Mansfield
District Council

2025 Air Quality Annual Status Report (ASR)

In fulfilment of Part IV of the Environment Act 1995 Local Air Quality Management, as amended by the Environment Act 2021

Date: JUNE 2025

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Local Responsibilities and Commitment

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

Sally Dilks

Zac Mott

This ASR has been approved by: David Evans Assistant Director - Health, Communities and Insight, Mansfield District Council

This ASR has been signed off by on behalf of the Nottinghamshire County Councils Director of Public Health and Communities by Jo Marshall – Public Health and Commissioning Manager who said the following:

- Overall, the plan is sound and comprehensively describes the air quality issues and impact in Mansfield, and the measures to be taken forward. It demonstrates good collaborative working with other districts, NCC Transport, National highways, and other Partners. There is reference to co benefits and the HECC (Health Effects of Climate Change) report.

- It also aligns well with the Air Quality Strategy for Nottingham and Nottinghamshire 2020-2030 particularly as table 2.2 is aligned to the Nottingham and Nottinghamshire Air Quality objectives. The inclusion of the section on page 2 and 3 highlights the transboundary nature of air pollution and the need for collaboration with neighbours but also reflects the need for local work in Mansfield which the ASR provides.

If you have any comments on this ASR please send them to Zac Mott at:

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Executive Summary: Air Quality in Our Area

Air Quality in Mansfield District Council

Breathing in polluted air affects our health and costs the NHS and our society billions of pounds each year. Air pollution is recognised as a contributing factor in the onset of heart disease and cancer and can cause a range of health impacts, including effects on lung function, exacerbation of asthma, increases in hospital admissions and mortality.

Air pollution particularly affects the most vulnerable in society, children, the elderly, and those with existing heart and lung conditions. Low-income communities are also disproportionately impacted by poor air quality, exacerbating health and social inequalities.

Table ES 1 provides a brief explanation of the key pollutants relevant to Local Air Quality Management and the kind of activities they might arise from.

Table ES 1 - Description of Key Pollutants

Pollutant	Description
Nitrogen Dioxide (NO_2)	Nitrogen dioxide is a gas which is generally emitted from high-temperature combustion processes such as road transport or energy generation.
Sulphur Dioxide (SO_2)	Sulphur dioxide (SO_2) is a corrosive gas which is predominantly produced from the combustion of coal or crude oil.
Particulate Matter (PM_{10} and $PM_{2.5}$)	Particulate matter is everything in the air that is not a gas. Particles can come from natural sources such as pollen, as well as human made sources such as smoke from fires, emissions from industry and dust from tyres and brakes. PM_{10} refers to particles under 10 micrometres. Fine particulate matter or $PM_{2.5}$ are particles under 2.5 micrometres.

Mansfield's air quality efforts remain centred on NO_2 and $PM_{2.5}/PM_{10}$. The modern decline in domestic solid fuel burning, means focus has shifted toward vehicle emissions and airborne dust.

In 2024, Bureau Veritas installed and activated a real-time analyser to monitor $PM_{2.5}$. Data collection began on 01/10/2024, but the limited monitoring period prevents its inclusion in this report.

No Air Quality Management Areas have been required across the district, as none of the monitoring sites exceeded the national Air Quality Objective of an annual mean of 40µg/m³.

Data from NO_2 monitoring indicates that levels of the pollutant are continuing to decline in the district. During 2024, 15 out of 16 sites had previous annual data to compare with; all but one site had a lower annual mean compared to 2023.

The 15 monitoring locations from 2023 continued to be used, and one additional location was introduced in Pleasley. These locations were spread across the Council District in Mansfield, Mansfield Woodhouse, Warsop, Forest Town, Rainworth, and Pleasley. No sites had co-located tubes during 2024, and there are no plans to use co-located tube sites in the future.

A new monitoring location has been identified on Southwell Road West, in the Big Barn Lane Estate, between Ravensdale and Berry Hill, in the South East region of Mansfield.

Monitoring will occur during 2025 and be reported on in the 2026 ASR. See Appendix D (figure D18) for the new monitoring location.

The Pleasley area of Manfield has continued to be an area of interest regarding its air quality, which is why the new monitoring location was added here. It should be noted that levels of monitored pollutants have never been high enough to declare an Air Quality Management Area, and the data from the new site shows NO_2 levels over 2024 were below the objective annual mean of 40µg/m³.

While the general trend of declining NO_2 levels has continued, local Councils continue to rely on actions taken by County Council, Highways, Governmental policy and other involved parties to reduce NO_2 emissions.

Actions to Improve Air Quality

Whilst air quality has improved significantly in recent decades, there are some areas where local action is needed to protect people and the environment from the effects of air pollution.

The Environmental Improvement Plan[1] sets out actions that will drive continued improvements to air quality and to meet the new national interim and long-term targets for fine particulate matter ($PM_{2.5}$), the pollutant of most harmful to human health. The Air Quality Strategy[2] provides more information on local authorities' responsibilities to work towards these new targets and reduce fine particulate matter in their areas.

The Road to Zero[3] details the Government's approach to reduce exhaust emissions from road transport through a number of mechanisms, in balance with the needs of the local community. This is extremely important given that cars are the most popular mode of personal travel and the majority of Air Quality Management Areas (AQMAs) are designated due to elevated concentrations heavily influenced by transport emissions.

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

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

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

Mansfield District Council continues to enforce its Smoke Control Area programme, which covers the entire district, including all open land. This initiative has been highly successful in reducing air pollution from domestic heating sources. As a result, the Council has not needed to monitor for 'black smoke' or sulphur dioxide for over 13 years. However, when necessary, Environmental Health reminds residents of the requirements set by the Smoke Control Orders.

Whenever Mansfield's Environmental Protection team becomes aware of local wood-burning stove installations, they provide guidance on proper installation and usage. Fortunately, these stoves are dispersed across the district rather than concentrated in specific areas, meaning any impact is typically limited to their immediate surroundings and does not pose a significant risk to overall air quality.

A closer working relationship with other Councils has been achieved through various schemes, including the Local Authority Energy Partnership, the Nottingham City Procurement Unit and the development of the Nottingham and Nottinghamshire air quality oversight group. This group has recently reviewed the Nottingham and Nottinghamshire Air Quality Strategy 2020-2030 and will take this strategy forward (Air Quality Strategy for Nottingham and Nottinghamshire 2020-2030)

All large developments have been required to submit an air quality assessment and an environmental management plan. Air quality forms part of the Spatial Planning & Health Framework and Health Impact Checklist produced and used for Local Development Plans.

Conclusions and Priorities

This report comments on the NO_2 levels monitored by passive methods throughout the Mansfield Council district. No exceedances of the annual mean objective (40µg/m^3) were identified during 2024. Additionally, no Air Quality Management Areas for NO_2 were declared or deemed necessary in the district.

Mean levels of NO_2 are continuing to decrease, providing further indications that air quality levels are generally improving gradually.

Only passive monitoring of NO_2 occurred in the district during 2024 and will be the same in 2025, this is because NO_2 levels in the district are not at a significant level to be a cause for concern.

The tube network utilised the same 15 sites from 2023, with the addition of an extra site located in Pleasley. These 16 sites where used throughout 2024, and make up the passive monitoring of NO_2 throughout the Mansfield area.

Our priorities for the coming year are:

- To continuously implement and develop the various measures the Council is taking to improve local air quality.
- To work in partnership to promote the Air Quality Strategy for Nottingham and Nottinghamshire 2020-2030, and to encourage the prevention and reduction of polluting activities as detailed in the strategy.
- To promote the requirements of the Air Quality Regulations 2020 (England), which came into force on 1 May 2021.
- To continue to run the network of 16 tube sites effectively, monitoring for exceedances or issues and extend the network with a new tube on Southwell Road West.

How to get Involved

The Council takes a proactive and positive approach to air quality, through engaging with relevant shareholders and participating in appropriate initiatives. Through working with other bodies, we achieve a consistent and effective approach.

The Environment and Community Protection Team works with residents about local air quality issues, which mostly involves wood burning stoves and garden bonfires.

The public can help to improve air quality in the district through the following means:

1) If you are using an open fire, you must burn only solid smokeless fuels, not wood or coal. This is a legal requirement under the Clean Air Act 1993 and the various Smoke Control Orders that cover all properties in the district. The text of the Clean Air Act 1993 is available at www.legislation.gov.uk/ukpga/1993/11/contents; information on the Council's Smoke Control Orders and the streets within each is available on

request from the Environmental Health section. Please note that Mansfield has Smoke Control Areas, not “Smokeless Zones”, and smoke will be emitted by a chimney when an open or closed solid-fuel fire is being lit from cold or re-fuelled.

2) If you have a closed solid-fuel fire (stove or room heater), you should burn only the type of fuel recommended by the manufacturer. Again, this is a legal requirement. Some stoves are advertised as ‘multi-fuel’, but if they are not on the Defra ‘approved appliances’ list, you cannot burn anything except smokeless fuel on them. Approved appliances are listed at www.smokecontrol.defra.gov.uk/appliances.php?country=england, and authorised fuels at www.smokecontrol.defra.gov.uk/fuels.php. If you use other types of fuel on a stove, you risk damaging its interior, which may release fumes into your house or cost you money to repair.

3) If you are using a wood-burning stove, you should burn only clean, dry wood. Wood must be left to dry for at least a year before you use it (unless you have bought ‘kiln-dried’ wood), and it must contain less than 20% moisture. Moisture meters can be bought to check this; they are particularly useful if you buy wood from several different sources, as the moisture content may not be consistent. Store your firewood in a place where it will not get damp - if possible, bring wood indoors at least a week before using it, to help it to dry out further, and check its moisture content before using it. Never burn wood that has been painted, varnished or treated in any way (this includes pallets), as it could cause damage to the interior of your stove and release fumes inside your house or cost you money to repair. New legislation came into force in May 2021 to regulate the sale of wood as a fuel - visit www.hetas.co.uk/ready-to-burn-what-consumers-need-to-know for more information.

4) Since 2005, wood-burning stoves have been required by law to have a Certificate of Compliance from a HETAS-registered engineer, or a Building Notice from a Building Control Officer, to confirm that they have been fitted correctly. If you do not have a certificate for your stove, you should have it serviced by a HETAS-registered engineer, who will give you a certificate for twelve months.

5) Avoid garden bonfires as much as possible. Never burn household waste, furniture, carpets, anything containing plastics or foam rubber, or any other items likely to cause black smoke and smell. You can burn plant and tree cuttings from your garden, but

you must allow them to dry out first, so that they produce less smoke and burn away quickly. You can also burn confidential papers if you cannot shred them or dispose of them securely in another way. Any garden fire you do have should be attended at all times by someone with access to a hosepipe or a bucket of water, soil or sand, to put it out if it gets out of control or if the wind blows the smoke towards another property or a road. Fires must be put out before leaving them at night. Please note that garden fires are not covered by Smoke Control Orders or the Clean Air Act 1993; bonfires that are causing a nuisance are dealt with under the Environmental Protection Act 1990. There are no set times when a bonfire can be lit; we ask that residents avoid lighting them on windy days, or when other residents have their washing out, their windows open, or are sitting in their gardens.

6) Wherever possible, use alternative forms of transport rather than your car. When changing cars, look for a 'cleaner' vehicle; in particular, be aware that no new single-fuel cars and vans (i.e. those that only use petrol or diesel) will be produced after 2030. Have your car serviced regularly, and if the exhaust starts smoking, have it checked. Please note that car exhaust emissions are not covered by Smoke Control Areas or the Clean Air Act 1993, which only deal with emissions from chimneys. Vehicle idling (i.e. leaving the engine running when the vehicle is stationary for a long period of time) is an offence against the Road Traffic (Vehicle Emissions) (Fixed Penalty) (England) Regulations 2002, and a fine can be given to a person who does not switch off their vehicle engine when asked to do so.

The public can find out more about Mansfield's air quality on the Council website www.mansfield.gov.uk/airquality

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1 Local Air Quality Management

This report provides an overview of air quality in Mansfield District Council during 2024. It fulfils the requirements of Local Air Quality Management (LAQM) as set out in Part IV of the Environment Act (1995), as amended by the Environment Act (2021), and the relevant Policy and Technical Guidance documents.

The LAQM process places an obligation on all local authorities to regularly review and assess air quality in their areas, and to determine whether or not the air quality objectives are likely to be achieved. Where an exceedance is considered likely the local authority must declare an Air Quality Management Area (AQMA) and prepare an Air Quality Action Plan (AQAP) setting out the measures it intends to put in place in order to achieve and maintain the objectives and the dates by which each measure will be carried out. This Annual Status Report (ASR) is an annual requirement showing the strategies employed by Mansfield 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 18 months. The AQAP should specify how air quality targets will be achieved and maintained, and provide dates by which measures will be carried out.

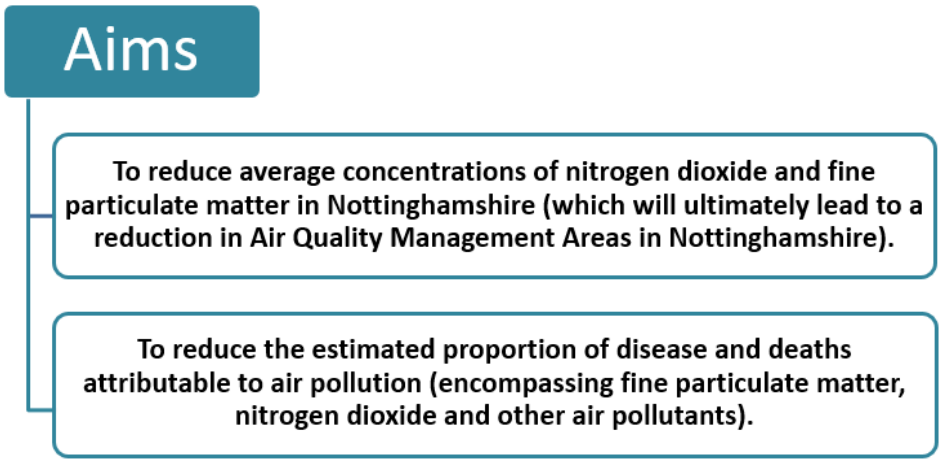
No exceedances or likely exceedances exist within the district. Therefore, Mansfield District Council currently does not have any declared AQMAs, nor is it preparing any.

Air Quality Strategy for Nottingham and Nottinghamshire 2020-2030

Mansfield District Council does not have an air quality strategy solely for this District, however this ASR is written in alignment with the aims and objectives of various strategies which can be found below:

Strategy for Nottingham and Nottinghamshire 2020-2030. **Air Quality Strategy for Nottingham and Nottinghamshire 2020-2030.**

This Joint Air Quality Strategy has been developed collaboratively across Nottinghamshire authorities (taking into account the DEFRA Air Quality Strategy factsheet in relation to joint Air Quality Strategies, which is available from the DEFRA Air Quality Hub, https://www.airqualityhub.co.uk/) and sets out the steps the local authorities will take to improve local air quality. This joint approach ensures that local authorities—including Mansfield District Council - are collectively addressing air quality concerns while still considering local-level priorities. Its aims are to encourage prevention and reduction of polluting activities across a range of diverse sectors.



The Strategy establishes the regional steps authorities will take to improve air quality while maintaining flexibility for local implementation. It is reviewed regularly by the Nottingham and Nottinghamshire Air Quality Oversight Group (NNAQOG) to remain up to date and to provide progress updates to the County and City Health and Well-Being Boards.

The NNAQOG includes colleagues from City and County Local Authorities and consists of Public Health, Environmental Health, Transport Planning and the local NHS; with input also from National Highways, Environment Agency, UKHSA, among others. Additionally, engagement with the Mayor's office for the East Midlands Combined County Authority (EMCCA) will be sought at the earliest opportunity.

The strategic aims of the strategy will be delivered through action under the following strategic objectives.

- Objective 1: Place Making and Development for Good Air Quality
- Objective 2: Enable the Shift to Zero and Low Emission Transport to Reduce Emissions
- Objective 3: Reduce, Minimise and Prevent Emissions from Industrial, Commercial, Agricultural and Domestic Sources and Activity
- Objective 4: Engagement and Communication for Behaviour Change

To achieve these objectives see Measures implemented in Mansfield district in Table 2.2.

The Nottinghamshire Joint Health and Wellbeing Strategy For 2022 – 2026

The Nottinghamshire Joint Health and Wellbeing Strategy For 2022 – 2026 has 4 ambitions one of which is Create Healthy and Sustainable Places:

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

This will also help to reduce health inequalities and benefit the environment, for a better quality of life; this includes Area of Focus 9 - Air quality: - nottinghamshirejointhealthwellbeingstrategy2022-2026.pdf

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

The Nottingham and Nottinghamshire ICS Green Plan 2022 to 2025

The Nottingham and Nottinghamshire ICS Green Plan 2022 to 2025 - https://healthandcarenotts.co.uk/wp-content/uploads/2021/05/ICS-Green-Plan-2022-to-2025.pdf recognises the importance of the NHS taking action to reduce air pollution and work with partners to improve air quality. The Plan includes the following ambitions:

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

The Nottingham and Nottinghamshire ICS Health Inequalities Strategy 2020-2024

The Nottingham and Nottinghamshire ICS Health Inequalities Strategy 2020-2024 - https://healthandcarenotts.co.uk/wp-content/uploads/2020/10/Notts-ICS-HI-strategy-06-October-v1.8.pdf has a strategic objective for system partners to work together to support action to improve air quality

Potential opportunities to include link between climate change and mention the HECC - HECC 2023 report. Chapter 4: Impacts of climate change and policy on air pollution and human health report and MDC climate strategy - Copy of Climate Change Strategy amends November 2021 without delivery plan and mention the co benefits.

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

Defra's appraisal of last year's ASR concluded:

The report is well structured, detailed, and provides the information specified in the Guidance. The following comments are designed to help inform future reports:

1. The Council has contributed towards the Air Quality Strategy for Nottingham and Nottinghamshire. However, it would be beneficial if the Council would produce a strategy to specifically target potential local air quality issues.

   RESPONSE – See section 2.1, in accordance with DEFRA's Air Quality Fact Sheet, which states that "Joint Air Quality Strategies can be produced in collaboration across neighbouring authorities," our strategy was developed in partnership with all other Nottinghamshire authorities. It outlines the actions we will take to enhance air quality both at the county level and locally.

2. The automatic monitoring unit is to be closed down in 2024 due to low results with its location taken into account and poor data capture. It would be beneficial for the Council to consider installing a new continuous monitor to get a better understanding of the air quality in the Council.

   RESPONSE – Justification for not continuing council automatic monitoring is that district has no significant issues with NO_2 levels, additionally, a site had already been approved for a Defra automatic monitoring unit to be installed. This became operational and began monitoring $PM_{2.5}$ and PM_{10} in October 2024.

3. The Council has addressed all the comments made in last year's appraisal, in a good level of detail and this is appreciated, and it is encouraged that this continues in future reports.

   RESPONSE – Effort has again been made to include a good level of detail to make an understandable and well produced ASR.

4. The Council has clearly stated their priorities for the coming year. This is highly positive and encouraged to continue improving local air quality.

   RESPONSE – The Council tries to take a proactive and deliberate approach to air quality as the health of the residents and the local environment is a priority.

5. The network of diffusion tubes keeps expanding in the Council; from 8 diffusion tubes in 2022 to 15 sites in 2023. It is also good to see the Council stating a new location, Pleasley,

will be added to the network in 2024. The council is encouraged to keep this good effort going.

RESPONSE – A further monitoring location has been identified on Southwell Road West, bringing the total monitoring sites to 17 during 2025.

Mansfield District Council has taken forward a number of direct measures during the current reporting year of 2024 in pursuit of improving local air quality. Details of all measures completed, in progress or planned are set out in Table 2.. 25 measures are included within Table 2., with the type of measure and the progress Mansfield District Council have made during the reporting year of 2024 presented. Where there have been, or continue to be, barriers restricting the implementation of the measure, these are also presented within Table 2..

More detail on these measures can be found in their respective Action Plans

- The Nottinghamshire County Council's Local Transport Plan 2011-2026 can be found at https://www.nottinghamshire.gov.uk/transport/public-transport/plans-strategies-policies/local-transport-plan
- Mansfield District Council's Local Plan was adopted on 8 September 2020 and can be found at https://www.mansfield.gov.uk/downloads/file/1645/mdc-adopted-local-plan-2020. The Local Plan includes pollution and air quality, outlining how these factors are considered in planning throughout the district. The plan also considers the impacts of climate change

Key completed measures are:

- The district now has at least 105 public charging points for electric cars including 3 new points in Warsop.
- 15% of current HGV fleet is Euro 5. 25% of current LGV fleet is Euro 5. Fleet replacement budget approved to enable replacement of HGVs within desired 10-year timeframe. Council's refuse collection fleet currently contains 3 Euro % variants.
- During 2024/25 cycle training was delivered to 1514 people in the Mansfield District.

Mansfield District Council expects the following measures to be completed over the course of the next reporting year:

Mansfield District Council's priorities for the coming year are:

- Ongoing effective land use planning and securing appropriate developer contributions to support air quality mitigation measures
- Actively enforce legislation regulating industrial emissions using a risk-based strategy. Efficiently apply legal powers to ensure industrial operations comply with the air quality conditions set in their environmental permits.
- Actively enforce legislation to manage emissions from chimneys and bonfires.
- To educate the public about the impacts of domestic burning and encourage the use of cleaner fuels. Promote DEFRA guidance on Open Fires, Wood Burning Stoves, and the Woodsure Ready to Burn initiative.
- To promote anti-idling of vehicles around schools.
- Promote the adoption of low-emission vehicles by expanding the Nottinghamshire public electric vehicle charging network.
- Improve local cycling and walking networks to encourage active, sustainable travel.

Mansfield District Council worked to implement these measures in partnership with the following stakeholders during 2024:

- Internal MDC departments
- Nottinghamshire County Council
- Serco
- Local Authority Energy Partnership (Nottinghamshire and Derbyshire).
- Severn Trent Water

A reduction in finances and resources at Mansfield District Council are the principal challenges and barriers to the implementation of these measures, also meaning that progress on certain measures has been slower than expected.

Table 2.2 – Progress on Measures to Improve Air Quality

Measure No.	Measure	Category	Classification	Year Measure Introduced in AQ Strategy	Estimated / Actual Completion Year	Organisations Involved	Funding Source	Funding Status	Estimated Cost of Measure	Measure Status	Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Barriers to Implementation
Top Three Measures taken from below.														
1	LEV parking and charging	Promoting low emission transport	Priority parking for LEVs		Ongoing	MDC Planning	Internal	No	0	0	Greatest impact may not be seen for some years after 2030, when natural wastage of existing single-fuel vehicles takes effect	Number of spaces provided alongside demand.	Updated Local Plan (2013-33) includes policies addressing electric car charging, and mitigation and adaptation to climate change. Local Plan Annual Monitoring Report has recorded number of applications for electric car charging points and renewable energy. See https://www.mansfield.gov.uk/planning-policy/annual-monitoring-reports-1 Development Management putting conditions on new developments for electric charging points	District now has least 105 public charging points for electric cars. Numerous stores and public houses have charging points in their car parks. Three new charging ports where installed at Warsop Health Hub June 2024
2	Cycle network	Promoting travel alternatives	Promotion of cycling	2017/18	Ongoing	MDC, Notts County Council	D2N2 LEP LGF	No	0	**0**	Considered likely to have only small impact on AQ – will mostly affect health	Increased use of cycle network	In May 2022, it was announced that NCC were successful in securing £4.6m of funding from Tranche 3 of the Active Travel Fund (ATF), to develop and construct three cycle schemes on: A611 Derby Road, Mansfield; A612 Colwick Loop Road, Netherfield; and B6021 Kirkby Folly Road, Sutton in Ashfield. In May 2024, the A611 Derby Road, Mansfield, cycle scheme was completed. Work continues on the potenial cycle schemes along the A612 Colwick Loop Road, Netherfield, and B6021 Kirkby Folly Road, Sutton in Ashfield.	A611 Derby Road, Mansfield - complete and open to the public. A611 Derby Road, Mansfield - complete and open to the public. A612 Colwick Loop Road, Netherfield and B6021 Kirkby Folly Road, Sutton in Ashfield are still in progress.
3	Energy partnership	Policy guidance and development control	Regional groups co-ordinating programmes to develop area-wide strategies to reduce emissions and improve air quality		Ongoing funding available	Local Authority Energy Partnership made up of 20 authorities from Nottinghamshire and Derbyshire		No		Internal Climate Change and Resilience Group set up to drive policies forward locally	Co-ordination of strategies likely to have positive effect on air pollution throughout county	Impact on general air quality	MDCs climate change delivery plan developed. D2N2 local area energy partnership. Local area energy plan (LAEP) currently working to identify the most effective route for an area to meet its local / national net zero targets. This includes actions on retrofit, renewable energy, and EV charging strategies.	
Objective 1: Place Making and Development for Good Air Quality														
1	Energy partnership	Policy guidance and development control	Regional groups co-ordinating programmes to develop area-wide strategies to reduce emissions and improve air quality		Ongoing funding available	Local Authority Energy Partnership made up of 20 authorities from Nottinghamshire and Derbyshire		No		Internal Climate Change and Resilience Group set up to drive policies forward locally	Co-ordination of strategies likely to have positive effect on air pollution throughout county	Impact on general air quality	MDCs climate change delivery plan developed. D2N2 local area energy partnership. Local area energy plan (LAEP) currently working to identify the most effective route for an area to meet its local / national net zero targets. This includes actions on retrofit, renewable energy, and EV charging strategies.	

2	Air quality strategies	Policy guidance and development control	Regional groups co-ordinating programmes to develop area-wide strategies to reduce emissions and improve air quality	2022	2022	Nottinghamshire local authorities		No		Completed	Potentially significant impact on air quality and health	Impact on general air quality	Nottinghamshire Air Quality Strategy – see https://committee.nottinghamcity.gov.uk/documents/s107973/Notts%20AQ%20Strategy%202020%20FINALv1.0.pdf. Nottinghamshire Joint Health and Wellbeing Strategy – see https://www.nottinghamshire.gov.uk/policy-library/38815/the-joint-health-and-wellbeing-strategy-for-2022-2026	Nottingham and Nottinghamshire air quality oversight group collaborated to ensure actions identified as part of the Nottingham and Nottinghamshire strategies are implemented.
3	Local Plan	Policy guidance and development control	Air quality planning and policy guidance	2013	Ongoing development and refinement of AQ policies	MDC Planning Policy	Internal	No			Impact in immediate area of development potentially significant – development should include potential to reduce poor air quality in area	Increased awareness of air quality issues, and action to improve air quality, among developers in District	Updated Local Plan adopted September 2020 (https://www.mansfield.gov.uk/local-plan/adopted-local-plan-2013-2033). Plan addresses air quality in policies P7 (Amenities) and NE3 (Pollution and land stability). Objectives 9 and 12 and monitoring indicator for NE3 address air quality. Review of Council's Local Plan has commenced with 'Issues and Options' paper being issued for consultation in summer 2023 and further consultation planned for summer 2025 will consider need for air quality evidence to inform emerging policies and proposals	Evidence on air quality to be gathered and used to inform AQ policies within local plan
Objective 2: Enable the Shift to Zero and Low Emission Transport to Reduce Emissions														
4	LEV parking and charging	Promoting low emission transport	Priority parking for LEVs		Ongoing	MDC Planning	Internal	No			Greatest impact may not be seen for some years after 2030, when natural wastage of existing single-fuel vehicles takes effect	Number of spaces provided alongside demand.	Updated Local Plan (2013-33) includes policies addressing electric car charging, and mitigation and adaptation to climate change. Local Plan Annual Monitoring Report has recorded number of applications for electric car charging points and renewable energy. See https://www.mansfield.gov.uk/planning-policy/annual-monitoring-reports-1 Development Management putting conditions on new developments for electric charging points	District now has least 105 public charging points for electric cars. Numerous stores and public houses have charging points in their car parks. Three new charging ports where installed at Warsop Health Hub June 2024
5	Carbon management plan	Policy guidance and development control	Low Emissions Strategy	2010	Ongoing	MDC Planning Policy	Internal	No			Climate change mitigation measures will reduce air pollutants and lead to improvements in health	% reduction in emissions. Carbon-neutral status	Full Council declared climate emergency 'in principle' on 5 March 2019. Council to go carbon-neutral by 2040. Pledge to make Mansfield carbon-neutral by 2040 and work with local businesses and industry	Climate Change Strategy & Delivery Plans have been produced
6	Cleaner taxis	Promoting low emission transport	Taxi emission incentives		Ongoing	MDC Taxi Licencing	Internal	No			Ongoing	Gradual replacement of older diesel vehicles will contribute to local AQ improvements	Increased number of taxi operators using cleaner vehicles	Licence fee for hybrid vehicles reduced by 25%. MDC continuing to review taxi licencing policy to encourage newer, cleaner vehicles
7	MDC vehicle fleet efficiency	Vehicle fleet efficiency	Fleet efficiency and recognition schemes		When all MDC fleet vehicles are Euro 6 (or ideally electric)	MDC Fleet Management	Internal	No			Major review planned for 2025	Gradual replacement of diesel fleet vehicles with electric ones will contribute to local AQ improvements	% reduction in emissions and fuel usage; increased number of cleaner vehicles	15% of current HGV fleet is Euro 5. 25% of current LGV fleet is Euro 5. Fleet replacement budget approved to enable replacement of HGVs within desired 10-year timeframe. Council's refuse collection fleet currently contains 3 Euro % variants (out of 20 vehicles) and will be fully Euro 6 by end of 2025. MDC currently has 9 electric HGVs in fleet, which will continue to expand as specific vehicles are due for replacement, based on prices at replacement time. Depot has 5 electric charging points – sufficient for current fleet – which again will expand as need arises. Large-scale electrification of vehicle fleet to be looked at in greater depth in 2025

8	School travel plans	Promoting travel alternatives	School travel plans		Ongoing	Notts County Council Education Department	NCC	No			Potentially locally significant impact, particularly in areas of high-density housing	Reduction in number of private vehicle school runs	Several school travel plans already implemented	Lack of cycle lanes could be a barrier to implementation. Warsop Health Hub has piloted a partnership with local schools to deliver walking buses for school swimming to Warsop Health Hub. Parents then collect their children from the hub after their school swimming sessions. Which also improves congestion around the schools.
9	Bus lane	Traffic management	Strategic highway improvements, re-prioritising road space away from cars, including access management, selective vehicle priority, bus priority, high-occupancy lane	Included in Transport Plan 2011-2026	Ongoing – new bus lanes under consideration	Notts County Council Highways	NCC	No			Local impact potentially quite significant – existing bus lane is on street with terraced houses next to traffic lights	Reduction of bus waiting time at one busy traffic-lighted junction	Bus lane on Leeming Lane South has been in place for several years. Possibility of two further bus lanes, plus extension of existing one, being investigated by NCC	Existing bus lane has reduced bus waiting time at traffic lights by two minutes on average
Objective 3: Reduce, Minimise and Prevent Emissions from Industrial, Commercial, Agricultural and Domestic Sources and Activity														
10	Warm Homes on Prescription	Policy guidance and development control	Other		When funding exhausted	MDC Private Sector Housing		No			Potentially locally-significant impact – may prevent residents resorting to cheaper, possibly non-authorised, fuels	Number of homes improved	143 properties improved since grant introduced in 2016/17, including 33 in 2022/23 financial year	Health professionals encouraged to refer patients if they have concerns about heating and insulation of their homes
11	Sustainable procurement	Policy guidance and development control	Sustainable procurement guidance		Ongoing compliance with strategy	Nottingham County Council Procurement Unit		No		Sustainable procurement considered as part of new contract with Notts. County Council beginning in June 2023	Potentially significant impact of less-frequent deliveries in town centre, as most delivery vehicles are diesel	Impact on general air quality	Minimise environmental impact of goods, services and works procured	
12	Delivery management	Freight and delivery management	Quiet & out-of-hours delivery		Ongoing	MDC Planning		No			Local impact potentially quite significant for large developments	Reduction in complaints from nearby residents	Discussions with businesses to reduce frequency of deliveries. Construction Environmental Management Plan conditions put on major developments as standard to restrict deliveries and lorry routing during building process; Air Quality Impact Assessments often required	Considered during planning process; conditions attached where appropriate
13	“Part B” process controls	Environmental permits	Measures to reduce pollution through IPPC permits going beyond BAT		Ongoing	MDC Environmental Health		No			Potentially large local impact from releases – controls through new technology, usage reduction and BAT	Reduction in solvent use	Permitted processes reporting on progress every two years	Discussed with businesses during inspection; also considered in business’s Six-Year Review

14	Renewable energy statements	Policy guidance and development control	Other policy	2022	Ongoing	MDC Planning		No				Renewable Energy Statement required for major planning applications (Planning Policy P5 Climate Change)	
15	Environmental road improvements	Traffic management	Other	2023	Ongoing	MDC, Notts County Council, Severn-Trent Water	Severn-Trent Water	No		Ongoing		Small local impact from speed reduction	Building of SUDs commenced 2023, resulting in narrowing of certain sections of road – speed reduction	
16	Warmer Homes	Policy guidance and development control	Other		ongoing	MDC Housing	Internal	No		EWI, loft, roofs, windows, doors, heating upgrades as an ongoing 5 year programme	Potentially locally-significant impact – may prevent residents resorting to cheaper, possibly non-authorised, fuels	Number of homes improved	600+ properties improved to date	
Objective 4: Engagement and Communication for Behaviour Change														
17	Working from home	Promoting travel alternatives	Encourage/ facilitate home-working	2014	Ongoing	MDC Human Resources	Internal	No			Impact likely to be most noticeable at peak times – people working from home likely to plan journeys to avoid those times	Number of people taking up option	Home working policy implemented 2014. Hybrid Policy has been drafted consultation held with the Trade Unions in March 25. Estimated to go live June 25.	MDC now operates hybrid working system –
18	Speed limit reductions	Traffic management	Reduction of speed limits, 20mph zones	Included in Transport Plan 2011-2026	Ongoing	Notts County Council Highways	NCC	No			Potentially significant impact during peak times	Reduction in traffic emissions; accident reduction	Some 40mph roads reduced to 30; 20mph zones around most schools in district, although those on main roads operate only during school start and finish times on Mondays to Fridays during school terms	Primarily for road safety, but should also improve air quality
19	Cycle-to-work scheme	Promoting travel alternatives	Promotion of cycling	2016	Ongoing; relaunched 2022	MDC	Internal	No		Ongoing	Considered likely to have only small impact on AQ – will mostly affect health	Number of people cycling to work	Cycle-to-work scheme already implemented at MDC. Scheme relaunched and promoted internally. Cycle to work scheme still available to all employees	Low take-up. Awareness campaign commenced March 2025 with MDC to MDC staff to promote cycling to work and linking with cycling purchasing scheme, further work taking place to promote cycle routes in the district
20	Cycle network	Promoting travel alternatives	Promotion of cycling	2017/18	Ongoing	MDC, Notts County Council	D2N2 LEP LGF	No			Considered likely to have only small impact on AQ – will mostly affect health	Increased use of cycle network	Potential cycle routes identified in 2017; one implemented in 2023	Low take-up. Awareness campaign commenced March 2025 with MDC to MDC staff to promote cycling to work and linking with cycling purchasing scheme, further work taking place to promote cycle routes in the district
21	Promotion of walking	Promoting travel alternatives	Promotion of walking	2016	Ongoing	MDC Planning Policy	Internal	No			Considered likely to have only small impact on AQ – will mostly affect health	Increased number of people walking; improvements in health	Early-stage engagement with Nottinghamshire County Council on potential routes and strategic approach. County Council are progressing LCWIP in order to encourage greater use of walking and cycling, reducing pollution from vehicles	
22	Public information	Public information	Via radio, press, and internet		Ongoing	MDC/Notts City and Notts County Public Relations and Communications Team	Internal	No				Increased number of hits, comments and likes recorded from website, Facebook pages, etc.	Positive publicity via social media, MDC / NCC website, press releases, etc., and by taking part in national awareness campaigns such as Clean Air Day, anti-idling campaigns and Ready-to-Burn Scheme	joint approach, shared resources, consistent messages from District and County Councils.

23	Improving bus services	Public transport	Bus Service Improvement Plan	2022	2026	DfT	No	Funded	> £10m	Implementation	Reduced emissions of N02 and PM due to increased passenger transport patronage	Increased passenger transport patronage	Delivery of the two Bus Service Improvement Plans within Nottinghamshire has progressed well, with Nottinghamshire BSIP spending £6.3 revenue and £2.9m capital to date on various measures including enhanced bus services, ticketing improvements and infrastructure improvements. 2025/26 will focus on maintaining current service levels and delivery of major bus priority schemes.	Bus service provision is provided on a commercial basis with support from NCC where justified; and reviewed periodically. Estimated cost of measure £25m
24	Cycle training	Promoting Travel Alternatives	Promotion of cycling	Circa 1970s	Ongoing	NCC	DfT funding / PH funding	Funded	Various	Implementation	Reduced emissions of N02 and PM	Increased cycling trips	Across the county, 16,735 people recieved cycle training during 2024/25 and in Mansfield specifically, training was delivered to 1,514 people. Implementation is ongoing.	The Bikeability Grant was doubled last year and all providers are still scaling up their delivery over the coming years.
25	Public information	Public information	Via leaflets, radio, and internet		Ongoing	MDC Environmental Health	Internal	No			Local impact potentially quite significant – necessary to remind residents at intervals of requirements of Smoke Control Orders	Increased number of requests per annum for leaflets and interviews; increased number of hits on EH section of website	Various leaflets always available on request; interviews as requested by local radio station; information on MDC website	Some requests received for advice on wood-burning stoves, but clearly many more stoves being put in without MDC advice

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

As detailed in Policy Guidance LAQM.PG22 (Chapter 8) and the Air Quality Strategy[4], local authorities are expected to work towards reducing emissions and/or concentrations of fine particulate matter ($PM_{2.5}$). There is clear evidence that $PM_{2.5}$ (particulate matter smaller 2.5 micrometres) has a significant impact on human health, including premature mortality, allergic reactions, and cardiovascular diseases.

The Public Health Outcomes Framework indicator D01, "Fraction of mortality attributable to particulate air pollution", measures the proportion of deaths influenced by air pollution. The most recent data from 2022 shows that air pollution contributed to 5.2% of deaths nationally. There are no specific figures available for Mansfield or the East Midlands as a whole. However, estimates indicate that 5.6% of deaths in Nottinghamshire are attributable to air pollution, suggesting that the impact in Nottinghamshire is above the national average. This data was obtained from the Office for Health Improvement and Disparities website on 02/04/25. For more information and data on mortality attributable to air pollution, visit the OHID website: https://fingertips.phe.org.uk/search/mortality%20air%20pollution.

Automatic monitoring for $PM_{2.5}$ and PM_{10} did occur within the district during 2024, however monitoring started in October, providing only 2 months data. Therefore, this report will discuss $PM_{2.5}$ over 2024 using modelled background concentrations from the Defra website.

The Defra website was checked on 18th March 2025, it modelled the $PM_{2.5}$ background level over 2024 for the Mansfield area at 6.67 μgm^3. This is a decrease from the 2023 modelled background level in Mansfield of 7.63μgm^3.

Throughout 2024 the annual mean concentration at Nottingham Kenmore Gardens was 10.65μgm^3. This is a similar result to the 2023 figure of 10.47μgm^3.

In October 2024 the Mansfield Ladybrook AURN site began monitoring air quality, meaning that the 2026 report will include monitored $PM_{2.5}$ and PM_{10} levels.

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

In September 2021, the World Health Organisation published its updated Air Quality Guidelines, and its guideline value[6] for $PM_{2.5}$ is now 5µgm^3; no air quality objective has been set to date (https://iris.who.int/bitstream/handle/10665/345329/9789240034228-eng.pdf). The Environmental Improvement Plan 2023 for England set interim targets that by January 2028 an annual average of 12µg/m^3 for $PM_{2.5}$ is not exceeded at any monitoring station and that population exposure to $PM_{2.5}$ is at least 22% less than in 2018.

The European Union legal annual mean is 25µg/m^3, which has been transposed into UK law, although the Mayor of London said in the Greater London Authority's 2019 report, "$PM_{2.5}$ in London: roadmap to meeting World Health Organisation guidelines by 2030" that he did not think this limit "goes far enough for the protection of human health". Several countries with cities of a size comparable to London have set out to meet the previous WHO guideline of 10µgm^3, rather than the EU legal annual mean.

Mansfield town centre $PM_{2.5}$ levels will be unlikely to be as high as Nottingham city centre. It is assumed that the $PM_{2.5}$ levels will be closer to the modelled figure of 6.67µgm^3, it can therefore be argued that there is an unlikely to be a major problem with $PM_{2.5}$ in the district. Mansfield modelled levels are below the European Union legal annual mean and the WHO guideline value.

Mansfield District Council does not currently have any measures in place to deal specifically with $PM_{2.5}$. Previous data from 2016, and the modelled figures indicate that there is not a high level of $PM_{2.5}$ in the district. Additionally, all action taken to reduce PM_{10} will be having a knock-on effect of reducing $PM_{2.5}$.

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

This section sets out the monitoring undertaken within 2024 by Mansfield District Council and how it compares with the relevant air quality objectives. In addition, monitoring results are presented for a five-year period between 2020 and 2024 to allow monitoring trends to be identified and discussed.

3.1 Summary of Monitoring Undertaken

3.1.1 Automatic Monitoring Sites

Mansfield District Council did not conduct any automatic monitoring in 2024. The monitoring unit was decommissioned the previous year due to poor data capture and insignificant NO_2 levels, making it unnecessary. Its removal also resulted in cost savings for the council.

3.1.2 Non-Automatic Monitoring Sites

Mansfield District Council undertook non- automatic (i.e. passive) monitoring of NO_2 at 16 sites during 2024. Table A. in Appendix A presents the details of the non-automatic sites.

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

3.2 Individual Pollutants

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

3.2.1 Nitrogen Dioxide (NO_2)

Table A. and Table A.2 in Appendix A details 2024 data and compares the ratified and adjusted monitored NO_2 annual mean concentrations for the past five years with the air quality objective of 40µg/m^3. Note that the concentration data presented represents the concentration at the location of the monitoring site, following the application of bias adjustment and annualisation, as required (i.e. the values are exclusive of any consideration to fall-off with distance adjustment).

For diffusion tubes, the full 2024 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. No distance correction was required at any site in 2024.

Table A.2 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.

No exceedances of the annual mean or hourly mean Air Quality Objectives were recorded in 2024. Indicating that no NO_2 issues are present within Mansfield Council's district.

Appendix A: Monitoring Results

Table A.1 – Details of Non-Automatic Monitoring Sites

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube Co-located with a Continuous Analyser?	Tube Height (m)
DL	Debdale Lane	Roadside	452515	362508	NO2	NO	2.0	3.0	No	2.0
FT1	Clipstone Road East	Roadside	457199	362697	NO2	NO	2.0	5.0	No	2.0
LLS	Leeming Lane South	Roadside	454421	362860	NO2	NO	2.5	3.0	No	2.5
NR	Nottingham Road	Roadside	453842	360174	NO2	NO	2.5	2.0	No	2.5
OML	Old Mill Lane	Roadside	455834	362101	NO2	NO	2.0	3.0	No	2.0
SS	Sherwood Street	Roadside	456928	367423	NO2	NO	2.5	4.0	No	2.5
SRE	Southwell Road East	Roadside	458513	358623	NO2	NO	2.0	3.0	No	2.0
WT	Warsop Town Hall	Roadside	456663	368019	NO2	NO	2.5	4.0	No	2.0
PR	Priory Road	Roadside	453709	363105	NO2	NO	2.0	1.0	No	2.0

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)
AR	Abbott Road	Roadside	451892	362443	NO2	NO	2.0	0.5	No	2.0
CRN1	Chesterfield Road North	Roadside	450980	363716	NO2	NO	2.0	1.0	No	2.0
CRS	Chesterfield Road South	Roadside	453349	361915	NO2	NO	2.0	1.0	No	2.5
FT2	Clipstone Road West	Roadside	456251	362135	NO2	NO	2.0	2.0	No	2.0
HL	Hermitage Lane	Roadside	452429	360052	NO2	NO	2.0	2.0	No	2.0
RS	Rosemary Street	Roadside	453269	361308	NO2	NO	2.0	1.0	No	2.0
P1	Pleasley Landmark	Roadside	450819	364042	NO2	NO	2.5	0.5	No	2.5

Notes:

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

(2) N/A if not applicable.

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

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2024 (%) (2)	2020	2021	2022	2023	2024
DL	452515	362508	Roadside	-	100.0	21.5	28.7	27.7	26.2	25.5
FT1	457199	362697	Roadside	-	75.0	15.3	20.1	19.2	20.0	17.1
LLS	454421	362860	Roadside	-	100.0	15.4	20.8	22.0	20.4	20.2
NR	453842	360174	Roadside	-	100.0	18.2	23.5	26.1	25.4	26.4
OML	455834	362101	Roadside	-	100.0	15.7	23.0	22.6	22.0	21.5
SS	456928	367423	Roadside	-	58.5	11.7	16.0	16.5	15.1	14.0
SRE	458513	358623	Roadside	-	66.0	10.6	14.0	15.2	14.8	14.5
WT	456663	368019	Roadside	-	100.0	13.5	20.4	20.7	18.6	18.0
PR	453709	363105	Roadside	-	90.6	-	-	-	25.9	25.6
AR	451892	362443	Roadside	-	90.6	-	-	-	26.1	25.3

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 2024 (%) (2)	2020	2021	2022	2023	2024
CRN1	450980	363716	Roadside	-	84.9	-	-	-	17.9	17.7
CRS	453349	361915	Roadside	-	92.5	-	-	-	20.2	19.2
FT2	456251	362135	Roadside	-	90.6	-	-	-	20.7	21.1
HL	452429	360052	Roadside	-	100.0	-	-	-	19.4	18.4
RS	453269	361308	Roadside	-	92.5	-	-	-	21.0	20.0
P1	450817	364042	Roadside	-	67.9	-	-	-	-	30.3

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

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

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

Notes:

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

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

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

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

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

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

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

Figure A.1 – Trends in Annual Mean NO_2 Concentrations

Figure A1.1 NO_2 Bar chart of annual mean concentration (µg/m^3) at tube locations across the Mansfield District

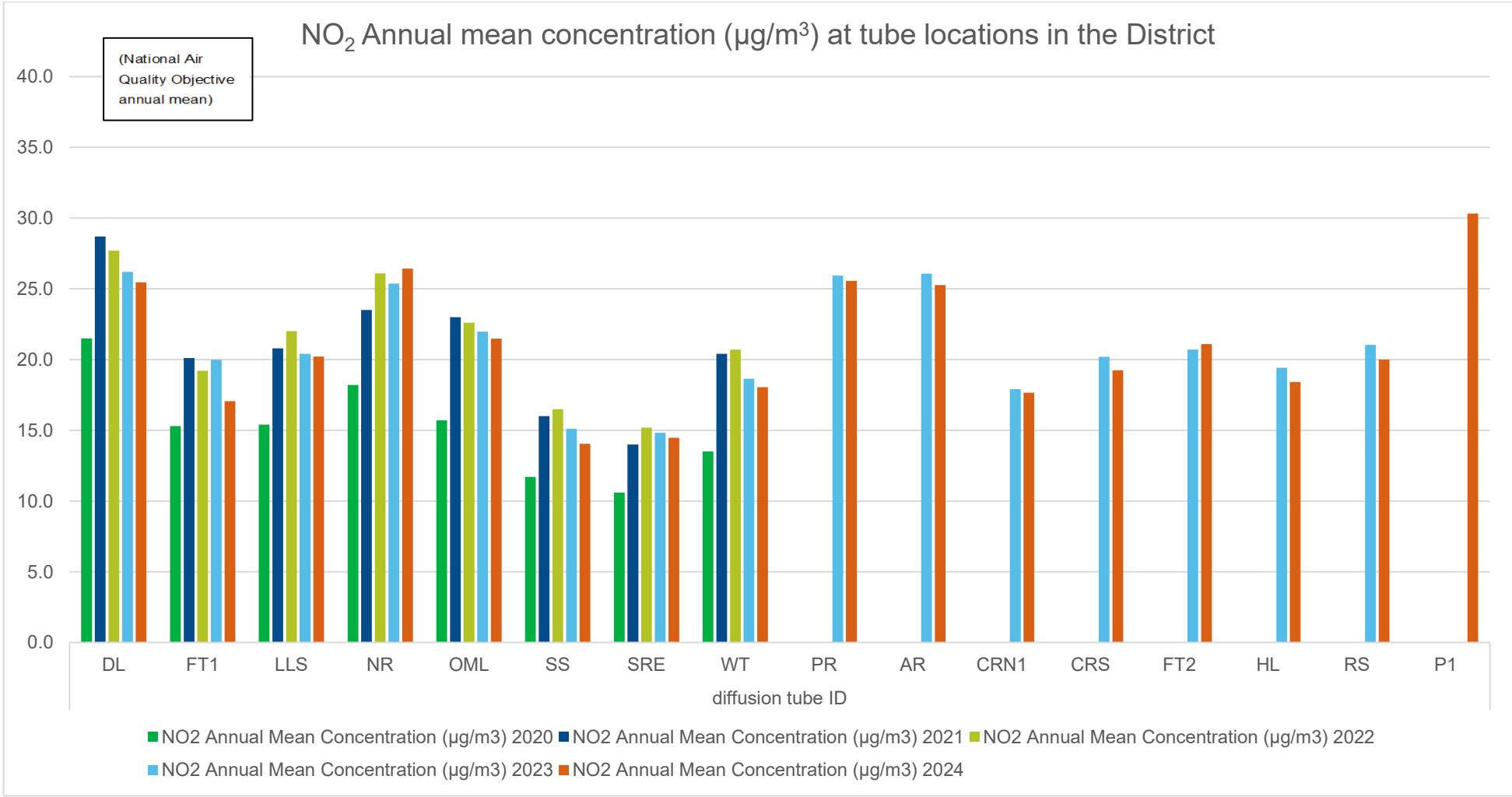


Figure A1.2 shows NO_2 annual mean at various sites between 2020 and 2024, showing no exceedances and a downward trend in sites monitored for more than one year.

Figure A1.2 NO_2 Bar chart of annual mean concentration (µg/m^3) at tube locations across the Mansfield District (COLOURBLIND VERSION)

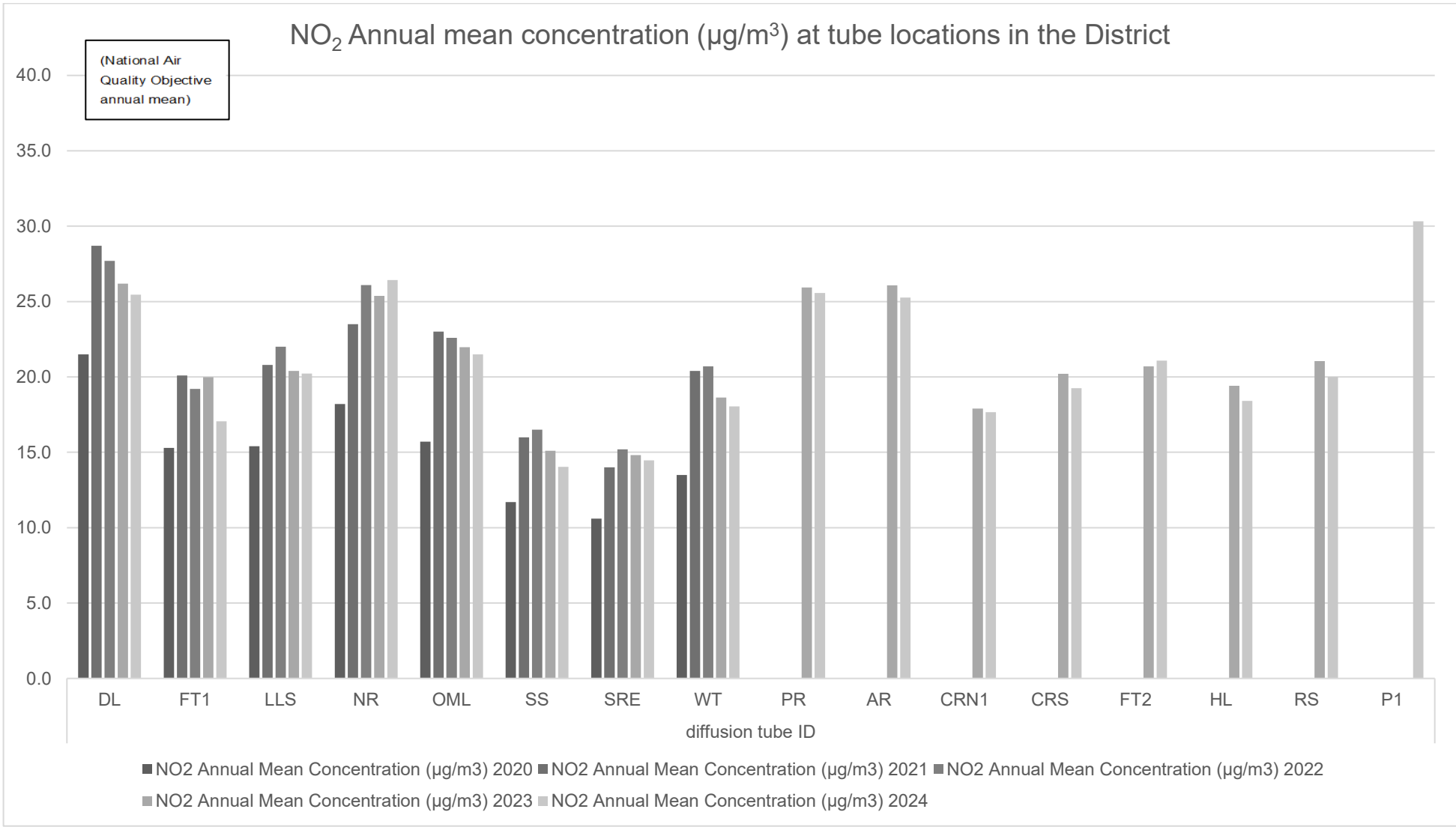


Figure A1.3 shows NO_2 annual mean at various sites between 2020 and 2024, showing no exceedances and a downward trend in sites monitored for more than one year.

Figure A1.3 NO_2 line chart of annual mean concentration (µg/m^3) at 8 tube locations with 5 year data across the Mansfield District

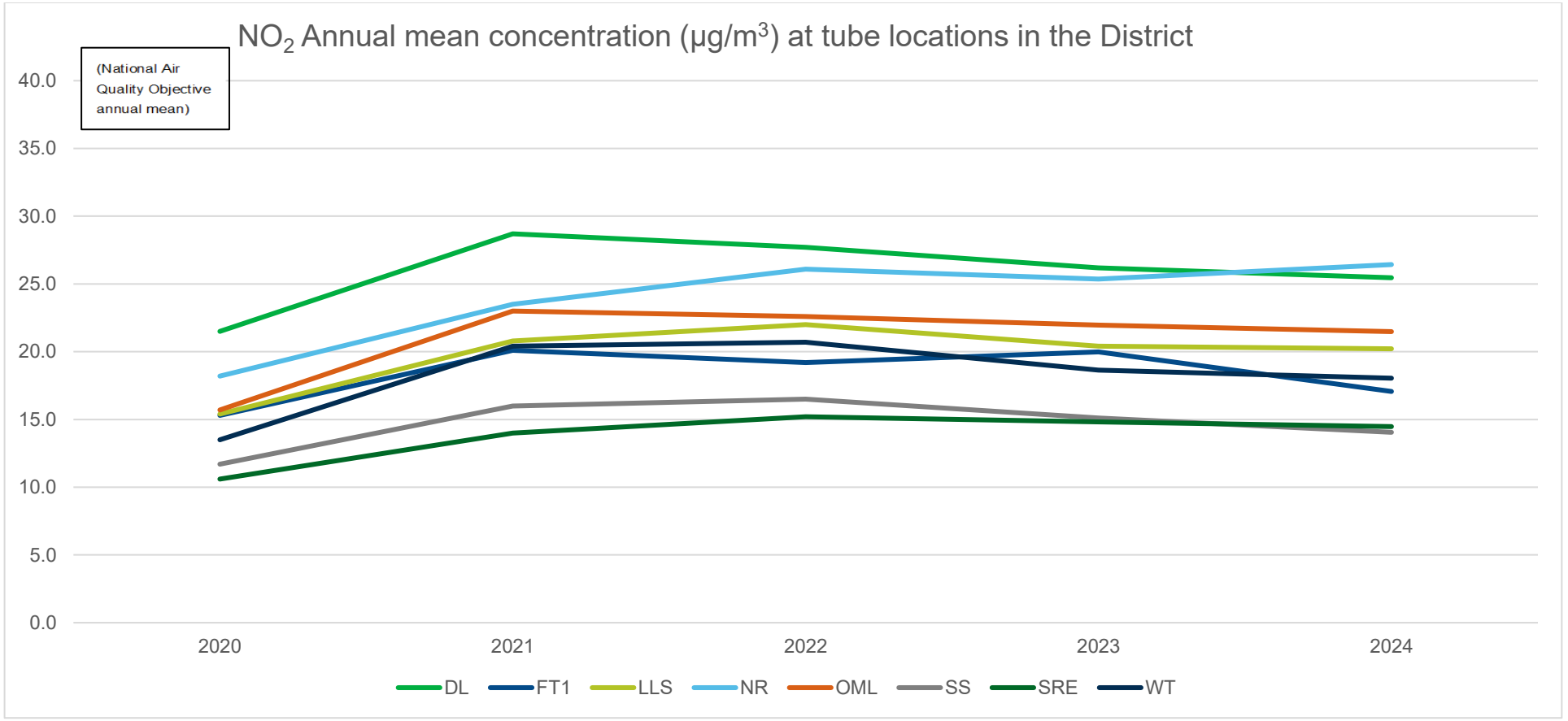
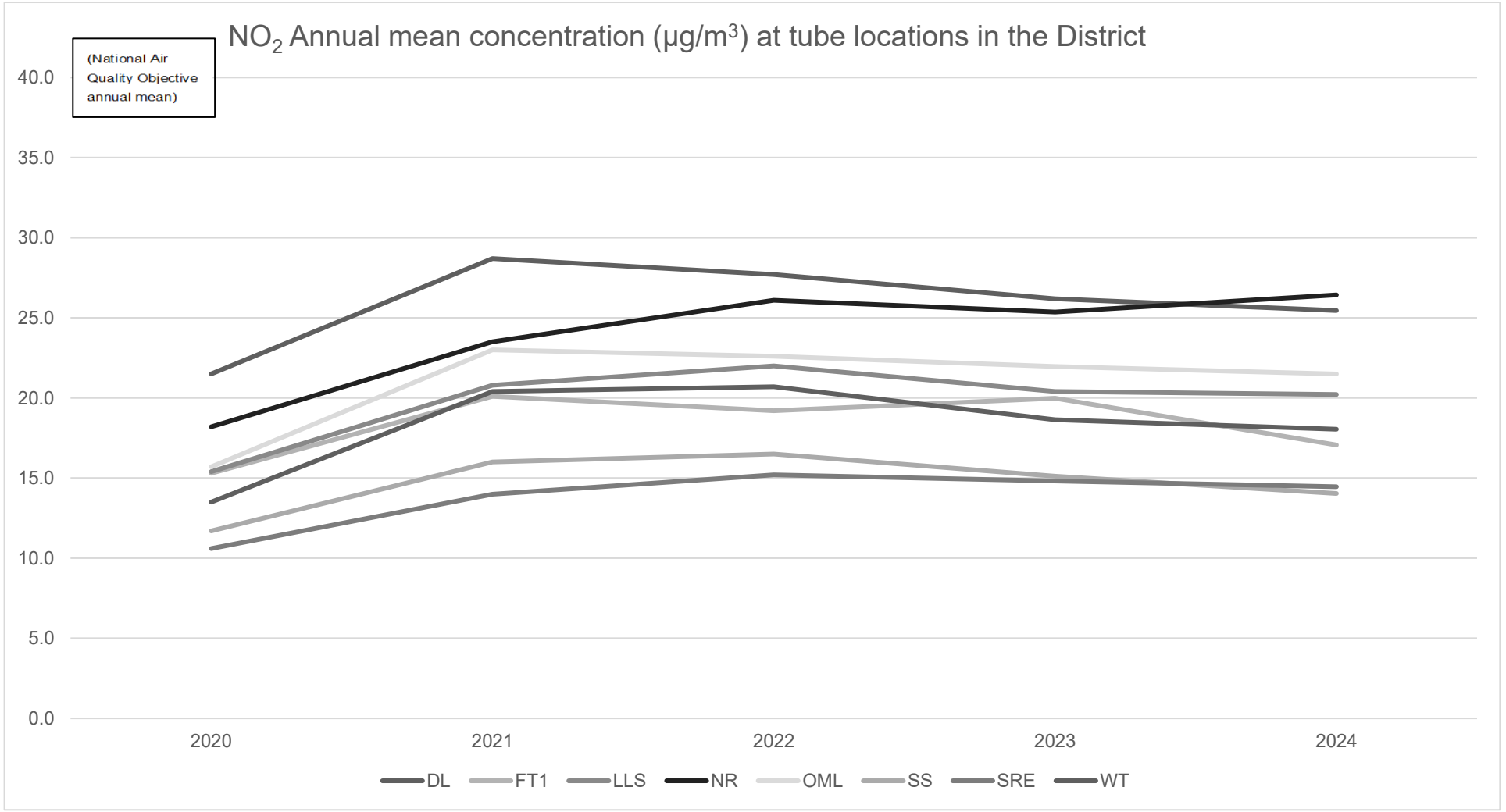


Figure A1.4 NO_2 line chart of annual mean concentration (µg/m^3) at 8 tube locations with 5 year data across the Mansfield District (COLOURBLIND VERSION)



Appendix B: Full Monthly Diffusion Tube Results for 2024

Table B.1 – NO_2 2024 Diffusion Tube Results ($\mu g/m^3$)

DT ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Annualised and Bias Adjusted <(x.x)>	Annual Mean: Distance Corrected to Nearest Exposure	Comment
DL	452515	362508	34.1	34.2	31.1	28.4	27.3	28.2	27.7	23.0	24.5	33.0	38.8	33.5	30.3	25.5	-	
FT1	457199	362697	23.8	26.3	23.3	17.0	17.4	16.3	16.9	18.5				23.3	20.3	17.1	-	
DL	452515	362508	34.1	34.2	31.1	28.4	27.3	28.2	27.7	23.0	24.5	33.0	38.8	33.5	30.3	25.5	-	
FT1	457199	362697	23.8	26.3	23.3	17.0	17.4	16.3	16.9	18.5				23.3	20.3	17.1	-	
LLS	454421	362860	30.5	28.4	24.8	21.1	21.2	18.5	20.8	18.3	21.3	28.2	29.3	26.5	24.1	20.2	-	
NR	453842	360174	36.0	31.7	29.8	30.2	32.0	26.6	29.3	25.6	34.6	32.6	36.9	32.5	31.5	26.4	-	
OML	455834	362101	30.5	24.9	26.3	25.1	24.7	21.3	22.3	18.3	24.3	29.1	32.8	27.4	25.6	21.5	-	
SS	456928	367423	23.0	19.9		14.0	12.9		13.3				25.6	18.3	18.1	14.0	-	
SRE	458513	358623	23.0	19.6	16.5	14.6	14.2	12.8	12.6					17.5	16.3	14.5	-	
WT	456663	368019	28.2	23.4	20.7	21.5	19.6	17.6	19.1	16.5	17.2	23.2	27.9	23.0	21.5	18.0	-	
PR	453709	363105	37.3	32.1	30.7	29.3		26.8	28.0	25.0	31.7	31.7	30.5	31.7	30.4	25.6	-	
AR	451892	362443	34.9	32.7	29.2	26.1	27.2	28.9	29.2	27.3	27.0	31.4	37.0		30.1	25.3	-	
CRN1	450980	363716	25.1	22.4			20.6	15.3	16.7	16.1	19.7	23.5	30.7	20.2	21.0	17.7	-	
CRS	453349	361915	29.7	28.9	25.1	19.5	17.4		18.5	18.5	14.6	26.8	28.7	24.6	22.9	19.2	-	
FT2	456251	362135	31.1	28.1	26.0	23.9	21.7	17.9	19.9		22.9	27.5	32.2	25.0	25.1	21.1	-	
HL	452429	360052	28.7	25.4	23.5	19.4	18.4	16.4	17.9	16.7	20.4	23.1	30.8	22.4	21.9	18.4	-	
RS	453269	361308	28.2	31.1	27.1	22.0	20.6	16.6	21.6	18.3	21.1	29.5		25.8	23.8	20.0	-	

DT ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Annualised and Bias Adjusted <(x.x)>	Annual Mean: Distance Corrected to Nearest Exposure	Comment
P1	450817	364042				34.0	33.5		29.2	28.6	33.9	35.4	43.1	37.3	34.4	30.3	-	

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

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

☐ **Local bias adjustment factor used.**

☒ **National bias adjustment factor used.**

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

☒ **Mansfield District Council confirms that all 2024 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

New or Changed Sources Identified Within Mansfield District Council During 2024

Additional Air Quality Works Undertaken by Mansfield District Council During 2024

QA/QC of Diffusion Tube Monitoring

All the Local Authorities in Nottinghamshire have a contract with Gradko International for the supply and analysis of NO_2 diffusion tubes, so that there is consistency throughout the county. Gradko has a very strict QA procedure which involves analysing, once a month, a certified solution supplied by AEA Technology. Gradko also takes part in the NO_2 Network Field Intercomparison Exercises carried out by AEA Technology, in which it is rated as 'good'.

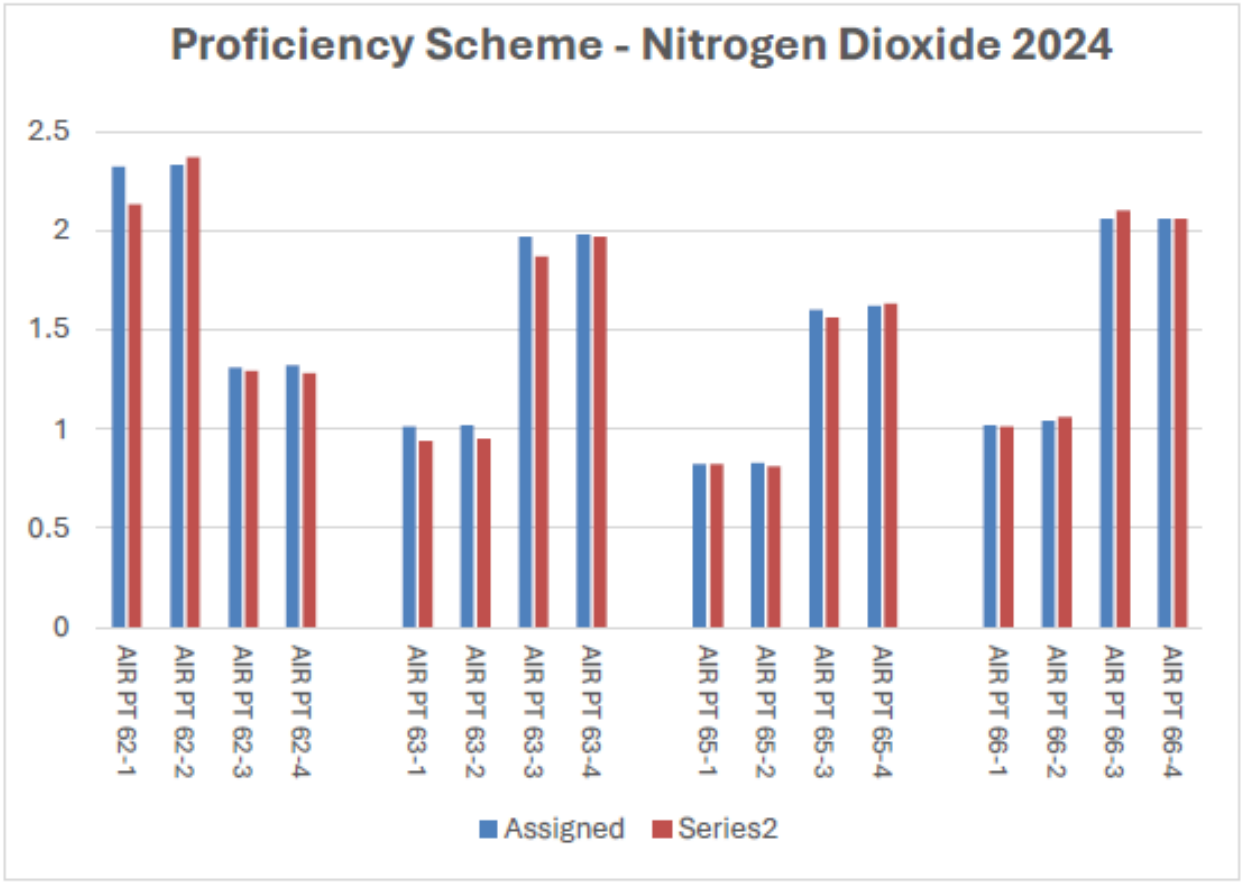
The diffusion tubes used in Nottinghamshire are prepared using 20% TEA in water. Mansfield's tubes are stored under refrigeration prior to use and are used within the specified expiry dates. The tube exposure periods in 2024 conformed to the Diffusion Tube Exposure Calendar.

Upon changing the tubes, the date, site and exposure times are recorded, and the tubes are put into a sealed bag. They are forwarded to Gradko for analysis along with an unexposed tube from the same batch.

Gradko has confirmed that the laboratory complies with the procedures detailed in the Defra Harmonisation Practical Guidance.

Their proficiency scheme results for 2024 are as follows:

AIR PT Proficiency Scheme - Nitrogen Dioxide 2024					
Date	Round	Assigned value	Procedure GLM 7		
			Measured concentration	z-Score	% Bias
Feb-24	AIR PT 62-1	2.32	2.13	-0.94	-8.2%
Feb-24	AIR PT 62-2	2.33	2.37	0.22	1.7%
Feb-24	AIR PT 62-3	1.31	1.29	-0.2	-1.5%
Feb-24	AIR PT 62-4	1.32	1.28	-0.4	-3.0%
Jun-24	AIR PT 63-1	1.01	0.94	-0.92	-6.9%
Jun-24	AIR PT 63-2	1.02	0.95	-0.92	-6.9%
Jun-24	AIR PT 63-3	1.97	1.87	-0.68	-5.1%
Jun-24	AIR PT 63-4	1.98	1.97	-0.07	-0.5%
Aug-24	AIR PT 65-1	0.82	0.82	0.00	0.0%
Aug-24	AIR PT 65-2	0.83	0.81	-0.32	-2.4%
Aug-24	AIR PT 65-3	1.6	1.56	-0.33	-2.5%
Aug-24	AIR PT 65-4	1.62	1.63	0.12	0.6%
Oct-24	AIR PT 66-1	1.02	1.01	-0.13	-1.0%
Oct-24	AIR PT 66-2	1.04	1.06	0.26	1.9%
Oct-24	AIR PT 66-3	2.06	2.10	0.26	1.9%
Oct-24	AIR PT 66-4	2.06	2.06	0	0.0%


Proficiency Scheme - Nitrogen Dioxide 2024
2.5
2
1.5
1
0.5
0
AIR PT 62-1
AIR PT 62-2
AIR PT 62-3
AIR PT 62-4
AIR PT 63-1
AIR PT 63-2
AIR PT 63-3
AIR PT 63-4
AIR PT 65-1
AIR PT 65-2
AIR PT 65-3
AIR PT 65-4
AIR PT 66-1
AIR PT 66-2
AIR PT 66-3
AIR PT 66-4
Assigned
Series2

Diffusion Tube Annualisation

Table C.1 – Annualisation Summary (concentrations presented in µg/m^3)

Annualisation was required for three non-automatic monitoring sites, Sherwood Street (SS), Southwell Road East (SRE), and Pleasley Landmark (P1).

Site ID	Annualisation Factor Sheffield Barnsley Road	Annualisation Factor Chesterfield Loundsley Green	Annualisation Factor Derby St Alkmund's Way	Average Annualisation Factor	Raw Data Annual Mean	Annualised Annual Mean
SS	0.9388	0.9145	0.9122	0.9218	18.1	16.7
SRE	1.0139	1.0902	1.0596	1.0546	16.3	17.2
P1	1.0683	1.0486	1.0332	1.0500	34.4	36.1

Diffusion Tube Bias Adjustment Factors

The diffusion tube data presented within the 2025 ASR have been corrected for bias using an adjustment factor. Bias represents the overall tendency of the diffusion tubes to under or over-read relative to the reference chemiluminescence analyser. LAQM.TG22 provides guidance with regard to the application of a bias adjustment factor to correct diffusion tube monitoring. Triplicate co-location studies can be used to determine a local bias factor based on the comparison of diffusion tube results with data taken from NO_x/NO_2 continuous analysers. Alternatively, the national database of diffusion tube co-location surveys provides bias factors for the relevant laboratory and preparation method.

Mansfield District Council have applied a national bias adjustment factor of 0.84 to the 2024 monitoring data. A summary of bias adjustment factors used by Mansfield District Council over the past five years is presented in Table C.2.

Table C.2 – Bias Adjustment Factor

Monitoring Year	Local or National	If National, Version of National Spreadsheet	Adjustment Factor
2024	National	03/25	0.84
2023	National	03/24	0.81
2022	National	03/23	0.83
2021	National	03/22	0.84
2020	National	03/21	0.81

Table C.3 – Local Bias Adjustment Calculation

No local bias adjustment has been calculated due to no local automatic monitoring data.

NO_2 Fall-off with Distance from the Road

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

No diffusion tube monitoring locations within the district required distance correction in 2024.

Appendix D: Map(s) of Monitoring Locations and AQMAs

D1 - Abbott Road
D2 - Chesterfield Road North
D3 - Chesterfield Road South
D4 - Debdale Lane
D5 - Forest Town 1
D6 - Forest Town 2
D7 - Hermitage Lane
D8 - Leeming Lane South
D9 - Nottingham Road
D10 - Old Mill Lane
D11 - Priory Road
D12 - Rosemary Street
D13 - Sherwood Street
D14 - Southwell Road East
D15 - Warsop Town Hall
D16 - Pleasley Landmark
D17 - Map of all non-automatic monitoring sites across Council District
D18 - Map of NEW non-automatic monitoring site SRW (Southwell Road West) to be included in 2026 ASR

Figure D.1 – Map of non-automatic monitoring site AR (Abbott Road)

The blue marker shows the tube's location on Abbott Road (A6075) in Mansfield (451892 362443), approximately 2km NW of Mansfield town centre.

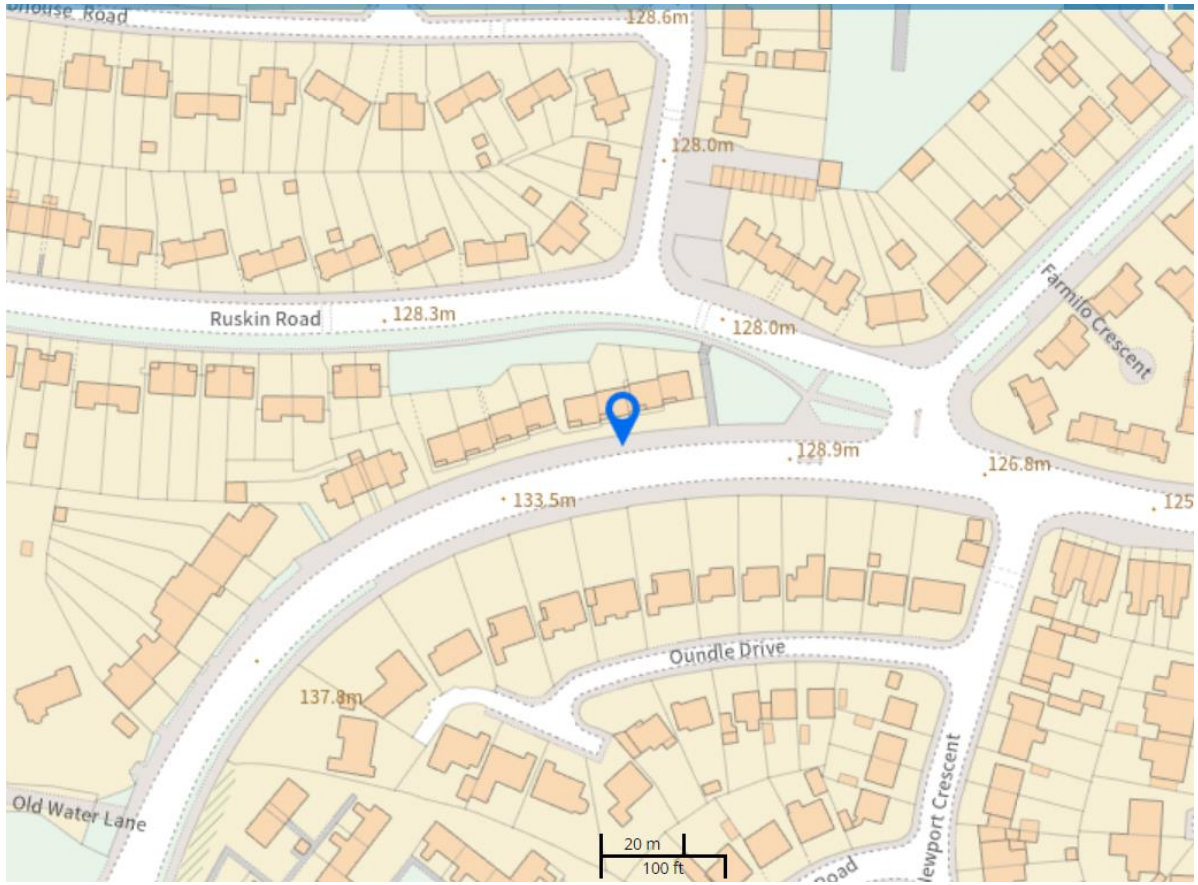


Figure D.2 – Map of non-automatic monitoring site CRN 1 (Chesterfield Road North)

The blue marker shows the tube location on Chesterfield Road North (A6191) in Pleasley Hill, Mansfield (450980 363716), approximately 3.5km NW of Mansfield town centre.

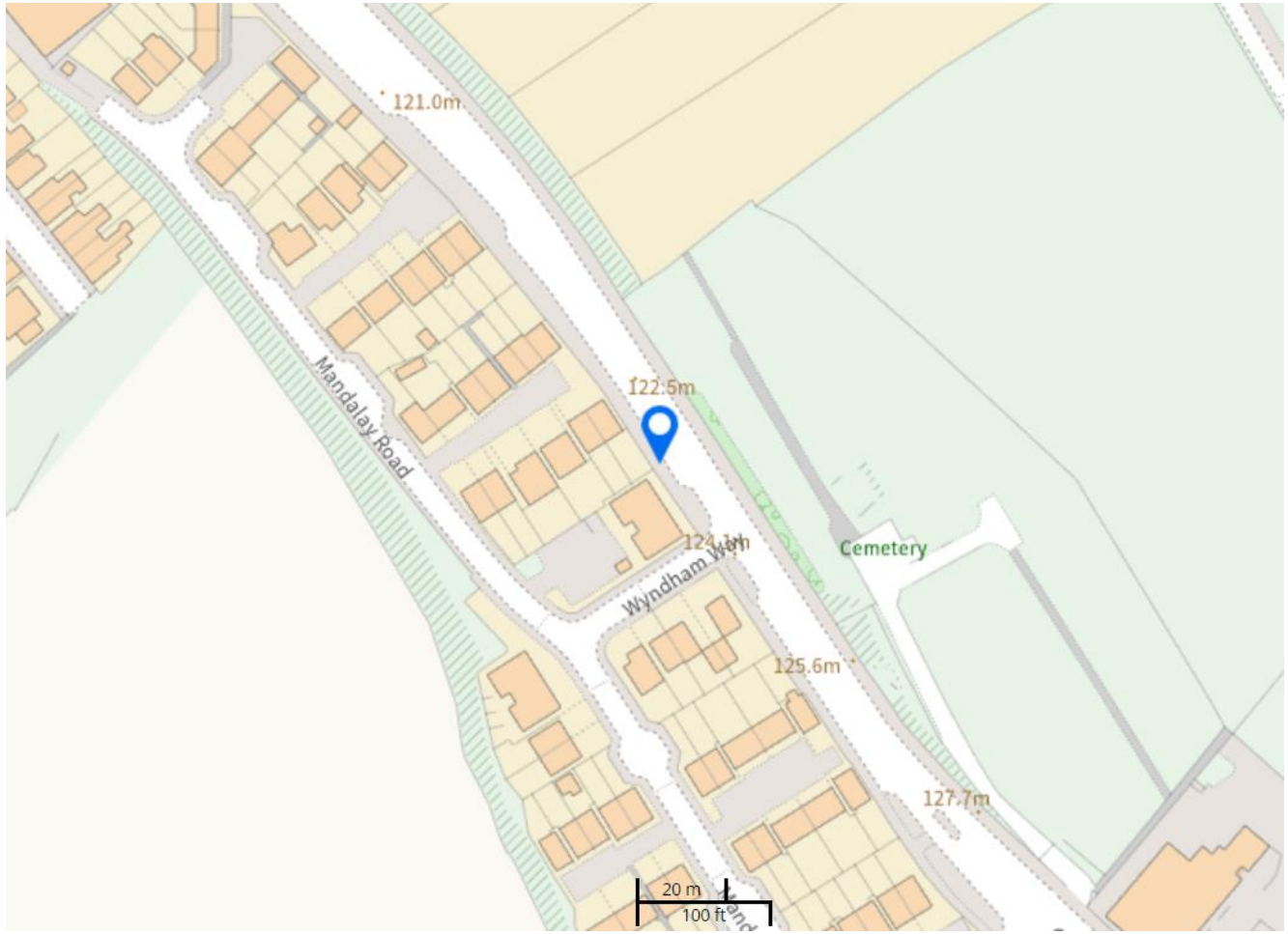


Figure D.3 – Map of non-automatic monitoring site CRS (Chesterfield Road South)

The blue marker shows the tube's location on Chesterfield Road South (A6191) in Mansfield (453349 361915), approximately 1km NW of Mansfield town centre.

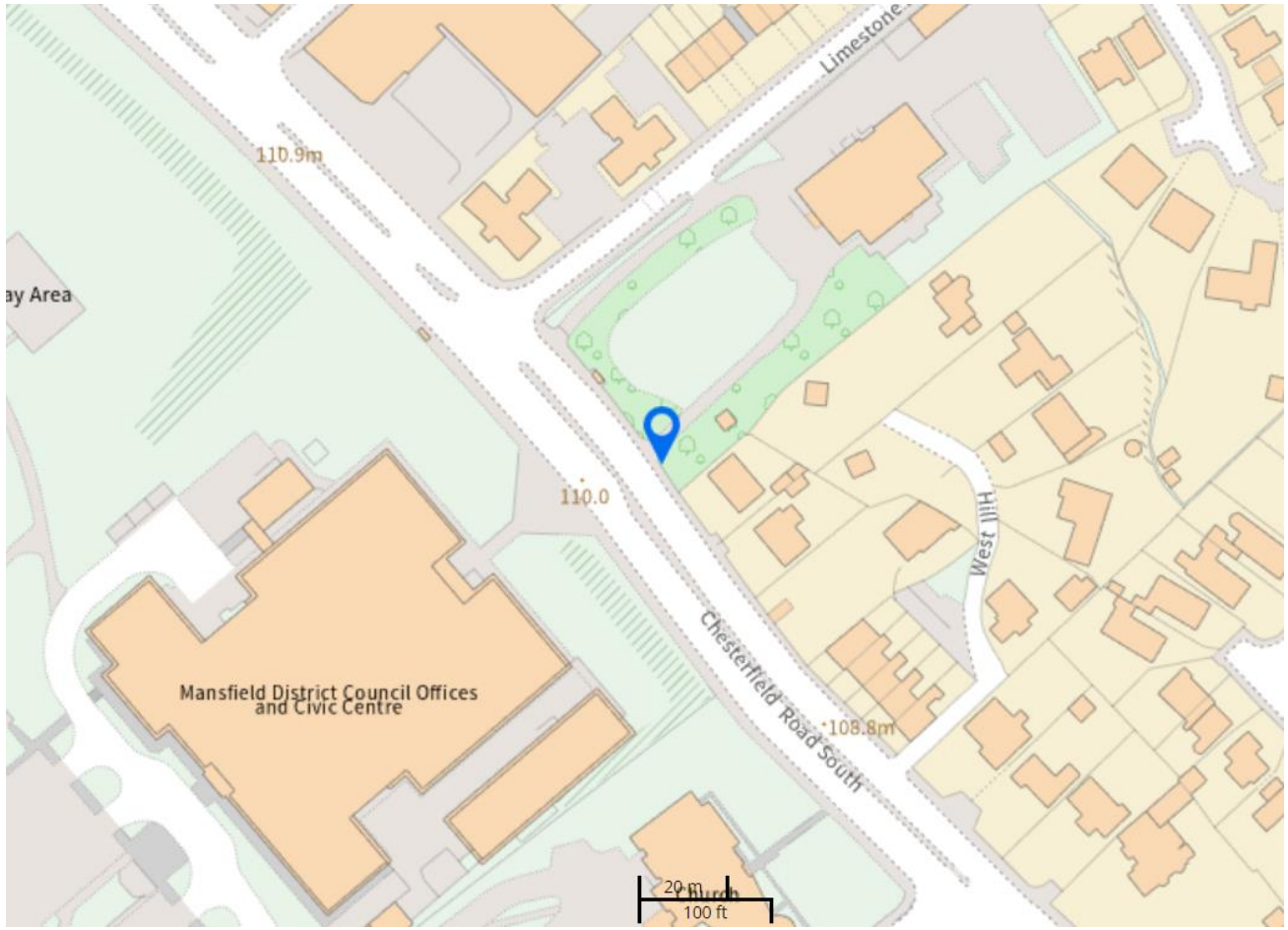


Figure D.4 – Map of non-automatic monitoring site DL (Debdale Lane)

The blue marker shows the tube's location near the junction of the A6191 (Chesterfield Road) and the A6075 (Debdale Lane) in Mansfield at 452515 362598, approximately 3km WNW of the town centre and 12.5km SE of M1 junction 29.

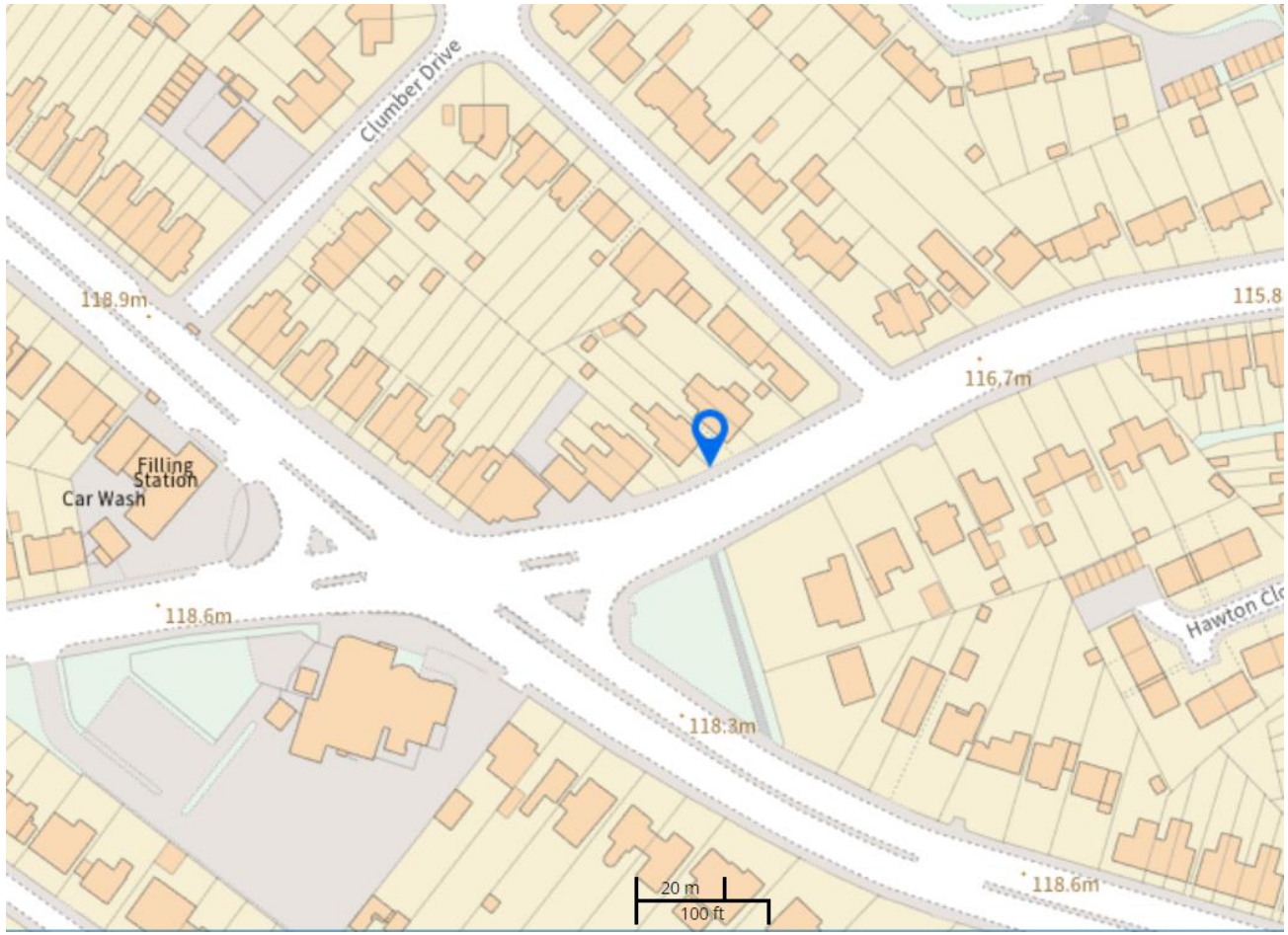


Figure D.5 – Map of non-automatic monitoring site FT 1 (Clipstone Road East)

The blue marker shows the tube's location on the B6030 (Clipstone Road East) in Forest Town at 457199 362697, approximately 4.5km NE of Mansfield town centre.

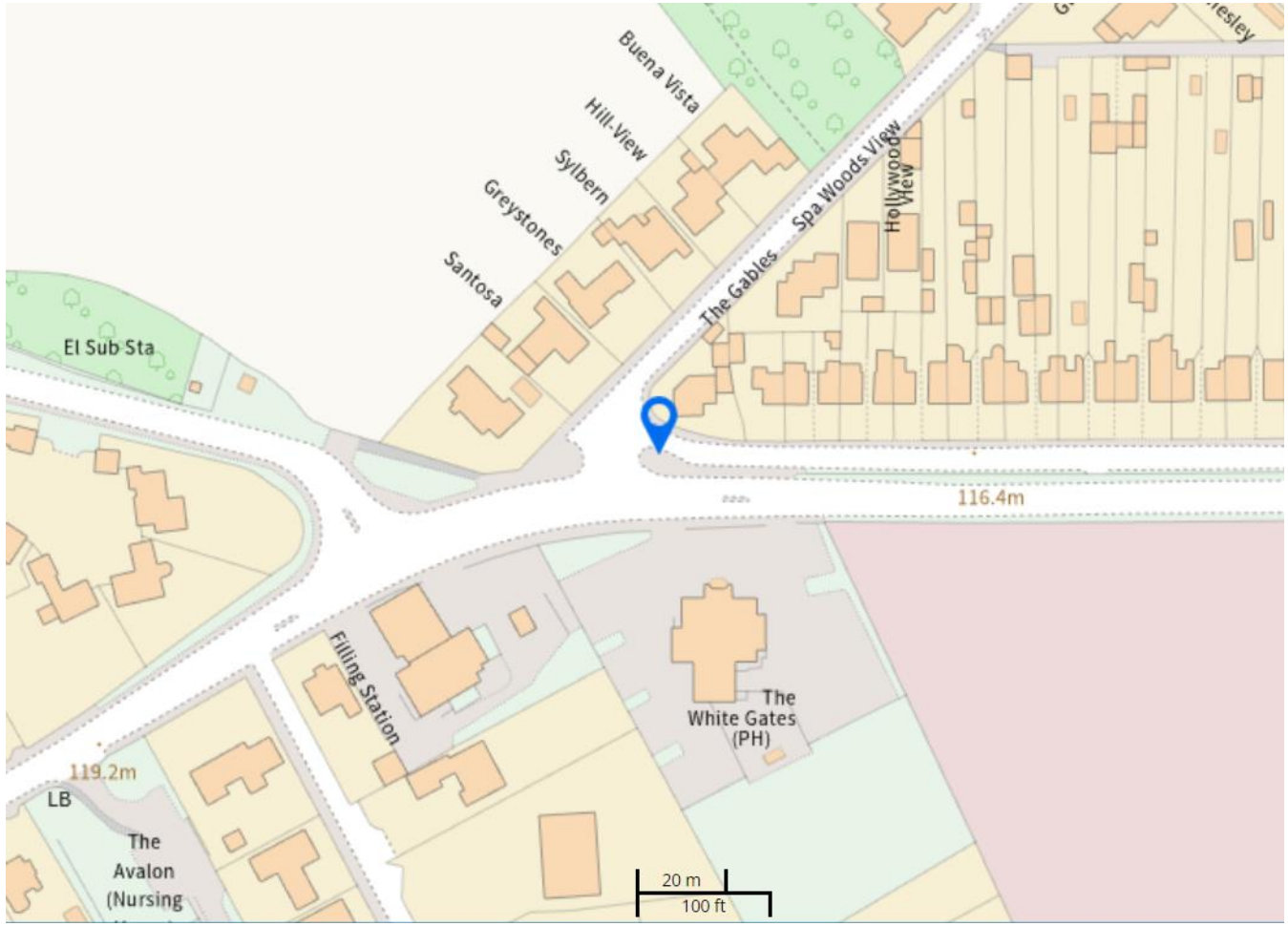


Figure D.6 – Map of non-automatic monitoring site FT 2 (Clipstone Road West)

The blue marker shows the tube's location on Clipstone Road West (B6030) in Forest Town, Mansfield (456251 362135), approximately 2.5km NE of Mansfield town centre.

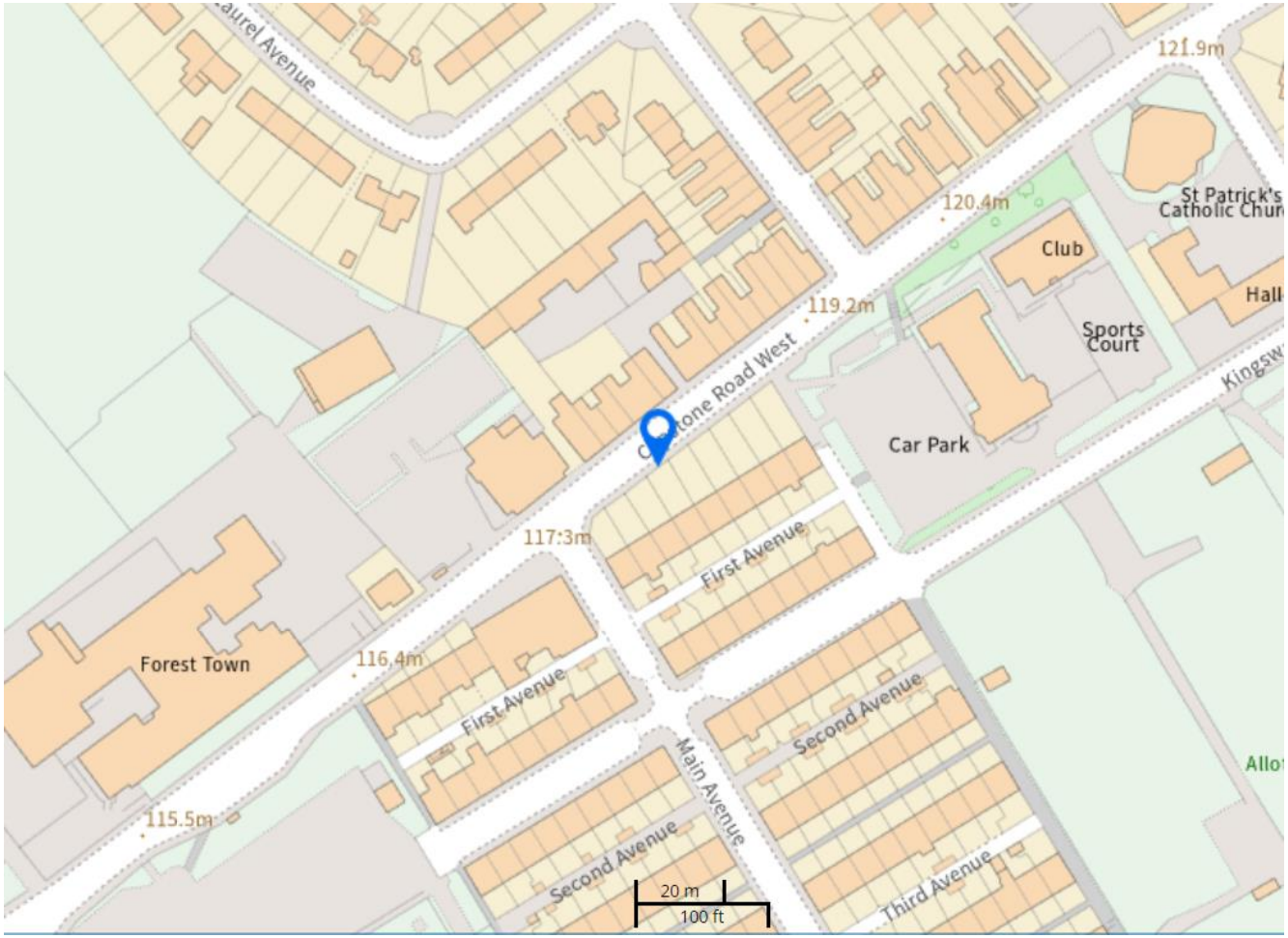


Figure D.7 – Map of non-automatic monitoring site HL (Hermitage Lane)

The blue marker shows the tube's location on Hermitage Lane, Mansfield (452429 360052), approximately 2.5km SW of Mansfield town centre.

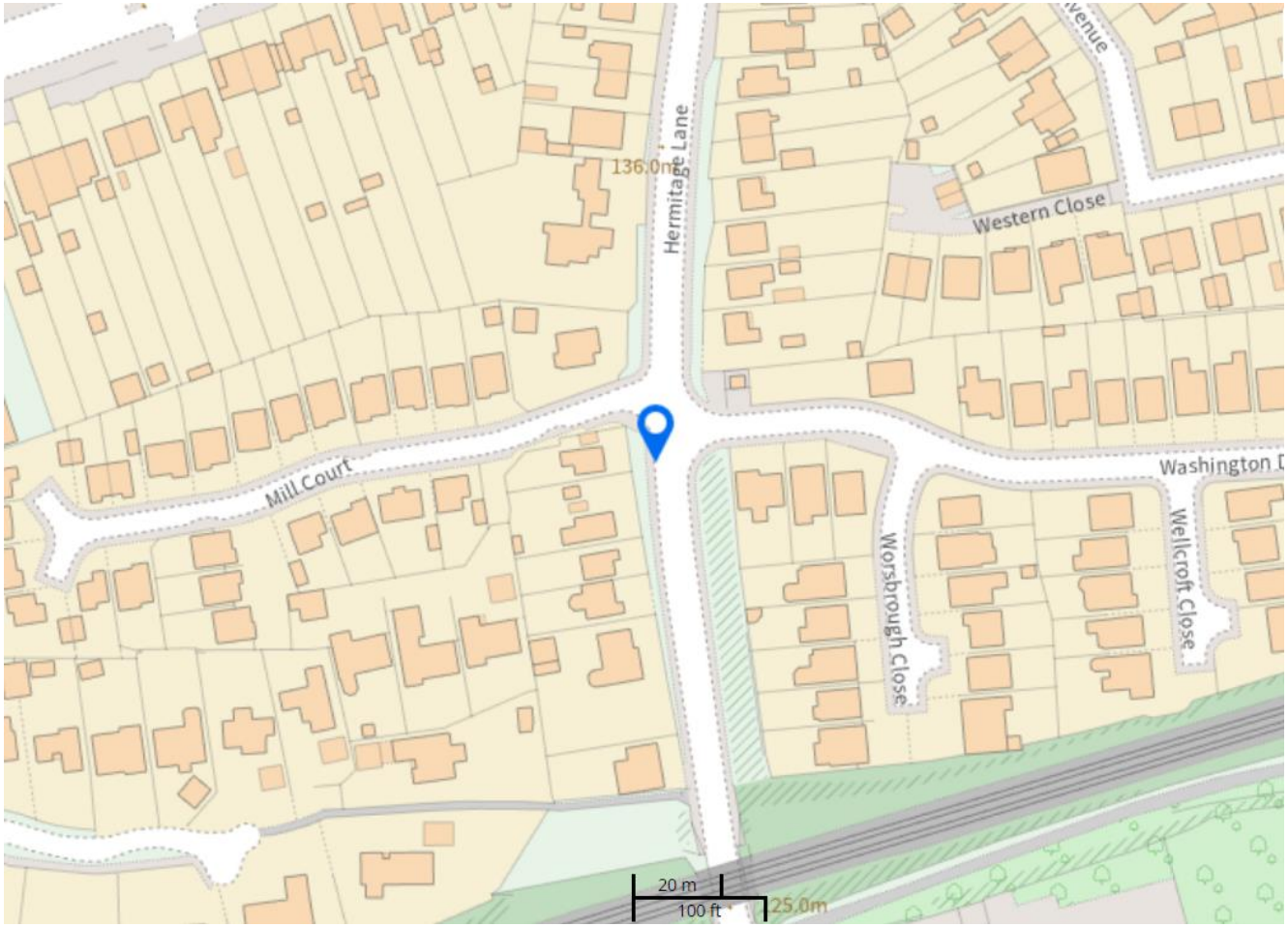


Figure D.8 – Map of non-automatic monitoring site LLS (Leeming Lane South)

The blue marker shows the tube's location on the A60 (Leeming Lane South) in Mansfield Woodhouse at 454421 362860, approximately 3km NNE of Mansfield town centre.

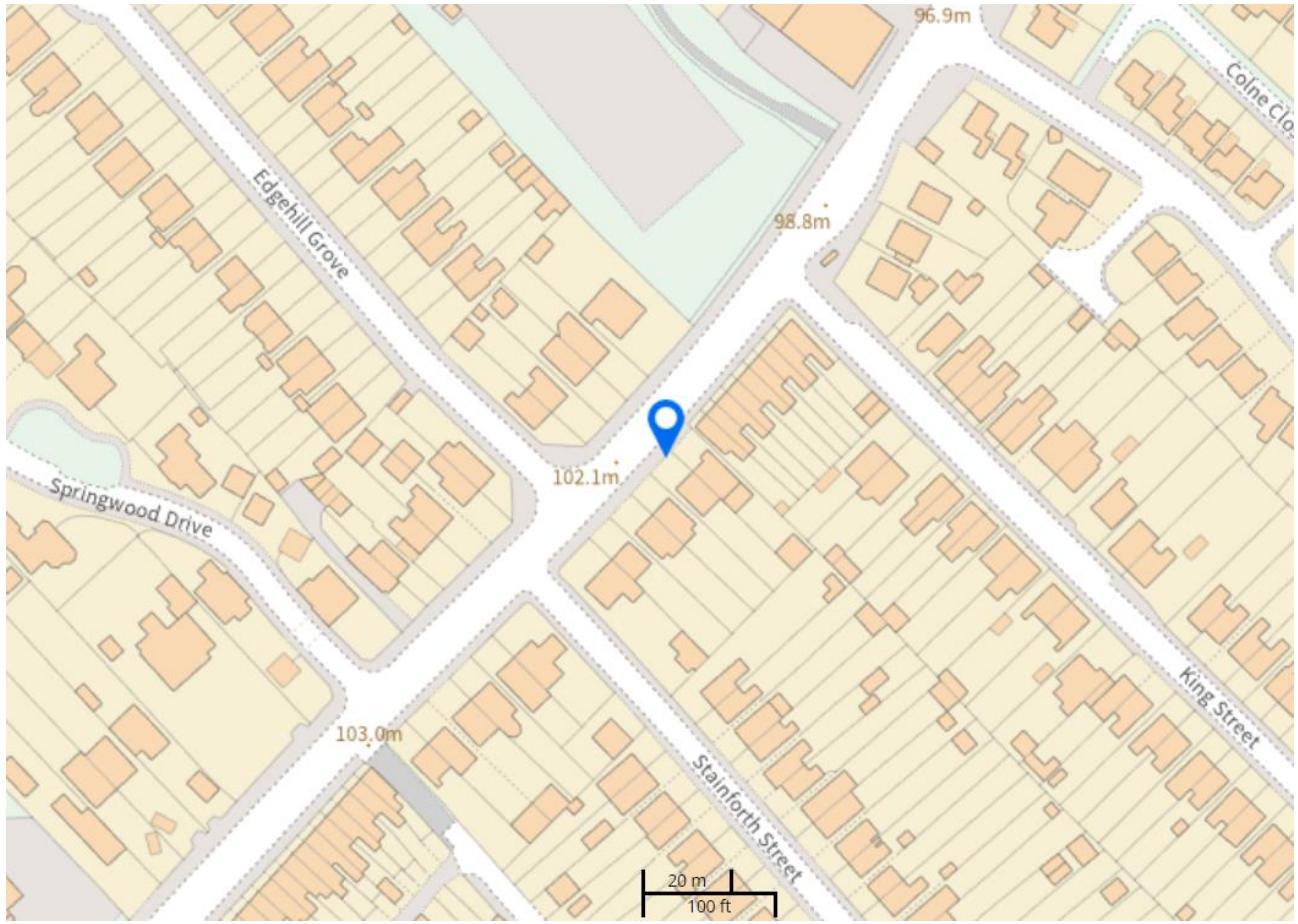


Figure D.9 – Map of non-automatic monitoring site NR (Nottingham Road)

The blue marker shows the tube's location on the A60 (Nottingham Road) in Mansfield at 453842 360174, approximately 1km N of Mansfield town centre and 6km S of the Mansfield outer ring road (the A617).

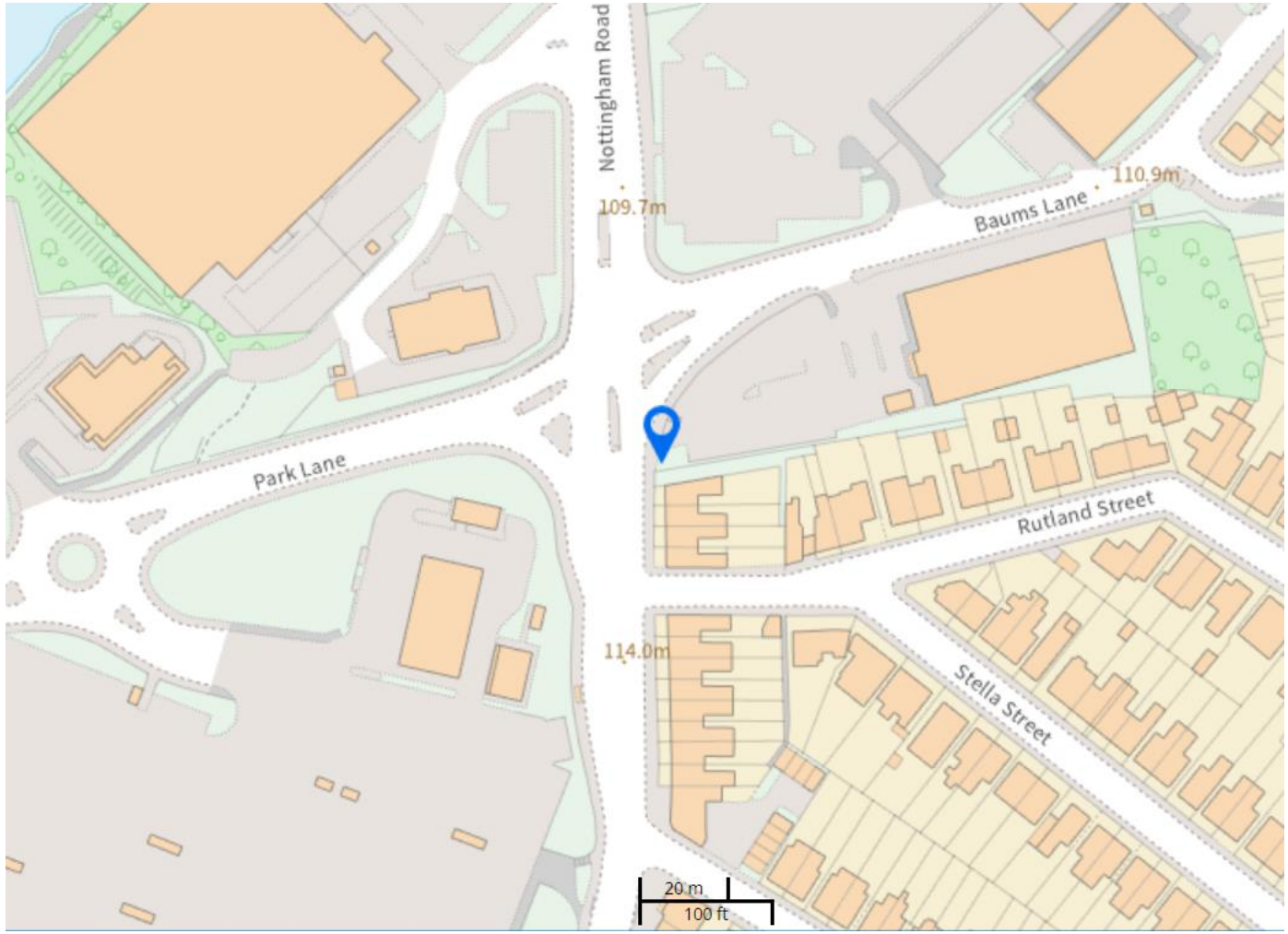


Figure D.10 – Map of non-automatic monitoring site OML (Old Mill Lane)

The blue marker shows the tube's location on the A6117 (Old Mill Lane) in Forest Town at 455834 362101, approximately 3km WSW of Mansfield town centre.

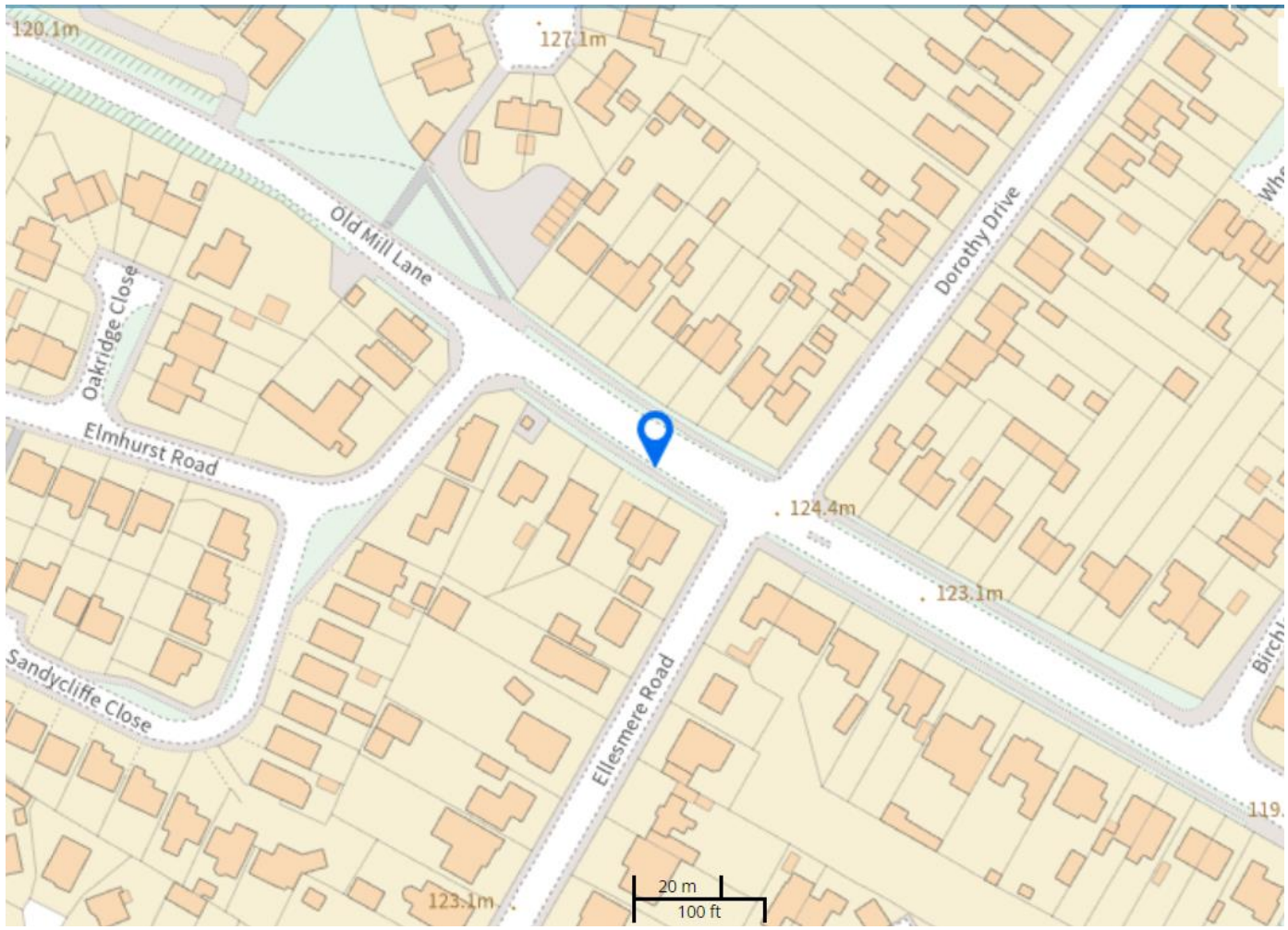


Figure D.11 – Map of non-automatic monitoring site PR (Priory Road)

The blue marker shows the tube's location on Priory Road (A6075) in Mansfield Woodhouse (453709 363105), approximately 2km N of Mansfield town centre.

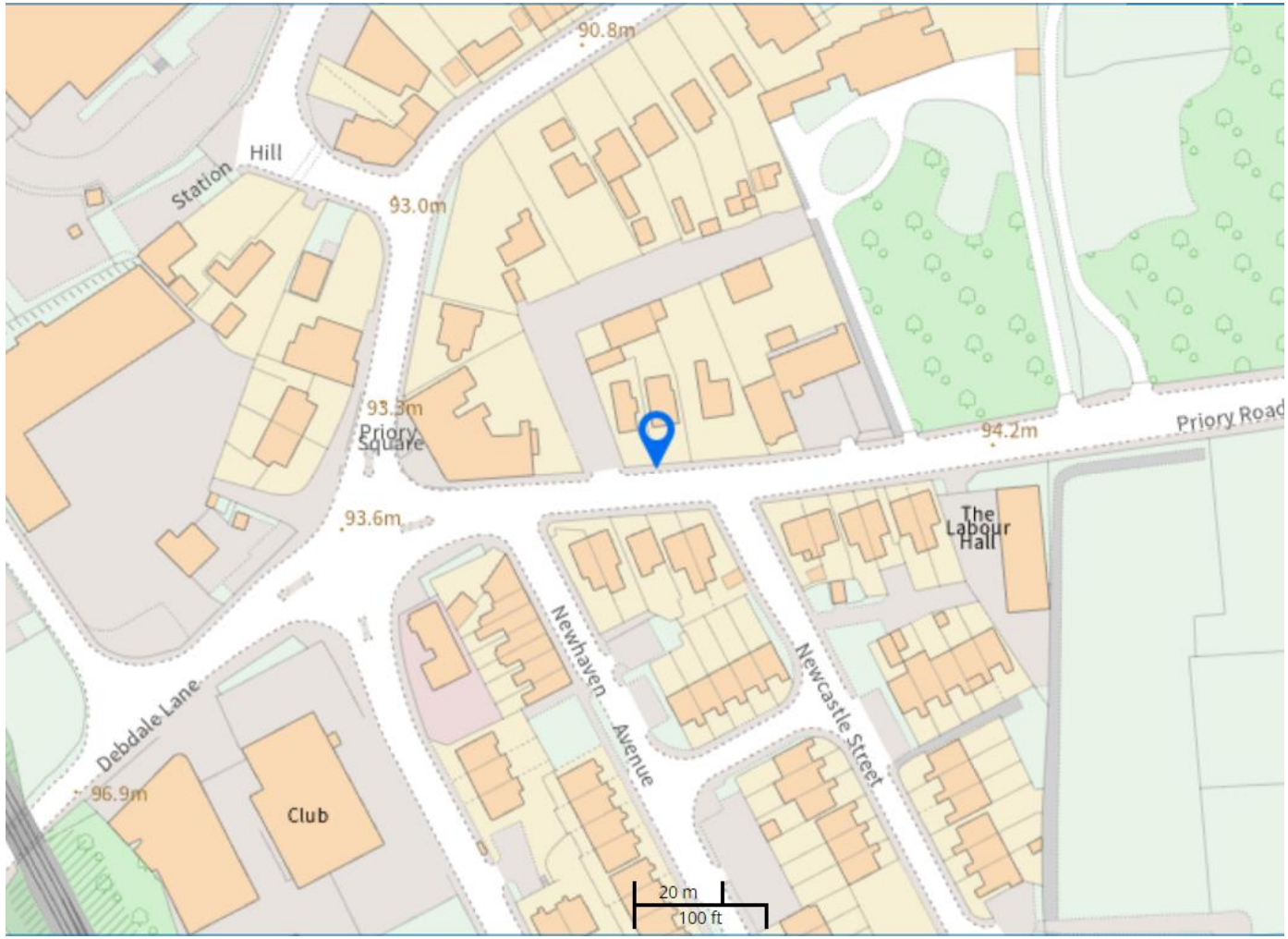


Figure D.12 – Map of non-automatic monitoring site RS (Rosemary Street)

The blue marker shows the tube's location on Rosemary Street (A6009) in Mansfield (453269 361308), approximately 1km W of Mansfield town centre. This road forms part of the ring road around the town centre.

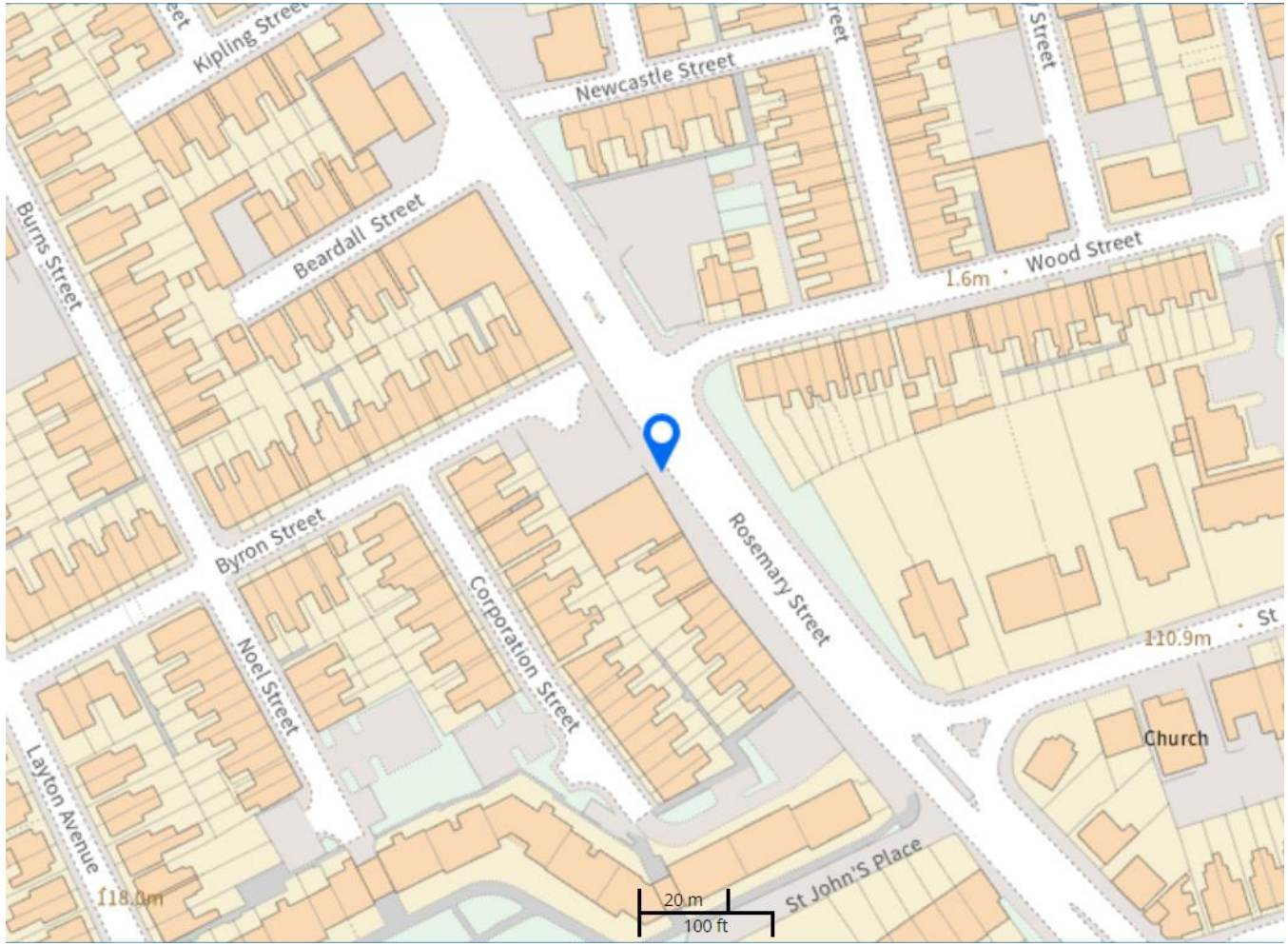


Figure D.13 – Map of non-automatic monitoring site SS (Sherwood Street)

The blue marker shows the tube's location on the B6035 (Sherwood Street) in Warsop at 456889 367638, approximately 9km SSW of Mansfield town centre.

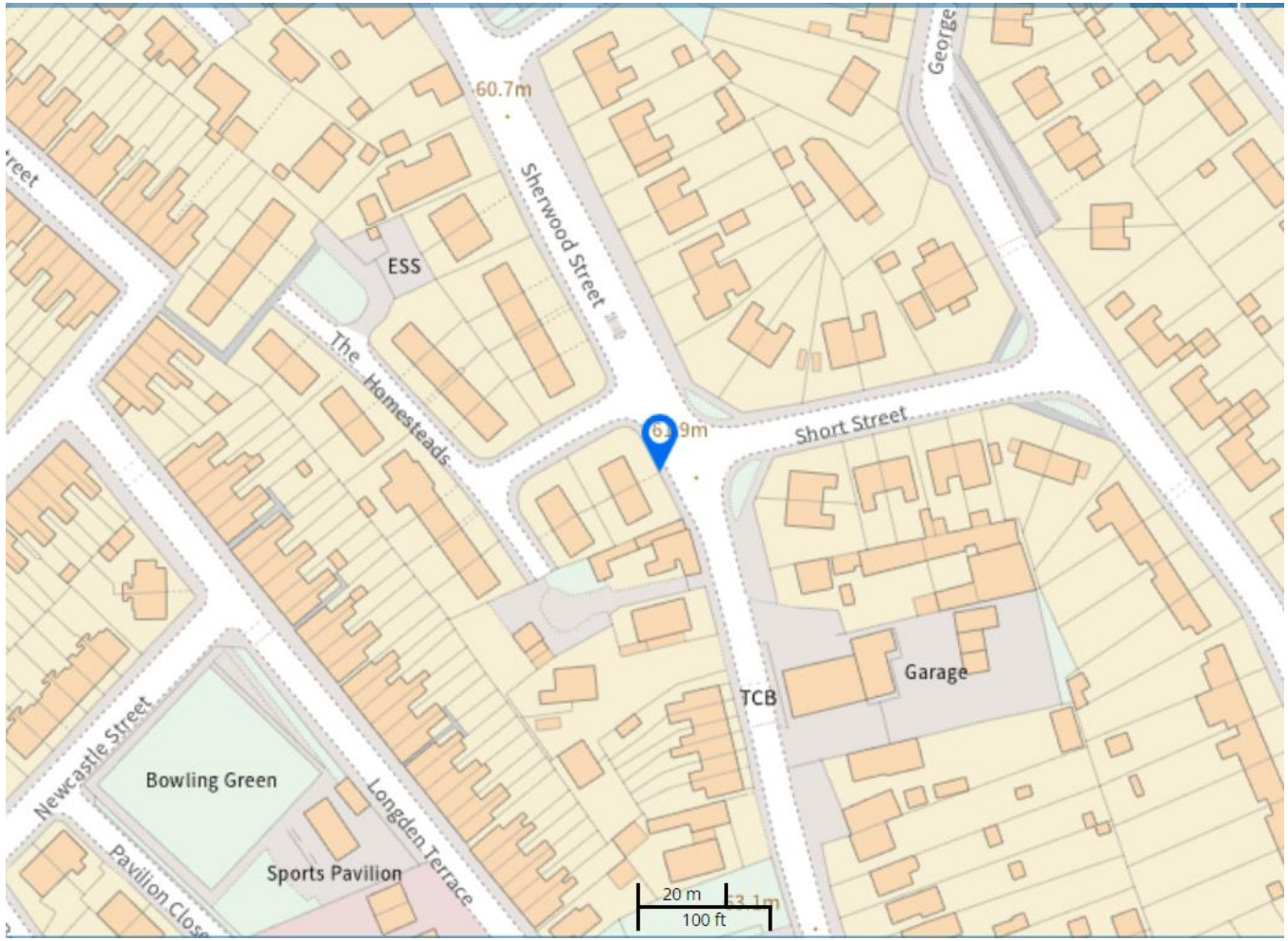


Figure D.14 – Map of non-automatic monitoring site SRE (Southwell Road East)

The blue marker shows the tube's location on Southwell Road East (B6020) in Rainworth (458513 358623), approximately 6km SE of Mansfield town centre.

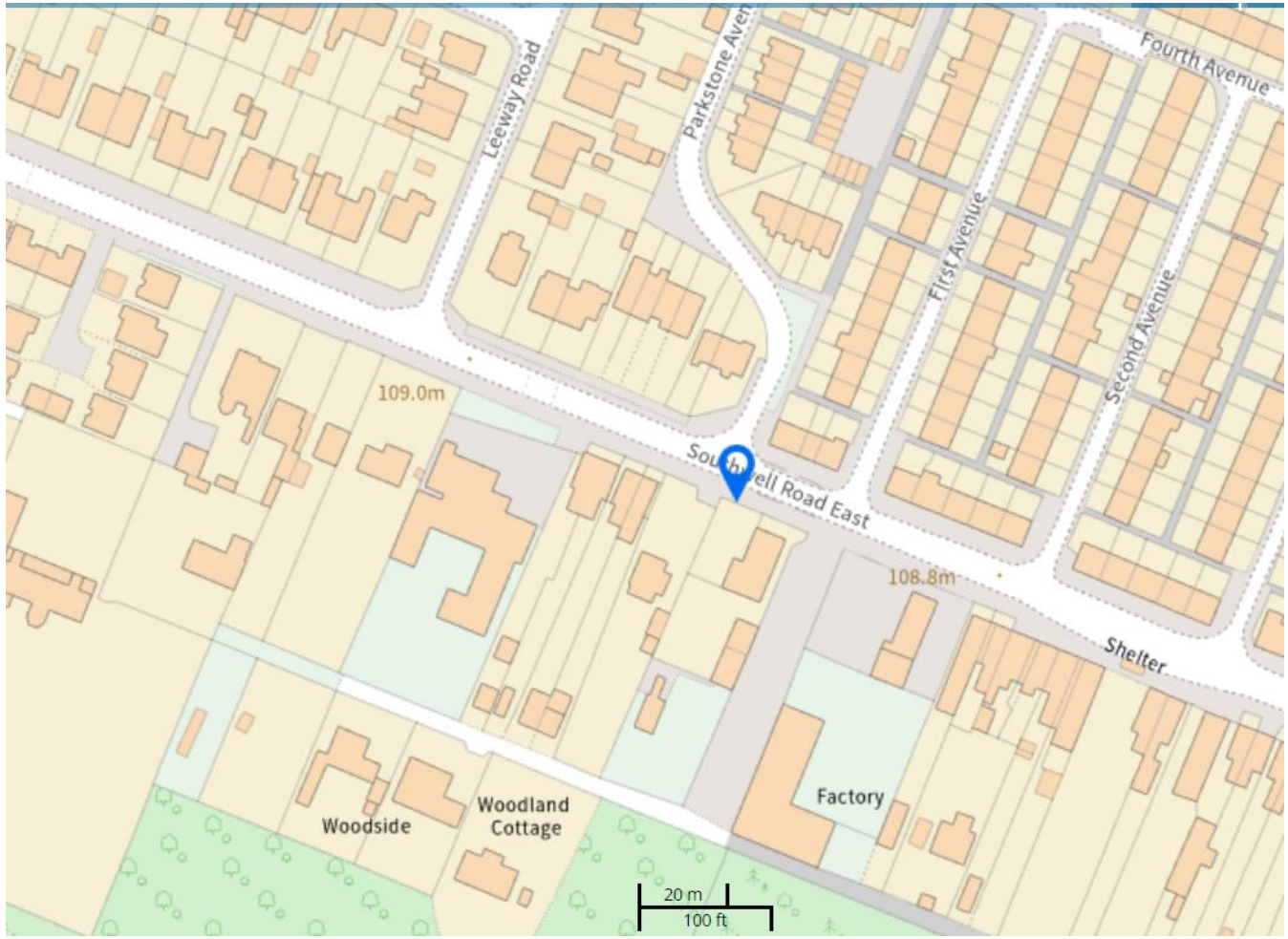


Figure D.15 – Map of non-automatic monitoring site WT (Warsop Town Hall)

The blue marker shows the tube's location on Church Street (A617) at Pleasleyhill (450817 364042), approximately 4km NNE of Mansfield town centre.

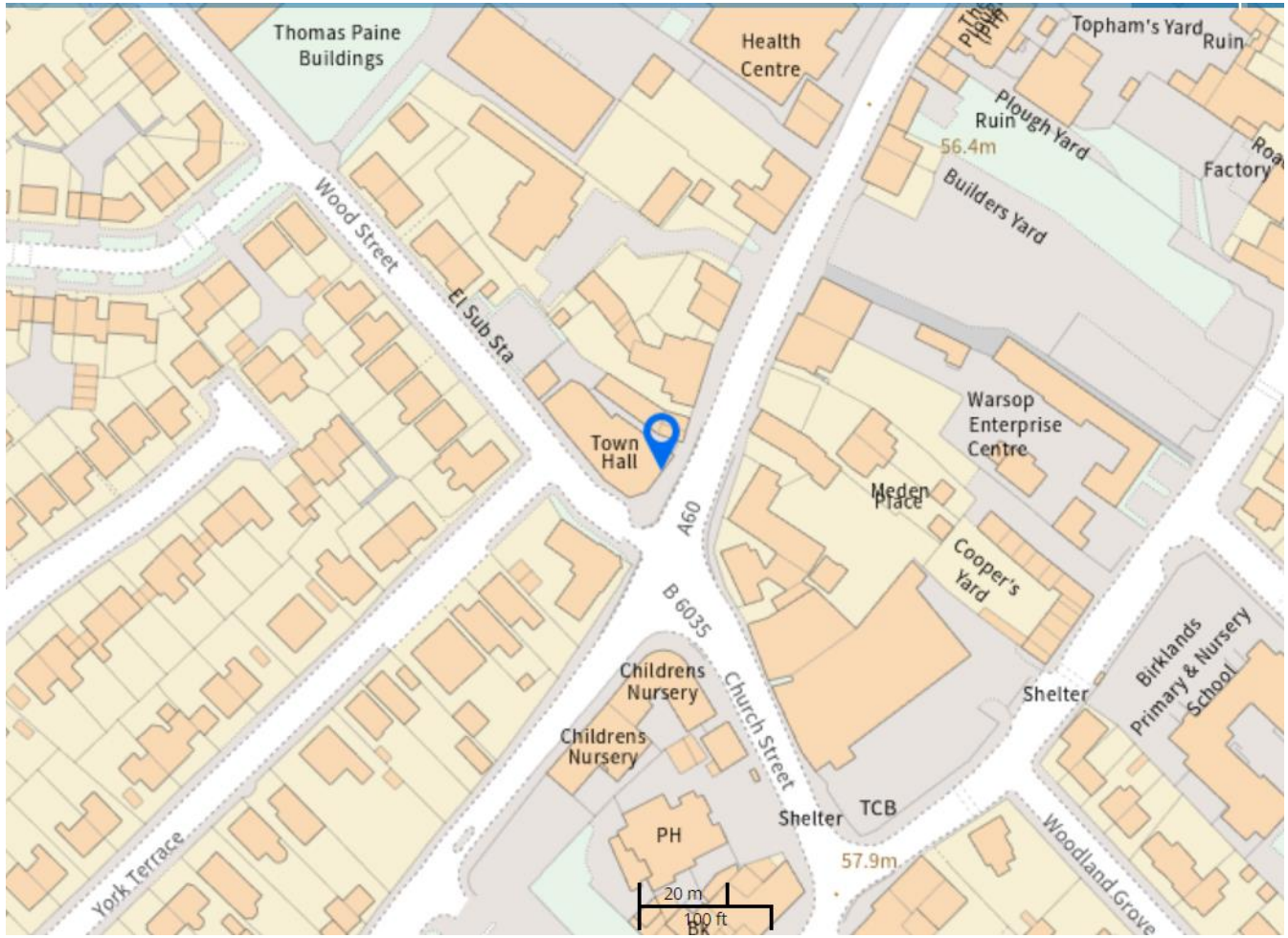


Figure D.16 – Map of non-automatic monitoring site P1 (Pleasley Landmark)

The blue marker shows the tube's location on Chesterfield Road North (A60) at Warsop Town Hall (450817 364042), approximately 4km NW of Mansfield town centre.

Figure D.17 – Map of all non-automatic monitoring sites across Mansfield Council District

The blue markers show the locations of non-automatic monitoring sites across the Mansfield District Council area.

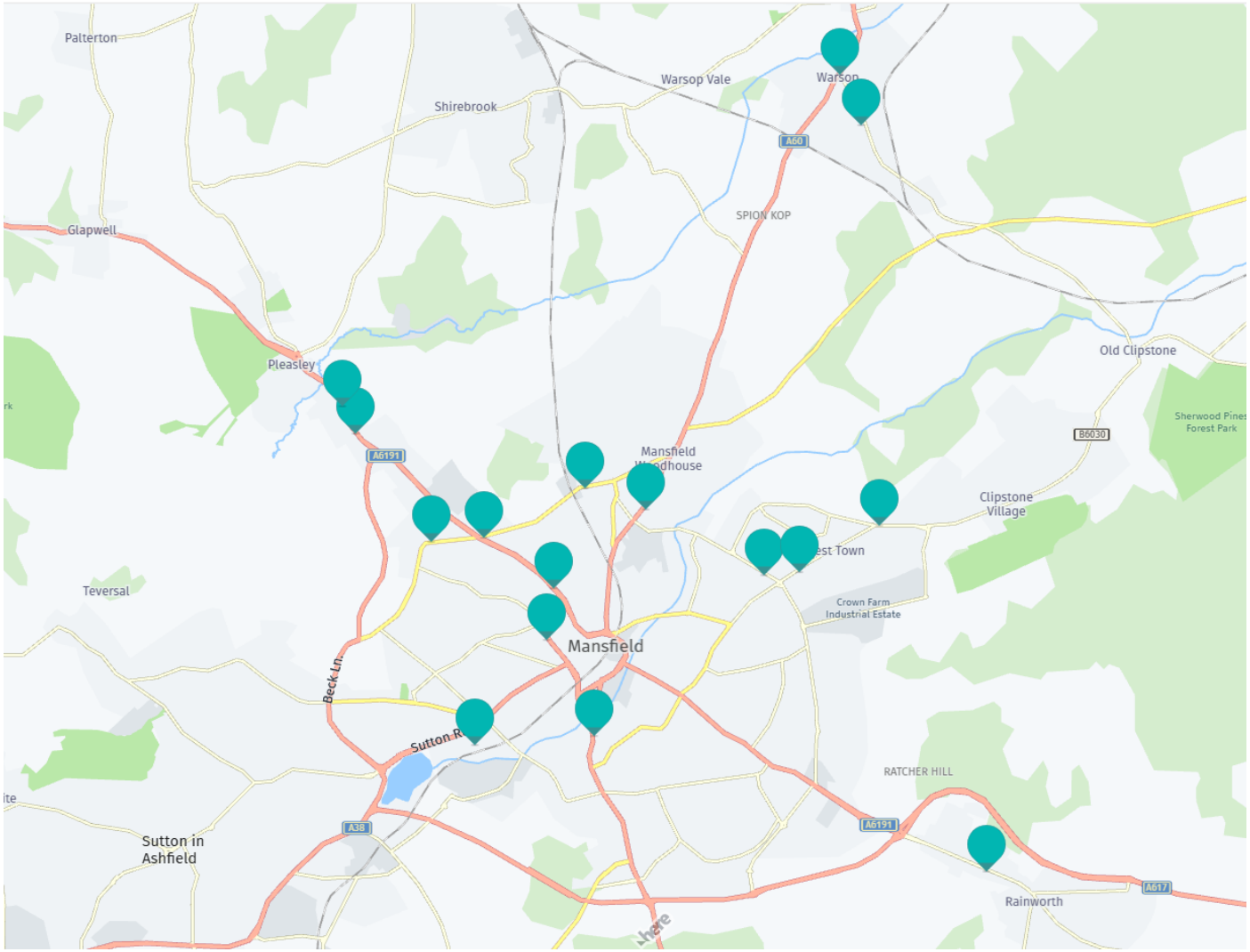
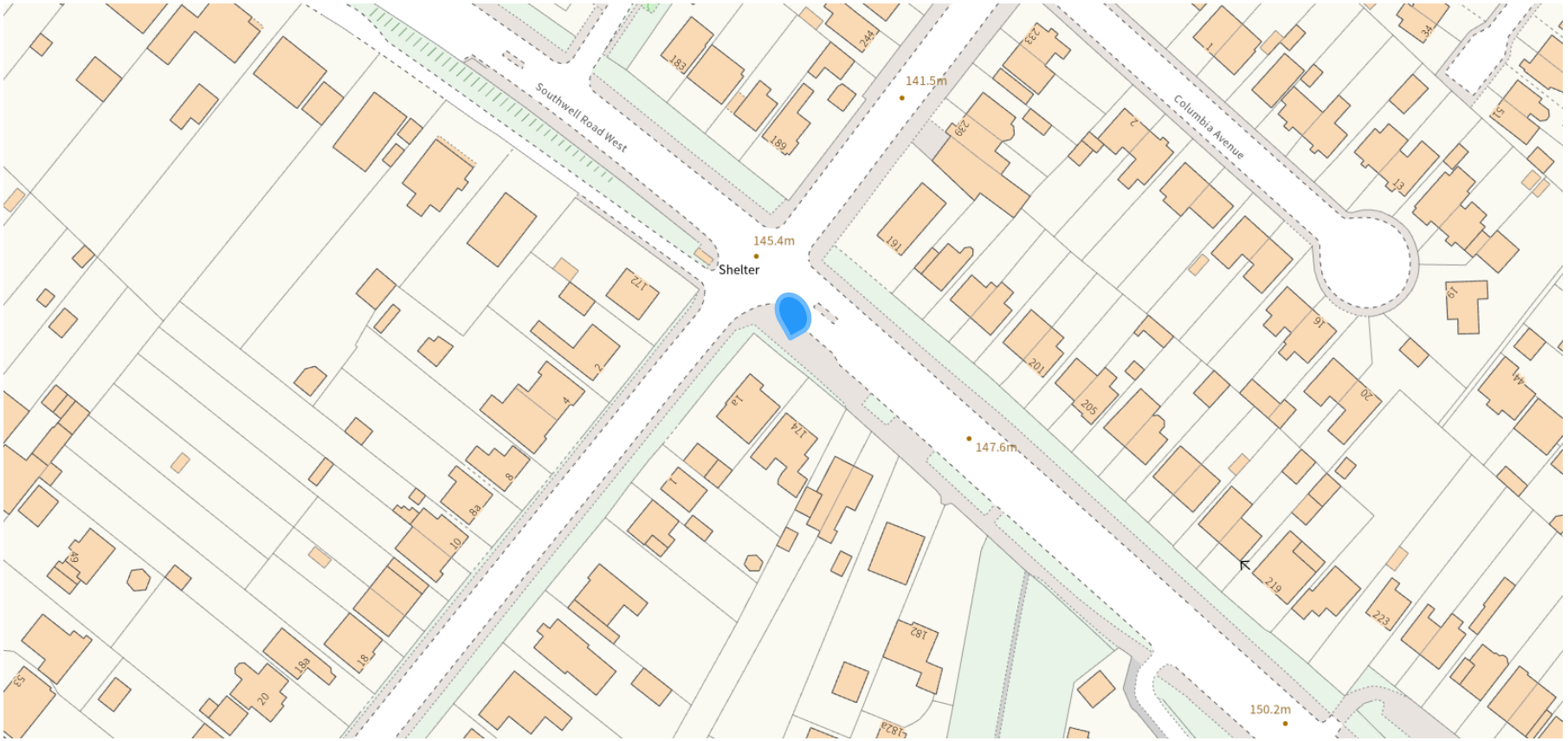


Figure D.18 – Map of NEW non-automatic monitoring site SRW (Southwell Road West) to be included in 2026 ASR

The blue marker shows the planned tube's location (monitoring year 2025) on Southwell Road West (A6191) (455719 360009), approximately 2km SE of Mansfield town centre.



Appendix E: Summary of Air Quality Objectives in England

Table E.1 – Air Quality Objectives in England[5]

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

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

Glossary of Terms

Abbreviation	Description
AQAP	Air Quality Action Plan - A detailed description of measures, outcomes, achievement dates and implementation methods, showing how the local authority intends to achieve air quality limit values'
AQMA	Air Quality Management Area – An area where air pollutant concentrations exceed / are likely to exceed the relevant air quality objectives. AQMAs are declared for specific pollutants and objectives
ASR	Annual Status Report
Defra	Department for Environment, Food and Rural Affairs
DMRB	Design Manual for Roads and Bridges – Air quality screening tool produced by National Highways
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
SO_2	Sulphur Dioxide

References

- Local Air Quality Management Technical Guidance LAQM.TG22. August 2022. 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.PG22. August 2022. Published by Defra in partnership with the Scottish Government, Welsh Assembly Government and Department of the Environment Northern Ireland.
- Chemical hazards and poisons report: Issue 28. June 2022. Published by UK Health Security Agency
- Air Quality Strategy – Framework for Local Authority Delivery. August 2023. Published by Defra.