MALDON DISTRICT COUNCIL

2026 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, 2026

Local Authority Officer	Paul Clift
Department	Environmental Health
Address	Maldon District Council Princes Road Maldon Essex CM9 5DL
Telephone	01621 732670
E-mail	paul.clift@maldon.gov.uk
Report Reference number	MAL/ASR2026
Date	24th June 2026
Written by	Tim Savage
Scientific Team Public Health & Protection Services Chelmsford City Council Duke Street Chelmsford Essex CM1 1JE	

Local Responsibilities and Commitment

This ASR was prepared by Public Health and Protection Services of Chelmsford City Council on behalf of Maldon District Council.

This ASR has been approved by: Paul Clift, Environmental Health Manager (Protection), Maldon District Council

This ASR has been sent to the Director of Public Health at Essex County Council.

If you have any comments on this report please send them to Maldon District Council:

01621 854477

paul.clift@maldon.gov.uk

Maldon District Council, Princes Road, Maldon, Essex, CM9 5DL

Executive Summary: Air Quality in Our Area

The 2026 Annual Status Report (ASR) is designed to provide the public with information relating to local air quality in Maldon, to fulfil Maldon District Council's statutory duty to review and assess air quality within its area, and to determine whether or not the air quality objectives are likely to be achieved.

In 2025, Maldon District Council measured **one** exceedance of the Air Quality Objectives.

Air Quality in Maldon

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.

Traffic emissions are the most significant source of air pollution in Maldon. Congestion dominates Market Hill, the town centre and bypass during the rush hour periods and the A414 is the principal route within the district.

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.

2020 - 2025 Air Quality Action Plan

The 2020–2025 Air Quality Action Plan delivered a strong package of measures that collectively addressed both transport emissions and public awareness. A key achievement was the development of a Transport Strategy for Maldon, providing a clear, long-term framework to manage traffic flows, reduce congestion and support modal shift. This strategic approach has underpinned several complementary measures and ensured that air quality considerations are embedded in wider transport planning decisions.

Targeted interventions to reduce vehicle emissions have also been successfully implemented. The introduction of a voluntary Class D Clean Air Zone (Clean Air Route on Market Hill) has encouraged cleaner vehicle use within the most sensitive areas, while updated Hackney Carriage and Private Hire Vehicle licensing standards have ensured all newly licensed or replacement vehicles meet Euro VI emission standards or better from 2022. In addition, the Council's own fleet has been modernised, with new Euro VI refuse collection vehicles replacing older Euro V vehicles, delivering a significant reduction in NOx emissions.

Operational improvements to council services have further contributed to reducing localised pollution impacts. Refuse and recycling collection routes have been revised to avoid Market Hill except where collections are required, helping to minimise emissions in this constrained and sensitive location. These practical, locally targeted measures demonstrate how service delivery can be adapted to directly support air quality improvement objectives.

Alongside emission reduction measures, the Council has enhanced public information and behaviour change initiatives. The provision of the airTEXT air quality forecasting system has enabled residents to receive timely pollution alerts, while the promotion of cleaner walking and cycling routes has supported both active travel and reduced exposure to pollution hotspots. Together, these initiatives have helped raise awareness and empower residents to make informed choices that contribute to improved air quality across the district.

2027 - 2032 Air Quality Action Plan

The 2027–2032 Air Quality Action Plan will provide the next stage of Maldon District Council's work to improve local air quality and reduce public exposure to emissions. The new plan will build on progress made through the previous Action Plan, particularly the Clean Air Route on Market Hill. Market Hill will remain an important focus, with further work proposed to reduce unnecessary vehicle movements and encourage drivers to use the bypass or other suitable alternative routes where possible.

Education and awareness-raising will be an important part of the new Action Plan. The Council will explore opportunities to provide clearer information to residents, visitors, local businesses and transport operators about the Clean Air Route and the practical choices they can make to support cleaner air. This may include promotion through the Council's website, social media, signage, local campaigns and partnership communications, helping to reinforce the benefits of avoiding unnecessary travel along Market Hill.

The new Action Plan will also look to strengthen partnership working with public transport operators. This could include establishing a working group with bus companies serving Maldon to discuss vehicle emissions, routing and operational issues affecting Market Hill. Through this group, the Council would seek to better understand the local bus fleet, identify any barriers to cleaner vehicle use, and explore practical opportunities to reduce emissions from buses travelling along Market Hill, including potential retrofit options where feasible.

Maldon District Council will also explore opportunities to support the wider transition to low and zero emission vehicles. This will include considering the potential provision of electric vehicle charging infrastructure in public car parks, helping to improve access to charging for residents, visitors and local businesses. These measures will form part of a wider approach to reducing transport-related emissions across the district while supporting cleaner travel choices.

The draft 2027–2032 Air Quality Action Plan must be submitted to Defra by 30 September 2026. Once the draft plan has been completed, it will undergo formal consultation to give residents, businesses, stakeholders and partner organisations the opportunity to comment on the proposed actions. The Council will then review the consultation responses before finalising and adopting the plan. The final adopted Air Quality Action Plan must be submitted to Defra by 31 March 2027.

Market Hill is a Clean Air Route Promotional Poster

Market Hill AQMA Amendment

The Market Hill Air Quality Management Area was originally declared in 2018 due to exceedances of the nitrogen dioxide annual mean and 1-hour mean objectives. Following a review of monitoring data and Defra technical guidance, Maldon District Council approved an amendment to the AQMA in March 2025 to remove the 1-hour mean NO_2 designation. This amendment reflects that monitored annual mean NO_2 concentrations within the AQMA have remained below 60µg/m³ for the previous five years, which Government guidance identifies as the level below which exceedances of the 1-hour mean objective are unlikely to occur.

The amendment removes only the 1-hour mean designation; the annual mean NO_2 designation remains in place. This means that Market Hill continues to be designated as an AQMA for the annual mean objective, and the Council will continue to monitor air quality and progress measures to reduce emissions and secure compliance. The removal of the 1-hour mean designation is a positive indication of improvement in local air quality, while recognising that further work remains necessary to address annual mean NO_2 concentrations on Market Hill.

Conclusions and Priorities

Maldon District Council has reviewed the 2025 monitoring results and identified one marginal exceedance of the annual mean nitrogen dioxide objective within the Market Hill Air Quality Management Area. This was recorded at MD27, where the measured annual mean was 40.4µg/m³ and, following fall-off with distance correction, the concentration at relevant exposure was calculated to be 40.1µg/m³.

Monitoring location MD22A/B/C recorded an annual mean below the objective, although concentrations remain close to the objective level. The long-term trend continues to show reduced NO_2 concentrations compared with pre-2020 levels; however, the 2025 results demonstrate that continued monitoring and action on Market Hill remain necessary.

No new or significantly changed sources of emissions have been identified during the reporting year that are expected to have a significant adverse impact on local air quality.

Priorities for 2026 & 2027

Maldon District Council's key air quality priority is the development and adoption of the 2027–2032 Air Quality Action Plan. The draft plan is due to be submitted to Defra by 30 September 2026, before formal consultation, with the final adopted plan due to be submitted by 31 March 2027.

How to get Involved

Everyone can help improve air quality in Maldon by making small changes to everyday journeys. If you are driving in Maldon and do not need to access Market Hill directly, please use the bypass or another suitable alternative route where possible.

Travelling by the bypass helps reduce traffic, congestion and emissions along Market Hill, while adding only around **two minutes** to the average journey compared with using Market Hill.

Residents, businesses and visitors can also help by choosing cleaner travel options where practical, such as walking, cycling, using public transport or car sharing. Drivers can also reduce emissions by avoiding unnecessary idling when parked or waiting. These simple actions can make a real difference when taken collectively, particularly in locations where traffic can become slow-moving.

You can find a list of electric car charging points in or closest to Maldon at the following link: https://www.zapmap.com/charge-points/maldon

Use the Tesco Free Bus

If you are visiting Maldon by private vehicle then there is a free bus ride into the town centre or Promenade Park. This free circular bus service (route number 288) operates from Tesco's car park (just off A414).

Here is the 288 route and timetable

Pedestrians can get on and off the bus at any bus stop on the route.

Please be aware that the Tesco car park is privately operated by Tesco, so drivers parking to use the 288 bus service should ensure that they comply with parking restrictions on site. This information is provided on signs in the car park.

airTEXT

You can also sign up to **airTEXT**, a free air quality forecasting and alert service. airTEXT provides information on expected air pollution levels and can send alerts when pollution is forecast to be elevated. This can help people plan journeys and outdoor activities, especially those who may be more affected by air pollution, including people with asthma, respiratory or heart conditions, older people, young children and their carers.

For more information and to register for alerts, visit: www.airtext.info

Table of Contents

Figures

Tables

1 Local Air Quality Management

This report provides an overview of air quality in Maldon during 2025. 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 Maldon 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.

A summary of the AQMA declared by Maldon District Council can be found in Table 2.1. The table presents a description of the AQMA currently designated within Maldon. 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 objective relevant to the current AQMA designation is the nitrogen dioxide (NO_2) annual mean objective, following removal of the NO_2 1-hour mean designation in March 2025.

Table 2.1 – Declared Air Quality Management Areas

AQMA Name	Date of Declaration	Pollutants and Air Quality Objectives	One Line Description	Is air quality in the AQMA influenced by roads controlled by Highways England?	Level of Exceedance: Declaration	Level of Exceedance: Current Year	Number of Years Compliant with Air Quality Objective	Name and Date of AQAP Publication	Web Link to AQAP
MDC Air Quality Management Area Number 1	11/12/2018 Amended March 2025	NO_2 Annual Mean	The stretch of road and properties between Anchorage Hill and Bull Lane, Maldon	No	**58.25µg/m³**	**40.4µg/m³** (**40.1µg/m³** at relevant exposure)	0	Maldon District Council Air Quality Action Plan 2020-2025	http://www.maldon.gov.uk/download/downloads/id/18206/air_quality_action_plan_2_july_2020.pdf

Maldon District Council is in the process of having the AQMA information updated on UK-Air

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

2.2 Progress and Impact of Measures to address Air Quality in Maldon

Defra's appraisal of last year's ASR concluded that report was well structured, detailed, and provides the information specified in the Technical Guidance.

During 2025, Maldon District Council's previous Air Quality Action Plan came to an end. The Council's focus is now on the development of a new 2027–2032 Air Quality Action Plan during 2026, which will review current monitoring evidence, identify appropriate future measures and provide an updated framework for improving air quality on Market Hill.

These are detailed in Table 2.2 below.

Table 2.2 – Progress on Measures to Improve Air Quality

Measure No.	Measure Title	Category	Classification	Year Measure Introduced in AQAP	Estimated / Actual Completion Date	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
1	Develop & Adopt Maldon District Council 2027 – 2032 Air Quality Action Plan	Policy Guidance and Development Control	Other policy	2026	2027	Maldon District Council Essex County Council	Maldon District Council	Funded	£10k-50k	Implementation	Not quantified at this stage. The AQAP will identify and prioritise measures intended to secure and maintain compliance with the annual mean NO_2 objective.	Compliance with Air Quality Objectives	Review of 2020-2025 Action Plan Measures Review of Air Quality Monitoring Data	Draft plan due 30th September 2026 Final adopted plan due 31st March 2027
2	Develop & Adopt a Local Air Quality Strategy (AQS)	Policy Guidance and Development Control	Other policy	2023	2026	Maldon District Council Essex Air Essex County Council	Essex County Council	Funded	£10k-50k	Implementation	Not quantified	Adoption of AQS	Essex Air Quality Strategy has been developed	Formal Adoption Due in 2026
3	Clean Air Route / Market Hill traffic and engagement work	Traffic Management	Other traffic management	2020	2032	Maldon District Council Essex County Council Local transport operators	Maldon District Council	Funded	< £10k	Implementation	Not quantified; intended to reduce unnecessary vehicle movements, congestion and NO_2 emissions on Market Hill	NO_2 concentrations within the AQMA; traffic flows on Market Hill; engagement and promotional activity undertaken	Clean Air Route in place. Ongoing public information and engagement to encourage use of the bypass or other suitable alternative routes where access to Market Hill is not required	Requires continued communication with residents, visitors, businesses and transport operators
4	Member of Essex Air	Policy Guidance and Development Control	Regional Groups Co-ordinating programmes to develop Area wide Strategies to reduce emissions and improve air quality	2012	2040	County Council / District & Borough Councils	Member Organisations	Funded	< £10k	Implementation	N/A	N/A	Implementation on-going	
5	Essex Liftshare	Alternatives to private vehicle use	Car & lift sharing schemes	2012	2040	Essex County Council	Essex County Council	Funded	< £10k	Implementation	Not Quantified	Number of Users	Implementation on-going	

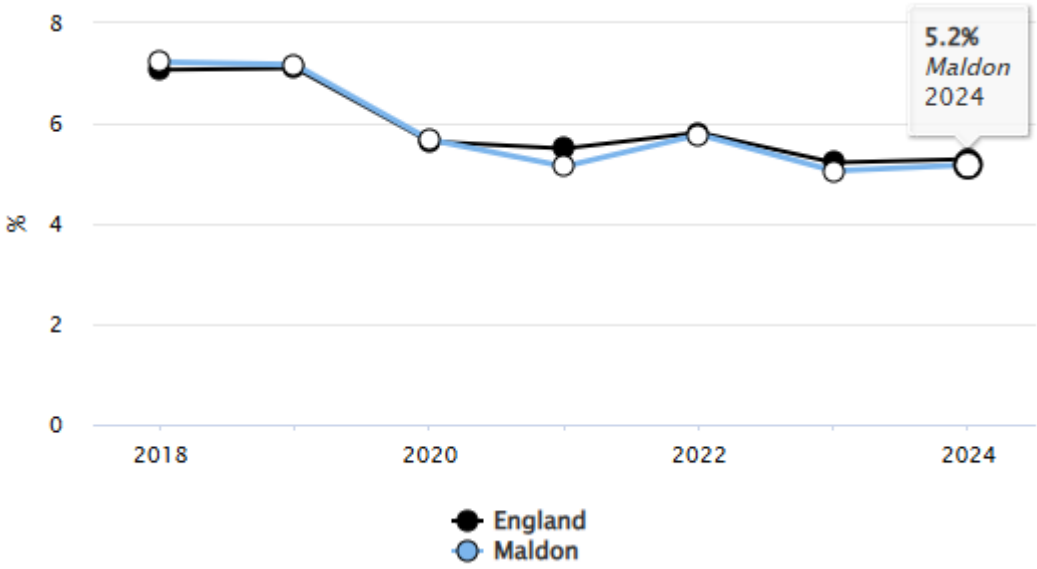
2.3 $PM_{2.5}$ – Local Authority Approach to Reducing Emissions and/or Concentrations

As detailed in Policy Guidance LAQM.PG22 (Chapter 8) and the Air Quality Strategy[1], 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.

Maldon District Council does not monitor $PM_{2.5}$ concentrations however notes the Defra background mapping resource which for $PM_{2.5}$ in 2025 models a maximum annual mean concentration of 7.6µg/m^3.

The Public Health Outcomes Framework indicator D01 – Fraction of mortality attributable to particulate ($PM_{2.5}$) air pollution which for 2024 gave a value of 5.2% which is trending downwards since 2018.

Figure 2.1 – Public Health Framework Indicator D01 Fraction of all-cause adult mortality attributable to anthropogenic particulate air pollution



- Regular inspections of permitted industry where combustion and non-combustion processes could lead to anthropogenic emissions of $PM_{2.5}$
- Working with Essex County Council (highway authority) to deliver Major Transport improvement schemes to alleviate congestion. In addition to reduced exhaust emissions, these schemes will reduce non-exhaust emissions from brake and tyre wear by making traffic flows smoother.

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

Smoke Control & Bonfires

Smoke from bonfires, open fires and wood burning stoves can affect local air quality and may cause problems for neighbours, particularly people with asthma, respiratory conditions, heart conditions, older people and young children. Maldon District Council does **not** have any designated Smoke Control Areas; however, this does not mean that smoke can be allowed to cause a nuisance.

Where smoke from premises, including domestic bonfires or solid fuel appliances, unreasonably and substantially interferes with the use or enjoyment of another property, or is harmful to health, it may be investigated as a statutory nuisance under the Environmental Protection Act 1990. If a nuisance is established, the Council can take appropriate action, including serving an abatement notice.

Residents are encouraged to avoid bonfires wherever possible and to use more sustainable alternatives, such as home composting, garden waste collections, or taking waste to an appropriate recycling centre. Bonfires can produce large amounts of smoke and particulate pollution, especially when burning damp garden waste, treated wood, furniture, plastics or household rubbish. These materials should not be burnt, as they can release harmful fumes and pollutants.

If residents use a wood burning stove or open fire, they should ensure it is operated efficiently and in line with the manufacturer's instructions. Burning dry, suitable fuel and maintaining the appliance can reduce smoke, improve efficiency and lower fuel costs. Anyone buying a new stove should consider a Defra-approved appliance and ensure it is installed by a suitably qualified person. These simple steps can help reduce particulate emissions, protect health and minimise the impact of smoke on neighbours.

Further information on smoke control, wood burning and practical steps residents can take to reduce emissions is available on the Maldon District Council website: https://www.maldon.gov.uk/info/20099/pollution/9148/air_quality/6

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

This section sets out the monitoring undertaken within 2025 by Maldon District Council and how it compares with the relevant air quality objectives. In addition, monitoring results are presented for a five-year period between 2021 and 2025 to allow monitoring trends to be identified and discussed.

Compliance with the NO_2 Annual Mean Air Quality Objective

In 2025, Maldon District Council continued to monitor nitrogen dioxide (NO_2) concentrations at roadside locations within Maldon. One monitoring location, MD27, recorded an annual mean concentration above the annual mean air quality objective of 40µg/m³, with a measured concentration of 40.4µg/m³. The triplicate monitoring location MD22A/B/C recorded an annual mean concentration of 38.9µg/m³, which is below the objective but remains close to the objective level.

Where monitoring locations are not fully representative of relevant public exposure, NO_2 fall-off with distance calculations have been undertaken. At relevant exposure, the predicted concentration was 37.1µg/m³ at MD22A/B/C and 40.1µg/m³ at MD27. Further details of these calculations are provided in Appendix C.

The 2025 results show an increase compared with 2024, although the longer-term trend remains downward compared with pre-2020 levels. Year-to-year variation can be influenced by traffic flows, fleet composition, local activity and meteorological conditions, including wind speed, wind direction and atmospheric dispersion.

The 2025 exceedance at MD27 demonstrates that concentrations on Market Hill remain close to, and in some cases above, the annual mean objective.

Table 3.1 – Annual Mean NO_2 Exceedances (µg/m³)

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	2019	2020	2021	2022	2023	2024	2025
MD22A, MD22B, MD22C	585062	207160	Roadside	**55.1**	**42.8**	**41.7**	**44.4**	**40.9**	35.8	38.9
MD27	585073	207132	Roadside	**51.9**	**43.0**	**40.1**	**46.2**	**41.2**	33.2	**40.4**

Compliance with the NO_2 1-hr Air Quality Objective

No monitoring location recorded an annual mean NO_2 concentration greater than 60µg/m³ in 2025. It is therefore considered unlikely that the 1-hour mean NO_2 air quality objective was exceeded during the reporting year.

3.1 Summary of Monitoring Undertaken

3.1.1 Automatic Monitoring Sites

Maldon District Council does not undertake automatic continuous monitoring.

3.1.2 Non-Automatic Monitoring Sites

Maldon District Council undertook non- automatic (i.e. passive) monitoring of NO_2 at 26 sites during 2025. Table A.1 in Appendix A presents the details of the non-automatic sites.

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.2 in Appendix A compares the ratified and adjusted monitored NO_2 annual mean concentrations for the past five years with the air quality objective of 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 2025 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.

MD23 has not been used in the 2025 compliance assessment because data capture was below 25%; further explanation is provided in Appendix C.

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)
MD1	Opposite Cherry Oak A414	Roadside	580645	204820	NO2	No	15.9	10.7	No	2.3
MD2, MD2B, MD2C	A414 Spital Road/A414 Bypass	Kerbside	583952	205742	NO2	No	17.0	1.0	No	2.3
MD3	Heybridge Approach	Roadside	584763	208107	NO2	No	17.9	3.7	No	2.3
MD5	Colchester Rd/Heybridge Street Junction	Roadside	585914	208104	NO2	No	15.6	3.9	No	2.3
MD6	High Street (Market Hill Junction)	Urban Centre	585072	207080	NO2	No	0.1	2.1	No	2.3
MD7	Wantz Road/High Street	Urban Centre	585307	206943	NO2	No	1.9	1.6	No	2.3
MD8	Latchingdon/Burnham Road Junction	Kerbside	588575	200492	NO2	No	11.6	0.4	No	2.3
MD11	Latchingdon Street	Kerbside	588205	200438	NO2	No	0.0	1.3	No	2.3
MD12	A414 Spital Road/A414 Bypass	Kerbside	583862	205549	NO2	No	32.4	1.5	No	2.3
MD13	Limebrook Way/A414 Bypass	Kerbside	584165	205532	NO2	No	31.6	1.5	No	2.3
MD14	The Causeway	Roadside	585221	207682	NO2	No	0.1	9.0	No	2.3
MD16	8 Narvik Close	Roadside	584309	205776	NO2	No	3.0	0.5	No	2.3
MD17	2 Creasen Butt Close	Suburban	585078	207924	NO2	No	5.0	0.5	No	2.3
MD19	Adjacent to 16 Mill Road, Maldon	Kerbside	585565	206723	NO2	No	3.4	0.2	No	2.3
MD22A, MD22B, MD22C	10 Market Hill, Maldon	Roadside	585062	207160	NO2	Yes	0.5	1.5	No	2.3

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube Co-located with a Continuous Analyser?	Tube Height (m)
MD23	59-63 Market Hill, Maldon	Roadside	585055	207324	NO2	Yes	1.5	1.3	No	2.3
MD24	32 Market Hill	Roadside	585045	207272	NO2	Yes	0.7	1.9	No	2.3
MD25	1 Hillside, Maldon	Roadside	585016	207241	NO2	Yes	5.0	1.4	No	2.3
MD26	18 Market Hill, Maldon	Roadside	585045	207186	NO2	Yes	0.1	2.6	No	2.3
MD27	6 Market Hill, Maldon	Roadside	585073	207132	NO2	Yes	0.1	2.3	No	2.3
MD28	21 Market Hill, Maldon	Roadside	585067	207116	NO2	Yes	0.1	1.6	No	2.3
MD29	5 The Square, Heybridge	Roadside	585467	208089	NO2	No	4.0	1.0	No	2.3
MD30	High Street, Maldon	Roadside	584868	207042	NO2	No	0.1	1.0	No	2.3
MD31	Petchey Court, Fambridge Road	Roadside	584809	206962	NO2	No	0.1	3.0	No	2.3
MD32	Goings Wharf, Colchester Road	Roadside	585740	208010	NO2	No	0.1	2.5	No	2.3
MD33	High Street, Maldon	Roadside	584857	207023	NO2	No	0.1	1.0	No	2.3

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 2025 (%) [2]	2021	2022	2023	2024	2025
MD1	580645	204820	Roadside	100.0	100.0	20.1	22.1	21.4	18.9	20.0
MD2, MD2B, MD2C	583952	205742	Kerbside	100.0	100.0	25.8	28.0	24.5	25.1	24.4
MD3	584763	208107	Roadside	100.0	100.0	25.7	27.9	23.2	20.7	20.7
MD5	585914	208104	Roadside	100.0	100.0	25.3	30.5	23.6	23.0	23.2
MD6	585072	207080	Urban Centre	100.0	100.0	21.2	21.9	22.8	20.4	19.9
MD7	585307	206943	Urban Centre	92.3	92.3	22.5	24.2	22.3	19.7	20.3
MD8	588575	200492	Kerbside	82.7	82.7	26.1	32.8	24.3	22.3	22.9
MD11	588205	200438	Kerbside	100.0	100.0	20.3	21.3	18.4	17.9	16.8
MD12	583862	205549	Kerbside	100.0	100.0	19.5	21.1	17.9	17.7	18.4
MD13	584165	205532	Kerbside	90.4	90.4	19.4	21.3	19.1	17.0	18.8
MD14	585221	207682	Roadside	92.3	92.3	22.6	25.7	24.5	21.8	21.2
MD16	584309	205776	Roadside	100.0	100.0	10.7	12.5	10.8	10.3	9.6
MD17	585078	207924	Suburban	100.0	100.0	14.6	13.9	12.9	11.4	11.4
MD19	585565	206723	Kerbside	92.3	92.3	18.1	20.6	17.2	15.6	19.2
MD22A, MD22B, MD22C	585062	207160	Roadside	100.0	100.0	**41.7**	**44.4**	**40.9**	35.8	38.9
MD23	585055	207324	Roadside	7.7	7.7	33.7	26.7	28.9	28.4	N/A
MD24	585045	207272	Roadside	92.3	92.3	32.6	33.9	34.0	30.8	33.7
MD25	585016	207241	Roadside	69.2	69.2	25.4	24.8	23.5	22.0	23.6
MD26	585045	207186	Roadside	69.2	69.2	27.8	31.3	27.0	23.2	25.8
MD27	585073	207132	Roadside	90.4	90.4	**40.1**	**46.2**	**41.2**	33.2	**40.4**
MD28	585067	207116	Roadside	90.4	90.4	27.0	27.8	24.2	24.4	21.4
MD29	585467	208089	Roadside	100.0	100.0	23.1	24.0	22.0	20.0	20.2
MD30	584868	207042	Roadside	84.6	84.6	31.5	25.9	26.4	21.5	25.3
MD31	584809	206962	Roadside	100.0	100.0	19.6	21.0	18.2	16.9	20.0
MD32	585740	208010	Roadside	100.0	100.0	28.3	29.2	26.1	23.1	25.6
MD33	584857	207023	Roadside	100.0	100.0	27.4	31.2	29.6	25.3	22.8

☒ **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 on Market Hill

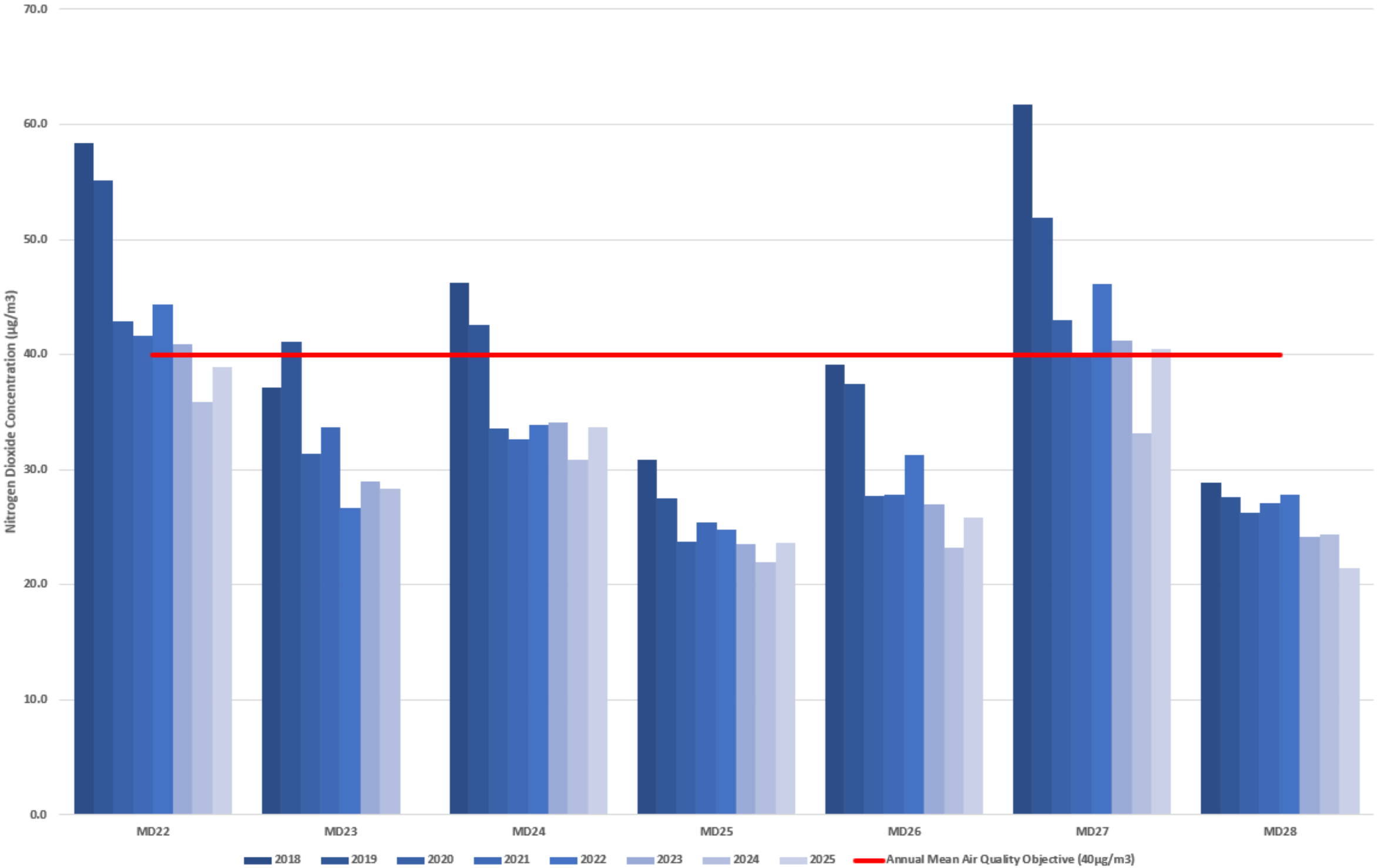
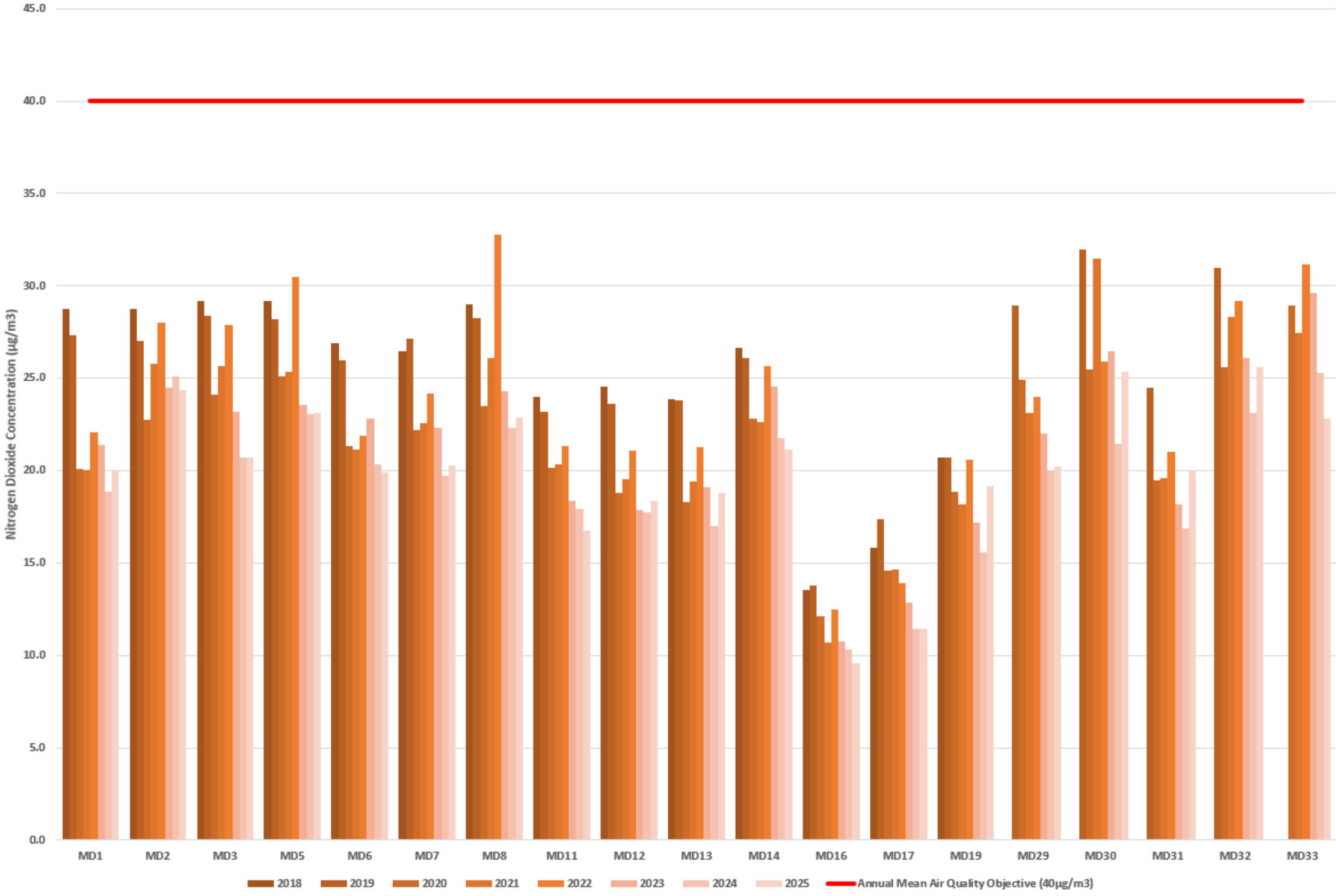


Figure A.2 – Trends in Annual Mean NO_2 Concentrations elsewhere in Maldon



Appendix B: Full Monthly Diffusion Tube Results for 2025

Table B.1 – NO_2 2025 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 (0.78)	Annual Mean: Distance Corrected to Nearest Exposure	Comment
MD1	580645	204820	32.4	29.9	27.7	27.5	30.2	29.8	22.9	21.7	18.0	20.8	25.1	22.1	25.7	20.0	-	
MD2	583952	205742	39.4	45.0	37.5	38.3	40.6	26.6	22.5	31.5	30.1	31.4	32.3	33.0	-	-	-	Triplicate Site with MD2, MD2B and MD2C - Annual data provided for MD2C only
MD2B	583952	205742	41.0	40.8	36.4	25.6	29.4	30.4	21.2	27.0	26.4	29.6	30.9	32.6	-	-	-	Triplicate Site with MD2, MD2B and MD2C - Annual data provided for MD2C only
MD2C	583952	205742	35.3	35.7	12.4	36.0	27.0	32.0	24.0	29.7	26.7	29.6	31.0	25.8	31.2	24.4	-	Triplicate Site with MD2, MD2B and MD2C - Annual data provided for MD2C only
MD3	584763	208107	31.8	36.4	28.0	29.7	26.0	29.0	23.3	21.2	21.6	24.4	29.1	18.0	26.5	20.7	-	
MD5	585914	208104	39.5	36.1	30.6	28.7	33.7	21.8	22.4	27.4	27.7	27.3	30.5	30.5	29.7	23.2	-	
MD6	585072	207080	34.3	30.7	28.9	20.7	26.6	20.6	22.2	20.6	22.3	24.7	27.0	27.6	25.5	19.9	-	
MD7	585307	206943	35.5	31.5	30.6	Missing	36.8	22.4	21.6	19.3	20.6	22.7	23.3	21.9	26.0	20.3	-	
MD8	588575	200492	41.4	35.8	37.7	25.4	28.0	29.8	22.7	23.3	20.4	Missing	Missing	29.1	29.4	22.9	-	
MD11	588205	200438	26.5	26.6	27.8	22.8	23.3	19.6	19.2	17.0	17.6	19.1	21.7	17.0	21.5	16.8	-	
MD12	583862	205549	27.2	29.3	27.3	24.4	25.8	20.3	23.0	20.4	21.2	19.0	21.8	22.8	23.5	18.4	-	
MD13	584165	205532	33.8	26.4	28.9	24.9	30.1	18.2	Missing	18.7	19.4	17.3	24.7	22.8	24.1	18.8	-	
MD14	585221	207682	34.1	32.7	26.2	26.8	30.6	Missing	17.9	21.4	21.3	22.4	34.0	31.2	27.1	21.2	-	
MD16	584309	205776	23.8	12.9	18.2	12.1	7.9	10.0	8.3	8.4	10.0	11.6	15.0	9.4	12.3	9.6	-	
MD17	585078	207924	24.7	20.9	19.6	10.3	11.9	11.4	10.7	9.8	9.9	12.8	15.9	17.6	14.6	11.4	-	
MD19	585565	206723	31.6	28.2	28.5	21.6	19.2	Missing	18.3	14.9	18.6	38.9	27.5	23.2	24.6	19.2	-	
MD22A	585062	207160	44.8	60.9	61.4	66.3	58.2	42.2	41.5	47.7	47.6	41.9	44.5	44.6	-	-	-	Triplicate Site with MD22A, MD22B and MD22C - Annual data provided for MD22C only
MD22B	585062	207160	54.1	58.9	60.4	63.6	51.2	45.3	44.9	44.5	39.3	42.7	45.5	33.1	-	-	-	Triplicate Site with MD22A, MD22B and MD22C - Annual data provided for MD22C only
MD22C	585062	207160	57.2	61.6	64.9	65.5	51.0	45.1	38.9	51.1	44.3	41.7	45.5	43.9	49.9	38.9	37.1	Triplicate Site with MD22A, MD22B and MD22C - Annual data provided for MD22C only
MD23	585055	207324	Missing	Missing	Missing	Missing	Missing	Missing	Missing	18.5	Missing	Missing	Missing	Missing	18.5	14.4	-	Very Low Exposure Not to be used for reviewing trends
MD24	585045	207272	59.2	60.2	56.0	50.7	56.7	40.7	31.7	38.9	Missing	25.5	28.3	26.9	43.2	33.7	-	
MD25	585016	207241	Missing	31.7	Missing	24.1	28.0	16.9	19.7	Missing	Missing	19.7	44.6	38.9	28.0	23.6	-	
MD26	585045	207186	27.1	Missing	39.0	41.6	51.2	32.9	28.0	Missing	Missing	27.8	Missing	26.1	34.2	25.8	-	

DT ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Annualised and Bias Adjusted (0.78)	Annual Mean: Distance Corrected to Nearest Exposure	Comment
MD27	585073	207132	59.9	60.5	63.1	61.7	64.4	49.5	47.9	35.1	47.8	Missing	28.7	51.7	51.8	**40.4**	**40.1**	
MD28	585067	207116	39.0	31.4	30.6	25.7	27.6	24.5	18.9	23.7	26.8	23.9	29.8	Missing	27.4	21.4	-	
MD29	585467	208089	34.0	35.2	33.1	27.8	32.6	23.5	16.9	14.1	19.9	21.8	24.9	26.9	25.9	20.2	-	
MD30	584868	207042	36.1	Missing	26.7	37.5	41.2	35.1	26.7	30.7	29.3	33.5	Missing	27.9	32.5	25.3	-	
MD31	584809	206962	32.0	45.9	39.9	30.1	18.1	19.0	15.1	15.7	19.4	23.7	22.4	26.7	25.7	20.0	-	
MD32	585740	208010	39.8	39.9	39.9	35.8	39.8	26.1	28.6	25.9	25.7	25.2	36.5	30.3	32.8	25.6	-	
MD33	584857	207023	50.9	37.1	30.2	29.0	30.9	29.9	24.2	24.5	25.3	23.7	22.6	22.4	29.2	22.8	-	

☒ **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**

☒ **National bias adjustment factor used**

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

☒ **Maldon District Council confirms that all 2025 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 Maldon During 2025

Maldon District Council has not identified any significant new sources relating to air quality within the reporting year of 2025.

Additional Air Quality Works Undertaken by Maldon District council during 2025

Maldon District Council has not completed any additional works within the reporting year of 2025.

QA/QC of Diffusion Tube Monitoring

MD23 Data Capture

Due to repeated loss of the diffusion tube monitoring location MD23 during 2025, only one valid monthly result was obtained for the year. As the site therefore had insufficient data capture, the result has not been annualised and should not be used to assess compliance with the annual mean objective or to identify trends.

The single result has, however, been retained within the Appendix B results table for transparency but not included within historical trend tables or charts. It should be treated with caution, as the recorded concentration was approximately 50% lower than would normally be expected at this location and is unlikely to be representative of annual conditions. The low result may reflect the limited monitoring period rather than a genuine reduction in nitrogen dioxide concentrations.

Diffusion Tube Annualisation

Annualisation is required for any site with data capture less than 75% but greater than 25%. The diffusion tube processing tool is used to complete the annualisation process using background data sourced from regional AURN sites. Table C.1 shows annualised pre-bias adjustment values, one of which exceeds 40µg/m³, whereas the final reported values in Appendix A are post-bias-adjustment and all below objective.

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

Site ID	Annualisation Factor Rochester Stoke AURN	Annualisation Factor Southend-on-Sea AURN	Average Annualisation Factor	Raw Data Annual Mean	Annualised Annual Mean
MD25	1.0825	1.0835	1.0830	28.0	30.3
MD26	0.9616	0.9752	0.9684	34.2	33.1

Rochester Stoke and Southend-on-Sea were selected as suitable reference sites because they are regional AURN monitoring sites with adequate 2025 data capture and are considered representative of wider background temporal variation affecting the Maldon diffusion tube sites.

Diffusion Tube Bias Adjustment Factors

The diffusion tube data presented within this 2026 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.

Maldon District Council do not operate a triplicate co-location study so have applied a national bias adjustment factor of 0.78 to the 2025 monitoring data. A summary of bias adjustment factors used by Maldon 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
2025	National	03/26	0.78
2024	National	03/25	0.78
2023	National	03/24	0.77
2022	National	03/23	0.76
2021	National	03/22	0.78

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.

For triplicate site MD22A/B/C, the monitored annualised and bias-adjusted concentration was 38.9µg/m³ at 1.5m from the kerb. The receptor was slightly further from the kerb at 2.0m, giving a predicted receptor concentration of 37.1µg/m³. This is below the annual mean air quality objective of 40µg/m³, although it remains within 10% of the objective and therefore continues to require close review.

At site MD27, the monitored annualised and bias-adjusted concentration was 40.4µg/m³ at 2.3m from the kerb. The relevant receptor was located at a similar distance from the kerb, 2.4m, and the predicted receptor concentration was therefore only slightly lower at 40.1µg/m³. This remains above the annual mean air quality objective and confirms that exceedance conditions are predicted at relevant exposure at this location.

These results show that concentrations on Market Hill remain close to, or above, the objective at some locations, supporting the need for continued action through the forthcoming 2027–2032 Air Quality Action Plan.

Table C.3 – Non-Automatic NO_2 Fall off With Distance Calculations (concentrations presented in µg/m³)

Site ID	Distance (m): Monitoring Site to Kerb	Distance (m): Receptor to Kerb	Monitored Concentration (Annualised and Bias Adjusted	Background Concentration	Concentration Predicted at Receptor	Comments
MD22A, MD22B, MD22C	1.5	2.0	38.9	9.6	37.1	Predicted concentration at Receptor within 10% the AQS objective.
MD27	2.3	2.4	40.4	9.6	**40.1**	Predicted concentration at Receptor above AQS objective.

Summary of Low Cost Air Quality Sensor Monitoring

The Market Hill sensor was installed on 22 January 2025 and recorded high data capture for the remainder of the year. The processed annual mean NO_2 concentration for 2025 was 22.1µg/m³, which is significantly below the annual mean air quality objective of 40µg/m³.

Monthly concentrations were highest in March and April, with lower concentrations recorded during the summer months. This seasonal pattern is broadly consistent with expected annual variation in NO_2, where concentrations can be influenced by traffic activity, meteorological conditions and atmospheric dispersion.

The sensor provides useful supporting evidence for air quality conditions on Market Hill, particularly in relation to short-term and seasonal variation.

No hourly mean concentrations exceeded 200µg/m³, and therefore the sensor data does not indicate any exceedance of the 1-hour NO_2 objective during the monitoring period.

Table C.4 – Details of Low Cost Sensor Sites

Site ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	Sensor Type	In AQMA?	Which AQMA? [1]
1763	Market Hill	Roadside	585061	207159	NO2	Aeroqual AQS1	Yes	Market Hill AQMA

Table C.5 – Monthly Air Quality Sensor Monitoring Results

Site 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 Data
1763	585061	207159	21.7*	26.3	33.4	30.0	21.3	18.6	17.7	18.3	18.5	18.8	19.2	21.4	**22.1**

*January is based on partial-month data only, as monitoring commenced on 22 January 2025.

Appendix D: Maps of Monitoring Locations and AQMAs

Figure D.1 – Map of Diffusion Tube Monitoring Sites: Market Hill AQMA & Town Centre

Figure D.2 – Map of Diffusion Tube Monitoring Sites: East of Maldon Town Centre

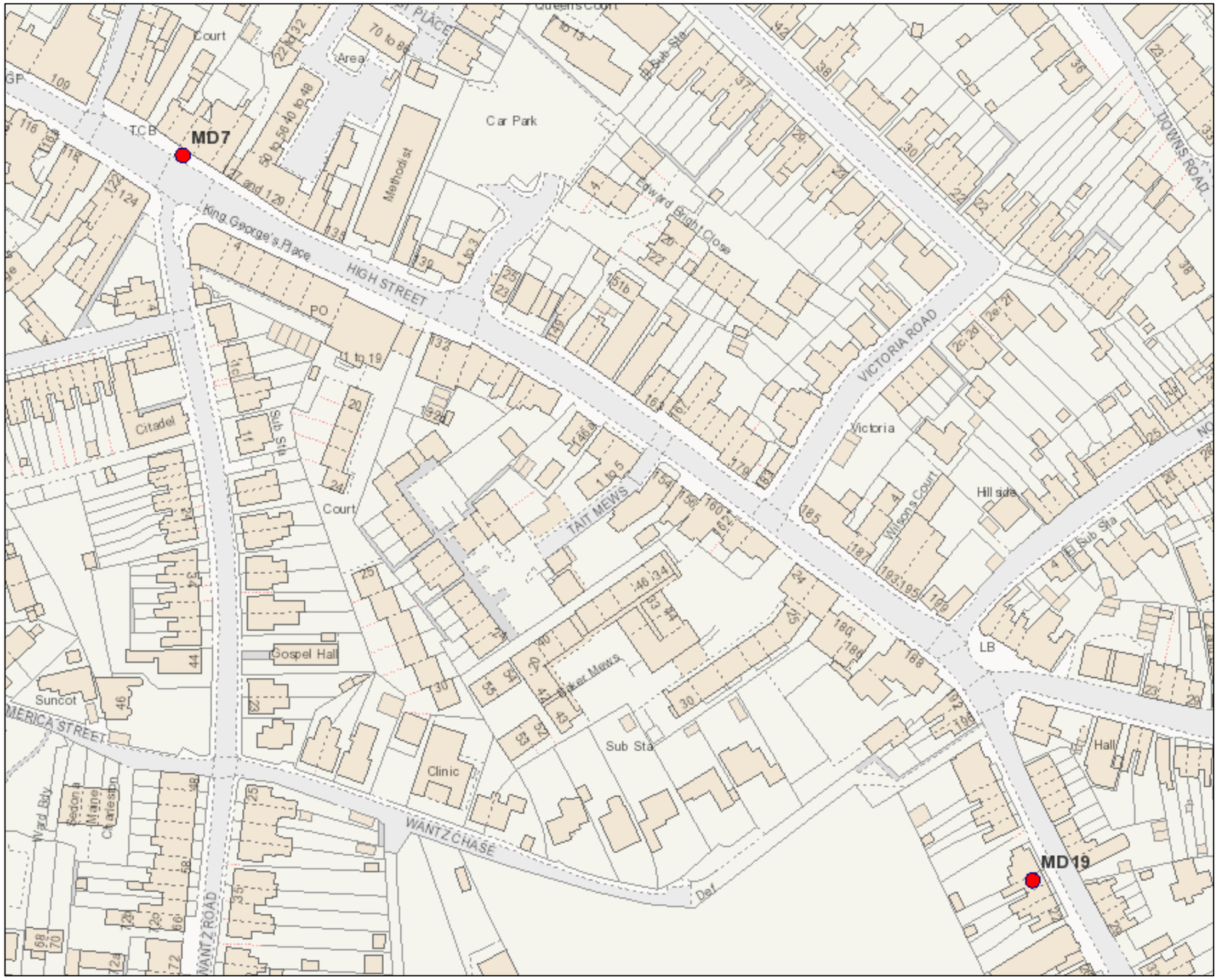


Figure D.3 – Map of Diffusion Tube Monitoring Sites: Heybridge

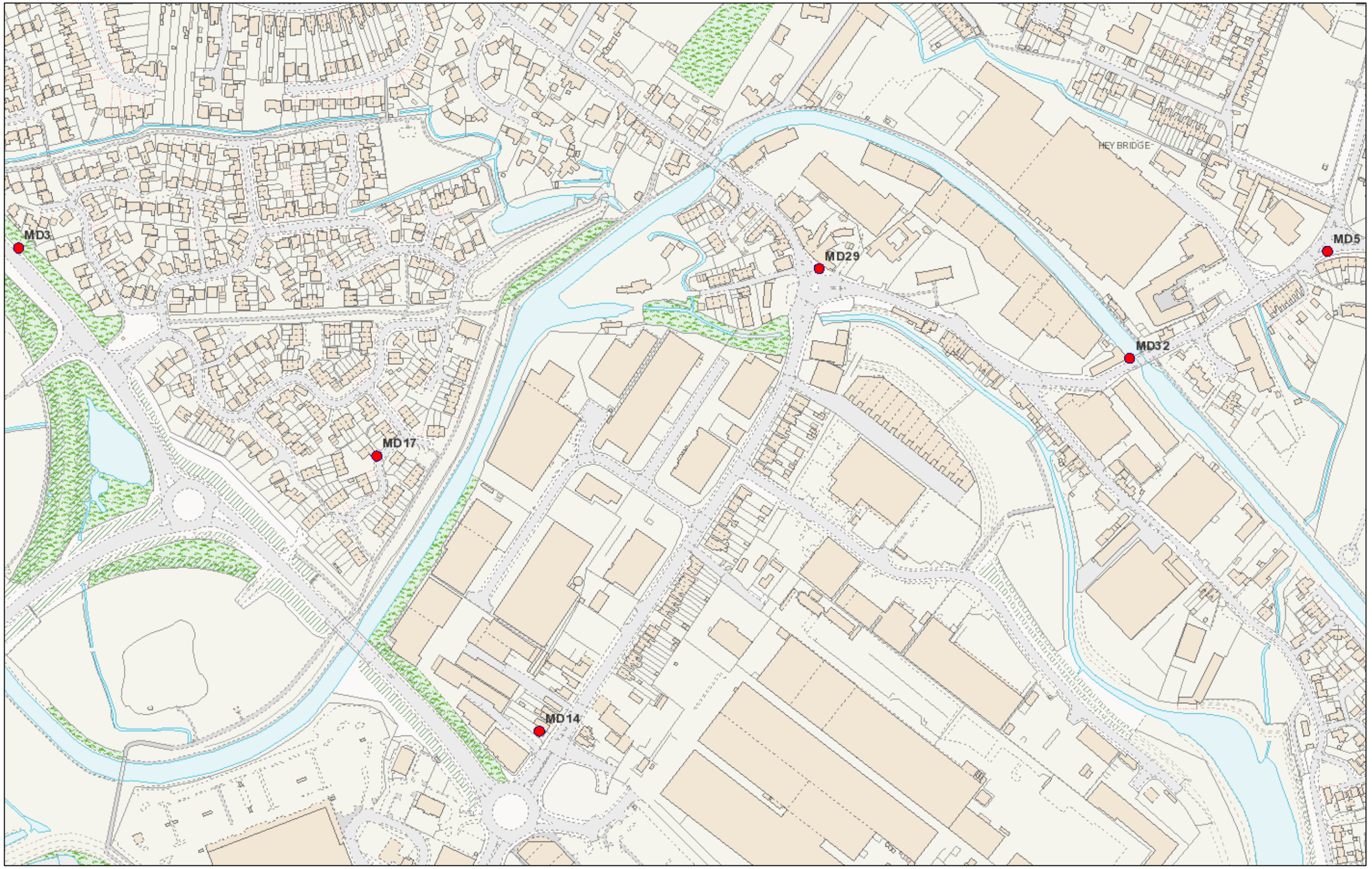


Figure D.4 – Map of Diffusion Tube Monitoring Sites: A414 Wycke Hill / Limebrook Way Roundabout

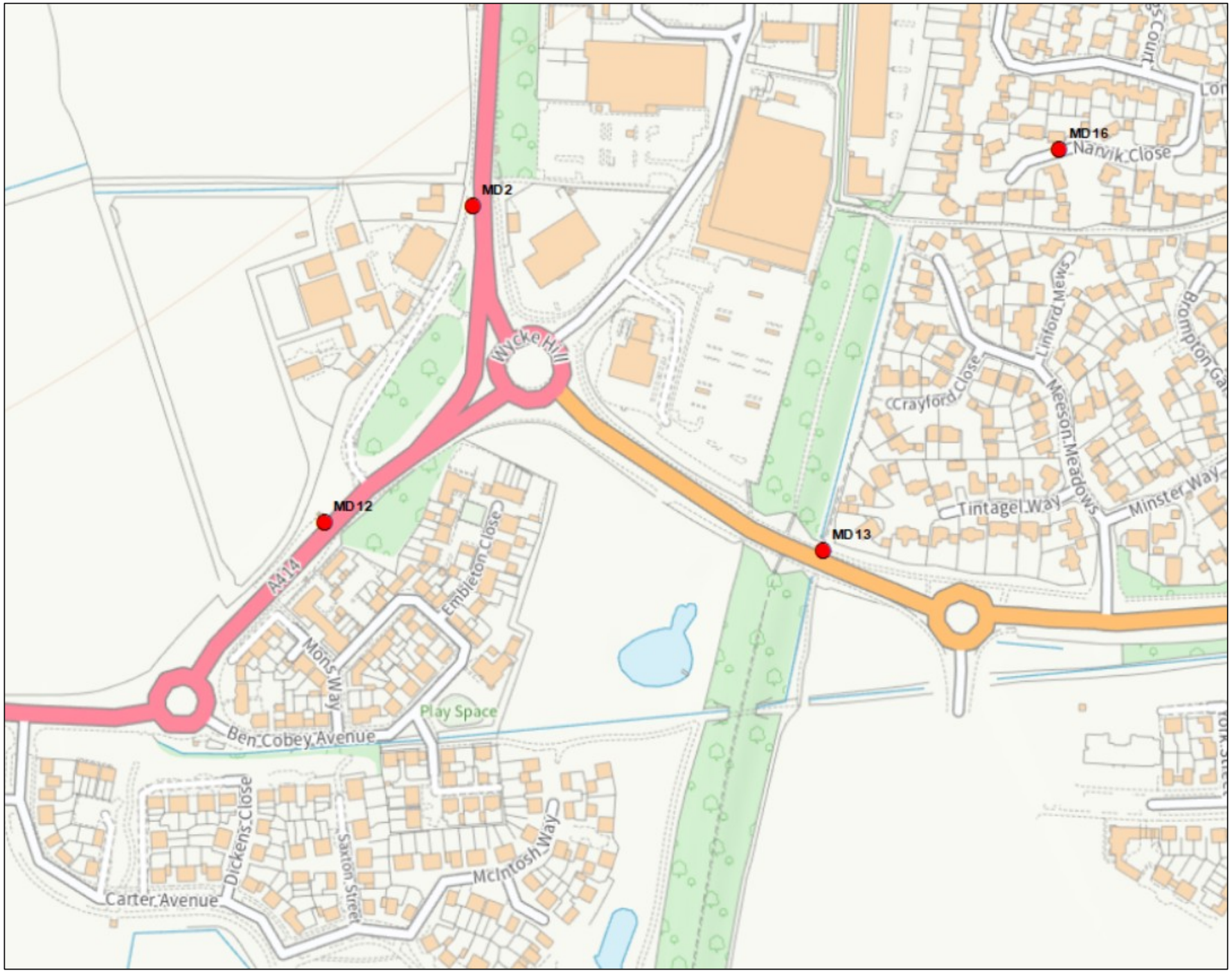


Figure D.5 – Map of Diffusion Tube Monitoring Sites: Latchingdon

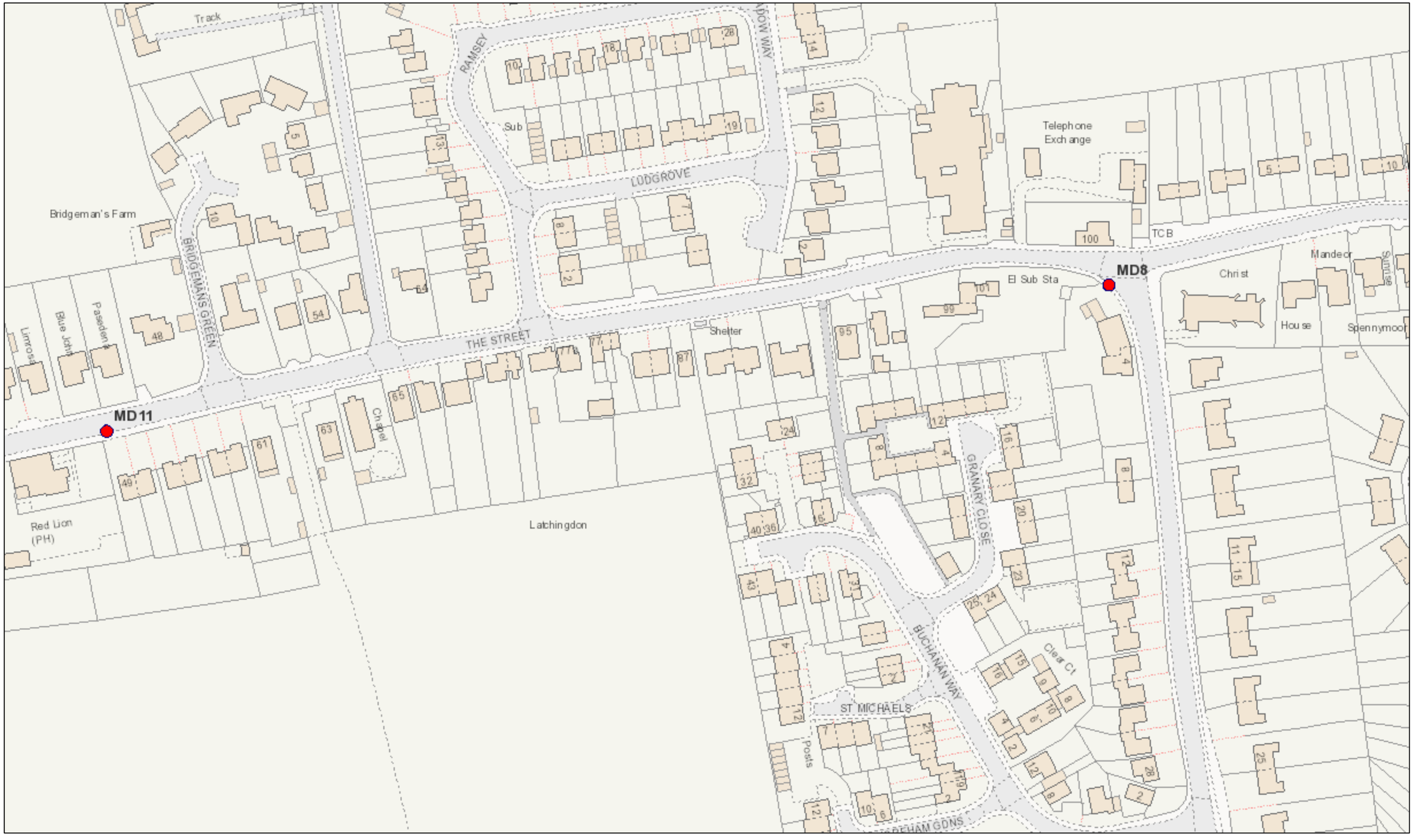
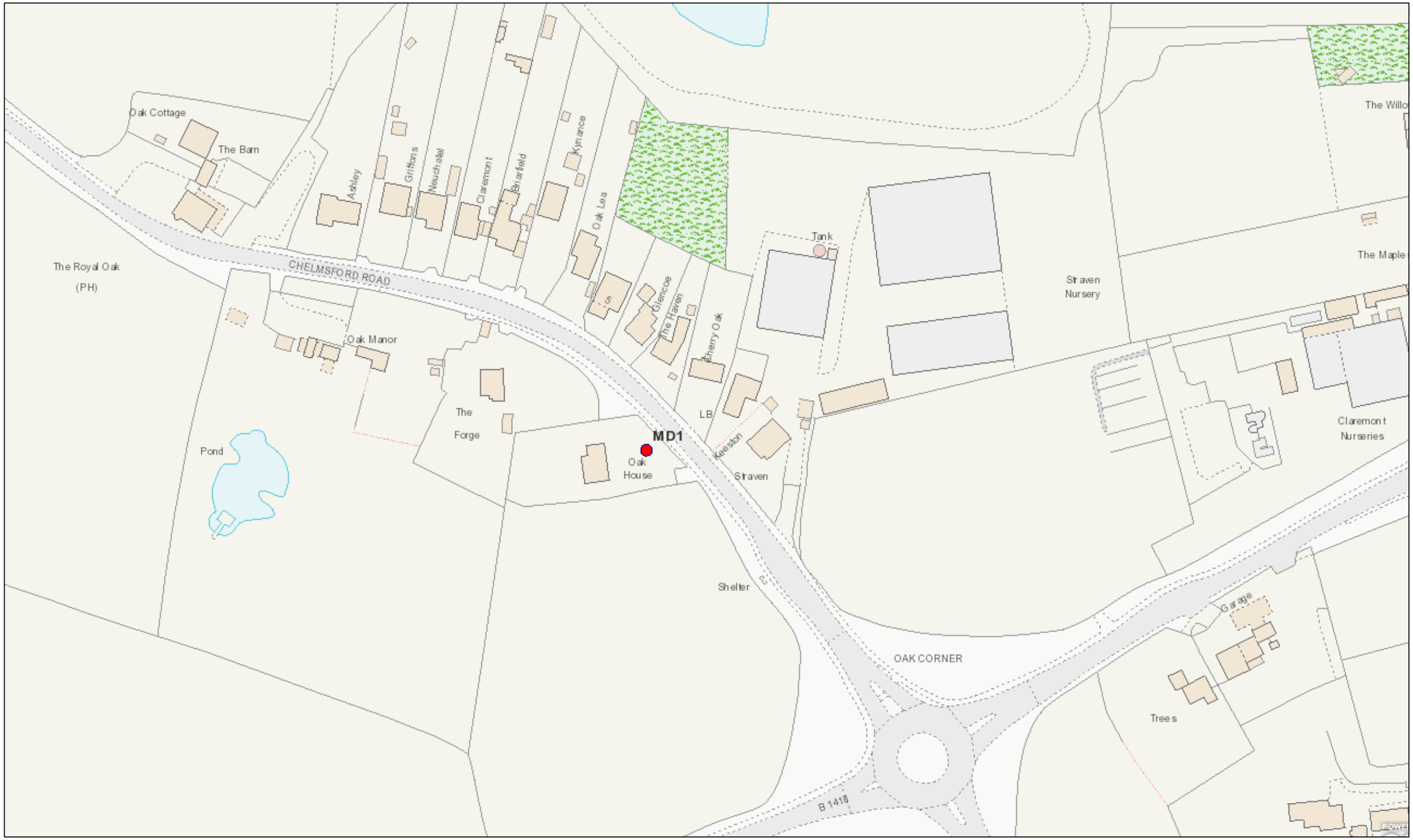


Figure D.6 – Map of Diffusion Tube Monitoring Sites: A414 Chelmsford Road



Appendix E: Summary of Air Quality Objectives in England

Table E.1 – Air Quality Objectives in England[2]

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

[2] 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

- Air Quality Strategy – Framework for Local Authority Delivery. August 2023. Published by Defra available at; https://www.gov.uk/government/publications/the-air-quality-strategy-for-england/air-quality-strategy-framework-for-local-authority-delivery
- Chemical hazards and poisons report: Issue 28. June 2022. Published by UK Health Security Agency available at; https://www.gov.uk/government/publications/chemical-hazards-and-poisons-report-issue-28
- Essex Air website available at; https://essexair.org.uk/
- Essex Air Quality Strategy available at; https://essexair.org.uk/strategy
- Essex Air social media feed available at; https://x.com/EssexAir
- Maldon District Council 2024 Air Quality Annual Status Report available at; https://cdn.cms42.com/essexair/maldon/Maldon_2025_ASR.pdf
- Maldon District Council Clean Air Route available at; https://www.maldon.gov.uk/info/20099/pollution/9148/air_quality/3
- Local Air Quality Management Background Maps available at; https://laqm.defra.gov.uk/air-quality/air-quality-assessment/background-maps/
- Local Air Quality Management Technical Guidance LAQM.TG22. May 2025 available at; https://laqm.defra.gov.uk/air-quality/featured/uk-regions-exc-london-technical-guidance/
- Local Air Quality Management Policy Guidance LAQM.PG22. May 2025 available at; https://laqm.defra.gov.uk/air-quality/featured/england-exc-london-policy-guidance/
- Local Air Quality Management QA/QC Framework available at; https://laqm.defra.gov.uk/air-quality/air-quality-assessment/qa-qc-framework/
- Public Health Framework available at; https://fingertips.phe.org.uk/profile/public-health-outcomes-framework
- Tesco Free Bus Route available at; https://bustimes.org/services/288-central-maldon-circular
- UK Air Quality Limits available at; https://uk-air.defra.gov.uk/air-pollution/uk-limits
- Zapmap Charging Points in or close to Maldon available at; https://www.zapmap.com/charge-points/maldon