community and encourage uptake from other schools, businesses, and organisations in future air quality initiatives.

Unfortunately, due to the COVID-19 pandemic, no work could be undertaken in schools in the first quarter of 2021. Instead, much of the work with schools began in the last quarter of 2021, giving them time as required to adjust to different ways of working given the challenges that were still being faced due to the pandemic and local lockdowns. Part of the work with schools involved the ‘Beat the Street’ initiative which encouraged 540 students to use scooters and bikes as alternatives to conventional travel methods. Such schemes encourage students to participate in active travel which reduces congestion and traffic in hotspot areas such as schools.

Work on this project will continue in 2022 with the aim of further face to face engagement and progress against the initial objectives.

Blaby District Council installed 24 seven kW Electrical Vehicle (EV) chargers in 2021, mostly funded by the On-street Residential Charge Scheme (ORCS). These were located in several car parks to support residents who have limited off-street parking provision and to encourage EV usage in the District. The implementation of infrastructure to support the usage of lower emission vehicles will aid in the reduction of NO_2 emissions throughout Blaby District.

Furthermore, to incentivise the use of Ultra Low Emission Vehicles (ULEV’s) and Electric Vehicles (EV), Blaby District Council’s Licensing department have offered a 25% and 50%

fee reduction respectively, for operators who license a vehicle under any of these categories. The Hackney Carriage and Private Hire Policy for 2022 – 2027 has also been updated, this has delegated that any newly licenced vehicles must be under five years of age, and existing vehicles will not be renewed once they reach 10 years of age. This ensures that by September 2025 all vehicles will have Euro six type engines or newer. Initiatives as such have the scope to positively influence air quality within the district and improve the health and wellbeing of the community.

Conclusions and Priorities

Overall, there were no exceedances of air quality objectives for Blaby District in 2021 within or outside any of the existing AQMAs.

There were small-scale changes in concentrations of NO_2 at some monitoring locations, but no significant elevations were indicated, and all were below the national objective. CM1 and CM4 recorded a small increase in concentrations and monitoring will continue during 2022 to assess future changes and any action that may be required.

The policy guidance (PG16) and technical guidance (TG16) set out by DEFRA states that there should be three to five years of consistent low results when considering making amendments to an AQMA. Given the impact of COVID-19 in 2020 and 2021, in particular due to local lockdowns around Leicester and Leicestershire, it would be necessary to obtain additional monitoring data before amending any of the AQMAs at this time. Revocation of AQMAs 1, 2, and 4B may need to be considered in the future if further data is reported at well below national air quality objectives, consistent with the concentrations seen in 2020 and 2021. Further updates will be reported on in ASR 2023.

There are several developments within and around Blaby District which may have a potential negative impact on air quality within the area. Monitoring is underway in proximity to many of these developments and will continue to assess the future impacts and be reported on in ASR 2023. The following are developments which are proposed or currently underway:

- Lubbesthorpe Development - sustainable urban extension to the west of the M1 consisting of 4,250 homes and associated facilities (continuing development)
- Hinckley National Rail Freight Interchange Development (potential development)
- Extension to Croft Quarry (planning permission approved by Leicestershire County Council).
- HMP Fosse Way Prison, Glen Parva (under construction)

- Land north of A47 Hinckley Road, Kirby Muxloe – proposal for 885 dwellings (planning application pending consideration)

Monitoring will continue throughout 2022 to assess where there are long term trends, following steps from the AQAP 2021 – 2025 to improve air quality in the district.

Local Engagement and How to get Involved

The Council works closely with other stakeholders and continues to chair the Air Quality Forum for Leicester, Leicestershire and Rutland. Officers attend the East Midlands Air Quality Network, and the Air Quality and Health Partnership. This includes attending regular meetings, sharing best practice and providing updates on air quality within the District (as described on page iii above). Engagement with schools and businesses, have continued virtually or in person where appropriate, throughout 2021, although on fewer occasions than anticipated due to the impact of the pandemic and restrictions.

Members of the public can help improve the air quality by participating in one of the many alternatives to personal car transport, for example, park and ride bus schemes, car sharing, buses, walking and cycling. Blaby District Council has an active travel campaign to encourage those who travel to local schools and businesses to travel more sustainably using a range of methods as mentioned above. Air quality has been monitored for the past three years at 12 schools around the district and will continue in order to identify any link between sustainable travel, air quality and the associated benefits.

In light of encouraging sustainable travel, ‘Walk and Ride Blaby’ is a long-term project aiming to improve travel options within Blaby District. Funding has been sourced and pooled together by Blaby District Council, Leicester and Leicestershire Enterprise Partnership and Leicester City Council to plan, develop, and deliver this project. Within this is a series of actions and projects to increase the provision of walking and cycling. The main piece of work is creating a cycle route from the area of New Lubbesthorpe through Braunstone Town to join the Great Central Way within the final destination of the cycle network into Leicester City Centre. Additionally, within this project, there is a partnership with ‘Sustrans’ to develop a Local Cycling and Walking Improvement plan to increase provisions of more sustainable travel routes. Improving walking and cycling networks encourages usage of more ‘green’ travel options and can aid in reducing car usage where alternatives are available, therefore having a positive impact on air quality around the district.

Officers continue to work closely with local parishes, residents, and elected members, providing updates on monitoring results and continuing to identify areas of potential air quality problems through presentations at member meetings and other local events.

Local Responsibilities and Commitment

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

- Environmental Services
- Health, Leisure and Tourism
- Leicestershire County Council (Public Health, Traffic Management, Sustainable Travel teams)
- Planning Development Services

This ASR has been approved by:

- Environmental Health, Housing and Community Services Group Manager
- Strategic Director
- Portfolio Holder and Elected Members

This ASR has not been signed off by a Director of Public Health but has been forwarded for their consideration.

If you have any comments on this ASR, please send them to the Environmental Services team at:

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1 Local Air Quality Management

This report provides an overview of air quality in Blaby District during 2021. 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 Blaby District Council to improve air quality and any progress that has been made.

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

2 Actions to Improve Air Quality

2.1 Air Quality Management Areas

Air Quality Management Areas (AQMAs) are declared when there is an exceedance or likely exceedance of an air quality objective. After declaration, the authority should prepare an Air Quality Action Plan (AQAP) within 12 months setting out measures it intends to put in place in pursuit of compliance with the objectives.

A summary of AQMAs declared by Blaby District Council can be found in Table 2.1. The table presents a description of the 5 AQMAs that are currently designated within Blaby District. Appendix D: Maps of Monitoring Locations and AQMAs provides maps of AQMAs and also the air quality monitoring locations in relation to the AQMAs. The air quality objectives pertinent to the current AQMA designations are as follows:

- NO_2 annual mean.

Table 2.1 – Declared Air Quality Management Areas

AQMA Name	Date of Declaration	Pollutants and Air Quality Objectives	One Line Description	Is air quality in the AQMA influenced by roads controlled by National Highways?	Level of Exceedance: Declaration	Level of Exceedance: Current Year	Name and Date of AQAP Publication	Web Link to AQAP
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	NO	50 µg/m3	20 µg/m3	Air Quality Action Plan 2021-2025	https://www.blaby.gov.uk/media/z3opt2yt/air-quality-action-plan-2021-2025.pdf
AQMA 2: M1 corridor in Enderby and Narborough	Declared September 2000; Amended 2020	NO2 Annual Mean	Residential properties adjacent to the M1, between around 1.5 km and 3 km south of Junction 21.	YES	50 µg/m3	24 µg/m3	Air Quality Action Plan 2021-2025	https://www.blaby.gov.uk/media/z3opt2yt/air-quality-action-plan-2021-2025.pdf
AQMA 3: M1 corridor between Thorpe Astley and Leicester Forest East	Declared September 2000; Amended April 2005; Amended 2020	NO2 Annual Mean	Residential houses adjacent to the M1 and A47 between Thorpe Astley and Leicester Forest East	YES	62 µg/m3	27 µg/m3	Air Quality Action Plan 2021-2025	https://www.blaby.gov.uk/media/z3opt2yt/air-quality-action-plan-2021-2025.pdf

AQMA Name	Date of Declaration	Pollutants and Air Quality Objectives	One Line Description	Is air quality in the AQMA influenced by roads controlled by National Highways?	Level of Exceedance: Declaration	Level of Exceedance: Current Year	Name and Date of AQAP Publication	Web Link to AQAP
AQMA 4B: Enderby Road, Whetstone	Declared April 2005; Amended 2020	NO2 Annual Mean	Residential houses along Enderby Road, Whetstone	NO	50 µg/m3	19 µg/m3	Air Quality Action Plan 2021-2025	https://www.blaby.gov.uk/media/z3opt2yt/air-quality-action-plan-2021-2025.pdf
AQMA6: Mill Hill, Enderby	Declared January 2018	NO2 Annual Mean	Residential properties along Hall Walk and Mill Hill, Enderby	NO	43 µg/m3	29 µg/m3	Air Quality Action Plan 2021-2025	https://www.blaby.gov.uk/media/z3opt2yt/air-quality-action-plan-2021-2025.pdf

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

☒ **Blaby District Council confirm that all current AQAPs have been submitted to Defra.**

2.2 Progress and Impact of Measures to address Air Quality in Blaby District

Defra's appraisal of last year's ASR concluded that the report is well structured, and provides all of the information specified in the Guidance. The report was accepted and the following comments are to assist with future reporting.

1. Trends are presented and discussed, and a robust comparison to air quality objectives is provided.

   Response: Comment welcomed.

2. The Council has taken the decision to amend the boundaries of AQMA No.2 and AQMA No. 4B in light of recent trends in monitoring results.

   Response: Comment welcomed.

3. The Council has also presented a detailed assessment in support of their amendments to the boundaries of AQMA 2 and 4B. They show a good commitment to air quality monitoring despite low pollutant concentration levels in all AQMAs.

   Response: Comment welcomed.

4. The Council has added nine new diffusion tube sites to their monitoring network. This is welcomed and will help define hotspot areas.

   Response: Comment welcomed. An additional 11 diffusion tubes were introduced in 2021 to supplement monitoring in areas of concern.

5. The Council has provided an extensive list of action plan measure and all the relevant fields have been completed with detailed comments, but not for their most recent AQAP. Despite publishing a more recent AQAP in 2021 the Council states most of their measures are outlined in an Air Quality Strategy adopted in 2018. A similar level of detail produced for the progress on measures outlined in their 2014 AQAP could be made for measures outlined in their most recent Air Quality Strategy which really ought to be included in their most recent AQAP.

Response: The Council has since published an AQAP 2021-2025, detailing the action plan measures for each AQMA. Further information can be found on our Air Quality webpage.

6. Robust and accurate QA/QC procedures were applied. Calculations for bias adjustment and the annualisation completed were outlined in detail which enhances the reader's understanding. The deliberation over the choice of bias adjustment used was appropriate and considered robust

   Response: Comment welcomed.

7. The Council has responded to last year's appraisal comments and made changes to the report based on the comments. This is encouraging to see.

   Response: Comment welcomed.

8. Overall, the report is detailed, concise and satisfies the criteria of relevant standards. The Council should continue their good and thorough work.

   Response: Comment welcomed.

Blaby District Council has taken forward a number of direct measures during the current reporting year of 2021 in pursuit of improving local air quality. Details of all measures completed, in progress or planned are set out in Table 2.2.There are 26 measures included within Table 2.2, with the type of measure and the progress Blaby District Council have made during the reporting year of 2021 presented. Where there have been, or continue to be, barriers restricting the implementation of the measure, these are also presented within Table 2.2.

More detail on these measures can be found in their respective Action Plans. Key completed measures are as follows (as taken from table 2.2):

- **Actions three, six and 10** - Improve driver information about air quality for example., signs and active signs
- **Action seven -** 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.
- **Actions 11 and 15 -** Gather information from local sources and interrogate air quality monitoring data to inform actions and support bids for funding.

- **Action 23 -** Develop a partnership to create a charging network across the district (public and private car parks, petrol stations, on street).
- **Action 25 -** Improve air quality information on BDC website.

Blaby District Council expects the following measures to be completed over the course of the next reporting year; gathering and looking at information, increasing air quality monitoring, improvement of walking and cycling routes promoting sustainable travel and continuing to work on behavioural change actives with schools and businesses.

Blaby District Council's priorities for the coming year are to continue working on achieving steps from the action plan to improve air quality. Additionally, to continue working on initiatives within the DEFRA Air Quality grant and strengthen existing partnerships with stakeholders. Blaby District Council worked to implement these measures in partnership with the following stakeholders during 2021:

- Schools
- Businesses
- Community Groups
- The Highways Authority
- Developers
- Leicestershire County Council
- Leicester City Council
- Oadby and Wigston Borough Council

Furthermore, a small Working Group of officers was established in 2021, which includes a partnership of organisations such as the Environmental Services and Planning Policy (Blaby District Council) and Highways and Public Health (Leicestershire County Council). Together, the aim of the group will be to support the carrying out of action plan measures in the AQAP and continue to work on jointly on projects.

The principal challenges and barriers to implementation that Blaby District Council anticipates facing are maintaining ongoing relationships with various partners, many of which were affected over the last two years due to the COVID-19 pandemic.

Progress will continue to be made on actions which include working with or are led by the Leicestershire County Council to achieve progress and strengthen the relationship between authorities in making a positive impact on Air Quality. Several of the traffic modelling/management initiatives in the AQAP represent longer-term actions, which

require a series of monitoring, observations, and information to achieve completion. Efforts behind these actions will continue and be reported on in ASR 2023.

Table 2.2 – Progress on Measures to Improve Air Quality

Measure No.	Measure	Category	Classification	Year Measure Introduced	Estimated / Actual Completion Year	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Barriers to Implementation
1 - AQMA 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	Summer 2021	September 2021	BDC	BDC and Defra AQ Grant	YES	Partially Funded	< £10k	Implementation	N/A	Clearer picture of traffic flows and effects on air quality	Data gathered throughout the year using a variety of sources	Due to Covid restrictions being applied to UK until 16th July 2021, data is less representative for first half of the year. However new data collated from July to Dec 2021 is more representative. A number of observations completed by officers. Data should be collated and integrated for 2022 to allow better representation post Covid period.
2 - AQMA 1	Integrate traffic management (for example, SCOOT) with air quality monitoring	Traffic Management	UTC, Congestion management, traffic reduction	To be determined	2025	LCC	LCC	NO	Not Funded		Planning	N/A	Systems integrated	Presentation completed by LCC showing research and future considerations	Ongoing implementation over coming years
3 - AQMA1	Improve driver for example, signs and active signs	Traffic Management	UTC, Congestion management, traffic reduction	To be determined	2025	LCC	LCC	NO	Not Funded		Planning	N/A	Signs installed	Current signs already active in park ride locations such as Fosse Park and Narborough Road South	Ongoing implementation over coming years
4 - AQMA 2	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	Summer 2021	Sep-21	BDC	BDC	NO	Not Funded	< £10k	Implementation	N/A	Clearer picture of traffic flows and effects on air quality	Data gathered throughout the year using a variety of sources	Due to Covid restrictions being applied to UK until 16th July 2021, data is less representative for first half of the year. However new data collated from July to Dec 2021 is more representative. A number of observations

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
															completed by officers
5 - AQMA 2	Integrate traffic management (for example, SCOOT) with air quality monitoring	Traffic Management	UTC, Congestion management, traffic reduction	To be determined	2025	LCC	LCC	NO	Not Funded		Planning	N/A	Systems integrated	Presentation completed by LCC showing research and future considerations	Ongoing implementation over coming years
6 - AQMA 2	Improve driver information about air quality for example, signs and active signs	Traffic Management	UTC, Congestion management, traffic reduction	To be determined	2025	LCC	LCC	NO	Not Funded		Implementation	N/A	Signs installed	Current signs already active in park ride locations such as Fosse Park and Narborough Road South	No further comments
7 - AQMA 3	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	Summer 2021	Sep-21	BDC	BDC	NO	Not Funded	< £10k	Completed	N/A	Clearer picture of traffic flows and effects on air quality	Air Quality improvement officers undertook site observations and have compared with this monitored data, this information has been used to apply for further air quality grant funding.	No further comments
8 - AQMA 3	Deliver Braunstone Crossroads junction improvement	Traffic Management	UTC, Congestion management, traffic reduction	To be determined	2025	LCC/Developers	LCC/S106 money	NO	Funded		Planning	N/A	Junction improved	Planning on improvement discussions to take place	Awaiting date for implementation when development commences
9 - AQMA 3	Integrate traffic management (for example. SCOOT) with air quality monitoring	Traffic Management	UTC, Congestion management, traffic reduction	To be determined	2025	LCC	LCC	NO	Not Funded		Planning	N/A	Systems integrated	Presentation completed by LCC showing research and future considerations	Ongoing implementation over coming years

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
10 - AQMA 3	Improve driver information about air quality for example, signs and active signs	Traffic Management	UTC, Congestion management, traffic reduction	To be determined	2025	LCC	LCC	NO	Not Funded		Planning	N/A	Signs installed	Park and ride signs in L.F.E have been amended to represent appropriate wording.	No further comments
11 - AQMA 4B	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	Summer 2021	Sep-21	BDC	BDC	NO	Not Funded	< £10k	Completed	N/A	Clearer picture of traffic flows and effects on air quality	Air Quality improvement officers undertook site observations and have compared with this monitored data, this information has been used to apply for further air quality grant funding.	No further comments
12 - AQMA 4B	Integrate traffic management (for example, SCOOT) with air quality monitoring	Traffic Management	UTC, Congestion management, traffic reduction	To be determined	2025	LCC	LCC	NO	Not Funded		Planning	N/A	Systems integrated	Presentation completed by LCC showing research and future considerations.	Ongoing implementation over coming years
13 - AQMA 4B	Improve driver information about air quality for example, signs and active signs	Traffic Management	UTC, Congestion management, traffic reduction	To be determined	2025	LCC	LCC	NO	Not Funded		Planning	N/A	Signs installed	LCC considering appropriate wording on new signage and effect it will have on drivers.	Careful consideration not to overload drivers with too much signage information needs to be considered
14 - AQMA 4B	Increased air quality monitoring on Enderby Road, Whetstone	Traffic Management	UTC, Congestion management, traffic reduction	To be determined	2025	BDC	BDC	NO	Not Funded		Implementation		Additional Monitor (s) installed	New monitors received December 2021	Siting specific and relevant location for additional monitors to record the best data was complex in order to represent façade data
15 - AQMA 6	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	Summer 2021	Sep-21	BDC	BDC	NO	Not Funded	< £10k	Completed	N/A	Clearer picture of traffic flows and effects on air quality	Air Quality improvement officers undertook site observations and have compared with this monitored data, this information has been used to apply for further	No further comments

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
														air quality grant funding.	
16 - AQMA 6	Increased air quality monitoring	Traffic Management	UTC, Congestion management, traffic reduction	Autumn 2020	Oct-20	BDC	BDC/DEFRA	YES	Partially Funded	£10k - 50k	Implementation	N/A	Additional Monitors installed	Additional diffusion tubes were added in the area to better monitor the NO_2 local levels and the extent of boundaries	No further comments
17 - AQMA 6	Integrate traffic management (for example, SCOOT) with air quality monitoring	Traffic Management	UTC, Congestion management, traffic reduction	To be determined	2025	LCC	LCC	NO	Not Funded		Planning	N/A	Systems integrated	Presentation completed by LCC showing research and future considerations	Ongoing implementation over coming years
18 - AQMA 6	Improve driver information about air quality for example, signs and active signs	Traffic Management	UTC, Congestion management, traffic reduction	To be determined	2025	LCC	LCC	NO	Funded		Planning	N/A	Signs installed	LCC considering appropriate wording on new signs and affect it will have on drivers. Current signs already active in park ride signs such as nearby Fosse Park	Careful consideration not to overload drivers with too much signage information needs to be considered
19 - AQMA 6	Delivery of Enderby Relief Road	Traffic Management	Strategic highway improvements, Re-prioritising Road space away from cars, including Access management, Selective vehicle priority, bus priority, high vehicle occupancy lane	To be determined	2025	LCC/Developers	LCC/S106 money	NO	Funded	> £10 million	Planning	N/A	Relief Road operational	Relevant planning application currently being processed	No further comments

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
20 - Wider measures	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	2021 onwards	2025	BDC	BDC/DEFRA	YES	Funded		Planning	N/A	Project completed	Air Quality Improvement officer put in post August 2021 in order to help progress such projects. Meetings have been help with LCC to explore opportunities. LLEP exploring current cycle routes and opportunities for new ones at present. Health and Leisure Team to recruit additional officer in order to promote to residents. Health Walking classes developed and promoted in local GP surgeries and health advisors referrals. Cycling and scooting to school promoted through school assemblies to 11 schools. Scooter libraries and balance bike free hire to schools introduced during Covid to encourage uptake usage where schools had been provided information and shown interest. Health and Leisure Team to implement actions with new Air Quality Improvement Officer.	Promoting to the correct target audience took a while to develop uptake during first quarter of 2021 where Covid rules were still in place. Schools couldn't be contacted until October 2021 post covid to allow integration of new covid guidance for new academic year. This was implemented in the last quarter of 2021 post covid main restrictions and lockdown period in schools.

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
21 - Wider measures	Behavioural change project with businesses in vicinity of AQMA	Promoting Travel Alternatives	Workplace Travel Planning	Autumn 2020 onwards	Dec-21	BDC	BDC/DEFRA	YES	Funded		Planning	N/A	Completion of project	New Air Quality Improvement Officer joined the team in November 2021.	Due to staff recruitment business engagement was delayed until Christmas 2021. However, a plan of action was developed who to target and how to reach businesses.
22 - Wider measures	Behavioural change project with schools	Promoting Travel Alternatives	School Travel Plans	Autumn 2020 onwards	Dec-21	BDC	BDC/DEFRA	YES	Funded		Implementation	N/A	Completion of project	Health and Leisure Services in conjunction with Environmental Services offered a number of schools and Cub hut presentations and information on air quality and related climate change information and product demonstration	Contacting each organisation was timely and this is still ongoing. This was made more difficult to visit schools during the Covid lockdown restriction period earlier in 2021
23 - Wider measures	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	September 2020	Mar-21	BDC	BDC	NO	Funded		Completed	N/A	Completion of Project	BDC installed a number of EV charging points in summer 2021 connecting the district with charging points District Wide. This was done in order to encourage electric vehicle charging throughout the District. In addition, business breakfasts are being prepared to be conducted in early 2022.	Choosing suitable locations for charging points proved difficult to select areas where there would be enough usage of the electric charging points to justify the outlay

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
24 - Wider measures	Engage with the taxi drivers to encourage the switch to electric vehicles.	Promoting Low Emission Transport	Taxi emission incentives	2021	2022	BDC	BDC	NO	Not Funded		Planning	N/A	Completion of project	This action was put on hold during 2021 due to Covid restrictions and taxi drivers struggling with costs et cetera	This action will be revisited in 2022 (ASR 2023) where taxi drivers will be engaged
25 - Wider measures	Improve air quality information on BDC website	Public Information	Via the Internet	Summer 2021	End of July 2021	BDC	BDC	NO	Not Funded		Completed	N/A	Improved webpage	Web page made easier to access information and reports. All the latest information and reports are now made available through the Council's website	No further comments
26 - Wider measures	Use the Pan Regional Transport Model (PRTM) to build an Air quality model to be able to assess proposed physical mitigation measures and provide the evidence to bid for funding et cetra.	Traffic Management	UTC, Congestion management, traffic reduction	2021	Dec-21	LCC	LCC	NO	Not Funded		Planning	N/A	Clearer picture of traffic flows and effects on air quality	Funding obtained through air quality grant, working with LCC on delivery method.	Delays to commencement of DEFRA project and staff recruitment.

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

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

Blaby District Council is taking the following measures to address $PM_{2.5}$:

There are two continuous monitors that record concentrations of particulate matter. One located in AQMA2 (CM1): M1 corridor in Enderby and Narborough and is set up to collect quantitative and continuous data of PM_{10}; a correction factor can then be used to give an approximate expected $PM_{2.5}$ measurement. The second continuous monitoring station (CM5) located in AQMA 6 has been altered to allow it to measure $PM_{2.5}$ through the fitting of a sharp cut cyclone head. Furthermore, Blaby District Council has purchased 2 low-cost sensors which have been located in close proximity to the continuous monitoring station along the AQMA to consider the possible canyon effects of the area. These sensors will monitor levels of $PM_{2.5}$, PM_{10}, NO_2 and O_3, representing newly monitored pollutants for the District.

There are six Frisbee Style collection gauges located around Croft Quarry, which were introduced in 2017 to determine if the site has a significant impact on levels of particulate matter. These gauges measure levels of nuisance dust which are not comparable with local air quality monitoring objectives. The results can be characterised to identify the fractions of particulate matter. Monitoring continued throughout 2021 with samplers changed on a monthly basis.

Control of sources:

The Environmental Services Team of Blaby District Council is responsible for operating the Environmental Permitting Regime (EPR) in the District. The team currently permits several mobile crushers and screeners, a quarry, and several cement related processes. We will use the EPR regime to reduce emissions of dusty materials emitted from such processes. In addition, the Environmental Services Team provides advice to the Development Services Team in relation to planning applications. The construction and demolition phases associated with proposed developments are potential sources of $PM_{2.5}$. Where

appropriate, we will recommend controls over dust. Any new point sources that have a potential to contribute to levels of $PM_{2.5}$ will be assessed and controlled. The section of the District termed as the Principle Urban Area (PUA) is covered by Smoke Control Areas (SCAs). The SCAs are enforced where reports of visible smoke are received.

The following is an extract from the current Air Quality Strategy, which was adopted by Council on the 24th of July 2018:

Theme 3 – Air Quality and Public Health

In line with the recommendations in the Air Quality: A Briefing for Directors of Public Health, Defra, PHE, and LGA. March 2017, work is taking place with partners to improve air quality in Leicestershire.

During 2018/19 Leicestershire County Council Public Health has stated that it will work with key stakeholders, including Blaby District Council, to develop a Public Health Partnership Action Plan for Air Quality. The key elements will include:

- Gaining a better understanding of air pollution across Leicestershire and the impact it has on health. For example, mapping areas of poor air quality against hospital admissions for conditions that are exacerbated by poor air quality to enable targeting of action.
- Engaging local decision makers about air pollution. This includes developing a strong strategic focus; championing action by all stakeholders, undertaking Health Impact Assessments / Health In All Policies approach to influence major developments and policies that may impact on air quality; promoting the co-benefits of actions that tackle air pollution for example promoting active travel, and the use of green spaces
- Communicating with the public on the short- and long-term impacts of air pollution. As well as providing information and mitigating immediate risks, this should be done to help empower local people to take individual action to reduce the production of air pollutants (active travel, good driving habits, using cleaner vehicles, et cetera.)

The Action Plan will consider the evidence based for cost-effective interventions recommendation to tackle air pollution including for example NICE Guidance: Air pollution: outdoor air quality and health (NG70) 2017. This includes recommendations related to:

- Planning and Development Management
- Clean Air Zones
- Reducing emissions from public sector transport services and vehicle fleets (driver training and vehicle procurement)

- Smooth driving and speed reduction
- Walking and cycling
- Awareness raising including for vulnerable groups.

Actions for this Theme:

1. Be an active member of the Air Quality Public Health Partnership developed by Leicestershire County Council Public Health;

2. Implement a project of working with schools and businesses in the District to reduce the impact of the traffic associated with them using the awarded Defra funding;

3. Develop an approach to addressing $PM_{2.5}$, which builds on that stated in the 2017 Annual Status Report;

The Air Quality Strategy was to be refreshed in 2021, however this has been postponed and will be reviewed in 2022.

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

This section sets out the monitoring undertaken within 2021 by Blaby District Council and how it compares with the relevant air quality objectives. In addition, monitoring results are presented for a five-year period between 2017 and 2021 to allow monitoring trends to be identified and discussed.

3.1 Summary of Monitoring Undertaken

3.1.1 Automatic Monitoring Sites

Blaby District Council undertook automatic (continuous) monitoring at five sites during 2021. Table A.1 in Appendix A shows the details of the automatic monitoring sites. Automatic monitoring results for Blaby District Council are available on the Air Quality – Blaby District Council webpage.

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

In regard to data capture, CM1, CM5 and CM6 were below the 75% capture objective resulting in the requirement for annualisation. This was largely due to the continuous monitoring stations being down at particular intervals during the year resulting in periods of no data thus comprising the overall annual percentage capture. CM4 and CM7 however, presented a good and sufficient volume of capture for the year without the need for annualisation.

To further improve on attaining maximum data capture and accuracy, daily ratifications are being undertaken and fortnightly calibrations will continue to ensure any issues with the stations are highlighted and resolved at the earliest indication.

3.1.2 Non-Automatic Monitoring Sites

Blaby District Council undertook non-automatic (for example, passive) monitoring of NO_2 at 55 sites during 2021 and used one travel blank for Quality Assurance/Quality Control (QA/QC). Table A.2 in Appendix A presents the details of the non-automatic sites.

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

Further information on our diffusion tube monitoring results can be found on the Air Quality – Blaby District Council webpage.

3.2 Individual Pollutants

The air quality monitoring results presented in this section are, where relevant, adjusted for bias, annualisation (where the annual mean data capture is below 75% and greater than 25%), and distance correction. Further details on adjustments are provided in Appendix C.

3.2.1 Nitrogen Dioxide (NO_2)

Table A.3 and Table A.4 in Appendix A compare the ratified and adjusted monitored NO_2 annual mean concentrations for the past five years with the air quality objective of 40µg/m^3.

Note that the concentration data presented represents the concentration at the location of the monitoring site, following the application of bias adjustment and annualisation, as required (for example, the values are exclusive of any consideration to fall-off with distance adjustment).

For diffusion tubes, the full 2021 dataset of monthly mean values is provided in Appendix B. Note that the concentration data presented in Table B.1 includes distance corrected values, only where relevant.

Table A.5 in Appendix A compares the ratified continuous monitored NO_2 hourly mean concentrations for the past five years with the air quality objective of 200µg/m^3, not to be exceeded more than 18 times per year.

Overall in 2021 there were no exeedences of NO_2 indicated at any of the automatic and non-automatic monitoring sites located around the district. Adjustments were made to the number of diffusion tubes (DTs) within the district, with two removed and 11 new diffusion tubes introduced. These additions enabled a greater focus on previous areas of concern such as Glenfield and Stoney Stanton. The decision to remove two diffusion tubes was made due to consistent low levels of NO_2 as illustrated by previous monitoring data.

AQMA 1 – A5460 Narborough Road South

Diffusion tube data indicates that levels within this AQMA have not substantially changed from the previous year and remain low. There are no reported exceedances of the national air quality objective for this AQMA. Monitoring will continue within this AQMA to understand the potential impacts of nearby developments, which show little change in comparison to 2021 and remain lower than previous years.

AQMA 2 – M1 Corridor in Enderby and Narborough

This AQMA has not changed throughout 2021 and monitoring continues with data collected from DT48. Other sites include CM1 and DT80 which represents data in close proximity to the AQMA, north of the boundary. Concentrations in 2020 were significantly lower given the impact of the Covid-19 pandemic, however local and national restrictions were eased in March 2021 potentially resulting in the increase of levels. Concentrations of NO_2 increased at CM1 by eight µg/m^3 in 2021 yet remain below the national objective.

AQMA 3 – M1 Corridor between Thorpe Astley and Leicester Forest East

The A47 Hinckley Road is located well within the AQMA and is extensively used throughout the day, with higher levels of traffic pollution at peak rush hour times. Data capture for CM4 was 80.54% with an annual mean of 27 µg/m^3, a slight increase in comparison to 2020. Diffusion tube data for the five sites within the AQMA range from 16 µg/m^3 to 22 µg/m^3, remaining below the national objective in line with other areas around Blaby District.

DT 93, which was introduced in 2021, is also located in Leicester Forest East however, this is not within the AQMA and instead lies west of the AQMA boundary. The addition of this diffusion tube will supplement the monitoring currently in place and give a greater insight to the area given the removal of Continuous Monitor 3 (CM3) in 2020.

AQMA 4B – Enderby Road, Whetstone

Monitoring has continued with two diffusion tubes located within this AQMA (DT20 and DT26). Concentrations show no significant changes and below the national air quality objective, further supporting the reduction in boundary of this AQMA in 2020. Monitoring will continue to assess whether this remains a long-term trend.

AQMA – 6 Mill Hill, Enderby

As mentioned in the previous ASR, concentrations compared to 2018 have generally reduced and over the last three years and remain below the national objective. There are currently six diffusion tubes located within the AQMA, levels range between 13-29 $\mu g/m^3$ indicating that that some sites are recording elevated levels compared to others. CM5 is also located within this AQMA and has shown a four $\mu g/m^3$ reduction of NO_2 recorded in comparison to 2020.

Monitoring will continue within this AQMA to assess further trends and will be reported on in the ASR 2023.

Enderby Village

Monitoring has continued for this location in central Enderby, south of AQMA 6, with results showing minimal changes from the previous ASR findings.

Other Monitoring Areas

Lubbesthorpe Road, Braunstone Town

CM6 remains within this area being the closest receptor to the Fosse Park development, providing two years of monitoring data. Levels of NO_2 concentration were slightly lower than 2020 and corroborate well with the triplicate set of diffusion tubes (89,90,91) which were introduced in 2021. Overall levels continue to remain below the national objective and monitoring will continue to further assess the impact of the development.

Sharnford Hill, Sharnford

Levels in 2021 indicate no change in comparison to 2020, monitoring will continue to assess if this is a continuing trend.

Croft Road, Cosby

Previous years of data have shown no concern for air quality in Cosby with levels remaining below national objectives. Concentrations in 2021 follow this trend with no increase from levels in 2020.

Glenfield Village

Monitoring continues and has been extended in the village (DT 94 and 95), following concerns on the increasing levels within the area from previous monitoring and nearby developments. Concentrations from these additions are low and will continue to be monitored.

CM7 was moved to Glenfield Village in July 2020. This year's ASR will be able to comment on a full year of data from CM7 which attained a capture of 90.7% and recorded an annual average of 20 μg/m^3. Diffusion tube data suggests similar levels in the area, with DT 65 however, presenting a slightly higher level of 26 μg/m^3 but showing no increase from 2020.

Monitoring will continue in 2022 to enhance the understanding of initial concerns.

Glen Parva

Sites located in Glen Parva have indicated low levels of NO_2, in trend with data from the past five years. Monitoring will continue to understand the impacts of major roads such as the A426 (Leicester Road) which is located in proximity to DT5 and DT15.

Furthermore, an additional diffusion tube (DT 100) was introduced on Windsor Avenue (close to the B582, Little Glen Road) in July 2021. The addition of this DT is to obtain background data to assess if there is an impact on air quality from the current construction of the new HMP Fosse Way Prison. Construction began in August 2020 and is proposed to be completed by 2023. In comparison to other diffusion tube data, which falls under the monitoring of Oadby and Wigston Borough Council, levels are low at Windsor Avenue and monitoring will continue in 2022 and be reported on in ASR 2023.

Overall, within the area, results are low and well below the national objective, however monitoring will continue to understand if these are long term trends given the current prison development within the area.

Stoney Stanton Village

Monitoring has continued in the village due to elevated levels as indicated in previous years. Due to logistical constraints, it was not possible to relocate CM1 to Stoney Stanton in 2021 as originally proposed. The decision was made to include three new diffusion tubes (DTs 96,97 and 98) with the aim of the data improving the understanding of concerns in the area and informing a possible AQMA.

Results for 2021 have shown no significant increases in levels of NO_2 from 2020, with the highest level recorded at DT96 with a concentration of 25 μg/m^3, below the national

objective. However, given initial concerns and due to being unable to relocate the continuous monitor, passive monitoring will continue.

Sapcote Village

Monitoring in Sapcote has continued throughout 2021 and concentrations remained low at all three sites with a consistent result of 12 µg/m^3. Monitoring will continue to assess if such patterns remain and will be reported on in ASR 2023.

Elmesthorpe Railway Bridge

Monitoring has been undertaken at Elmesthorpe for the past three years, with the aim of obtaining background data linked to the proposed Hinckley National Rail Freight Interchange (HNFRI) development. Previous year's results have been low, with a small increase in 2021, but still below the national objective. Monitoring will continue to assess the potential impact of future development.

Thorpe Astley

Across all four sites in Thorpe Astley, there are no exceedances and results remain generally low. A new diffusion tube was introduced on Goodheart Way (DT92) to assess the lorry park of the M1 services adjacent; at the request of the Parish Council. Concentrations in 2021 returned an annual average of 20 µg/m^3, well below the national objective.

An additional diffusion tube (DT99) was reintroduced on Murby Way, in close proximity to the Centurion and Meridian Way roundabout, with the aim of understanding if there is an impact on air quality due to the New Lubbesthorpe Development.

Kirby Muxloe

A decision to remove DT76 (The Pines) was made as it was determined that the receptor was not in sufficient proximity to Desford Road, which resulted in the NO_2 fall off being substantial. DT77 (The Chestnuts) however remains within the area and will continue to monitor the impact of traffic and development nearby.

Aston Firs, near Sapcote

Monitoring has continued in Aston Firs (DT78) to obtain background levels linked to the proposed Hinckley National Rail Freight Interchange development. The last two years have shown relatively low levels of NO_2 with a level of 19 µg/m^3 in 2020 and 20 µg/m^3 in 2021, both which are below national objectives.

Monitoring will continue in Aston Firs to understand the potential future impacts of the proposed Hinckley National Rail Freight Interchange development.

Main Street, Kilby

Monitoring has continued in Kilby (DT88), with 2021 providing the first full year of data. Levels for 2021 indicate no exceedances and concentrations are lower than 2020. Monitoring will continue in this area to further inform an understanding of concentrations recorded.

Active Travel Monitoring

(See Table B.1. in Appendix B for monthly data on the Active Travel (AT) diffusion tubes).

As part of an additional DEFRA funded project (not included under LAQM), the Environmental Services team is working closely with the Active Travel team on a behavioural change scheme. This scheme includes an additional 14 AT diffusion tubes, 12 of which are located in close proximity to schools, where vehicle emissions, traffic congestion and idling are of growing concern.

Overall results indicate no exceedances of NO_2 across all sites. Concentrations are low at sites AT01 – AT011 and AT14, which are located near schools, ranging from 11 - 17 $\mu g/m^3$. Diffusion tubes AT012 and AT013 are in the vicinity of a major road network, the A563, and present relatively elevated levels of NO_2 concentrations yet remain below national objectives.

Monitoring will continue to inform the initial aims of the project and strengthen the existing determination as a council to better understand and improve sustainable travel which positively impacts air quality. Schemes include engaging initiatives such as 'Beat The Street', which encourages walking and cycling as an alternative to vehicle use as well as working together with schools and the community to raise awareness on relevant topics.

Summary

Overall, there are no exceedances for NO_2 at any of the monitoring sites in Blaby District. All diffusion tube raw means were bias adjusted using a national bias adjustment of 0.77. Annualisation was required for three diffusion tubes; DT 84 and DT 99 which were introduced in July 2021, and DT 84 which was missing on numerous occasions. To avoid further missing occurrences a new location within proximity has been found for this diffusion tube and will be reported on in ASR 2023.

3.2.2 Particulate Matter (PM_{10})

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

Table A.7 in Appendix A compares the ratified continuous monitored PM_{10} daily mean concentrations for the past five years with the air quality objective of 50 µg/m^3, not to be exceeded more than 35 times per year.

PM_{10} is monitored at one continuous monitoring station (CM1). In trend with the previous ASR, there was no exceedance with an annual level of 10.8 µg/m^3 in 2021, lower than the level in 2020 and well below the national objective.

Additionally, there were no occurrences of PM_{10} exceeding the 24 hours mean objective of 50µg/m^3, following trend with the previous three years of monitoring.

Monitoring of this pollutant will continue, and trends will be reported on in ASR 2023.

3.2.3 Particulate Matter ($PM_{2.5}$)

Table A.8 in Appendix A presents the ratified and adjusted monitored $PM_{2.5}$ annual mean concentrations for the past five years. $PM_{2.5}$ is measured at two continuous monitoring stations, CM1 and CM5. An estimated value for PM2.5 is calculated for CM1 from PM_{10} using a conversion factor which is detailed further in the QA/QC section.

CM1 recorded a slight decrease in concentrations compared to 2020 with levels remaining lower than the previous 5 years. Results in 2021 measured at CM5 indicate no change in concentrations of $PM_{2.5}$ as levels remained at 8.4 µg/m^3 and well below the national objective.

$PM_{2.5}$ is of growing importance given the potential impacts on health and life expectancy. Monitoring in Blaby District will continue and be reported on in the next ASR.

A formal MSc dissertation study was conducted in 2021 to consider concentrations of NO_2, O_3, $PM_{2.5}$ and PM_{10} with regard for local surface factors, sources, and meteorological variables. Several types of equipment were deployed, including both passive (diffusion tubes) and active (continuous monitoring station and low-cost sensors), for a period of three to five months. Statistical analyses were conducted to assess possible relationships between pollutant concentrations and various meteorological variables.

No exceedances of either the short term or longer-term objectives were reported within the study period. Wind speed was reported to be negatively correlated to all pollutants, except O_3, and was considered to be the most influential meteorological variable due to its dispersive capabilities. Atmospheric pressure was found to be positively correlated to all pollutants, except O_3, as higher pressure facilitated more stable conditions, lower wind speeds and reducing dispersion of pollutants. Relative Humidity (RH) was negatively correlated with NO_2 and O_3, the latter attributed to increased cloud cover reducing UV penetration and secondary pollutant formation. The NO_2 link was thought to be because the pollutant is more soluble. $PM_{2.5}$ and PM_{10} were positively correlated to RH, suspected because nitrates and sulphates accumulate more readily and facilitate secondary PM formation.

Local surface factors, namely a steep gradient in the highway in the northern extents of the AQMA contributed to increased NO_2 concentrations. The presence of high bricked walls and overarching vegetation at roadside in the central and southern reaches created a canyon effect and increased local pollutant concentrations. Local traffic management also played a role, acting to increase idling of vehicles, further increasing concentrations.

Appendix A: Monitoring Results

Table A.1 – Details of Automatic Monitoring Sites

Site ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Monitoring Technique	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Inlet Height (m)
CM1	Blaby 1 (Packhorse Drive, Enderby)	Roadside	454482	298573	NO2; PM10	NO	Chemiluminescent; Gravimetric (TEOM)	12.6	0.65	3
CM4	Blaby 4 (Hinckley Road, LFE)	Roadside	453492	303315	NO2	YES; AQMA 3	Chemiluminescent	4	1	1.5
CM5	Blaby 2 (Mill Hill, Enderby)	Roadside	453594	299549	NO2; PM2.5	YES; AQMA 6	Chemiluminescent; Gravimetric (TEOM)	4	1	1.5
CM6	Blaby 5 (Lubbesthorpe Road, Braunstone Town)	Roadside	455722	300782	NO2	NO	Chemiluminescent	7	1	1.5
CM7	Blaby 3 (Stamford Street, Glenfield)	Roadside	453934	305999	NO2	NO	Chemiluminescent	5	2.4	1.5

Notes:

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

(2) N/A if not applicable

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

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube Co-located with a Continuous Analyser?	Tube Height (m)
1	Kingsway	Roadside	455970	301146	NO2	No	11.0	1.5	No	2.2
4	Hall Walk, Moores Lane, Enderby	Roadside	453606	299557	NO2	Yes, AQMA 6	0.0	1.5	No	1.8
5	204 Leicester Road, Glen Parva	Roadside	457011	299627	NO2	No	21.6	3.4	No	1.8
15	1 Newbridge Road	Other	456786	298547	NO2	No	0.0	7.8	No	2.8
16	The Cottage, Ratby Lane	Roadside	453220	304273	NO2	Yes, AQMA 3	15.0	5.4	No	1.3
18	62 Packer Avenue, LFE	Other	453488	303637	NO2	Yes, AQMA 3	0.0	22.7	No	1.4
20	159 Enderby Rd	Roadside	455819	297954	NO2	Yes, AQMA 4B	0.0	4.7	No	1.7
25	7 Narborough Road South	Roadside	456470	301903	NO2	Yes, AQMA 1	0.0	7.0	No	1.8
26	Junction of Victoria Rd	Roadside	455817	297937	NO2	Yes, AQMA 4B	15.5	2.2	No	2.0
30	55 Hinckley Road, Sapcote	Roadside	448481	293549	NO2	No	19.3	2.3	No	1.8
31	5 Hinckley Road, Sapcote	Roadside	448876	293447	NO2	No	0.0	1.9	No	1.8
32	Co-Op Croft Rd	Roadside	454554	294803	NO2	No	2.3	1.5	No	1.9

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube Co-located with a Continuous Analyser?	Tube Height (m)
35	2 Narborough Rd. South	Roadside	456521	301896	NO2	Yes, AQMA 1	0.0	13.2	No	1.9
39	Sapcote Working Mens Club	Roadside	448847	293462	NO2	No	0.0	4.2	No	1.8
40	Conery Lane/Mill Hill Road	Roadside	453468	299737	NO2	Yes, AQMA 6	7.6	1.6	No	1.9
41	9 Mill Hill Road	Roadside	453439	299740	NO2	Yes, AQMA 6	0.0	3.8	No	1.9
43	Blaby Rd	Roadside	453780	299360	NO2	No	1.4	1.4	No	1.7
44	1 Mill Hill Rd	Roadside	453706	299455	NO2	Yes, AQMA 6	1.2	1.6	No	1.8
48	98 Leicester Rd, Enderby	Roadside	454519	298148	NO2	Yes, AQMA 2	0.0	8.7	No	1.8
49	10 Hall Walk, Enderby	Roadside	453565	299609	NO2	Yes, AQMA 6	0.0	13.0	No	2.0
51	257 Willow Way, LFE	Roadside	452234	302753	NO2	No	0.0	11.3	No	1.9
54	71 Hinckley Rd, LFE	Roadside	453592	303415	NO2	Yes, AQMA 3	0.0	32.9	No	1.5
56	Avalon, 9 Hinckley Rd, LFE	Roadside	454079	303535	NO2	Yes, AQMA 3	0.0	20.0	No	1.8
57	6 Ratby Lane, LFE	Roadside	454096	303599	NO2	No	12.1	2.4	No	1.7
64	3 Kirby Road, Glenfield	Roadside	453622	306039	NO2	No	0.0	2.0	No	1.9

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube Co-located with a Continuous Analyser?	Tube Height (m)
65	11 Stamford Street, Glenfield	Roadside	306077	453788	NO2	No	0.0	1.9	No	1.5
68	45 Mill Hill, Enderby	Roadside	299846	453281	NO2	Yes, AQMA 6	0.0	5.6	No	1.8
69	Station Road, Elmesthorpe	Roadside	447032	295877	NO2	No	49.3	1.2	No	1.8
73	New Road, Stoney Stanton	Roadside	449036	294720	NO2	No	11.1	2.3	No	1.8
74	Broughton Road, Stoney Stanton	Roadside	449105	294705	NO2	No	3.3	2.7	No	1.8
75	Long Street, Stoney Stanton	Roadside	449080	294785	NO2	No	1.4	1.2	No	1.8
77	The Chestnuts, Kirby Muxloe	Roadside	452309	304870	NO2	No	0.0	12.2	No	1.8
78	Aston Firs, Blaby	Roadside	446218	293831	NO2	No	17.0	37.5	No	1.8
80	Former Blaby 1 site, Packhorse Drive	Roadside	454483	298579	NO2	No	12.8	0.7	No	1.8
81	Newsagents near Blaby 4, LFE	Roadside	454038	303471	NO2	Yes, AQMA 3	6.2	2.4	No	1.8
82	Corner of King St/Mill Lane, Enderby	Roadside	453705	299187	NO2	No	0.5	1.0	No	1.8
83	Sharnford Hill, Sharnford	Roadside	448277	291869	NO2	No	2.9	1.4	No	1.8

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube Co-located with a Continuous Analyser?	Tube Height (m)
84	Lamppost outside Glenfield Travel	Roadside	453914	306109	NO2	No	6.7	1.2	No	1.8
85	14 The Square, Glenfield	Roadside	453813	306106	NO2	No	0.0	4.1	No	1.7
86	Wilson Close, Braunstone Town	Roadside	454930	302529	NO2	No	13.4	0.2	No	1.8
87	Thorpe Astley Community Centre	Roadside	454178	302627	NO2	No	5.8	2.0	No	1.8
88	42 Main Street, Kilby	Roadside	462115	295374	NO2	No	0.0	2.0	No	1.7
89, 90, 91	Blaby 5 triplicate 3 of 3	Roadside	455695	300824	NO2	No	16.2	2.6	Yes	1.7
92	61 Goodheart Way, LFE	Roadside	453957	302912	NO2	No	8.6	2.3	No	1.8
93	Former Blaby 3 site, LFE	Roadside	453219	303310	NO2	No	29.3	3.9	No	1.8
94	Lamppost opp Blaby 3, Stamford Street	Roadside	453933	305973	NO2	No	2.7	1.5	No	1.9
95	5 Main Street, Glenfield	Roadside	453809	306122	NO2	No	1.9	1.9	No	1.9
96	Estate Agents, roundabout Broughton Rd	Roadside	449083	294704	NO2	No	0.5	1.1	No	1.8
97	Scout hut, Broughton Rd, Stoney Stanton	Roadside	449127	294716	NO2	No	15.8	1.6	No	1.8

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube Co-located with a Continuous Analyser?	Tube Height (m)
98	3 Station Rd, opposite Foxbank Ind Est	Roadside	448591	294906	NO2	No	2.8	3.0	No	1.8
99	5 Murby Way, Thorpe Astley (former DT70)	Roadside	454465	302144	NO2	No	6.1	2.0	No	1.8
100	Windsor Avenue, Glen Parva	Roadside	458297	298329	NO2	No	5.5	1.2	No	1.9
AT1	Greystoke Primary, Narborough (BB54)	Roadside	454173	297603	NO2	No			No	1.8
AT2	Brockington College, Enderby (BB58)	Roadside	454356	298548	NO2	No			No	1.8
AT3	Danemill Primary, Enderby (BB60)	Roadside	453939	298947	NO2	No			No	1.8
AT4	Stafford Leys Primary, LFE (BB11)	Roadside	452944	303000	NO2	No			No	1.8
AT5	Fossebrook Primary, LFE (BB13)	Roadside	453982	303197	NO2	No			No	1.8
AT6	Glenfield Primary, Glenfield (BB05)	Roadside	453973	305842	NO2	No			No	1.8
AT7	Kingsway Primary, Braunstone (BB16)	Roadside	455214	302600	NO2	No			No	1.8

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube Co-located with a Continuous Analyser?	Tube Height (m)
AT8	The Winstanley School, Braunstone	Roadside	455251	302600	NO2	No			No	1.8
AT9	Ravenhurst Primary, Braunstone (BB21)	Roadside	455827	301842	NO2	No			No	1.8
AT10	Millfield Primary, Braunstone (BB23)	Roadside	453012	298723	NO2	No			No	1.8
AT11	The Pastures Primary, Enderby (BB59)	Roadside	455311	301428	NO2	No			No	1.8
AT12	Sainsbury's Footpath (BB27)	Other	455233	300417	NO2	No			No	1.8
AT13	Marriott Hotel (BB28)	Roadside	455035	300372	NO2	No			No	1.8
AT14	Badgerbrook Primary, Whetstone (BB42)	Roadside	455934	296288	NO2	No			No	1.8

Notes:7

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

(2) N/A if not applicable.

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

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2021 (%) (2)	2017	2018	2019	2020	2021
CM1	454482	298573	Roadside	74.9	74.9	28.8	27	30.9	16	24.3
CM4	453492	303315	Roadside	80.5	80.5	37.1	**47.3**	38.4	23.3	26.9
CM5	453594	299549	Roadside	71.2	71.2	**42.4**	38.3	30.9	22.9	18.9
CM6	455722	300782	Roadside	72.9	72.9	-	-	-	21	19.8
CM7	453934	305999	Roadside	90.7	90.7	-	-	-	21.1	20.2

☒ **Annualisation has been conducted where data capture is <75% and >25% in line with LAQM.TG16 (confirm by selecting in box).**

☒ **Reported concentrations are those at the location of the monitoring site (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**.

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

Table A.4 – Annual Mean NO_2 Monitoring Results: Non-Automatic Monitoring (µg/m^3)

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2021 (%) (2)	2017	2018	2019	2020	2021
1	455970	301146	Roadside	92	90.4	32.8	30.8	25.1	20.5	20.0
4	453606	299557	Roadside	92	90.4	**42.6**	**47.1**	36.9	29.4	29.3
5	457011	299627	Roadside	100	100.0			19.5	15.1	15.7
15	456786	298547	Other	100	100.0	20.3	20.0	16.4	13.5	14.3
16	453220	304273	Roadside	100	100.0	38.7	34.4	27.9	22.2	21.8
18	453488	303637	Other	100	100.0	34.7	30.1	24.9	20.6	19.1
20	455819	297954	Roadside	100	100.0	26.8	25.7	20.6	15.8	17.2
25	456470	301903	Roadside	100	100.0	28.2	29.4	23.0	17.0	18.1
26	455817	297937	Roadside	92	92.3	33.5	31.5	27.6	20.7	19.4
30	448481	293549	Roadside	100	100.0			15.4	11.5	11.6
31	448876	293447	Roadside	100	100.0			16.4	11.5	12.3
32	454554	294803	Roadside	83	82.7	20.1	23.8	16.3	11.8	12.1
35	456521	301896	Roadside	100	100.0	27.3	26.1	22.2	16.8	17.1

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 2021 (%) [2]	2017	2018	2019	2020	2021
39	448847	293462	Roadside	92	90.4			15.8	11.1	11.5
40	453468	299737	Roadside	100	100.0	29.2	28.7	21.9	17.8	17.9
41	453439	299740	Roadside	100	100.0	31.2	32.1	26.3	20.2	21.0
43	453780	299360	Roadside	100	100.0	31.3	32.5	25.2	18.3	19.2
44	453706	299455	Roadside	100	100.0	29.8	33.4	24.2	18.7	20.1
48	454519	298148	Roadside	92	90.4	35.5	34.0	25.0	18.2	18.3
49	453565	299609	Roadside	100	100.0	35.6	22.8	18.0	13.2	13.0
51	452234	302753	Roadside	100	100.0	22.6	22.4	18.0	13.0	13.1
54	453592	303415	Roadside	100	100.0	20.4	32.5	26.6	22.1	20.7
56	454079	303535	Roadside	100	100.0	26.3	24.8	21.0	15.9	15.8
57	454096	303599	Roadside	100	100.0	25.3	39.0	29.7	22.1	23.7
64	453622	306039	Roadside	100	100.0	25.3	24.3	22.4	17.0	18.0
65	306077	453788	Roadside	100	100.0		25.4	32.9	26.0	25.6
68	299846	453281	Roadside	100	100.0		25.7	23.8	18.4	19.2

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) [1]	Valid Data Capture 2021 (%) [2]	2017	2018	2019	2020	2021
69	447032	295877	Roadside	100	100.0		26.3	16.7	12.9	14.5
73	449036	294720	Roadside	100	100.0			29.0	25.1	24.0
74	449105	294705	Roadside	100	100.0			25.5	20.4	21.1
75	449080	294785	Roadside	100	100.0			21.1	17.4	18.0
77	452309	304870	Roadside	100	100.0			17.5	15.1	14.5
78	446218	293831	Roadside	100	100.0			31.5	19.3	19.6
80	454483	298579	Roadside	100	100.0				15.8	15.7
81	454038	303471	Roadside	92	92.3				19.6	20.6
82	453705	299187	Roadside	100	100.0				17.5	17.1
83	448277	291869	Roadside	100	100.0				18.4	17.8
84	453914	306109	Roadside	67	67.3				20.7	22.0
85	453813	306106	Roadside	100	100.0				13.4	14.3
86	454930	302529	Roadside	75	76.9				13.6	15.5
87	454178	302627	Roadside	92	90.4				16.8	16.6

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 2021 (%) [2]	2017	2018	2019	2020	2021
88	462115	295374	Roadside	100	100.0				13.0	13.9
89, 90, 91	455695	300824	Roadside	92	90.4					19.9
92	453957	302912	Roadside	100	100.0					16.1
93	453219	303310	Roadside	100	100.0					20.0
94	453933	305973	Roadside	92	90.4					15.3
95	453809	306122	Roadside	100	100.0					16.1
96	449083	294704	Roadside	100	100.0					25.0
97	449127	294716	Roadside	100	100.0					21.8
98	448591	294906	Roadside	100	100.0					15.4
99	454465	302144	Roadside	50	51.9					17.3
100	458297	298329	Roadside	50	51.9					10.7
AT1	454173	297603	Roadside	100	100.0			15.3	12.2	11.7
AT2	454356	298548	Roadside	100	100.0			16.2	13.2	13.3
AT3	453939	298947	Roadside	100	100.0			17.0	10.8	12.9

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 2021 (%) [2]	2017	2018	2019	2020	2021
AT4	452944	303000	Roadside	100	100.0			14.5	10.1	10.6
AT5	453982	303197	Roadside	100	100.0			16.9	12.6	13.7
AT6	453973	305842	Roadside	100	100.0			17.1	12.2	12.5
AT7	455214	302600	Roadside	100	100.0			16.2	11.9	11.6
AT8	455251	302600	Roadside	92	90.4			17.0	13.5	12.8
AT9	455827	301842	Roadside	75	75.0			19.1	16.1	16.6
AT10	453012	298723	Roadside	100	100.0			18.5	13.8	13.9
AT11	455311	301428	Roadside	100	100.0			13.6	10.1	10.5
AT12	455233	300417	Other	100	100.0			25.5	18.8	20.4
AT13	455035	300372	Roadside	100	100.0			24.6	17.6	18.0
AT14	455934	296288	Roadside	100	100.0				12.0	12.1

☒ **Annualisation has been conducted where data capture is <75% and >25% in line with LAQM.TG16.**

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

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

Notes:

The annual mean concentrations are presented as µg/m^3.

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

NO_2 annual means exceeding 60µg/m^3, indicating a potential exceedance of the NO_2 1-hour mean objective are shown in **bold and underlined**.

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

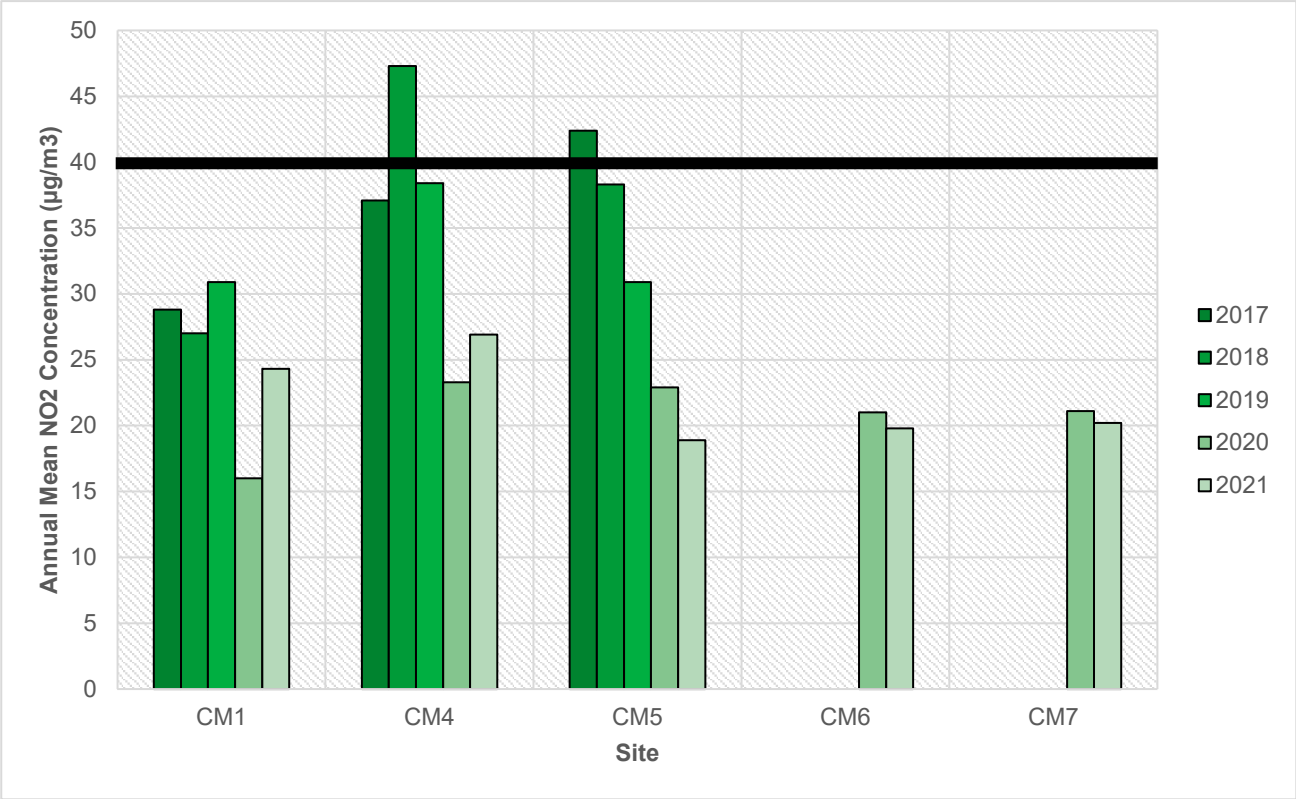
Concentrations are those at the location of monitoring and not those following any fall-off with distance adjustment.

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

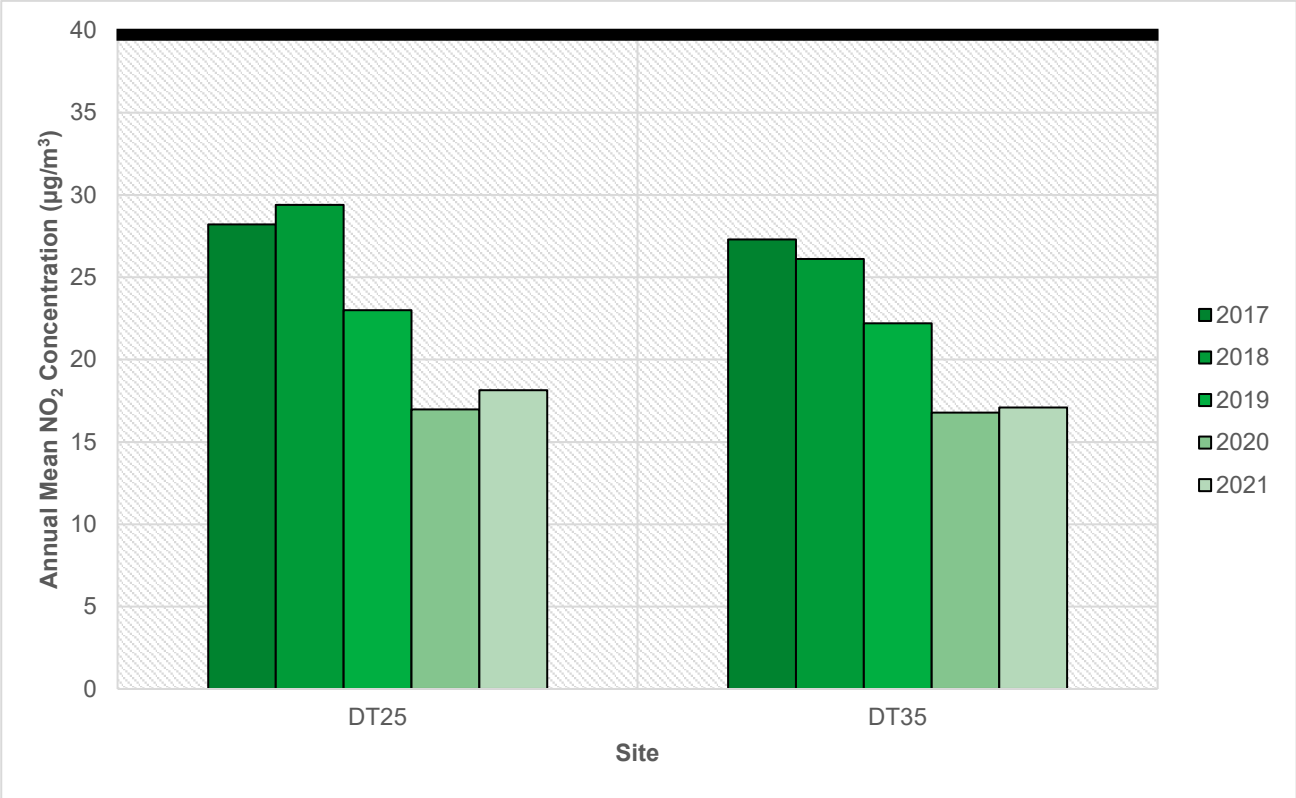
Figure A.1 – Trends in Annual Mean NO_2 Concentrations

Air Quality Monitoring Stations



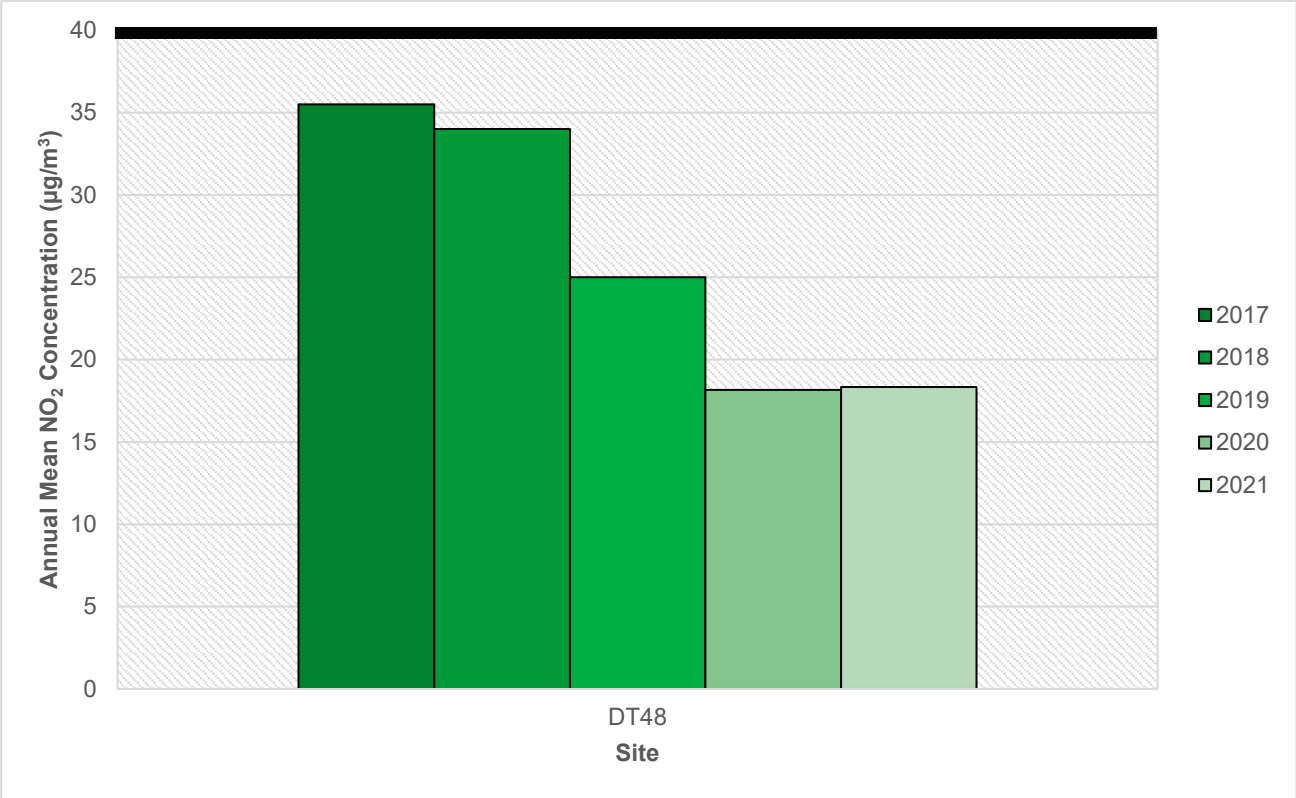
The black line represents the Air Quality Objective (AQO) for the named pollutant.

AQMA 1 – A5460 Narborough Road South



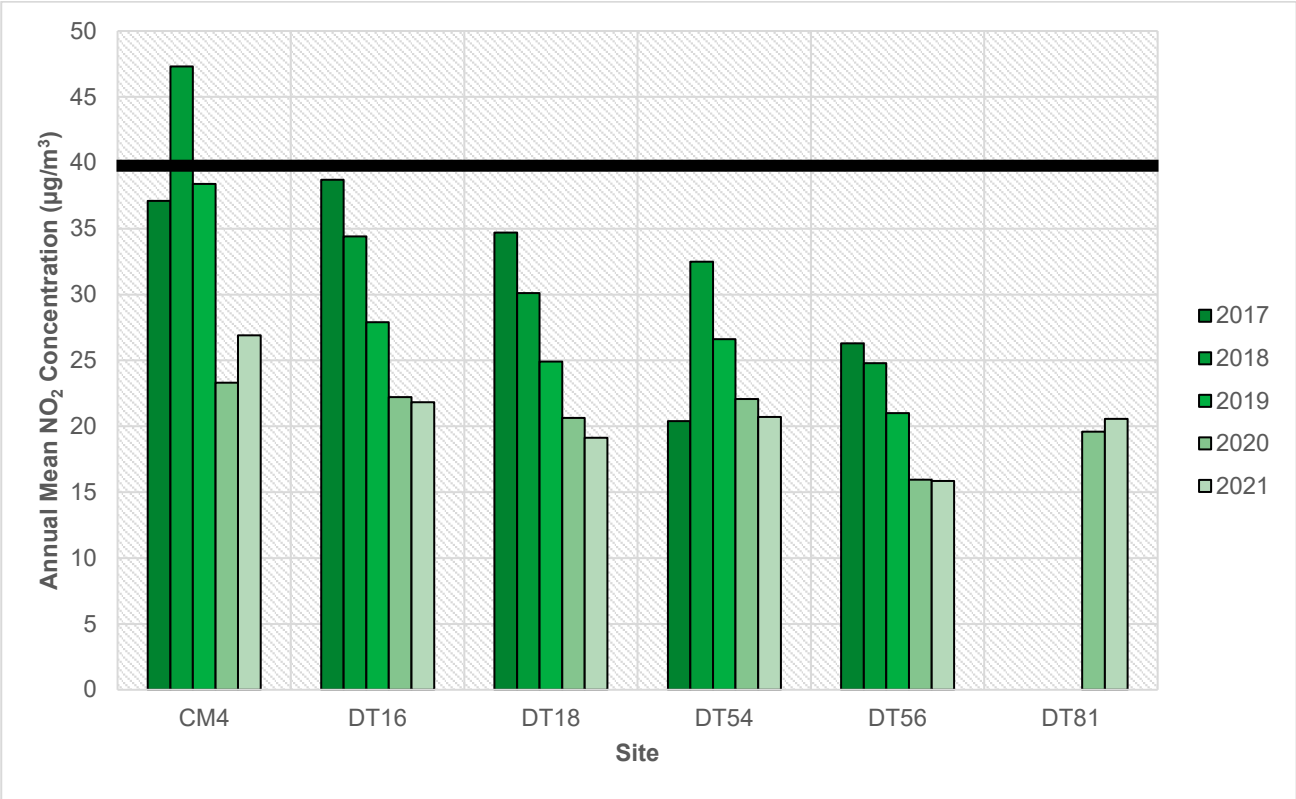
The black line represents the Air Quality Objective (AQO) for the named pollutant.

AQMA 2 – M1 corridor in Enderby and Narborough



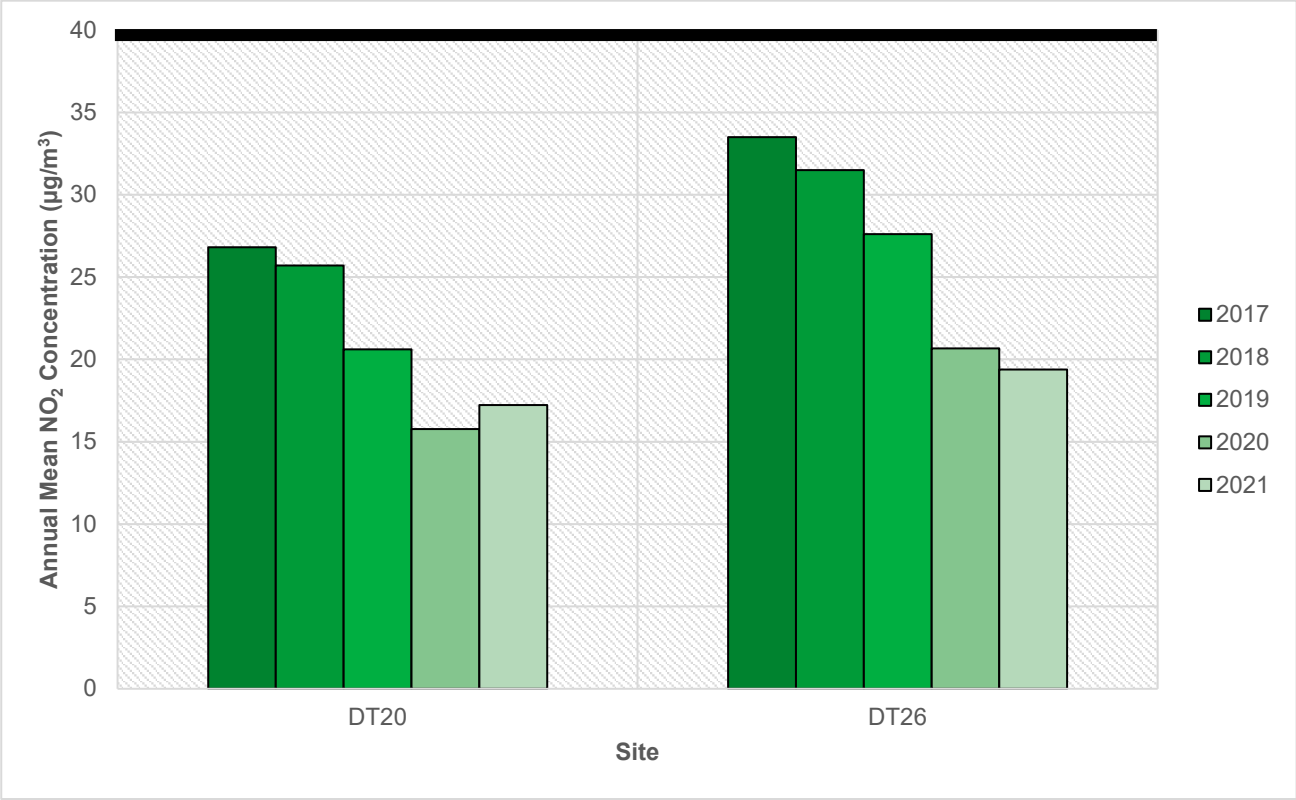
The black line represents the Air Quality Objective (AQO) for the named pollutant.

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



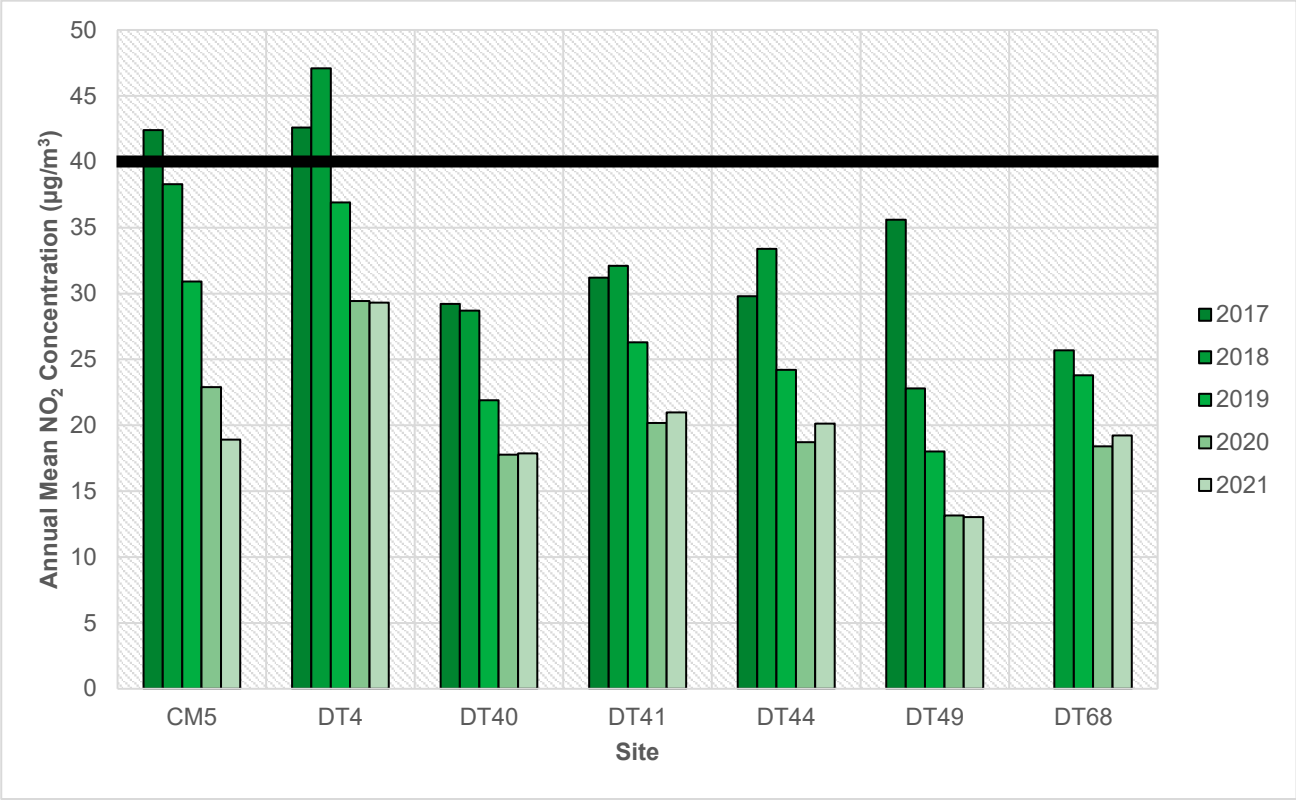
The black line represents the Air Quality Objective (AQO) for the named pollutant.

AQMA 4B – Enderby Road, Whetstone



The black line represents the Air Quality Objective (AQO) for the named pollutant.

AQMA 6 – Mill Hill, Enderby



The black line represents the Air Quality Objective (AQO) for the named pollutant.

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

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2021 (%) (2)	2017	2018	2019	2020	2021
CM1	454482	298573	Roadside	74.9	74.9	0	0	0	0	0
CM4	453492	303315	Roadside	80.5	80.5	5	1	0	0	0
CM5	453594	299549	Roadside	71.2	71.2	8	0	0	0	0
CM6	455722	300782	Roadside	72.9	72.9	-	-	-	0	0
CM7	453934	305999	Roadside	90.7	90.7	-	-	-	0	0

Notes:

Results are presented as the number of 1-hour periods where concentrations greater than 200µg/m^3 have been recorded.

Exceedances of the NO_2 1-hour mean objective (200µg/m^3 not to be exceeded more than 18 times/year) are shown in **bold**.

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

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

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

Table A.6 – Annual Mean PM_{10} Monitoring Results (µg/m^3)

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2021 (%) (2)	2017	2018	2019	2020	2021
CM1	454482	298573	Roadside	77.6	77.6	14.8	11	11.8	11.5	10.8

☒ **Annualisation has been conducted where data capture is <75% and >25% in line with LAQM.TG16.**

Notes:

The annual mean concentrations are presented as µg/m^3.

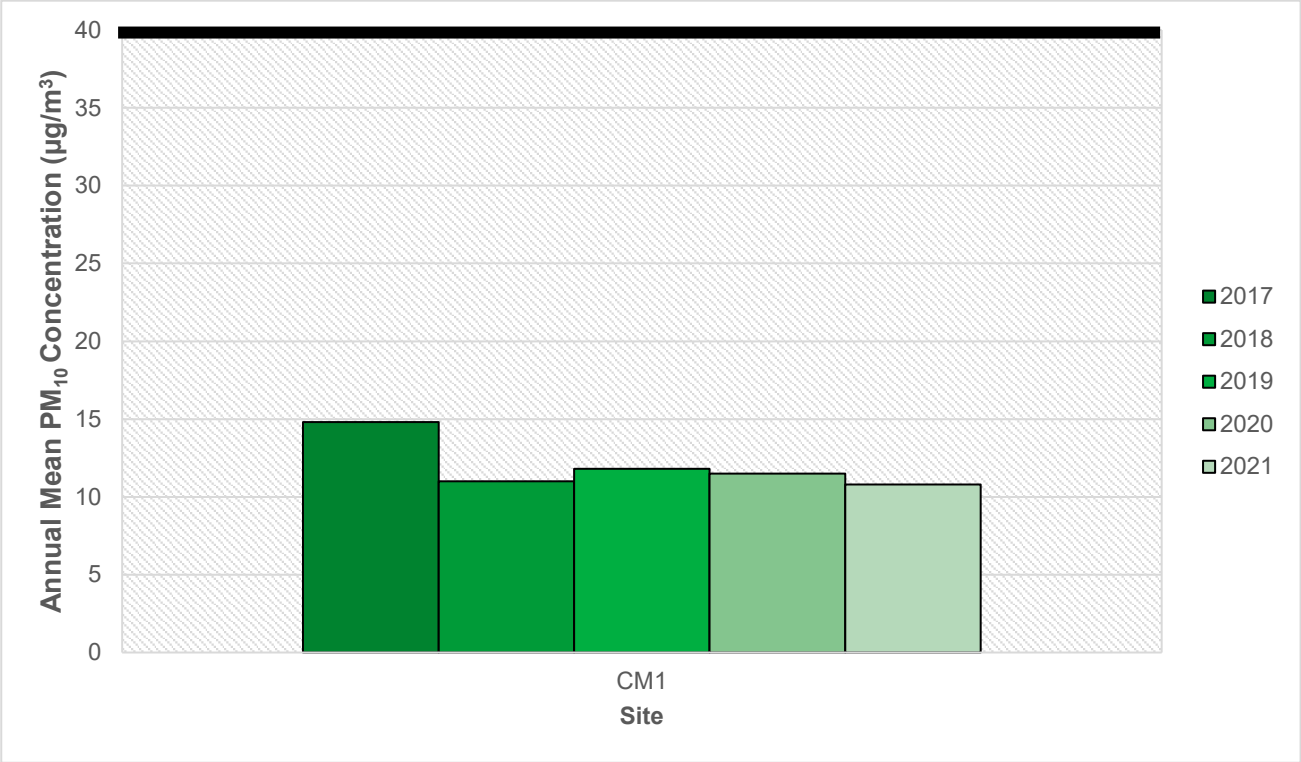
Exceedances of the PM_{10} annual mean objective of 40µg/m^3 are shown in **bold**.

All means have been "annualised" as per LAQM.TG16 if valid data capture for the full calendar year is less than 75%. See Appendix C for details.

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

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

Figure A.2 – Trends in Annual Mean PM_{10} Concentrations



The black line represents the Air Quality Objective (AQO) for the named pollutant.

Table A.7 – 24-Hour Mean PM_{10} Monitoring Results, Number of PM_{10} 24-Hour Means > 50µg/m^3

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2021 (%) (2)	2017	2018	2019	2020	2021
CM1	454482	298573	Roadside	77.6	77.6	1	0	0	0	0

Notes:

Results are presented as the number of 24-hour periods where daily mean concentrations greater than 50µg/m^3 have been recorded.

Exceedances of the PM_{10} 24-hour mean objective (50µg/m^3 not to be exceeded more than 35 times/year) are shown in **bold**.

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

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

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

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

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2021 (%) (2)	2017	2018	2019	2020	2021
CM1	454482	298573	Roadside	77.6	77.6	*10.4*	*7.7*	*8.3*	*8.1*	*7.6*
CM5	453594	299549	Roadside	91.5	91.5	*20.4*	*16*	*16.9*	8.4	8.4

☒ **Annualisation has been conducted where data capture is <75% and >25% in line with LAQM.TG16.**

Notes:

The annual mean concentrations are presented as µg/m^3.

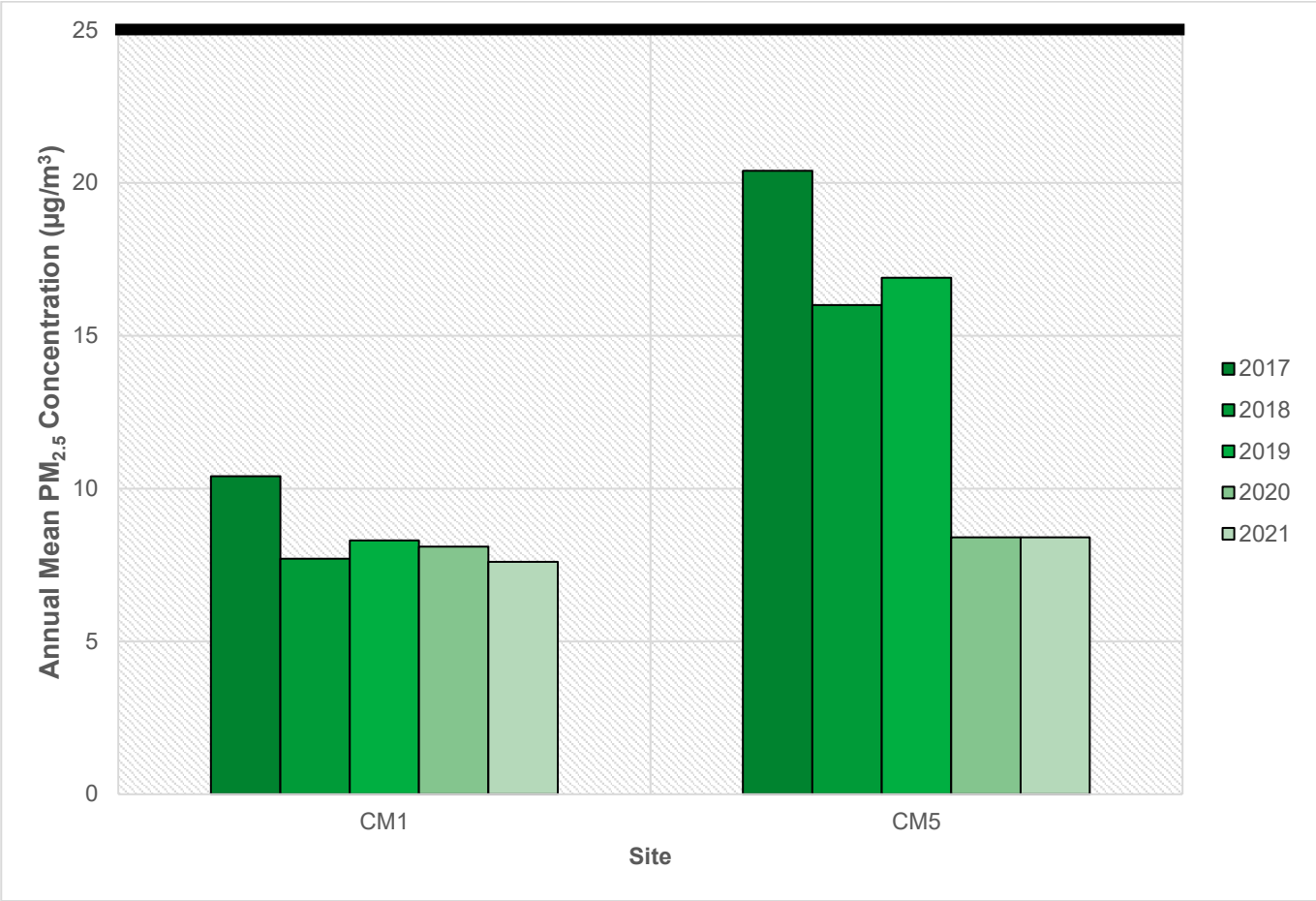
All means have been "annualised" as per LAQM.TG16 if valid data capture for the full calendar year is less than 75%. See Appendix C for details.

Concentrations in italics are estimated from monitored PM_{10} and derived using a factor of 0.7, further information can be found in Appendix C: Supporting Technical Information / Air Quality Monitoring Data QA/QC. Actual $PM_{2.5}$ monitoring commenced at CM5 from 2020.

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

Figure A.3 – Trends in Annual Mean $PM_{2.5}$ Concentrations



The black line represents the Air Quality Objective (AQO) for the named pollutant.

With the exception of CM5 since 2020, concentrations are derived from monitored PM_{10} concentrations. Further information can be found in Appendix C.

Appendix B: Full Monthly Diffusion Tube Results for 2021

Table B.1 – NO_2 2021 Diffusion Tube Results (µg/m^3)

DT ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Easting)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Annualised and Bias Adjusted (0.77)	Annual Mean: Distance Corrected to Nearest Exposure	Comment
1	455970	301146	34.4	30.9	22.9		23.8	21.7	18.7	18.0	28.3	26.7	33.0	28.0	26.0	20.0		
4	453606	299557	46.9	39.8	40.5		43.0	31.7	31.1	30.0	46.4	33.3	40.0	36.0	38.1	29.3		
5	457011	299627	27.2	24.3	16.7	23.4	19.3	18.3	17.8	17.0	22.2	16.8	22.0	20.0	20.4	15.7		
15	456786	298547	21.9	22.1	15.8	17.6	19.7	17.3	15.5	14.0	21.8	20.8	18.0	19.0	18.6	14.3		
16	453220	304273	34.5	29.2	29.4	19.1	32.3	22.9	21.7	24.0	31.7	31.3	35.0	29.0	28.3	21.8		
18	453488	303637	31.4	28.9	22.8	19.7	26.2	19.3	16.4	22.0	23.3	30.3	32.0	26.0	24.9	19.1		
20	455819	297954	24.7	20.9	20.6	26.6	20.3	22.2	17.4	18.0	23.2	21.8	31.0	22.0	22.4	17.2		
25	456470	301903	32.1	26.5	21.6	26.2	20.4	20.4	15.9	19.0	26.1	24.4	27.0	23.0	23.6	18.1		
26	455817	297937	33.3		26.3	29.0	27.0	19.4	20.6	19.0	28.8	13.5	28.0	32.0	25.2	19.4		
30	448481	293549	20.7	17.4	15.6	13.6	10.5	11.8	10.2	10.0	14.0	15.3	18.0	23.0	15.0	11.6		
31	448876	293447	20.8	14.2	14.8	15.4	12.1	14.7	11.9	14.0	16.9	12.0	24.0	21.0	16.0	12.3		
32	454554	294803	19.2	15.4			13.4	15.3	12.6	13.0	19.0	12.3	19.0	18.0	15.7	12.1		
35	456521	301896	30.1	19.5	22.6	19.4	17.6	20.6	17.4	21.0	25.2	20.9	29.0	23.0	22.2	17.1		
39	448847	293462	21.2	15.5	13.0	14.8	10.8	14.8		12.0	13.8	14.5	17.0	17.0	15.0	11.5		
40	453468	299737	29.8	24.4	20.6	24.0	21.9	20.6	17.5	19.0	28.2	18.3	28.0	26.0	23.2	17.9		
41	453439	299740	30.9	29.5	24.9	29.3	27.5	24.8	26.8	25.0	30.2	24.1	28.0	26.0	27.3	21.0		
43	453780	299360	28.4	26.5	23.0	27.3	25.3	22.4	21.2	22.0	31.0	21.1	28.0	24.0	25.0	19.2		
44	453706	299455	28.3	32.2	23.6	35.5	22.9	25.1	23.3	24.0	29.1	20.7	22.0	27.0	26.1	20.1		

DT ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Easting)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Annualised and Bias Adjusted (0.77)	Annual Mean: Distance Corrected to Nearest Exposure	Comment
48	454519	298148	27.9	22.5	24.3	17.4	23.1	20.1		22.0	24.9	26.8	30.0	23.0	23.8	18.3		
49	453565	299609	23.6	18.9	17.2	17.4	12.8	13.4	13.7	12.0	16.4	16.7	22.0	19.0	16.9	13.0		
51	452234	302753	21.0	19.9	15.0	14.6	14.4	13.1	14.7	15.0	21.0	14.7	22.0	19.0	17.0	13.1		
54	453592	303415	33.3	37.2	30.2	31.3	25.1	20.2	16.5	21.0	23.9	28.1	32.0	24.0	26.9	20.7		
56	454079	303535	26.2	18.9	22.2	17.8	18.8	16.5	16.7	16.0	23.8	22.2	25.0	23.0	20.6	15.8		
57	454096	303599	34.5	32.7	28.1	30.1	29.5	27.0	26.7	28.0	34.4	31.9	36.0	31.0	30.8	23.7		
64	453622	306039	30.5	22.6	25.6	23.2	17.4	20.2	19.9	18.0	25.2	23.6	28.0	27.0	23.4	18.0		
65	306077	453788	35.6	29.0	33.8	34.8	32.9	27.2	31.1	29.0	42.0	34.6	37.0	32.0	33.3	25.6		
68	299846	453281	28.4	31.3	23.6	26.8	25.3	21.5	19.4	21.0	29.3	21.9	27.0	24.0	25.0	19.2		
69	447032	295877	23.3	19.0	17.2	17.9	15.2	14.5	19.7	15.0	21.3	19.5	24.0	20.0	18.9	14.5		
73	449036	294720	36.7	31.4	28.9	23.1	30.1	29.2	23.7	27.0	39.8	34.0	39.0	31.0	31.2	24.0		
74	449105	294705	38.4	26.3	25.8	21.6	26.7	21.4	23.3	22.0	31.1	29.0	33.0	30.0	27.4	21.1		
75	449080	294785	30.4	26.2	22.7	20.5	19.8	20.0	14.9	19.0	25.7	27.0	27.0	27.0	23.4	18.0		
77	452309	304870	26.1	21.8	19.2	18.7	16.8	18.2	12.3	16.0	21.2	17.2	18.0	21.0	18.9	14.5		
78	446218	293831	32.6	26.1	24.0	21.2	24.1	21.4	16.8	19.0	29.5	28.3	30.0	32.0	25.4	19.6		
80	454483	298579	26.9	22.5	21.3	18.2	16.4	17.3	14.7	15.0	20.6	23.6	24.0	24.0	20.4	15.7		
81	454038	303471	37.7	26.3	31.3	26.9	27.2	21.5	19.1	21.0		25.8	30.0	27.0	26.7	20.6		
82	453705	299187	29.8	24.6	20.2	15.7	20.1	19.2	17.9	17.0	24.9	21.4	30.0	26.0	22.2	17.1		
83	448277	291869	28.1	25.1	22.0	24.2	20.5	21.1	21.6	21.0	27.6	17.5	27.0	22.0	23.2	17.8		
84	453914	306109	36.5	32.9		29.6	25.5	22.5	22.5		33.3	28.7			28.9	22.0		
85	453813	306106	28.1	20.3	20.3	17.3	14.0	14.2	12.2	13.0	19.7	19.5	21.0	23.0	18.6	14.3		

DT ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Easting)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Annualised and Bias Adjusted (0.77)	Annual Mean: Distance Corrected to Nearest Exposure	Comment
86	454930	302529	27.7	22.3	20.7	13.6	14.5		12.3			22.7	25.0	22.0	20.1	15.5		
87	454178	302627	28.6	18.0	24.7	17.4	18.0	16.2		16.0	21.5	23.6	29.0	24.0	21.5	16.6		
88	462115	295374	22.2	15.9	17.0	20.1	15.8	13.1	14.8	15.0	22.6	18.3	25.0	17.0	18.1	13.9		
89	455695	300824	29.4	27.1	23.1		25.5	19.2	22.6	19.0	27.5	27.4	26.0	27.0	-	-		Triplicate Site with 89, 90 and 91 - Annual data provided for 91 only
90	455695	300824	28.8	29.9	23.4		27.6	21.7	20.7	18.0	33.0	34.4	28.0	27.0	-	-		Triplicate Site with 89, 90 and 91 - Annual data provided for 91 only
91	455695	300824	33.5	27.6	23.3		27.5	21.8	20.6	18.0	26.0	26.9	29.0	31.0	25.8	19.9		Triplicate Site with 89, 90 and 91 - Annual data provided for 91 only
92	453957	302912	28.0	24.6	21.6	15.7	17.4	17.7	14.1	18.0	20.5	27.0	24.0	23.0	21.0	16.1		
93	453219	303310	33.0	29.6	27.1	27.2	23.1	22.0	18.2	21.0	31.8	26.2	25.0	27.0	25.9	20.0		
94	453933	305973	27.6	23.2	18.1	22.0	19.7	16.0	17.5	16.0	20.1	16.8	21.0		19.8	15.3		
95	453809	306122	28.4	23.3	23.0	19.4	18.8	17.2	15.3	16.0	23.7	22.6	21.0	23.0	21.0	16.1		
96	449083	294704	38.8	31.6	31.0	26.8	31.7	30.9	26.1	30.0	35.8	36.1	31.0	40.0	32.5	25.0		
97	449127	294716	34.6	29.4	29.1	27.2	29.5	23.6	24.5	24.0	33.5	27.6	28.0	29.0	28.3	21.8		
98	448591	294906	25.4	18.7	25.1	18.3	19.9	17.0	16.2	16.0	20.9	19.1	21.0	23.0	20.1	15.4		
99	454465	302144							21.7	16.0	24.9	25.9	24.0	27.0	23.3	17.3		
100	458297	298329							10.9	11.0	14.9	12.7	18.0	19.0	14.4	10.7		
AT1	454173	297603	23.3	16.9	15.2	15.2	10.6	12.1	10.8	11.0	14.9	12.8	21.0	18.0	15.1	11.7		
AT2	454356	298548	25.7	20.4	15.9	19.9	11.6	13.9	13.6	13.0	19.4	13.4	21.0	20.0	17.3	13.3		
AT3	453939	298947	22.7	21.1	13.8	15.2	12.8	12.9	13.9	11.0	16.8	17.4	21.0	22.0	16.7	12.9		
AT4	452944	303000	19.9	17.6	14.4	14.6	10.3	11.2	9.9	9.0	13.7	10.1	16.0	18.0	13.7	10.6		
AT5	453982	303197	27.2	20.7	18.8	16.3	12.0	13.8	12.4	13.0	16.5	17.2	26.0	20.0	17.8	13.7		
AT6	453973	305842	24.4	18.4	17.3	14.8	12.3	12.8	12.7	10.0	15.9	15.4	22.0	19.0	16.3	12.5		

DT ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Easting)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Annualised and Bias Adjusted (0.77)	Annual Mean: Distance Corrected to Nearest Exposure	Comment
AT7	455214	302600	23.2	17.6	16.9	12.4	9.4	11.3	9.5	10.0	15.2	14.6	21.0	19.0	15.0	11.6		
AT8	455251	302600	25.1	18.9	18.2	14.0	10.9	11.0		10.0	16.8	15.5	24.0	19.0	16.7	12.8		
AT9	455827	301842	32.7				16.1	16.6	15.0	14.0	23.1	21.8	31.0	24.0	21.6	16.6		
AT10	453012	298723	27.6	19.0	18.2	13.6	12.8	14.2	12.5	11.0	16.6	22.0	27.0	22.0	18.0	13.9		
AT11	455311	301428	25.8	15.7	11.1	11.8	8.3	10.8	10.2	10.0	13.4	11.9	18.0	16.0	13.6	10.5		
AT12	455233	300417	35.4	27.8	25.2	23.1	24.2	21.8	20.6	20.0	29.6	27.3	32.0	30.0	26.4	20.4		
AT13	455035	300372	31.0	23.2	22.9	22.9	18.8	23.2	17.8	20.0	25.7	22.6	29.0	24.0	23.4	18.0		
AT14	455934	296288	25.0	17.1	16.4	12.5	10.1	12.1	10.3	11.0	14.2	15.2	23.0	21.0	15.7	12.1		

☒ **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.**

☒ **National bias adjustment factor used.**

☒ **Where applicable, data has been distance corrected for relevant exposure in the final column.**

☒ **Blaby District Council confirm that all 2021 diffusion tube data has been uploaded to the Diffusion Tube Data Entry System**.

Notes:

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

NO_2 annual means exceeding 60µg/m^3, indicating a potential exceedance of the NO_2 1-hour mean objective are shown in **bold and underlined**.

See Appendix C for details on bias adjustment and annualisation.

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

Monitoring has been further extended in the villages of Stoney Stanton and Glenfield. In both locations, an increased number of diffusion tubes have been deployed compared to 2020 and a continuous monitoring station continues to be located in Glenfield. It is hoped that the increased monitoring capabilities in both villages will inform the necessity for AQMA(s).

There have been no additional studies including screening of sources, dispersion modelling or monitoring campaigns conducted in 2021.

New or Changed Sources Identified Within Blaby District During 2021

Blaby District Council has not identified any new sources relating to air quality within the reporting year of 2021. Road traffic counts were noted to have dropped during the third national lockdown (period Jan-Mar 2021) and this undoubtedly impacted on measured NO_2 concentrations. Furthermore, it is likely that some local industry ceased during this period which may have implications for recorded $PM_{2.5}$ and PM_{10} concentrations.

Additional Air Quality Works Undertaken by Blaby District Council During 2021

Blaby District Council has not completed any additional works within the reporting year of 2021 regarding the development of action plan measures or the declaration, amendment or revocation of an AQMA.

Minor amendments were made to the passive monitoring regime, including alterations to the number and location of diffusion tubes in Glenfield, Stoney Stanton, Leicester Forest East, Thorpe Astley, and Glen Parva. A member of the Environmental Services team conducted a Masters dissertation focussed on AQMA 6. The research included the use of diffusion tubes, a continuous monitor and two low-cost sensors to consider pollution concentrations in accordance with nationally set air quality objectives. Considerations for

local surface factors, pollutant sources and meteorological variables were made, and the results are summarised in Section 2.3.

QA/QC of Diffusion Tube Monitoring

During the monitoring year all diffusion tubes were changed in accordance with the 2021 DEFRA calendar (± 2 days) and none were exposed for prolonged periods. Samplers were stored in accordance with the guidance and promptly posted for laboratory analysis.

The supplier used to provide and analyse our diffusion tubes was South Yorkshire Air Quality Samplers (SYAQS) using the 50% TEA in acetone method of preparation. This laboratory is a regular contributor to the national bias correction spreadsheet database and has analysed the council's tubes for a number of years. The supplier maintained provision and analysis of diffusion tubes throughout 2021 enabling complete adherence to the monitoring calendar (± 2 days).

Diffusion Tube Annualisation

Where less than 75% (but >25%) of the data set is available, the diffusion tube data has been annualised as per Technical Guidance LAQM.TG(16). This procedure was necessary for DT84, DT99 and DT100 due to capture rates of 67%, 50% and 50% respectively. This can be attributed to missing samplers in the first instance and a monitoring start date of July 2021 for the remaining two tubes.

Annualisation was performed within the Diffusion Tube Data Processing Tool which is submitted with the report. The background stations utilised were Coventry Allesley, Coventry Binley Road, Leicester University and Leicester A594 Roadside, all of which had the requisite data capture in accordance with the guidance.

Diffusion Tube Bias Adjustment Factors

The diffusion tube data presented within the 2022 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 correction factor based on the comparison of diffusion tube results with data taken from NO_x/NO_2

continuous analysers. Alternatively, the national database of diffusion tube co-location surveys provides bias factors for the relevant laboratory and preparation method.

Blaby District Council have applied a national bias adjustment factor of 0.77 to the 2021 monitoring data. A local bias correction factor of 1.31 was calculated utilising the triplicate set at CM6. This factor was deemed inappropriate due to poor data capture at the station and further detail on the choice of correction factor can be found below. It is envisaged that the local factor may be a more suitable choice for use in ASR 2023. A summary of bias adjustment factors used by the Council over the past five years is presented in Table C.1.

Having regard to Box 7.13 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 Blaby 5, 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 NOx 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, et cetera) **– our tubes are similar in location to the co-location site;**
- 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 **– SYAQS use only one study in the national spreadsheet (London Marylebone), which is considerably different to Blaby District Council's area with regards traffic volumes and pollutant concentrations;**
- Local where that co-location study is spread across more than one calendar year **– ours is based on one calendar year only;**
- Local for "good" precision for diffusion tubes and with high quality chemiluminescence results, in regards to national AURN standards **– we have 'Good Overall Precision' for our DT results, but "Poor overall Data Capture" for the Continuous Monitor. Data does not comply with AURN standards;**

- National 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;**
- National 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 period of one year;**
- National 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;**
- National if the data capture from the automatic analyser is less than 90%, or there have been problems with data quality **– data capture from the automatic analyser is less than 90%;**
- National for co-location site with "poor precision" or laboratories with predominantly "poor" precision, as set out on the LAQM Support Helpdesk website – **we have 'Good Overall Precision' for our DT results, but "Poor Overall Data Capture" for the Continuous Monitor.**

Overall, it appears reasonable to choose the National bias correction factor. The bias correction factor was obtained from the DEFRA website using the National Diffusion Tube Bias Adjustment Factor Spreadsheet version 03/22. South Yorkshire Air Quality Samplers (SYAQS) were selected as they analyse the Council's diffusion tubes.

Table C.1 – Bias Adjustment Factor

Monitoring Year	Local or National	If National, Version of National Spreadsheet	Adjustment Factor
2021	National	03/22	0.77
2020	National	03/21	0.77
2019	National	09/20	0.78
2018	National	06/19	0.95
2017	National	09/18	0.88

NO_2 Fall-off with Distance from the Road

Wherever possible, monitoring locations are representative of exposure. However, where this is not possible, the NO_2 concentration at the nearest location relevant for exposure

has been estimated using the Diffusion Tube Data Processing Tool/NO_2 fall-off with distance calculator available on the LAQM Support website. Where appropriate, non-automatic annual mean NO_2 concentrations corrected for distance are presented in Table B.1.

No diffusion tube NO_2 monitoring locations within Blaby District required distance correction during 2021, as per the recommendation output from the Diffusion Tube Data Processing Tool in tab 'STEP 4 – Fall off with Distance'.

Precision and Accuracy of Triplicates

This analysis was completed as part of the local bias adjustment calculations for monitoring year 2021. The triplicate set provided 'Good overall precision' and a data capture of 92% for the year. However, for the co-located monitoring station (CMS 6), "Poor Overall Data Capture" was reported in accordance with the need to annualise the data. This has been considered when selecting the appropriate bias correction factor in the above section.

QA/QC of Automatic Monitoring

Calibrations of the continuous monitoring stations are carried out fortnightly by members of the Environmental Services Team at Blaby District Council. Local site officer (LSO) visits continued at this regularity throughout the monitoring year.

Data validation and ratification is conducted fortnightly by the same colleagues allowing for screening for erroneous readings. This represents an improvement from 2020 whereby data was ratified monthly, allowing for circumstantial information to be referenced with the data, to produce more reliable concentrations. Monitoring station data and performance is checked daily 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 either a gas of known concentration or by the use of scrubbers. Span gas of a known concentration is then applied to the system to ensure consistency in measured pollutant concentrations.

The zero and span readings are then used to adjust any offset of the baseline of the data through application of a correction factor. A linear two-point regression is then applied to the data linking the calibrations and adjusting any analyser offset.

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

PM_{10} data has been "factored" by applying a 1.3 multiplier to give "PM_{10} Gravimetric Equivalent" values, with further data corrections using the King's College Volatile Correction Mode. For further please visit the Volatile Correction Model webpage.

$PM_{2.5}$ concentrations were derived by applying a conversion factor of 0.7 to the PM_{10} data at CM1. This enabled for results to be graphed and compared against air quality objectives. CM5 provides direct monitoring of $PM_{2.5}$ concentrations, with 2021 representing the first year of a complete dataset and is visible in the report.

Automatic Monitoring Annualisation

Where less than 75% (but > 25%) of the data set is available, the continuous monitoring station data has been annualised as per Technical Guidance LAQM.TG (16). This procedure was necessary for CM1, CM5 and CM6 attributed to a data capture rate of 74.9%, 71.2% and 72.9% respectively for NO_2. The following background stations were used:

- Coventry Allesley
- Coventry Binley Road
- Leicester A594 Roadside
- Leicester University

Guidance was followed as closely as possible when selecting background stations for use in annualisation. Annualisation calculations for this station were submitted to Defra as a separate document.

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 NO_2 fall-off with distance calculator available on the LAQM Support website.

Where appropriate, non-automatic annual mean NO_2 concentrations corrected for distance are presented in Table B.1.

No automatic NO_2 monitoring locations within Blaby District required distance correction during 2021. All five stations are at roadside and within 2 metres of the highway.

Table C.2 – Annualisation Summary (concentrations presented in µg/m^3)

Site ID	Annualisation Factor Coventry Allesley	Annualisation Factor Coventry Binley Road	Annualisation Factor Leicester A594 Roadside	Annualisation Factor Leicester University	Average Annualisation Factor	Raw Data Annual Mean	Annualised Annual Mean	Comments
DT84	1.0016	0.9923	0.9694	0.9887	0.9880	28.9	28.6	
DT99	1.0084	0.9882	0.9280	0.9450	0.9674	23.3	22.5	
DT100	1.0084	0.9882	0.9280	0.9450	0.9674	14.4	13.9	
CM1	0.9097	0.9441	0.9373	0.9235	0.9287	26.1	24.3	
CM5	1.0657	1.0386	1.0599	1.0307	1.0487	29.1	18.9	
CM6	0.9172	0.9496	0.9242	0.9063	0.9243	34.4	19.8	

Table C.3 – Local Bias Adjustment Calculation

	Local Bias Adjustment Input 1	Local Bias Adjustment Input 2	Local Bias Adjustment Input 3	Local Bias Adjustment Input 4	Local Bias Adjustment Input 5
Periods used to calculate bias	8				
Bias Adjustment Factor A	1.31 (1.18 - 1.48)				
Diffusion Tube Bias B	-24%(-32% - -15%)				
Diffusion Tube Mean (µg/m^3)	26.6				
Mean CV (Precision)	7.8%				
Automatic Mean (µg/m^3)	34.9				

Notes:

A single national bias adjustment factor has been used to adjust the 2021 diffusion tube results.

Appendix D: Maps of Monitoring Locations and AQMAs

An assessment of 2021 results in the context of past data has been carried out for the following areas:

- 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
- Enderby Village
- Lubbesthorpe Road, Braunstone Town
- Sharnford Hill, Sharnford
- Croft Road, Cosby
- Glenfield Village
- Leicester Road, Glen Parva
- New Bridge Road and Windsor Avenue, Glen Parva
- Stoney Stanton Village
- Sapcote Village
- Elmesthorpe Railway Bridge
- Thorpe Astley
- Desford Road, Kirby Muxloe
- Aston Firs, near Sapcote
- Main Street, Kilby
- Active Travel tubes in Narborough, Enderby, Braunstone Town, Glenfield, Leicester Forest East, Thorpe Astley, and Whetstone

Maps showing the monitoring locations and corresponding average annual nitrogen dioxide concentrations (µg/m^3) are shown in Figures 1 to 25.

AQMA 1 – A5460 Narborough Road South

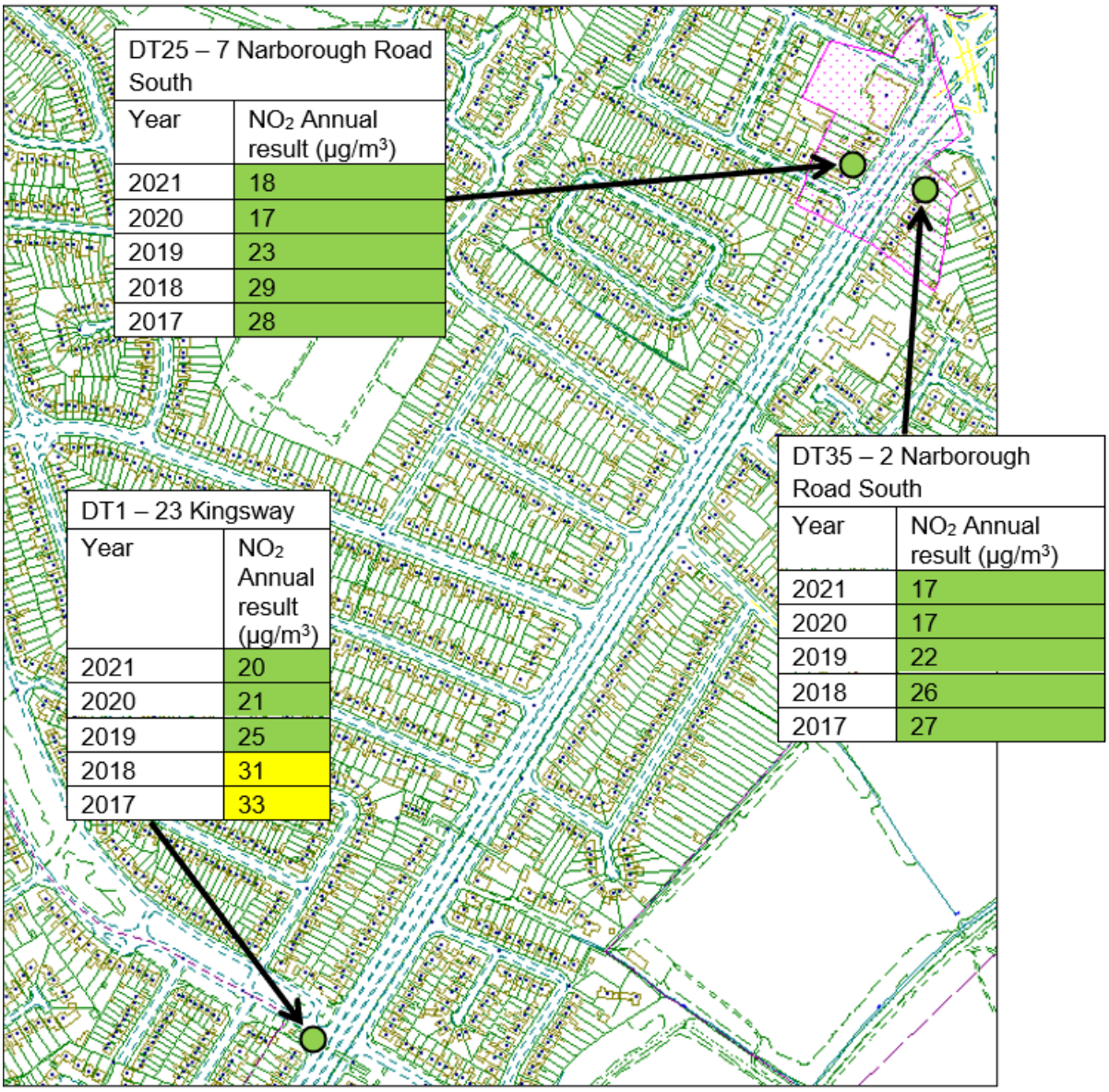


Figure 1: Map showing the locations and results of diffusion tubes in AQMA 1, including Narborough Road South and parts of Braunstone Town. AQMA boundary represented by pink outline. Results have been rounded to nearest whole number. 40 µg/m^3 is the national air quality objective for this pollutant. © Crown copyright. All rights reserved.

NO_2 concentrations in the area have remained at very similar levels to 2020 (±1 µg/m^3), with the only increase reported inside the AQMA boundary. Concentrations remain well below the national air quality objective, although consideration should be made for the impacts of COVID-19 in the monitoring year.

AQMA 2 – M1 corridor in Enderby and Narborough

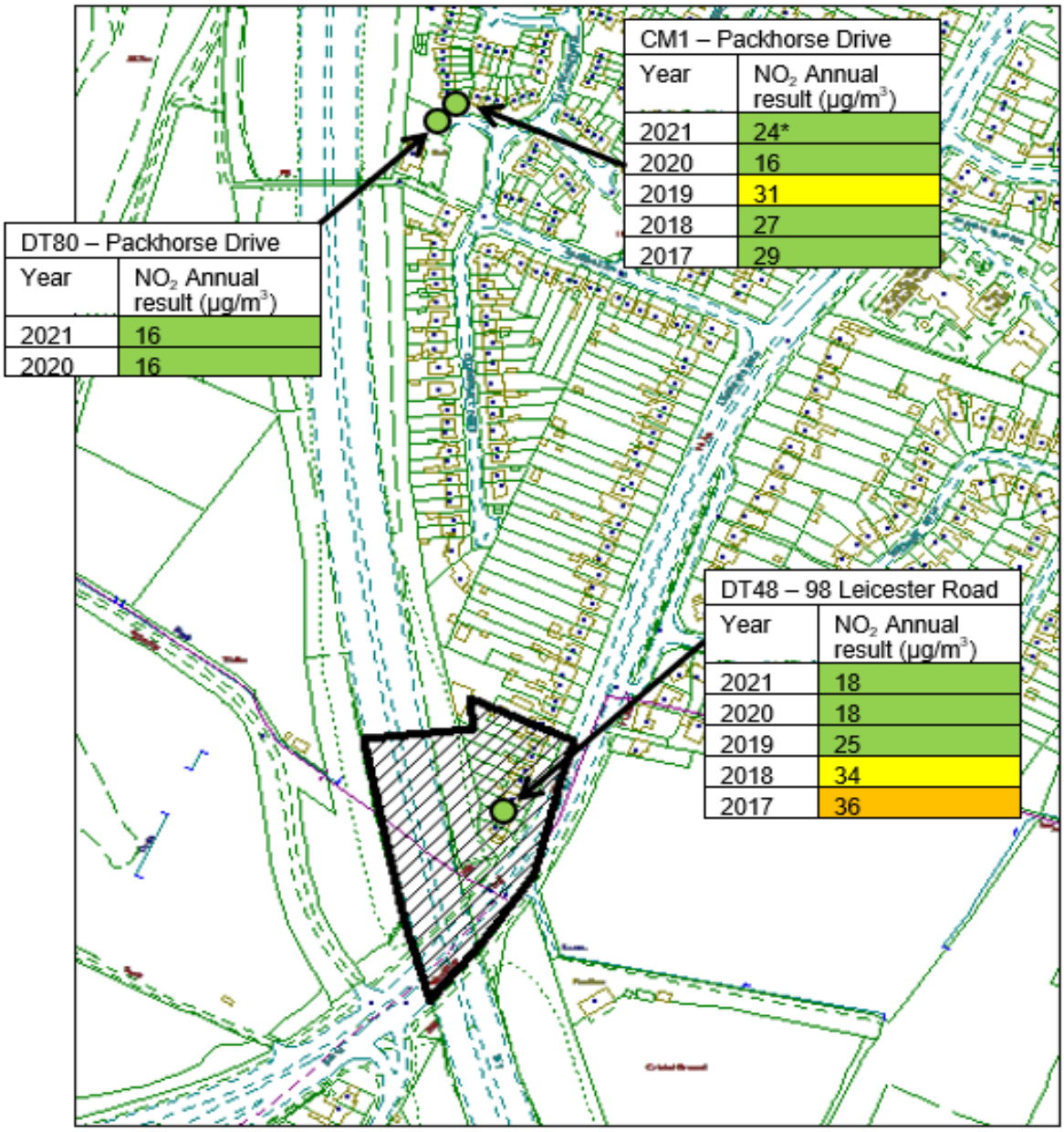


Figure 2: Map showing the locations and results of diffusion tubes and continuous monitoring stations in AQMA 2, along a corridor of the M1 between Enderby to the north and Narborough to the south. AQMA boundary represented by black outline. All rights reserved. Results have been rounded to nearest whole number. 40 µg/m^3 is the national air quality objective for this pollutant. © Crown copyright. All rights reserved.

Concentrations within the AQMA have remained at the same level as 2020 (18 µg/m^3) and again well below the national air quality objective. NO_2 levels at CM1 have increased significantly, although this figure has been subject to annualisation and the impacts of COVID-19 may explain the increase in concentration.

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

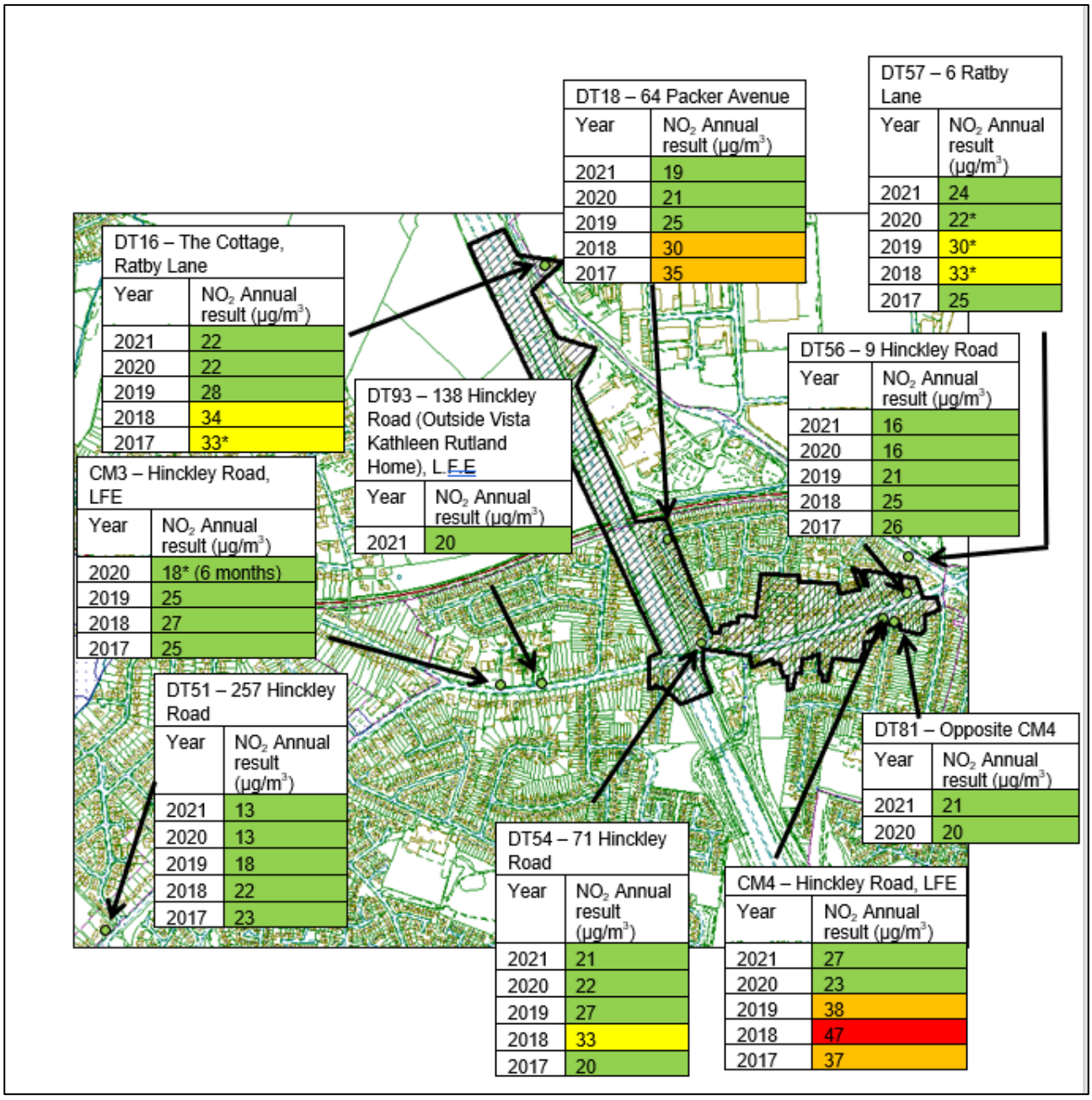


Figure 3: Map showing the locations and results of diffusion tubes and continuous monitoring stations in AQMA 3, along a corridor of the M1 between Thorpe Astley and Leicester Forest East. AQMA boundary represented by black outline. Results have been rounded to nearest whole number. * represents a result that has been annualised and/or distance corrected. 40 µg/m^3 is the air quality objective for this pollutant.

NO_2 concentrations remain consistent compared to 2020 data as is reported within other monitoring areas. Increases are noted in the eastern extents of the AQMA, particularly at CM4 and DT57, both of which are at roadside of busy routes into Leicester City Centre. All concentrations are well below the national air quality objective for the pollutant, most notably in the west, justifying the restriction of AQMA boundary reported in ASR 2021.

AQMA 4B – Enderby Road, Whetstone

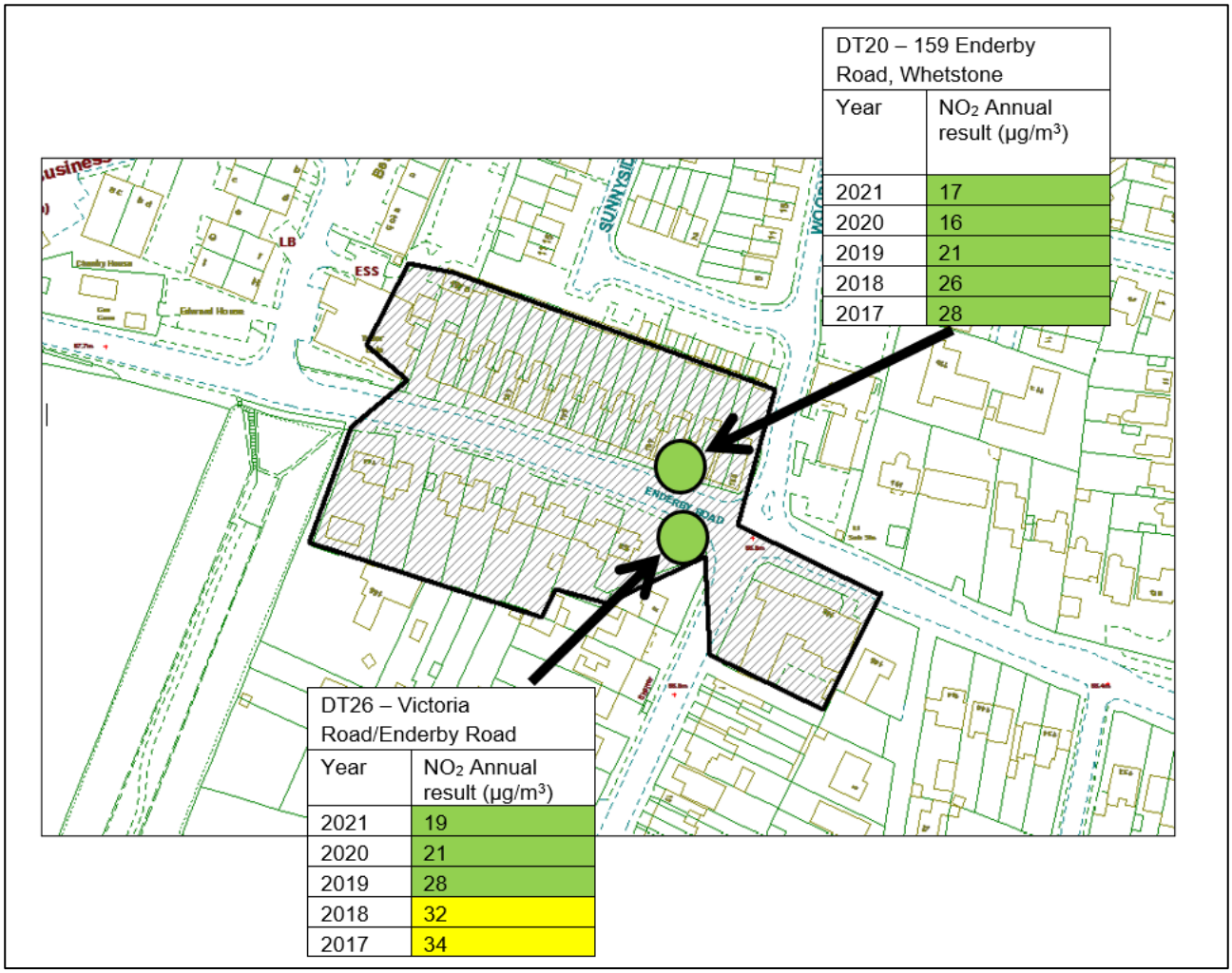


Figure 4: Map showing the locations and results of diffusion tubes in AQMA 4B, along Enderby Road in Whetstone. AQMA boundary represented by black outline. Results have been rounded to nearest whole number. 40 µg/m^3 is the national air quality objective for this pollutant. © Crown copyright. All rights reserved.

Concentrations within the AQMA have remained at a similar level to 2020 (±2 µg/m^3) and sit well below national air quality objectives. Monitoring is proposed to continue here in light of future development, including Whetstone Pastures.

AQMA 6 – Mill Hill, Enderby

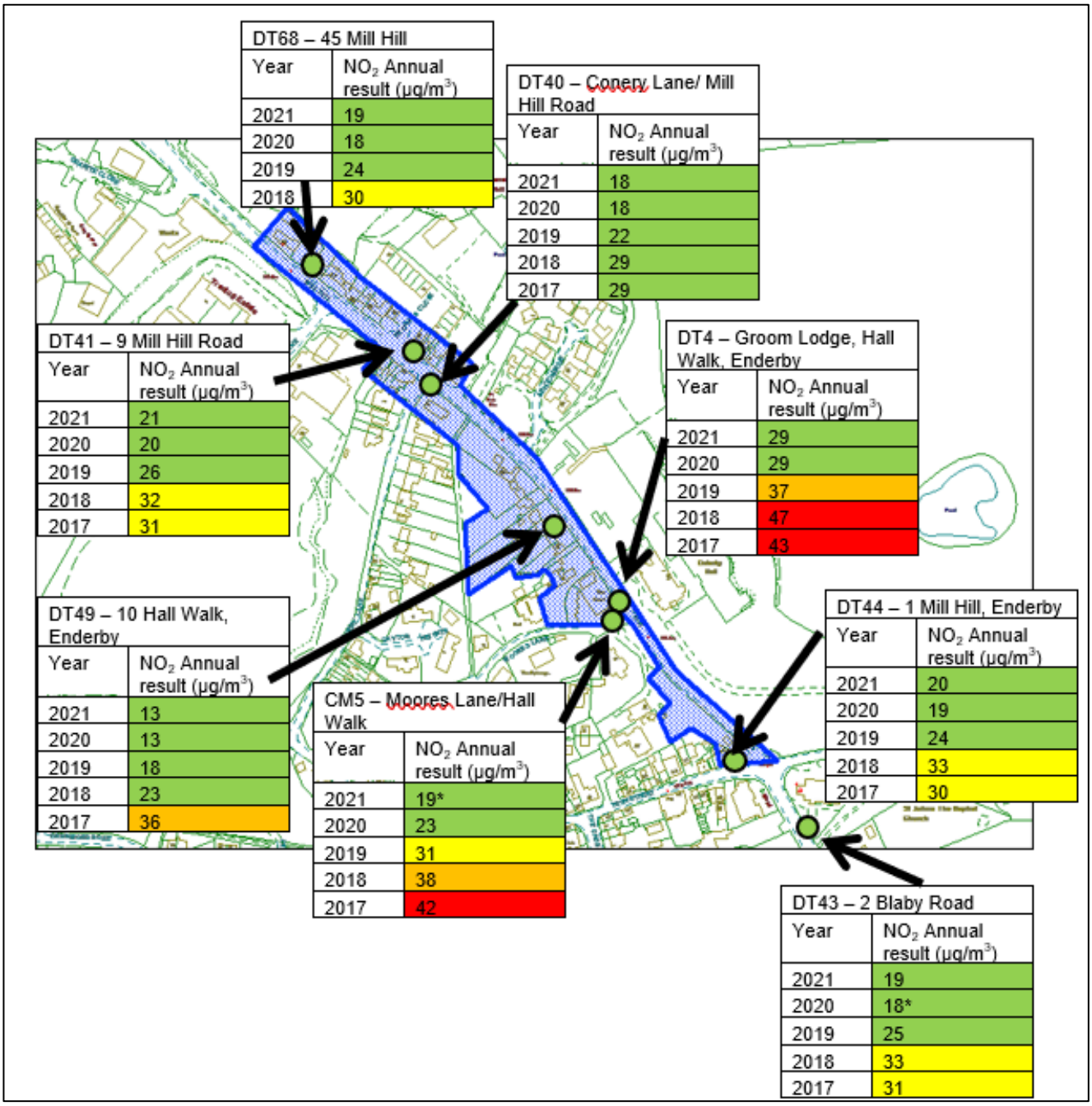


Figure 5: Map showing the locations and results of diffusion tubes and continuous monitoring stations in AQMA 6, along Mill Hill in Enderby. AQMA boundary represented by blue outline. Results have been rounded to nearest whole number. * represents a result that has been annualised and/or distance corrected. 40 µg/m^3 is the national air quality objective for this pollutant.

Passive monitoring in this AQMA has resulted in concentrations similar (±1 µg/m^3) when compared to 2020. This year represents the second consecutive year in which this AQMA did not produce an exceedance of the national air quality objective. CM5 reported a further decrease in NO_2 concentration, although annualisation was necessary due to poor data capture.

Enderby Village

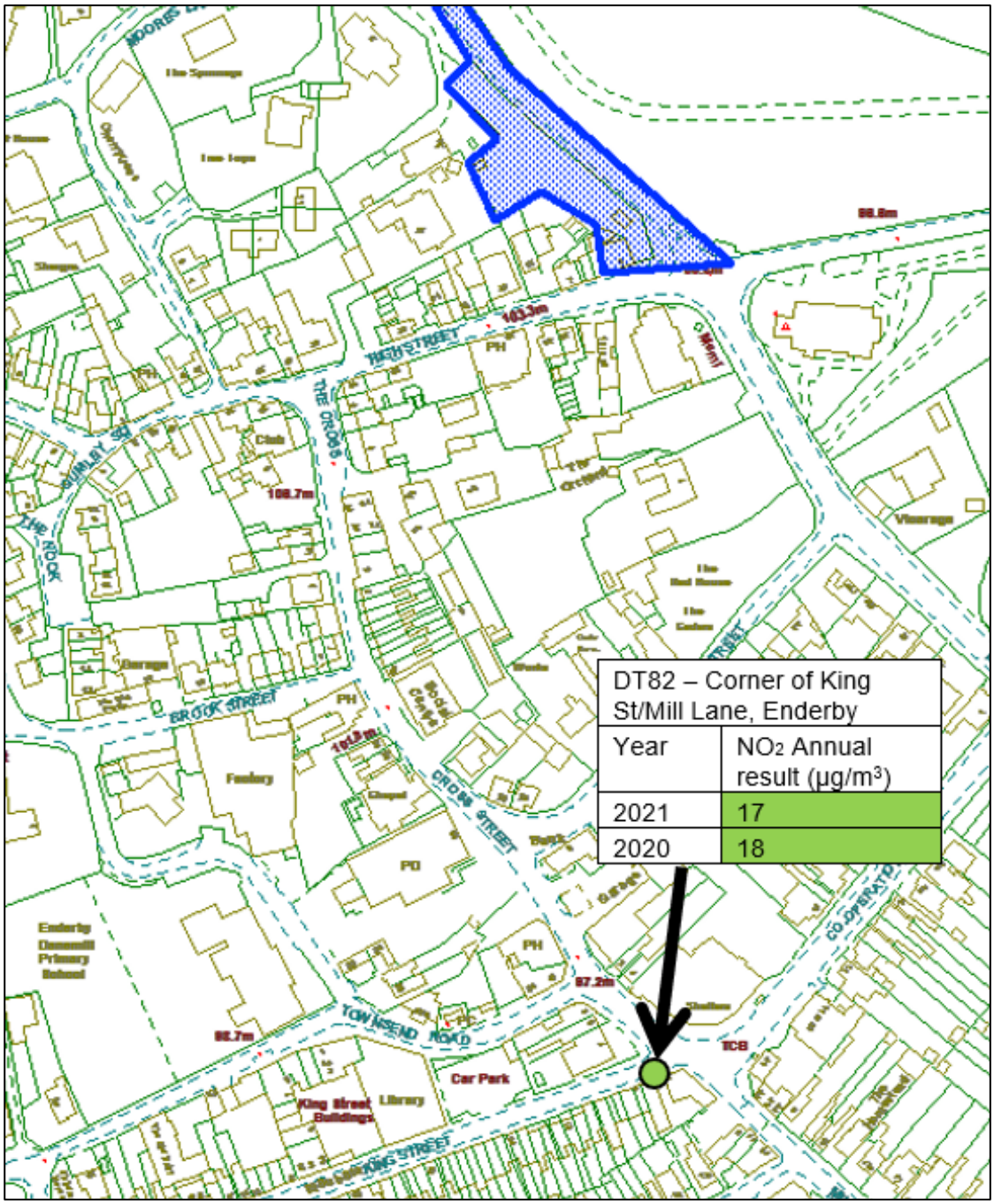


Figure 6: Map showing the locations and results of diffusion tubes in Enderby village. AQMA 6 boundary is visible to the north. Results have been rounded to nearest whole number. 40 µg/m^3 is the national air quality objective for this pollutant. © Crown copyright. All rights reserved.

NO_2 concentrations in Enderby village have reduced further since 2020 and remain well below the national air quality objective for this pollutant.

Lubbesthorpe Road, Braunstone Town

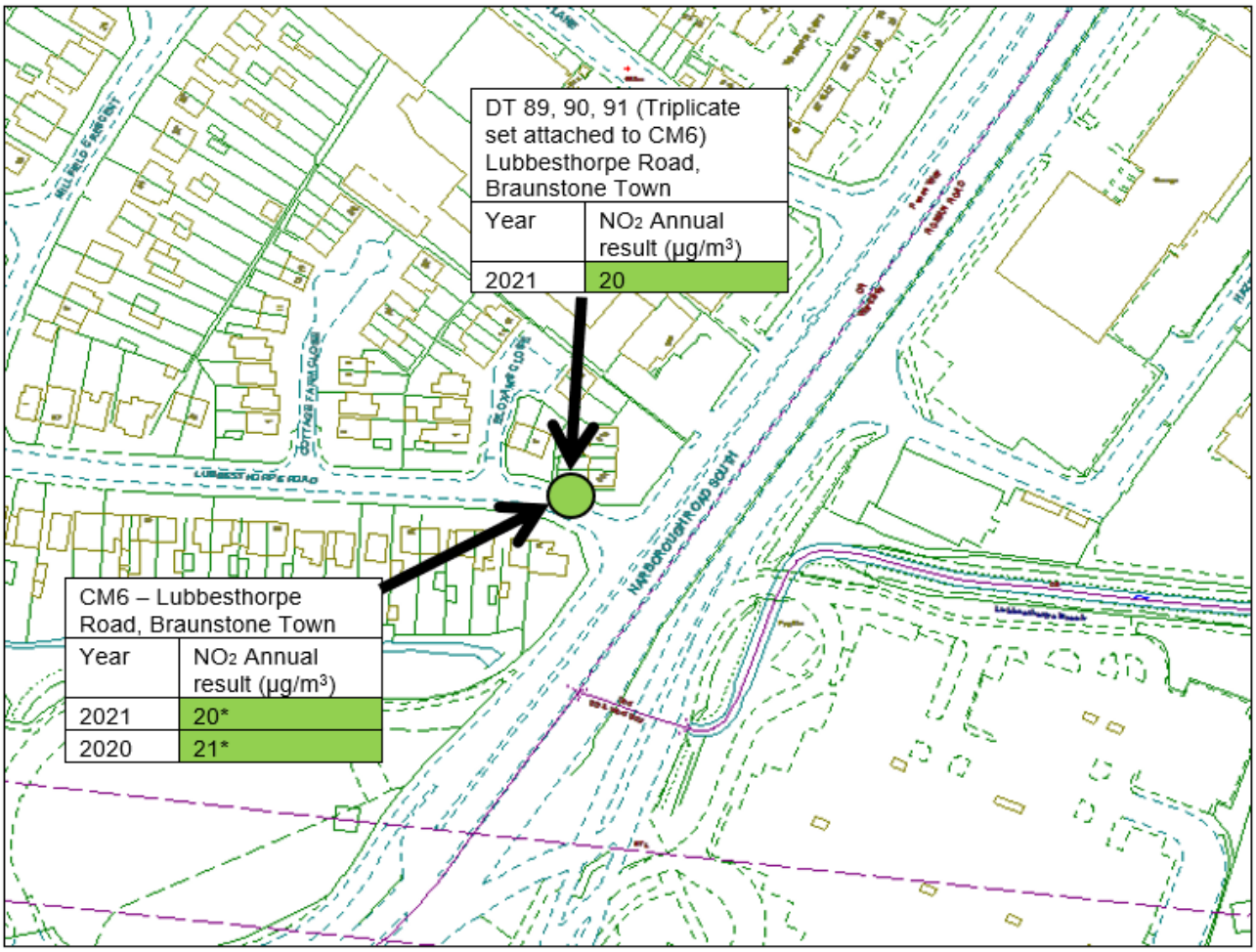


Figure 7: Map showing the location of a continuous monitoring station and triplicate set of diffusion tubes in Braunstone Town. Fosse Park is visible to the south. Results have been rounded to nearest whole number and annualised. 40 µg/m^3 is the national air quality objective for this pollutant. © Crown copyright. All rights reserved.

This image represents the newest air quality monitoring station (CM6) and accompanying triplicate set of diffusion tubes. Concentrations of NO_2 are similar between years at CM6, although annualisation was again required. There is a good level of agreement between the DTs and CM for monitoring year 2021 and the triplicate set was used in calculation of a local bias correction factor, of which there is further detail in the QA/QC section.

Sharnford Hill, Sharnford

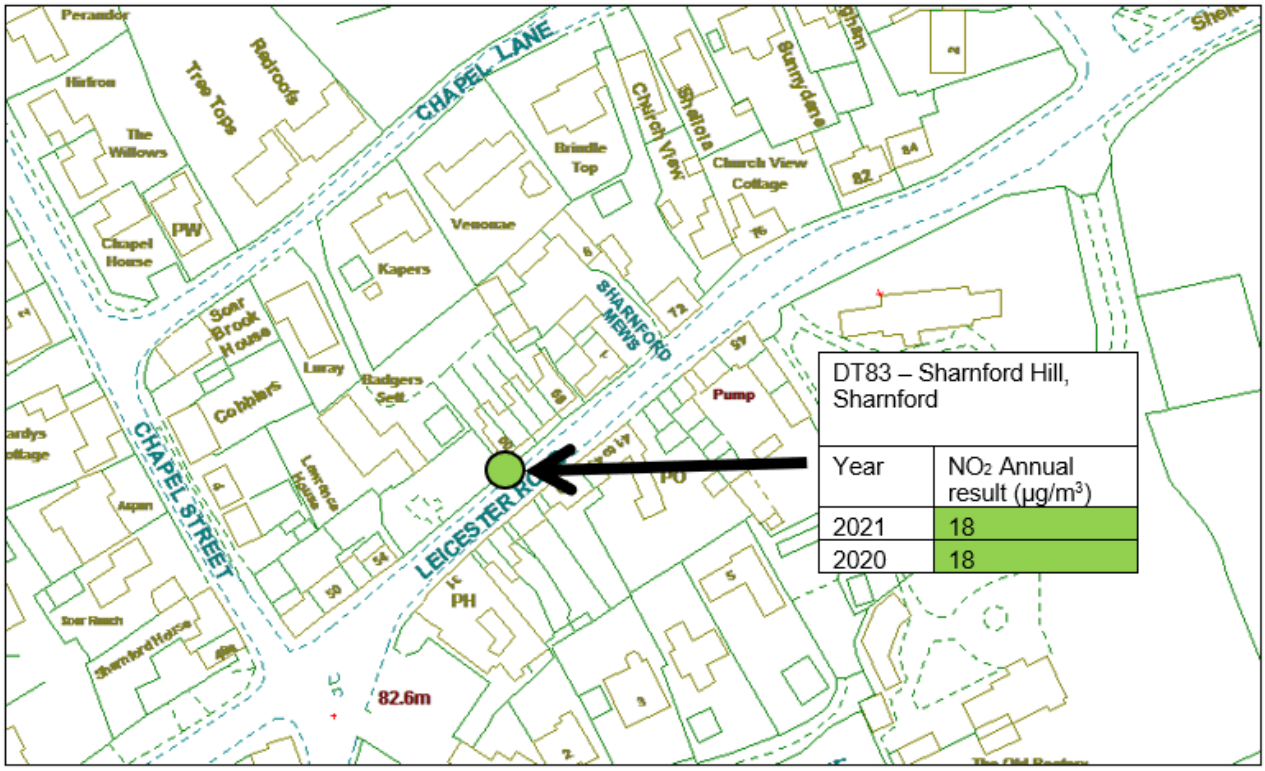


Figure 8: Map showing the locations and results of diffusion tubes in Sharnford. Results have been rounded to nearest whole number. 40 µg/m^3 is the national air quality objective for this pollutant. © Crown copyright. All rights reserved.

NO_2 concentrations in Sharnford are consistent with those reported in 2021 and are again below the national air quality objective for this pollutant.

Croft Road, Cosby

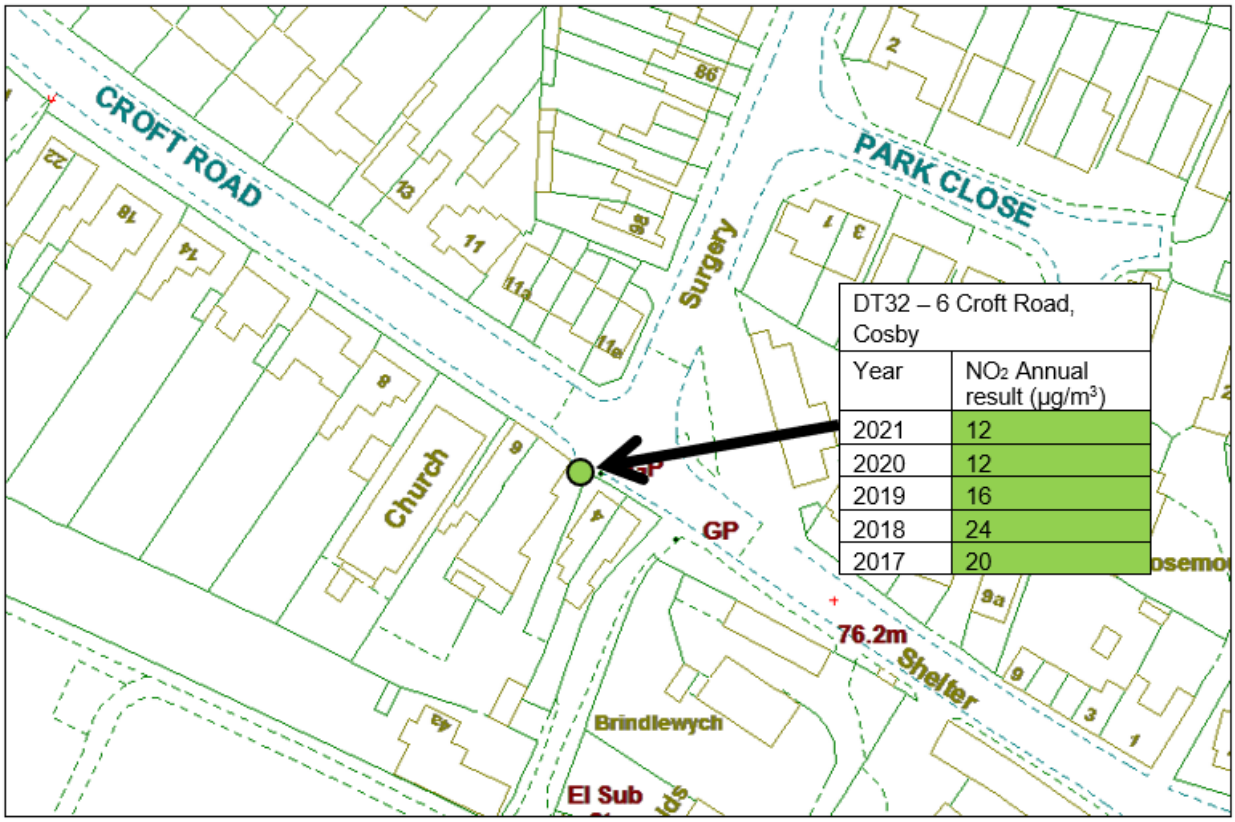


Figure 9: Map showing the locations and results of diffusion tubes in Cosby. Results have been rounded to nearest whole number. 40 µg/m^3 is the national air quality objective for this pollutant. © Crown copyright. All rights reserved.

Concentrations of NO2 in Cosby have decreased for a fourth consecutive year and are now significantly below national air quality objectives at 12 µg/m^3.

Glenfield Village

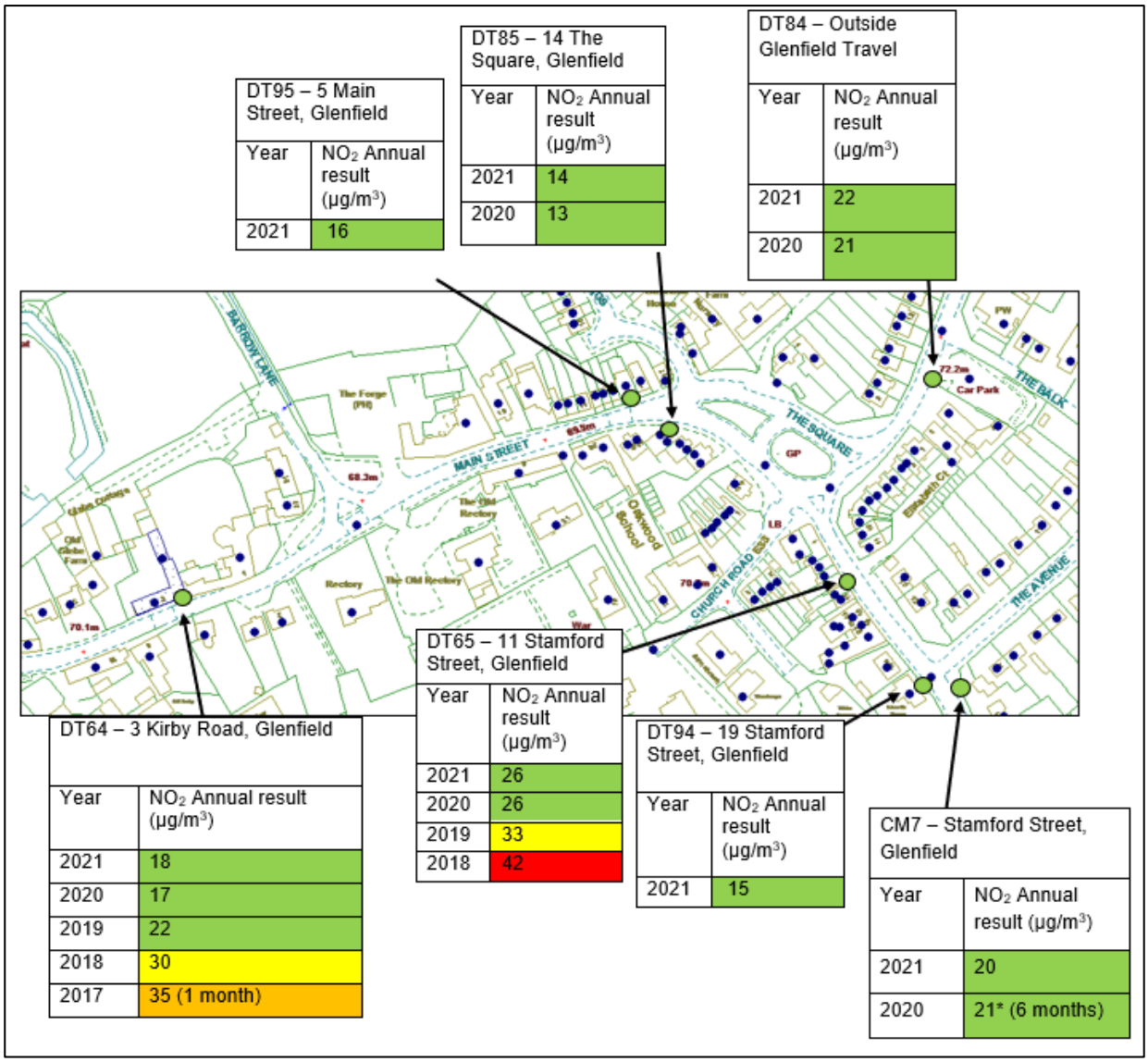
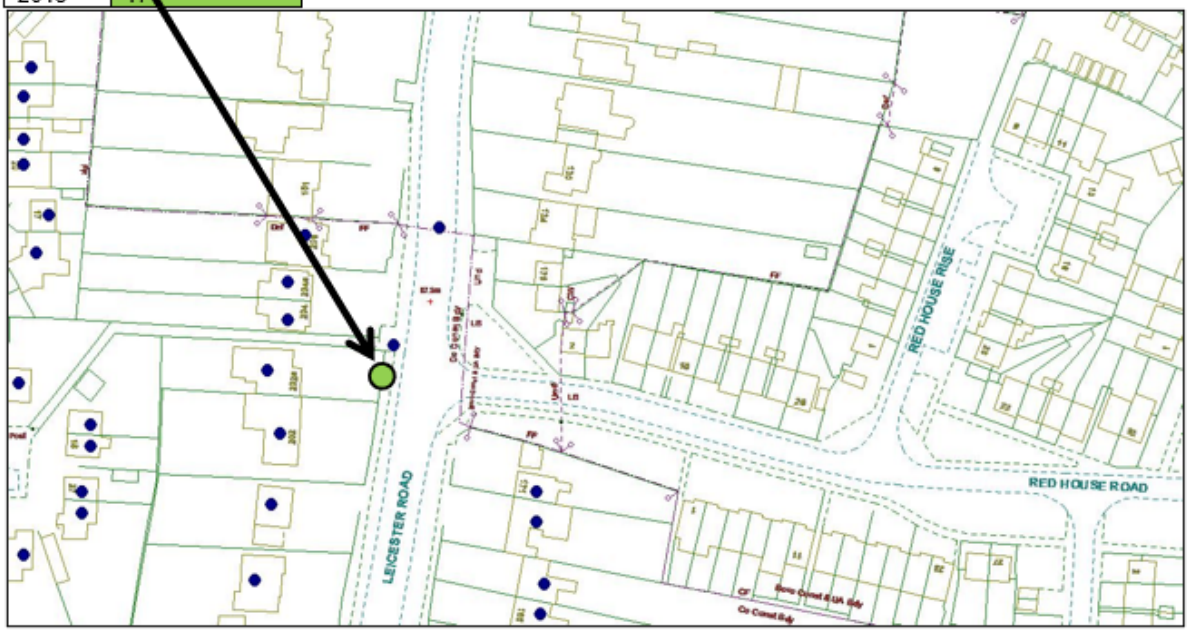


Figure 10: Map showing the locations and results of diffusion tubes and continuous monitoring stations in Glenfield. Note the result for CM7 is based on 6 months of data only. Results have been rounded to nearest whole number. 40 µg/m^3 is the national air quality objective for this

Glenfield represents an area of particular interest with regards to air quality monitoring. CM7 was relocated here in 2020 and produced a similar annual figure in 2021. All monitoring results are well below national air quality objectives, with a maximum concentration of 26 µg/m^3. Two additional DTs were installed in 2021 to assess any extent of NO_2 emissions, however concentrations are again below nationally set standards.

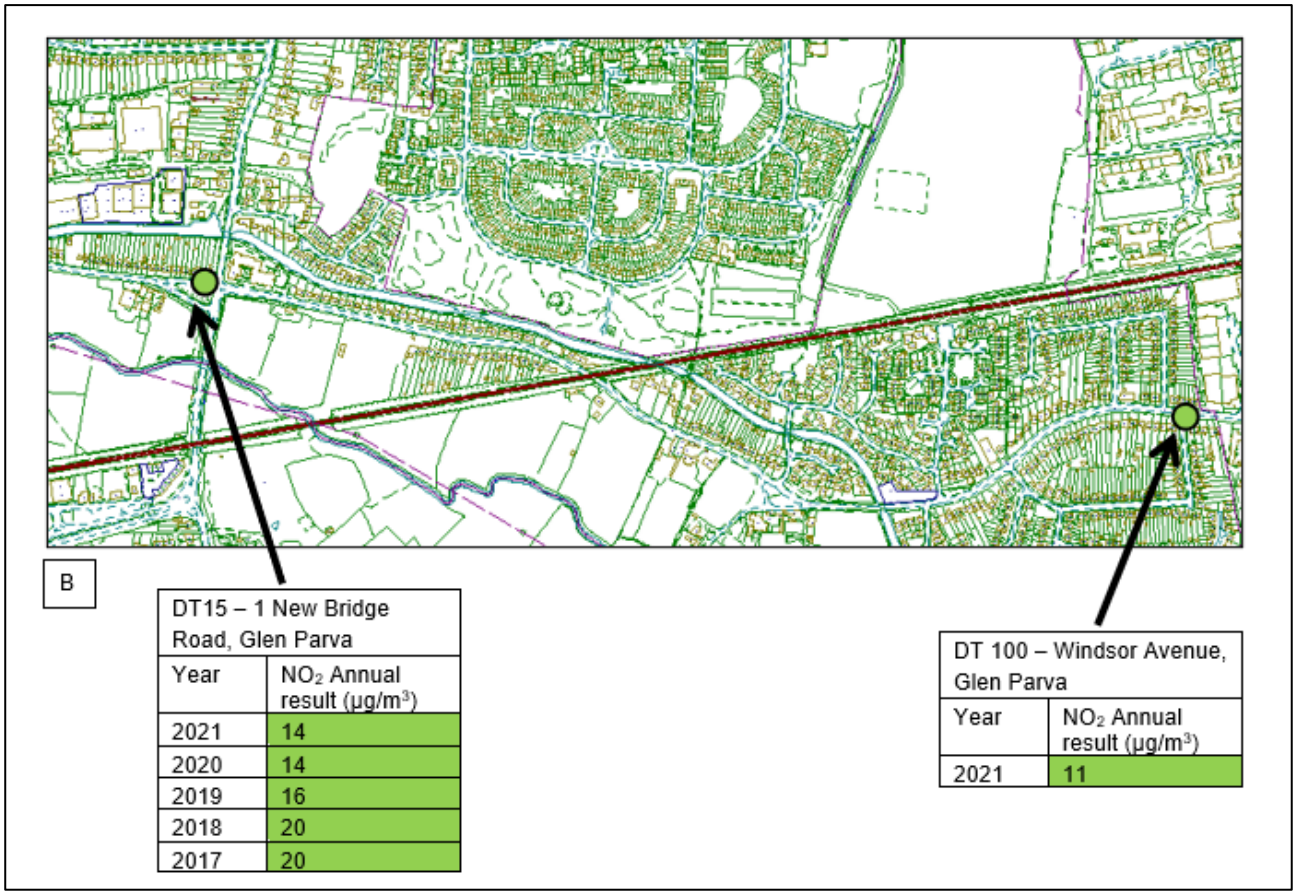
Leicester Road, Glen Parva

DT5 204 Leicester Road, Glen Parva	
Year	NO_2 Annual result ($\mu g/m^3$)
2021	16
2020	15
2019	20
2016	22
2015	17



A

New Bridge Road and Windsor Avenue, Glen Parva



DT15 – 1 New Bridge Road, Glen Parva	
Year	NO_2 Annual result (µg/m^3)
2021	14
2020	14
2019	16
2018	20
2017	20

DT 100 – Windsor Avenue, Glen Parva	
Year	NO_2 Annual result (µg/m^3)
2021	11

Figure 11 A and B: Map showing the locations and results of diffusion tubes in Glen Parva. Results have been rounded to nearest whole number. 40 µg/m^3 is the national air quality objective for this pollutant. © Crown copyright. All rights reserved.

Monitoring in Glen Parva continues to produce concentrations well below national air quality objectives and at levels consistent with 2020. DT100 was introduced on Windsor Avenue to provide some baseline and to assess any impact of the Fosse Way HMP development. Initial results here suggest concentrations around

Stoney Stanton Village

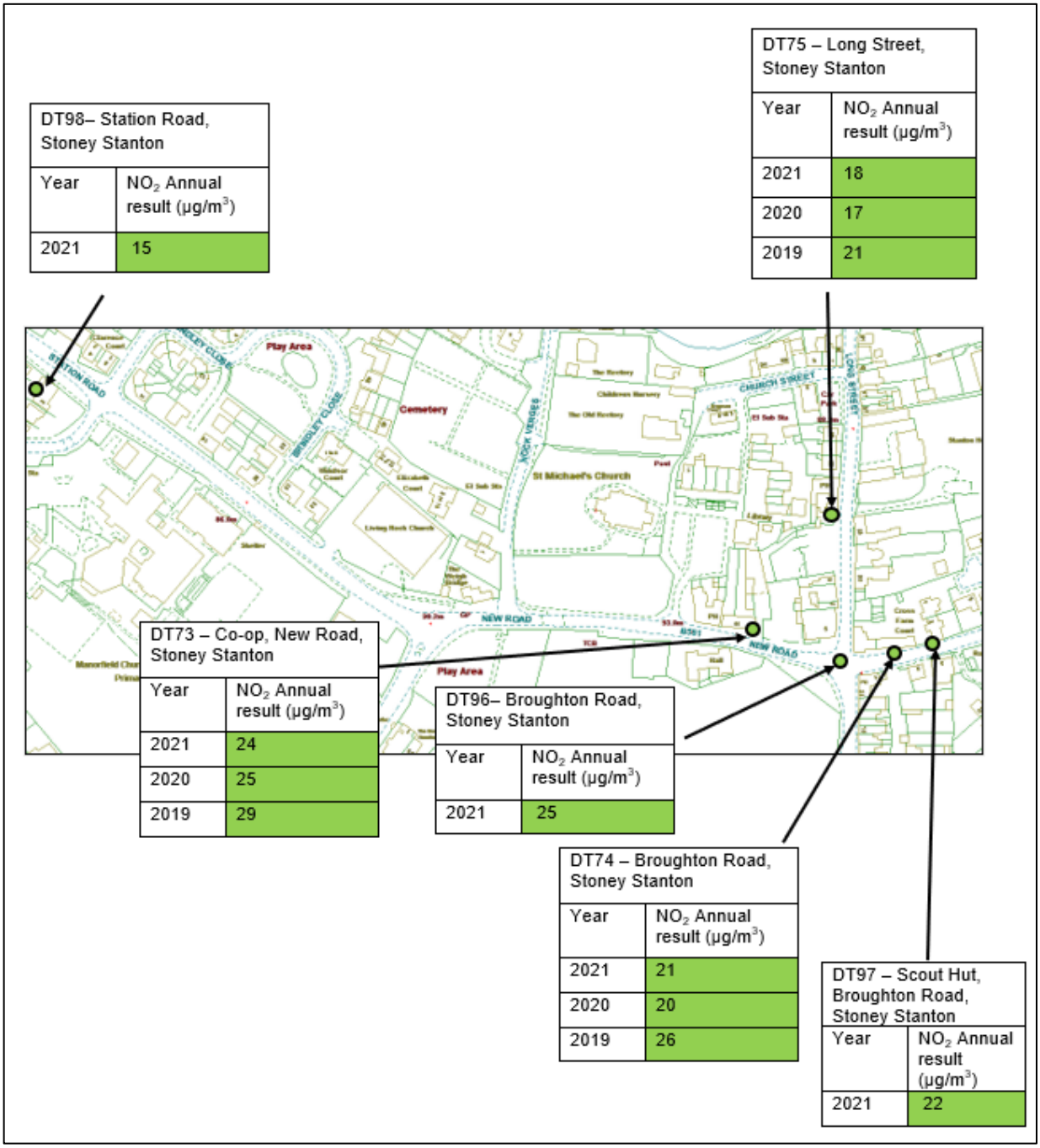
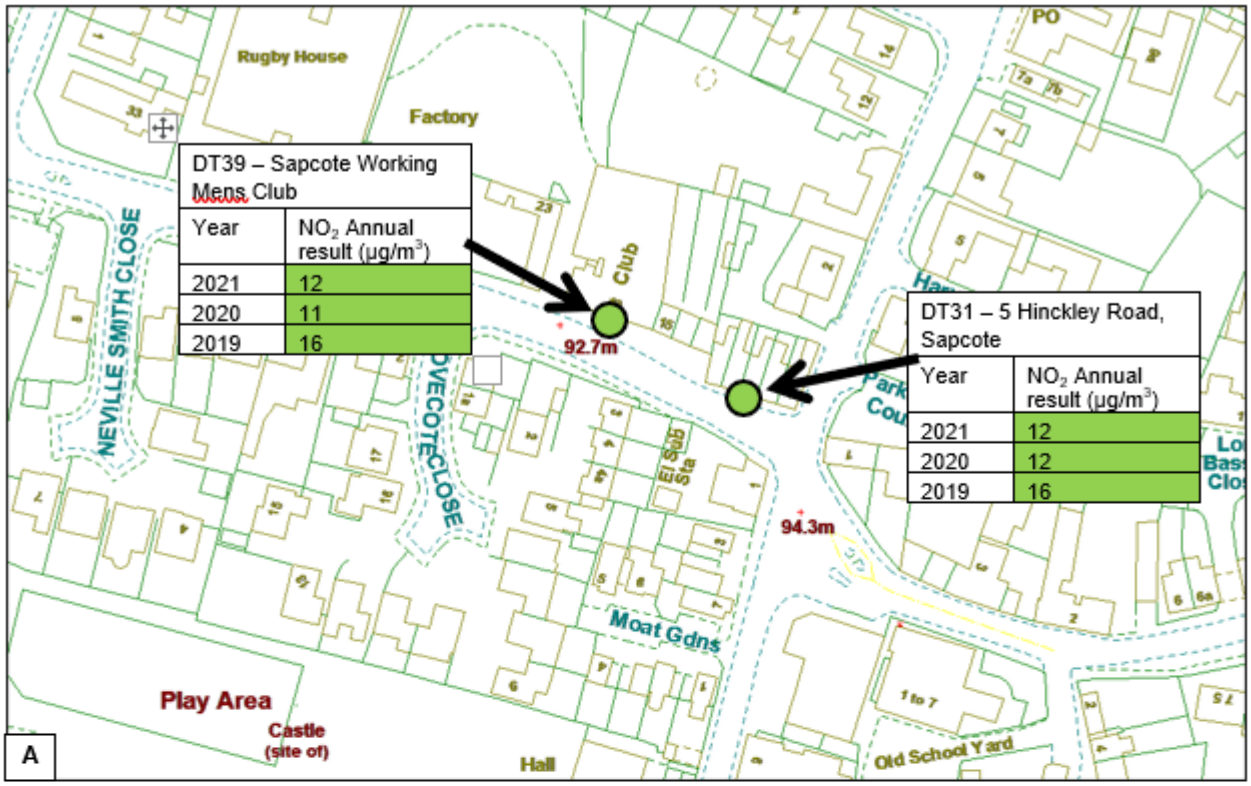
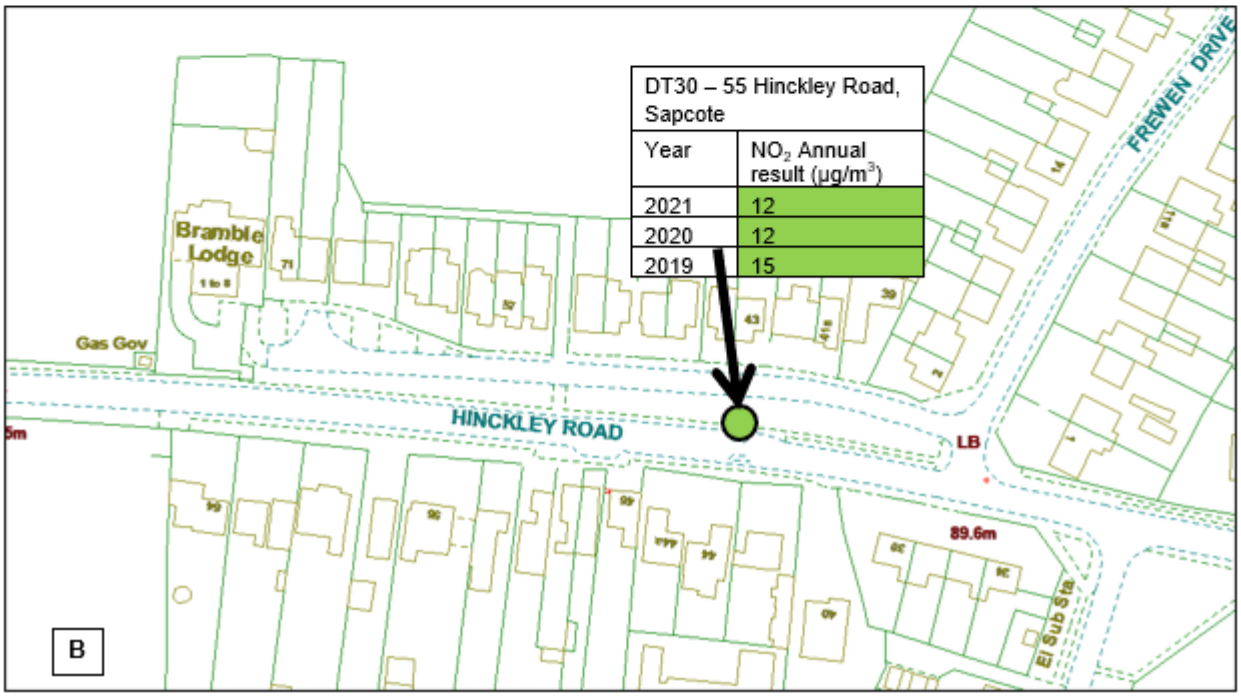


Figure 12: Map showing the locations and results of diffusion tubes in Stoney Stanton. Results have been rounded to nearest whole number. 40 µg/m^3 is the national air quality objective for this pollutant. © Crown copyright. All rights reserved.

Stoney Stanton is another area of interest for the Authority, with particular emphasis on the mini roundabout in the village centre. The addition of three DTs here represents an increase in monitoring to assess the extent of any NO_2 emissions. All monitoring points report concentrations well below national air quality objectives in the monitoring year, with the highest concentration of 25 µg/m^3 reported.

Sapcote Village





Figures 13A and B: Maps showing the locations and results of diffusion tubes in Sapcote. Results have been rounded to nearest whole number. 40 µg/m^3 is the national air quality objective for this pollutant.

Monitoring in Sapcote has reported very low concentrations of NO_2 in 2021, with a peak of 12 µg/m^3 and consistency with 2020 results. The DTs will be important in assessment of the proposed Hinckley National Rail Freight Interchange development and provide a good baseline for associated air quality assessments.

Elmesthorpe Railway Bridge

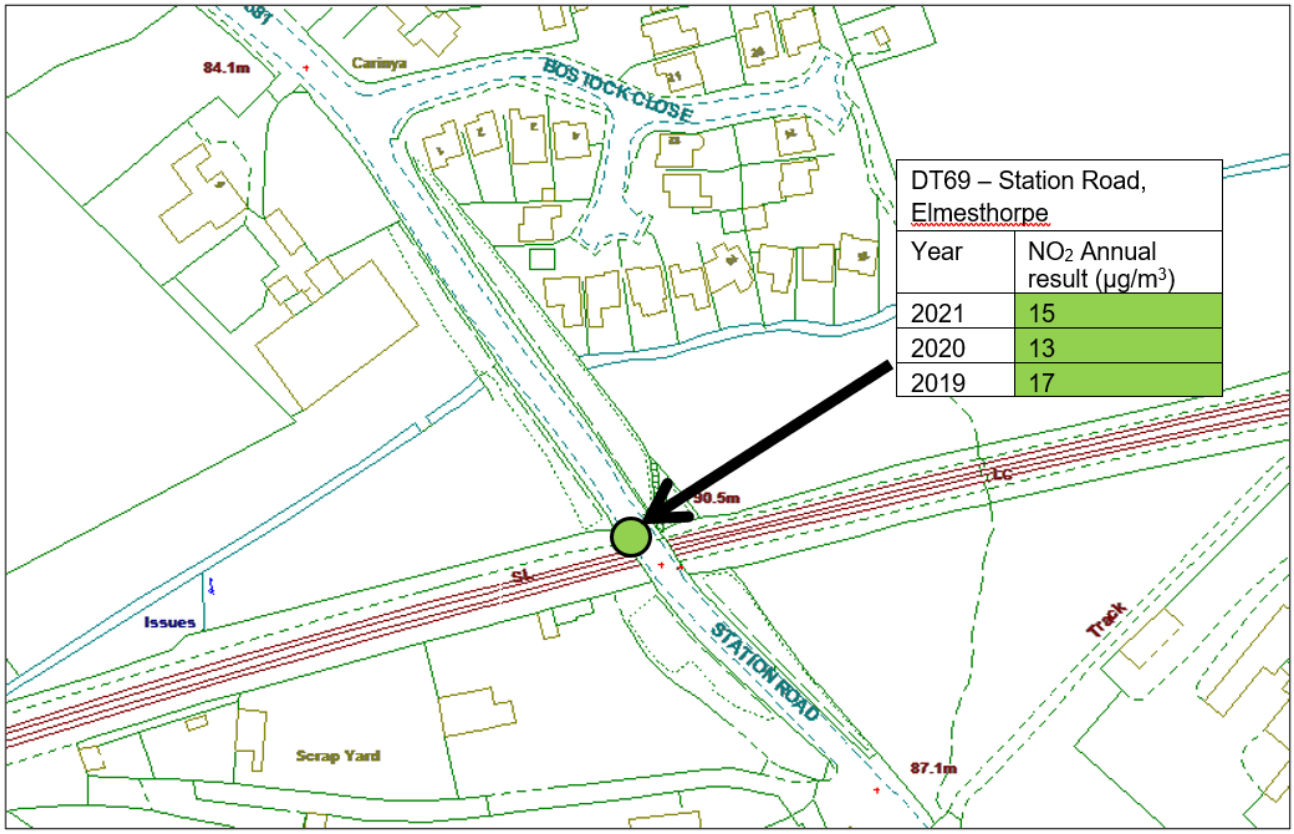
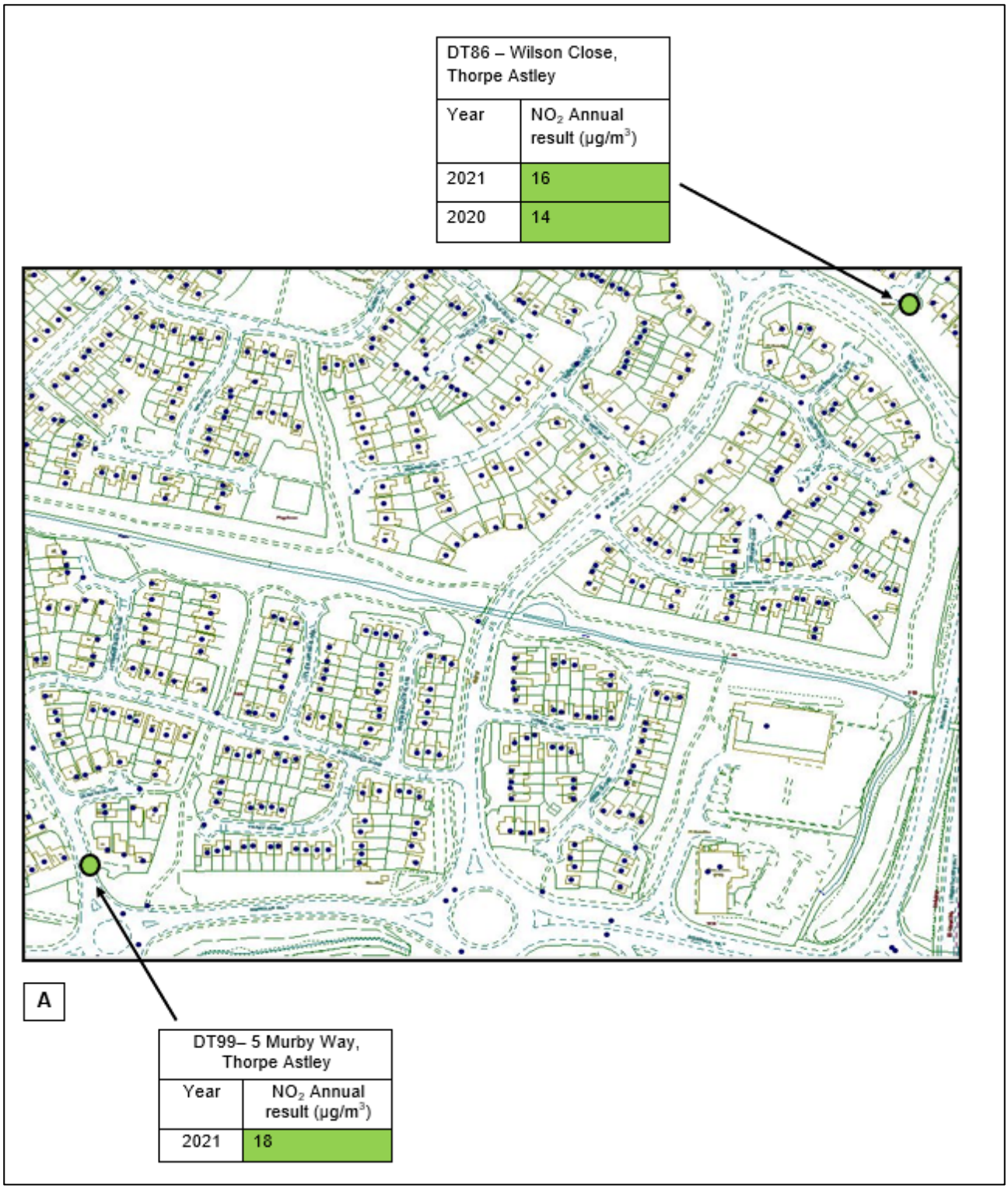
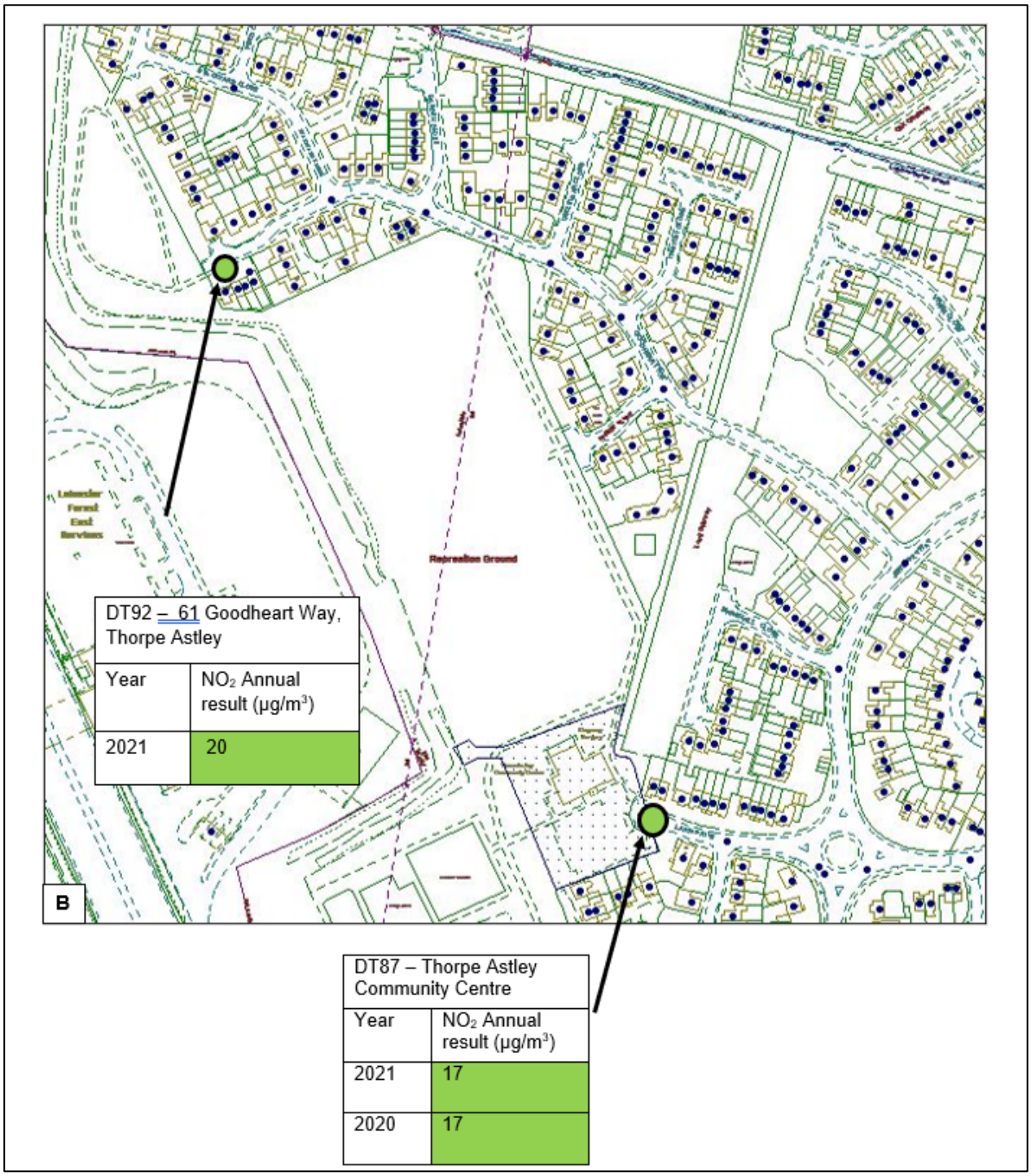


Figure 14: Map showing the locations and results of diffusion tubes near Elmesthorpe. Results have been rounded to nearest whole number. 40 µg/m^3 is the national air quality objective for this pollutant. © Crown copyright. All rights reserved.

Concentrations at the railway bridge reported a marked increase in concentration (2 µg/m^3) compared to 2020 and a return to levels seen pre-COVID-19. This tube will again be important with regards to assessment of the Hinckley National Rail Freight Interchange, with emphasis on railway emissions.

Thorpe Astley





Figures 15A and B: Maps showing the locations and results of diffusion tubes in Thorpe Astley. Results have been rounded to nearest whole number. 40 µg/m^3 is the national air quality objective for this pollutant. © Crown copyright. All rights reserved.

Passive monitoring in Thorpe Astley has been used for twofold assessment – initially of the New Lubbesthorpe development (DT99), but also to assess the impact of the M1 motorway which was removed as part of the AQMA boundary restrictions in 2020. All monitoring points report low NO_2 concentrations, with a peak of 20 µg/m^3, and well below national air quality objectives.

Desford Road, Kirby Muxloe

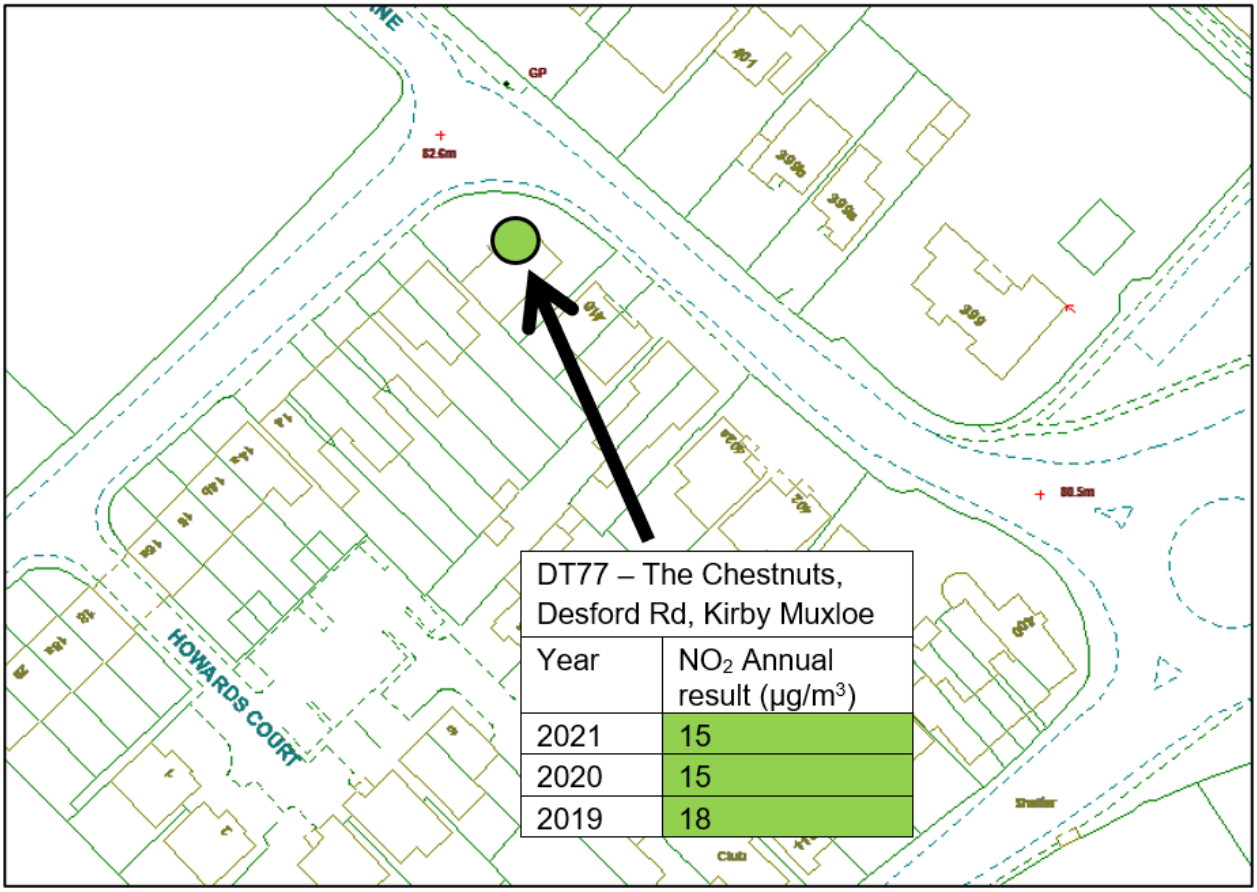


Figure 16: Map showing the locations and results of diffusion tubes along Desford Road in Kirby Muxloe. Results have been rounded to nearest whole number. 40 µg/m^3 is the national air quality objective for this pollutant. © Crown copyright. All rights reserved.

Desford Road monitoring has continued in 2021 due to local development and reports concentrations well below national air quality objectives at 15 µg/m^3. It is likely that monitoring will continue here due to the commencement of a development on the immediate site adjacent, which includes a housing development and road improvements. Impacts of this development on local NO_2 concentrations will be more evident in ASR 2023.

Aston Firs, near Sapcote

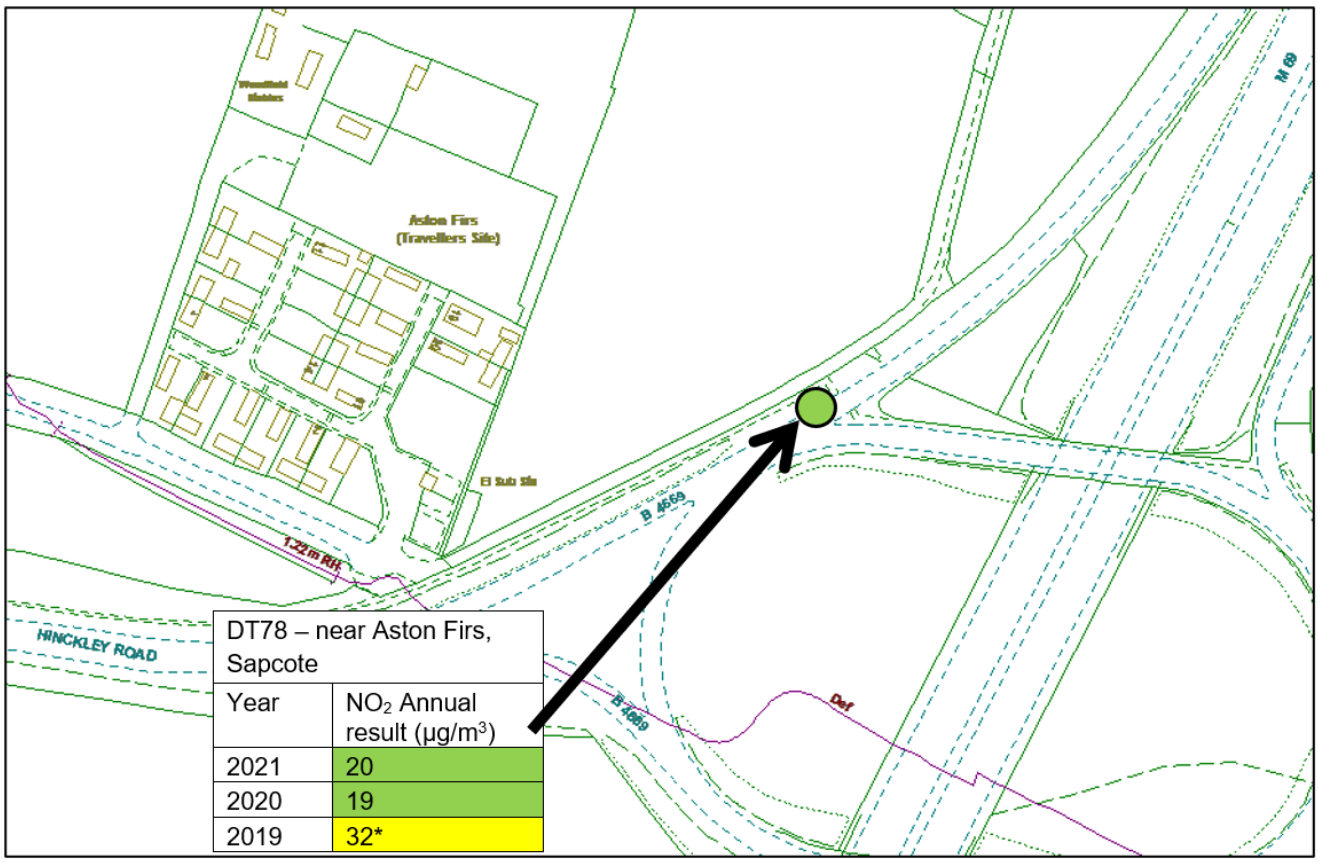


Figure 17: Map showing the locations and results of diffusion tubes near Aston Firs in Sapcote. The M69 can be seen to the east. Results have been rounded to nearest whole number. 40 µg/m^3 is the national air quality objective for this pollutant. © Crown copyright. All rights reserved.

Monitoring near Aston Firs caravan site reported low concentrations of NO_2 in 2021, well below national air quality objectives. This DT will be very important in assessment of the proposed Hinckley National Rail Freight Interchange development due to its close proximity to the proposed site and M69 junction improvements. Previous years data have provided a good baseline for associated air quality assessments.

Main Street, Kilby

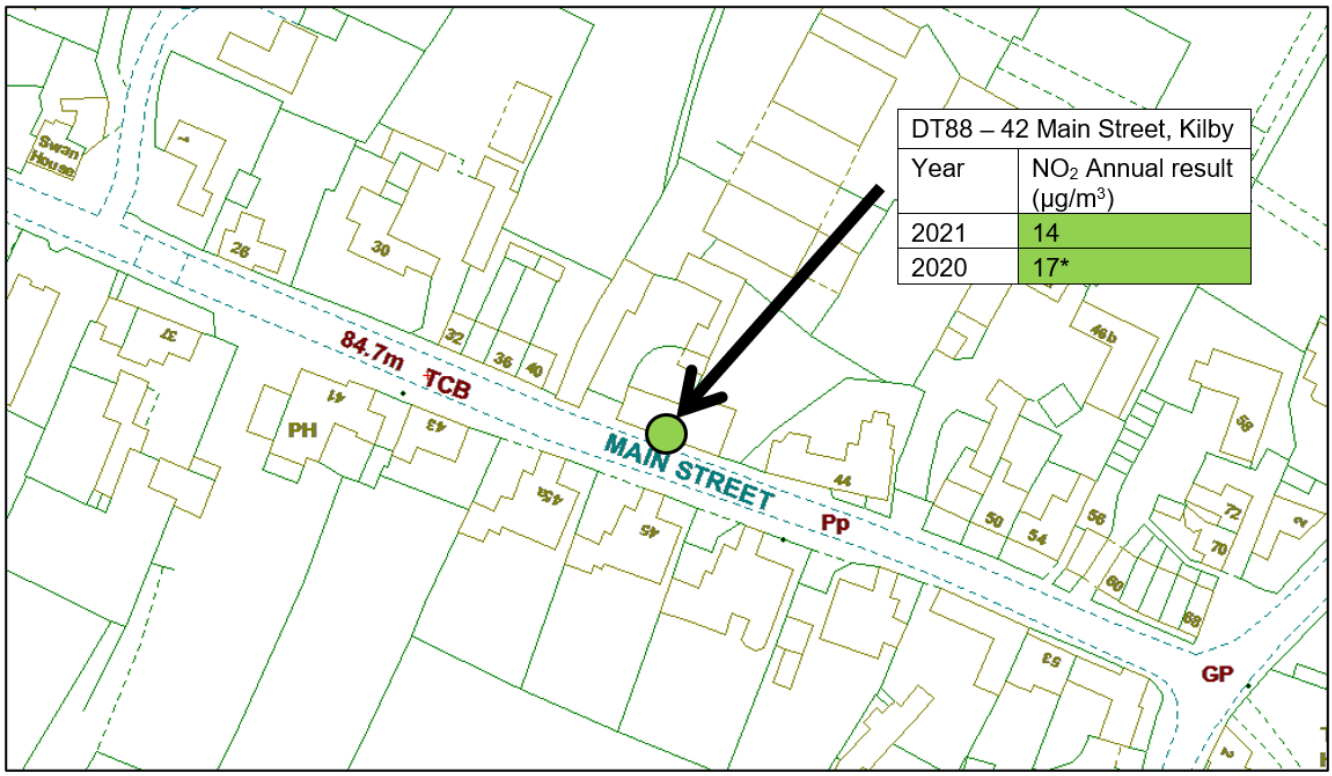


Figure 18: Map showing the locations and results of diffusion tubes in Kilby. Results have been rounded to nearest whole number. 40 µg/m^3 is the national air quality objective for this pollutant. © Crown copyright. All rights reserved.

2021 provided a full year of NO_2 monitoring in Kilby with an annual mean of 14 µg/m^3 reported. This figure is well below the national air quality objective for the pollutant despite the monitoring point being at roadside.

Active Travel – Narborough

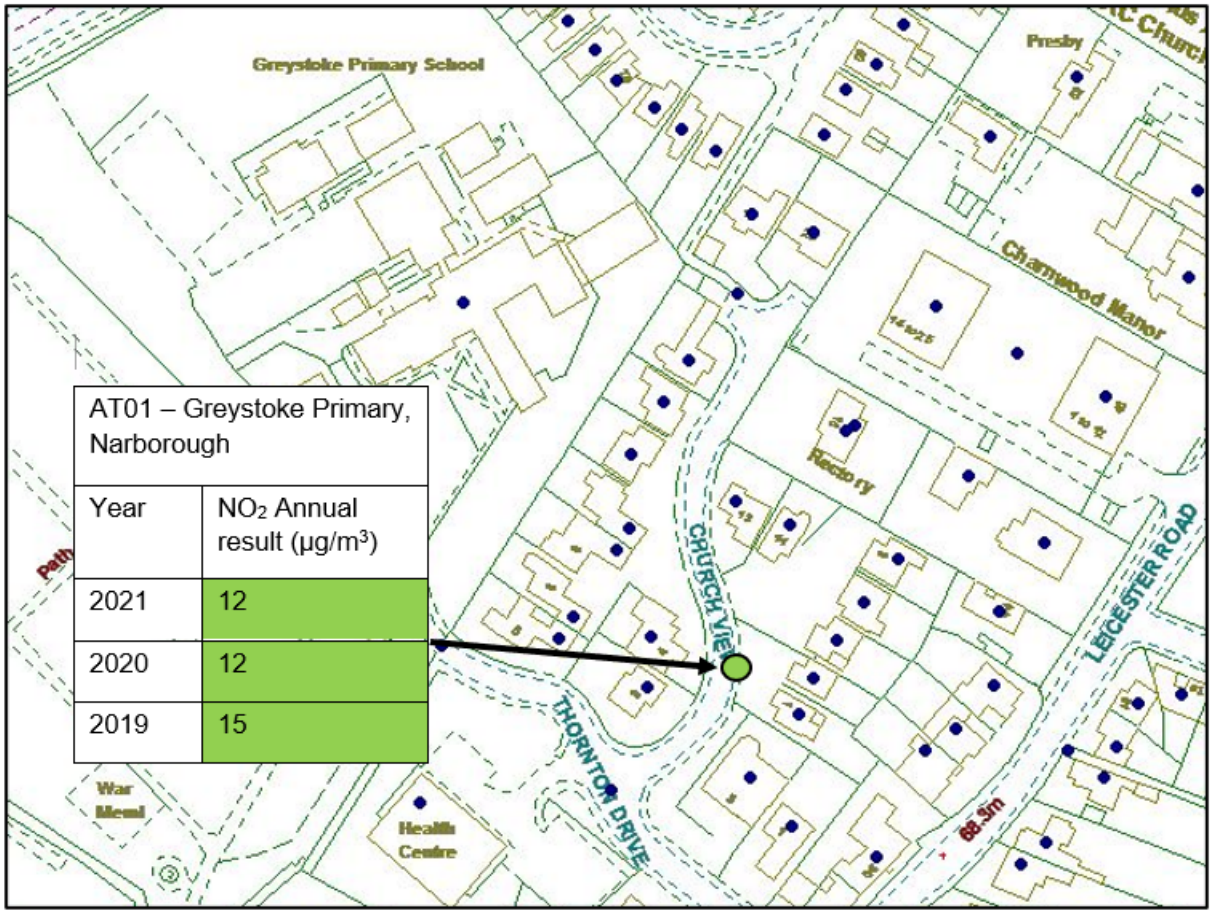
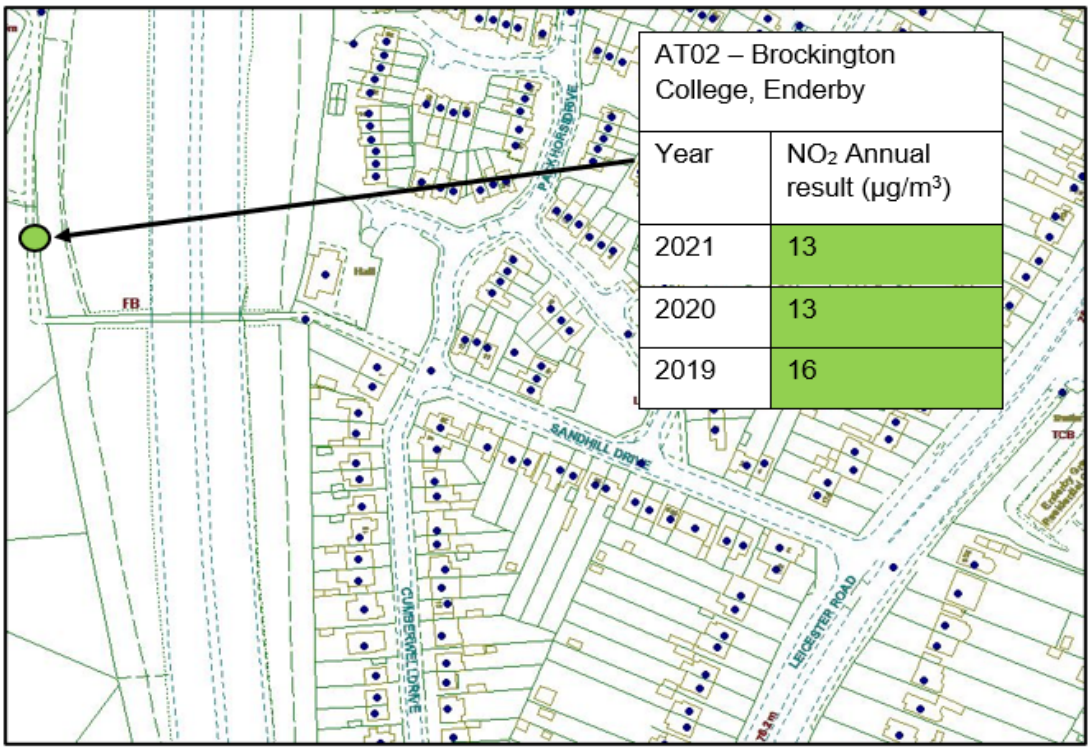
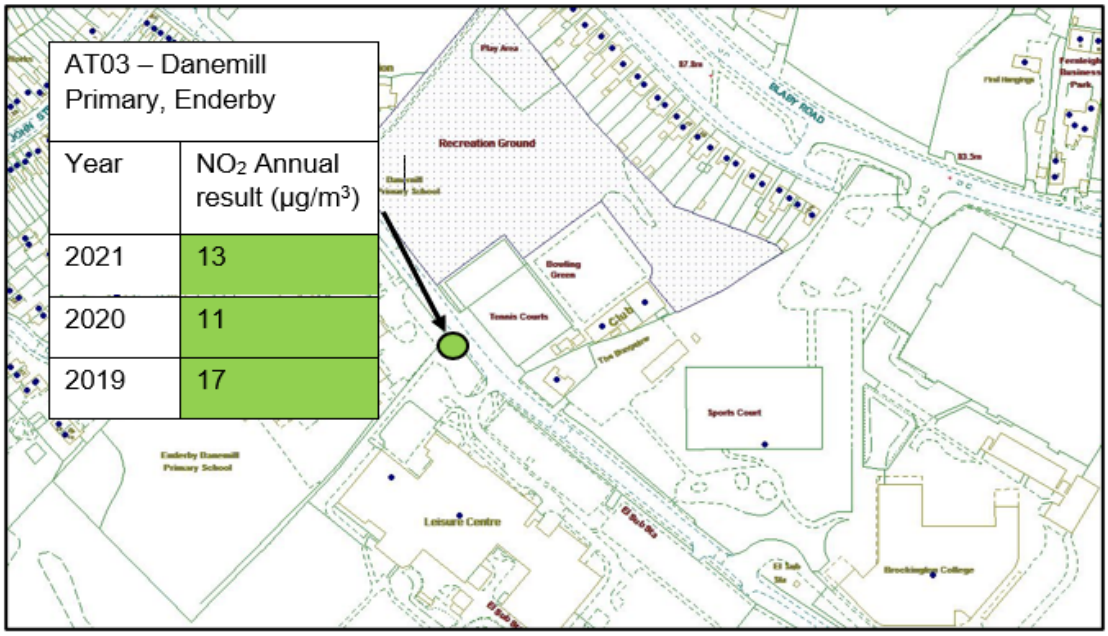


Figure 19: Map showing the locations and results of active travel (AT) diffusion tubes in Narborough, including a nearby primary school. Results have been rounded to nearest whole number. 40 µg/m^3 is the national air quality objective for this pollutant. © Crown copyright. All rights reserved.

Active Travel – Enderby



AT02 – Brockington College, Enderby	
Year	NO_2 Annual result (µg/m³)
2021	13
2020	13
2019	16



AT03 – Danemill Primary, Enderby	
Year	NO_2 Annual result (µg/m³)
2021	13
2020	11
2019	17

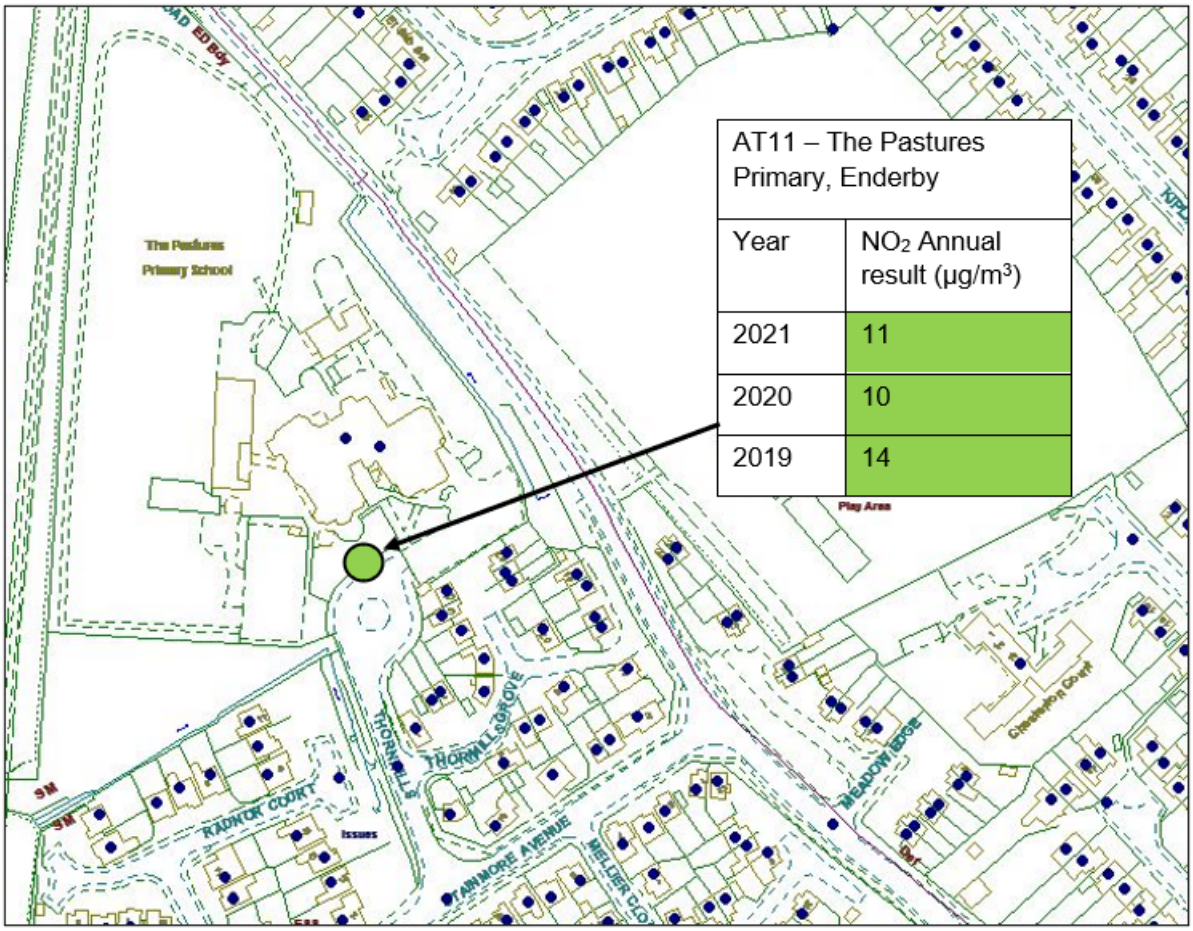
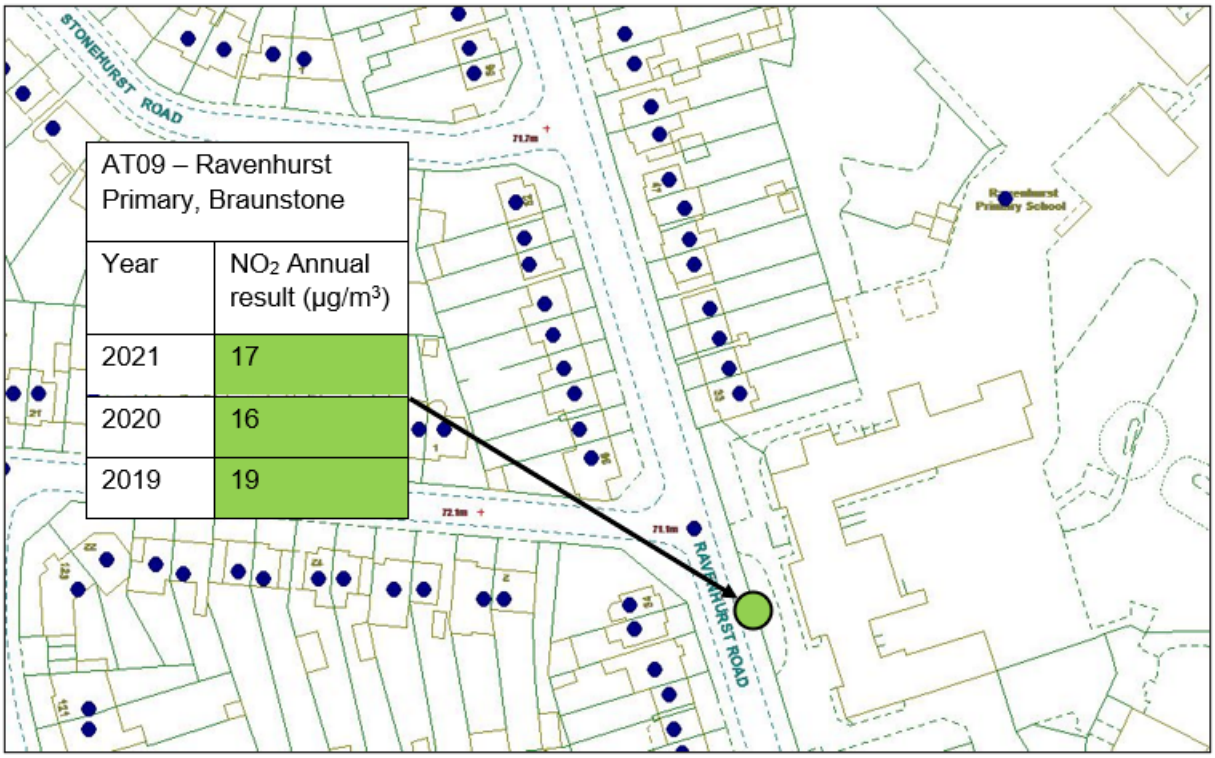
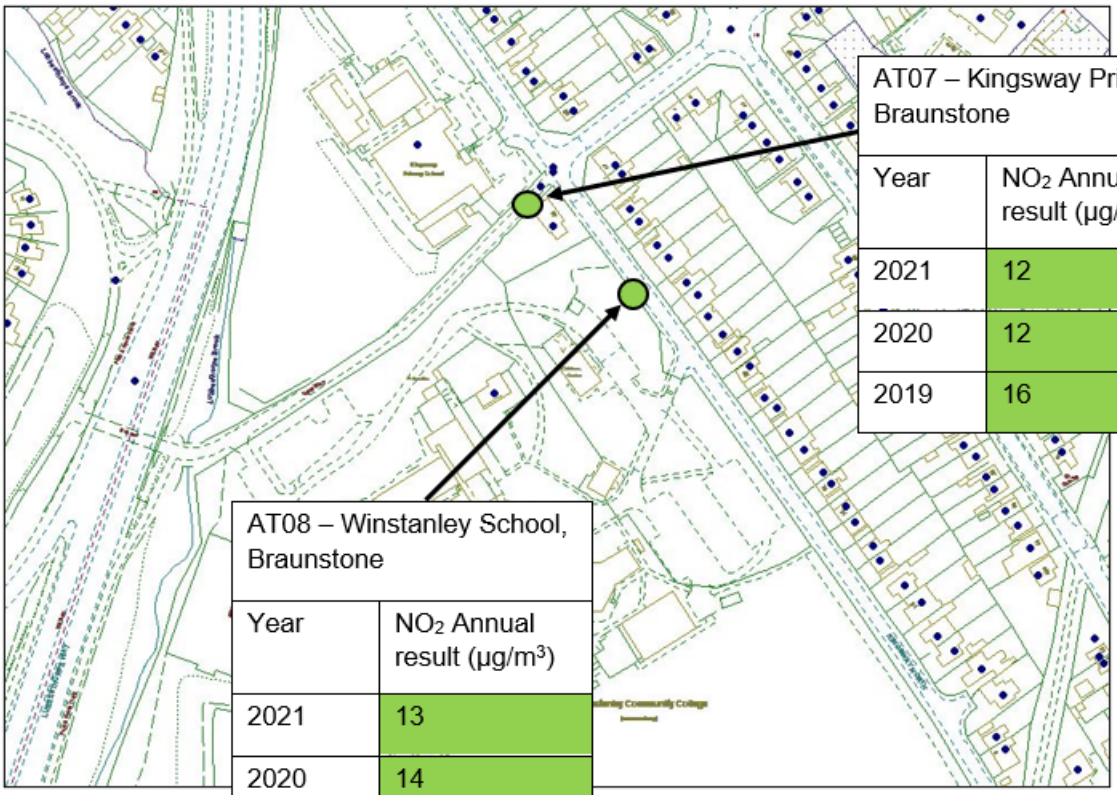


Figure 20: Maps showing the locations and results of active travel (AT) diffusion tubes in Enderby, including nearby college (top) and primary schools (middle, bottom). Results have been rounded to nearest whole number. 40 µg/m^3 is the national air quality objective for this pollutant.

Active Travel – Braunstone Town



AT09 – Ravenhurst Primary, Braunstone	
Year	NO_2 Annual result ($\mu g/m^3$)
2021	17
2020	16
2019	19



AT07 – Kingsway Primary, Braunstone	
Year	NO_2 Annual result ($\mu g/m^3$)
2021	12
2020	12
2019	16

AT08 – Winstanley School, Braunstone	
Year	NO_2 Annual result ($\mu g/m^3$)
2021	13
2020	14
2019	17

Figure 21: Maps showing the locations and results of active travel (AT) diffusion tubes in Braunstone Town, including nearby primary and secondary schools. Results have been rounded to nearest whole number. 40 µg/m^3 is the national air quality objective for this pollutant.

Active Travel – Glenfield

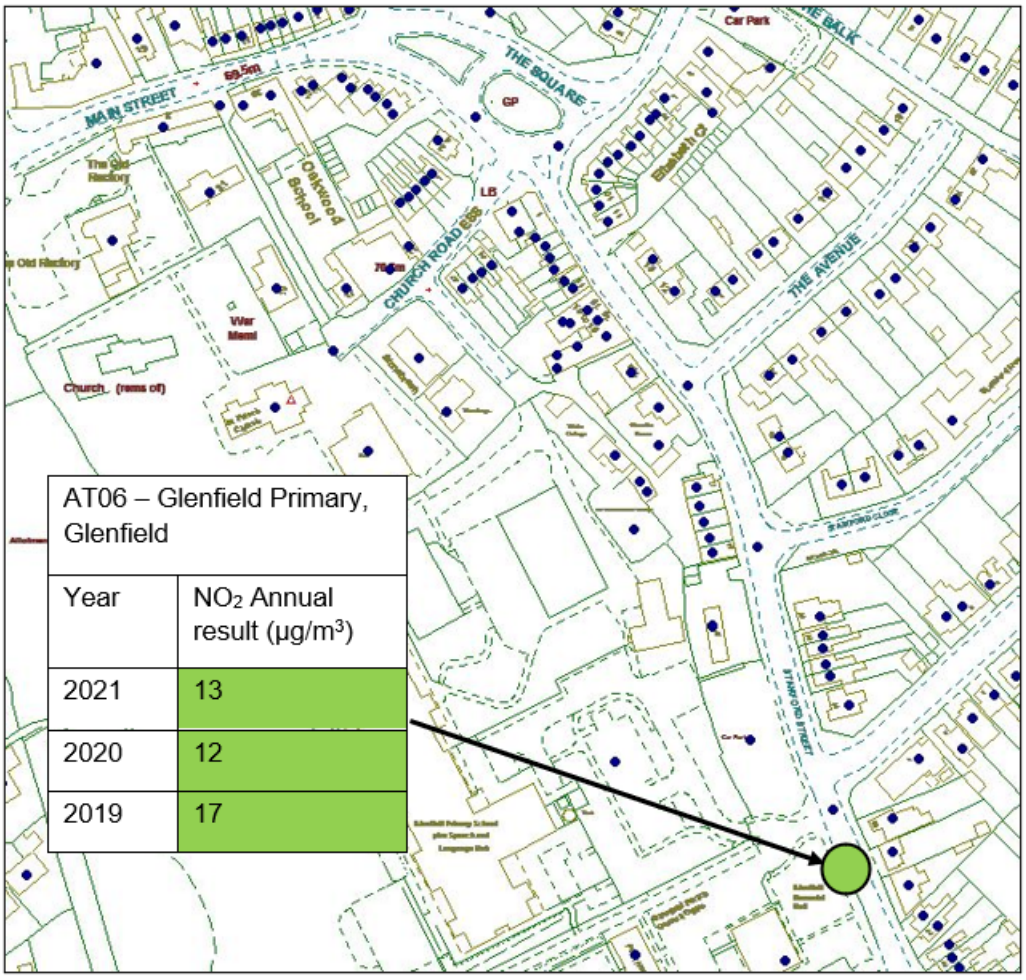


Figure 22: Map showing the location and results of active travel (AT) diffusion tubes in Glenfield, including a nearby primary school. Results have been rounded to nearest whole number. 40 µg/m^3 is the national air quality objective for this pollutant.

Active Travel – Leicester Forest East

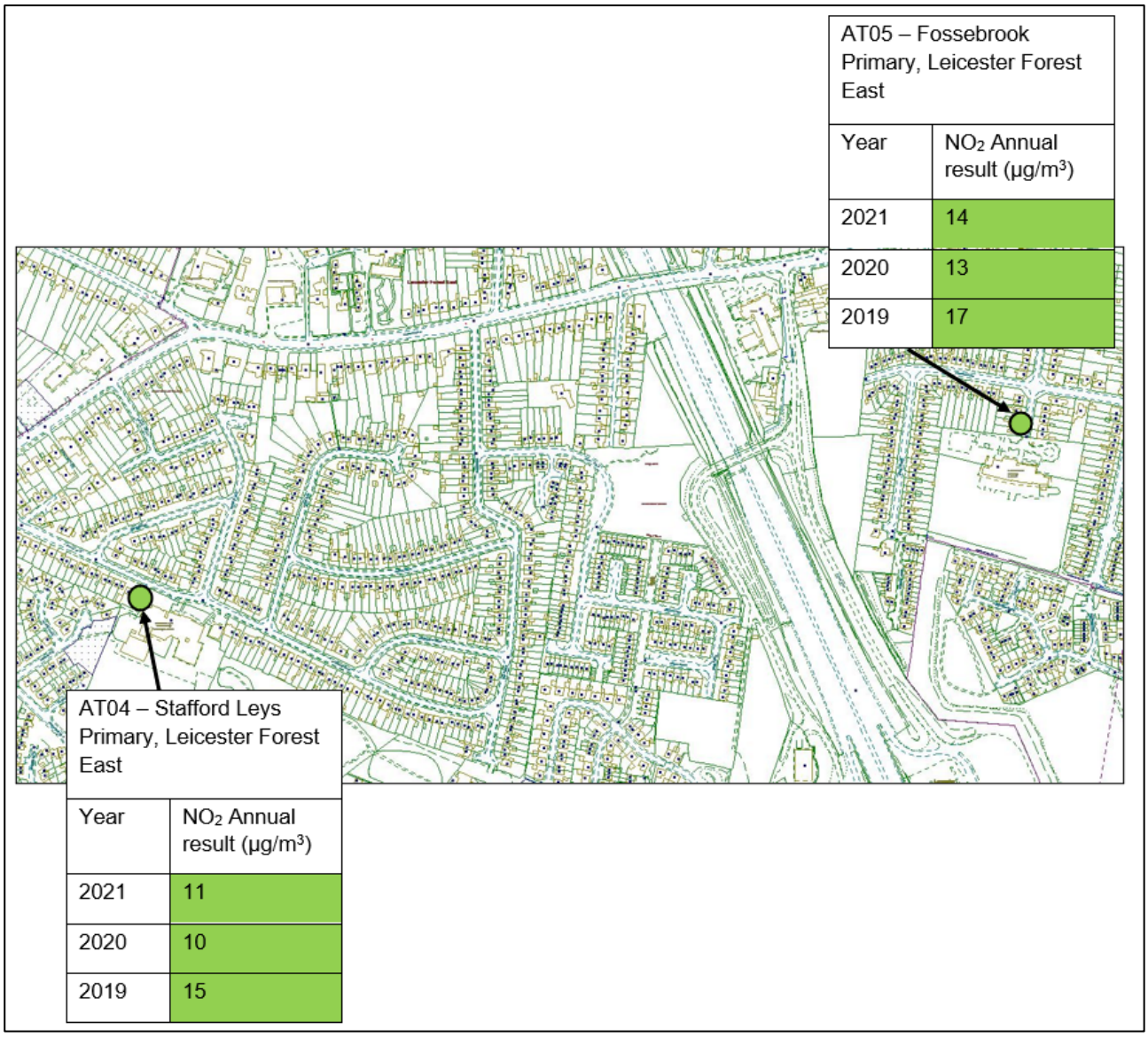


Figure 23: Map showing the locations and results of active travel (AT) diffusion tubes in Leicester Forest East, including nearby primary schools. Results have been rounded to nearest whole number. 40 µg/m^3 is the national air quality objective for this pollutant.

Active Travel – Thorpe Astley

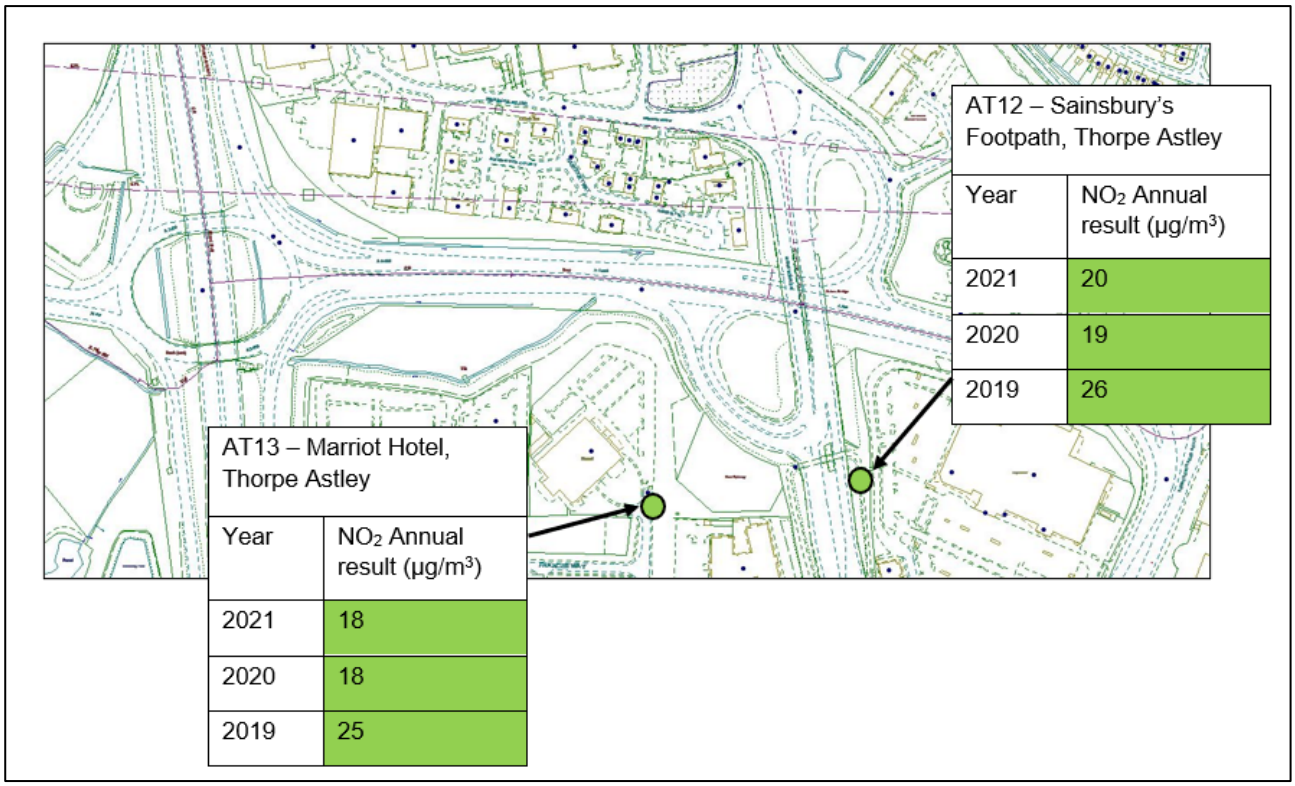


Figure 24: Map showing the locations and results of active travel (AT) diffusion tubes in Thorpe Astley, including a hotel and a footpath used by local workers. Results have been rounded to nearest whole number. 40 µg/m^3 is the national air quality objective for this pollutant. © Crown copyright. All rights reserved.

Active Travel – Whetstone

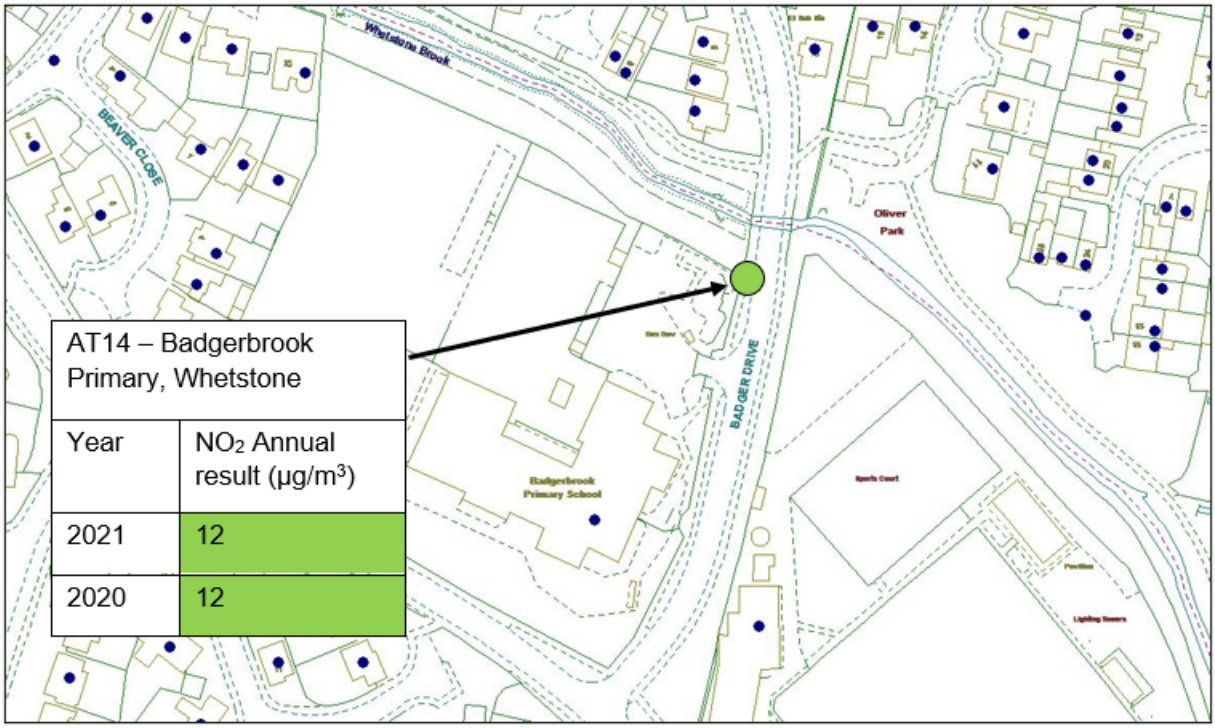


Figure 25: Map showing the location and results of active travel (AT) diffusion tubes in Whetstone, including a nearby primary school. Results have been rounded to nearest whole number. 40 µg/m^3 is the national air quality objective for this pollutant.

Appendix E: Summary of Air Quality Objectives in England

Table E.1 – Air Quality Objectives in England[7]

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

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

Glossary of Terms

Abbreviation	Description
AQAP	Air Quality Action Plan - A detailed description of measures, outcomes, achievement dates and implementation methods, showing how the local authority intends to achieve air quality limit values'
AQMA	Air Quality Management Area – An area where air pollutant concentrations exceed / are likely to exceed the relevant air quality objectives. AQMAs are declared for specific pollutants and objectives
AQO	Air Quality Objective
ASR	Annual Status Report
BDC	Blaby District Council
Defra	Department for Environment, Food and Rural Affairs
DMRB	Design Manual for Roads and Bridges – Air quality screening tool produced by National Highways
EU	European Union
HNRFI	Hinckley National Rail Freight Interchange
FDMS	Filter Dynamics Measurement System
LAQM	Local Air Quality Management
NO_2	Nitrogen Dioxide
NO_x	Nitrogen Oxides
PM_{10}	Airborne particulate matter with an aerodynamic diameter of 10µm or less
$PM_{2.5}$	Airborne particulate matter with an aerodynamic diameter of 2.5µm or less
QA/QC	Quality Assurance and Quality Control
RH	Relative Humidity
SO_2	Sulphur Dioxide

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.

Air quality information for Blaby District Council, as well as previous versions of the ASR can be found through our website on the Air Quality webpage.

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