

Colchester City 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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Executive Summary: Air Quality in Our Area

The 2025 Annual Status Report (ASR) is designed to provide the public with information relating to local air quality in Colchester, to fulfil Colchester City 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 2024, Colchester City Council measured **one** marginal exceedance of the Air Quality Objectives at relevant exposure. This exceedance is located at site CBC3 Mersea Road within the new Mersea Road Air Quality Management Area (AQMA).

Air Quality in Colchester

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})	<p>Particulate matter is everything in the air that is not a gas.</p> <p>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.</p> <p>PM₁₀ refers to particles under 10 micrometres. Fine particulate matter or PM_{2.5} are particles under 2.5 micrometres.</p>

The main source of air pollution in the Colchester is road traffic emissions from major roads, notably the A12, A120, A133, A134, A1232, Brook Street and Mersea Road. Significant traffic congestion can occur during peak times within Colchester causing high emissions of pollution such as nitrogen dioxide and particulate matter.

As the oldest recorded Roman town in Britain, Colchester has many narrow roads within the town centre and surrounding areas buildings flank to form a canyon like environment. Street canyons act to reduce dispersal of pollutants which can significantly worsen air quality.

Colchester City Council has three Air Quality Management Areas (AQMAs) which are detailed in Table 2.1. These air pollution hotspots have been declared due to emissions from road traffic causing exceedances of Nitrogen Dioxide concentrations at relevant exposure. The Air Quality Objectives and examples of where they apply are described in Appendix E.

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.

Colchester City Council 2025 – 2030 Air Quality Action Plan

In 2025, Colchester City Council adopted a new Air Quality Action Plan. The main priority for this Air Quality Action Plan is to achieve compliance with the nitrogen dioxide (NO₂) annual mean objective in Mersea Road. The main measure to achieve this objective is to deliver the St Botolph's Circus regeneration project.

St Botolph's Circus is situated to the south of Colchester Town Centre on the A134 Southway at its junction with St Botolph's Street, Mersea Road and Magdalen Street. Colchester Town railway station is also situated just off the roundabout.

As a crucial gateway into the city centre and a meeting point for different forms of transport, the regeneration of St Botolph's Circus is a vital part of Colchester's developing City Centre Masterplan.

In 2019, Essex County Council recognised the need for improvements at St Botolph's and undertook a consultation on the redesign of the roundabout.

In June / July 2023 a revised 'crossroads design' was consulted on as part of the City Centre Masterplan consultation. The design was further updated to address points raised within the consultation.

Air quality dispersion modelling has identified that the St Botolph's Circus regeneration project will lead to improved traffic flow along Mersea Road and achieve compliance with the nitrogen dioxide annual mean air quality objective.

The anticipated construction dates for St Botolph's are January 2026 to July 2027 and it is expected that compliance with the Air Quality Objectives will be measured in the first calendar year after completion. However, it would not necessarily be appropriate to revoke the AQMA without further monitoring to comply with Defra guidance for AQMA revocation.

Additional measures in the Action Plan will help improve air quality in the Brook Street AQMA and the Osborne Street and St John's Street AQMA which already comply with the Air Quality Objectives but in line with Defra guidance, are not yet eligible to have the AQMA revoked.

The Brook Street signage project uses fixed signage with messages based on psychological social cues to remind drivers to turn off their vehicles when stationary in queuing traffic along the Brook Street AQMA.

The high volume of buses using Osborne Street bus station makes buses the largest source of pollution within the Osborne Street and St John's Street AQMA. We will work with commercial bus operators and Essex County Council on ways to improve air quality in this area.

AQMA Amendments

Due to measured improvements in air quality, Colchester City Council revoked AQMA 3 in 2018 and AQMAs 2 and 4 in 2024.

The AQMA1 Central Corridors has been split into three smaller AQMAs:

- Brook Street AQMA
- Mersea Road AQMA
- Osborne Street & St John's Street AQMA

The 2024 AQMA order can be found in Appendix F.

The revocation of AQMAs 2, 3, and 4 by Colchester City Council reflects sustained reductions in nitrogen dioxide levels, primarily due to enhanced traffic management and cleaner vehicle technologies.

The restructuring of AQMA1 into three smaller, targeted AQMAs—Brook Street, Mersea Road, and Osborne Street & St John's Street—allows for more precise monitoring and mitigation strategies to address localised air pollution.

Essex Air Quality Strategy

The Draft Essex Air Quality Strategy 2025, developed by the Essex Air Quality Consortium, outlines a comprehensive plan to address air pollution, the largest environmental risk to public health in the UK, linked to approximately 36,000 deaths annually and nearly 900 deaths in Essex in 2021. The strategy, led by Essex County Council in partnership with 12 district, borough, city councils, and two unitary councils, aims to improve air quality across Essex, enhancing public health and environmental sustainability.

A public consultation on the draft ran from January 20 to March 2, 2025, inviting feedback via an online survey, printed copies, and email submissions to refine the strategy's vision, aims, and actions.

The strategy's vision is to create a cleaner, healthier Essex by reducing air pollution through collaborative efforts. Its key aims include reducing emissions, protecting vulnerable populations, and raising awareness about air quality's health impacts, such as cardiovascular and respiratory diseases, lung cancer, and dementia.

Proposed actions focus on practical measures like promoting sustainable transport (e.g., cycling, walking, and public transport), enhanced air quality monitoring, and integrating air quality considerations into urban planning and development. The strategy emphasizes community engagement, encouraging residents to adopt low-emission behaviours, such as reducing car idling and using cleaner energy sources.

The strategy aligns with national air quality objectives and complements local efforts, such as the Essex Design Guide's guidance on air quality in planning applications. It addresses local challenges, including high pollution levels in Air Quality Management Areas (AQMAs), by advocating for mitigation measures like green infrastructure and low-emission vehicles. The consultation will shape the final strategy, ensuring it reflects community priorities and scientific evidence.

By fostering partnerships and public participation, the Draft Essex Air Quality Strategy strives for measurable improvements in air quality, supporting healthier lives and a sustainable future.

Conclusions and Priorities

Colchester City Council have concluded that:

- One exceedance of the air quality objectives has been measured in 2024.
- There is a general trend of improved air quality although NO₂ concentrations at the exceedance location of CBC3 within the Mersea Road AQMA have no clear trend.
- There are no new developments that will have a significant impact on air quality.
- As set out in the LAQM Policy guidance, it is necessary for Colchester City Council to develop and adopt an Air Quality Strategy (AQS). Colchester City Council has been involved in developing the draft Essex Air Quality Strategy.

Colchester City Council's priority for 2025 is to deliver measures set out in the 2025 – 2030 Air Quality Action Plan.

Local Responsibilities and Commitment

This ASR was prepared by Public Health and Protection Services of Chelmsford City Council on behalf of Colchester City Council's Public Protection team.

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

This ASR has been approved by:

Leigh Newman – Environmental Protection Manager, Colchester City Council.

If you have any comments on this ASR please send them to Leigh Newman at:

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How to get Involved

Colchester City Council is a member of the Essex Air Quality consortium which along with Essex County Council. The Essex Air [website](#) provides a pollution monitoring map and highlights simple actions that people can take to reduce emissions.

The website features a dedicated school zone with resources, activities, and games, an air pollution map, tips to reduce exposure to air pollution, and advice on changing travel habits to lessen exposure to pollution.

The [@EssexAir](#) feed provides localised weekly air pollution forecasts.

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1 Local Air Quality Management

This report provides an overview of air quality in Colchester 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 Colchester City 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.

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 AQMAs declared by Colchester City Council can be found in Table 2.1. The table presents a description of the three AQMAs that are currently designated within Colchester. Appendix D: provides maps of AQMAs and also the air quality monitoring locations in relation to the AQMAs. The air quality objectives pertinent to the current AQMA designations are as follows:

- Nitrogen Dioxide (NO₂) annual mean

Table 2.1 – Declared Air Quality Management Areas

AQMA Name	Date of Declaration	Pollutants and Air Quality Objectives	One Line Description	Is air quality in the AQMA influenced by roads controlled by 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
Brook Street AQMA	20 th May 2024	NO ₂ Annual Mean	Part of Brook Street as set out on the AQMA map	No	No Exceedance	No Exceedance	3	Colchester 2025 – 2030 Air Quality Action Plan	https://essexair.org.uk/local-authorities/colchester
Mersea Road AQMA			Part of Mersea Road as set out on the AQMA map	No	41.0µg/m ³ at relevant exposure	42.9µg/m ³ at relevant exposure	0		
Osborne Street & St John's Street AQMA			All of Osborne Street & St John's Street	No	No Exceedance	No Exceedance	3		

Colchester City Council confirms the information on UK-Air regarding their AQMA(s) is up to date

Colchester City Council confirms that all current AQAPs have been submitted to Defra

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

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

Colchester City Council have a number of ongoing measures to improve air quality in Colchester. These are detailed in Table 2.2 below.

Table 2.2 – Progress on Measures to Improve Air Quality

Measure No.	Measure	Category	Classification	Estimated Year Measure to be Introduced	Estimated / Actual Completion Year	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Target Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Potential Barriers to Implementation
Dedicated Targeted Measures															
1	St Botolph's Circus Regeneration	Transport Planning and Infrastructure	Other	2019	2027	Essex County Council / Colchester City Council	Levelling Up Section 106 Town Deal	No	Funded	>£10 million	Planning	>2.34ug/m3 NOx >2ug/m3 NO ₂	Reduced Congestion	Consultation complete. Further works likely to be included within Colchester Future Transport Strategy	Dedicated Mersea Road AQ measure
2	Permanent installation of the Brook Street idling signage project	Public Information	Other	2024	2025	Essex County Council / Colchester City Council		Yes	Funded	< £10k	Planning	Not quantified		Signage now installed July 2025	Dedicated Brook Street AQ measure
3	Bus Operator Engagement	Vehicle Fleet Efficiency	Other			Essex County Council / Colchester City Council / Local Bus Operators		No				Not quantified	N/A	City Council participation in quarterly Bus Blueprint meeting with ECC and bus operators.	Dedicated Osborne Street & St John's Street AQ measure
Infrastructure															
4	Rapid Transport Service (RTS)	Transport Planning and Infrastructure		2025/26		Essex County Council		No	Funded	£>10			Reduced Congestion	Construction in progress	
5	Local Cycling and Walking Investment Programmes (LCWIP)	Transport Planning and Infrastructure		2024	Ongoing	Essex County Council		No	Unfunded	£>10			Reduced Congestion	Consultation complete. Further works likely to be included within Colchester Future Transport Strategy	Funding
6	Collection and analysis of Air Quality and transport data to develop traffic management measures	Traffic Management	UTC, Congestion management, traffic reduction	2016	2025	Essex County Council	Essex County Council / March 2021 Defra Air Quality Grant Funding	Yes	Funded	£100k - £500k	Implementation	Not quantified	Data Capture	Air quality and vehicle movement sensors have been installed at strategic locations to enable combined traffic flow and pollution monitoring to be undertaken	

Measure No.	Measure	Category	Classification	Estimated Year Measure to be Introduced	Estimated / Actual Completion Year	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Target Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Potential Barriers to Implementation
Policy & Strategies															
7	Colchester Future Transport Strategy	Traffic Management	Strategic highway improvements, Reprioritising road space away from cars, including Access management, Selective vehicle priority, bus priority, high vehicle occupancy lane	2019	2026	Essex County Council	Essex County Council	No	Funded	£1 million - £10 million	Implementation	Not quantified	N/A	Public Engagement	
8	Positive Parking Strategy	Traffic Management	Other	2023	2035	Colchester City Council	LA and external	No	Partially Funded	£1 million - £10 million	Implementation	Reduction in peak travel	Remove key casual long stay parking from city centre core to P&R by 2026/27	Long stay at Middleborough given up. Long stay removed from St John's to Britannia. Britannia car park due to close 2026/27. Park & Ride on stream via RTS by 2026, with new east P&R due around same time (by ECC)	Rapid Transit dependent upon ECC. East P&R dependent upon ECC and development in garden community, plus relief road connection to A120
9	Essex Electric Vehicle Charging strategy	Traffic Management	Strategy for implementation of electric charge points	2023	2025	Essex County Council	Essex County Council	No	Funded		Implementation	Not quantified		A number of charge points being implemented on street with ORCS funding. More funding coming forward through LEVI and cross pavement policy awaited from Highways	Funding
Behaviour Change															
10	Colchester Travel Plan Club	Promoting Travel Alternatives	Other	2004	Ongoing	Colchester City Council/Essex County Council/Businesses in Colchester	Colchester City Council/local Businesses	No	Funded	£10k - 50k	Implementation	Not quantified	N/A	Working with businesses to support creation and implementation of workplace travel plans. Membership offer refreshed and new website launched in April 2025. BID formally joining the club as a full member and Sodexo as an associate member	
11	City to Home e-Cargo bike service	Freight and Delivery	Freight Partnerships	2022	2025	Colchester City Council	Colchester City Council	Yes	Funded	£100k - £500k	Implementation	Not quantified	Take up of active travel	eCargo Bike delivery app developed and due to launch in August 2025, to support	

Measure No.	Measure	Category	Classification	Estimated Year Measure to be Introduced	Estimated / Actual Completion Year	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Target Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Potential Barriers to Implementation
		Management	for city centre deliveries				with Defra grant 21/22						/reduction in car use	growth of delivery service. Development of a micro distribution centre and city to home delivery by eCargo bike	
12	CAREless Pollution Campaign	Promoting Travel Alternatives	Other	2019	2025	Colchester City Council	Colchester City Council / Defra Air Quality Grant Funding	Yes	Funded	>£50k	Implementation	Not quantified	Number of businesses using toolkit	Business toolkit to support awareness raising and action around engine idling..	
13	Take Care of Your Air – Business eLearning tool and engagement	Promoting Travel Alternatives	Other	2023	2025	Colchester City Council	Colchester City Council / Defra Air Quality Grant Funding 22/23	Yes	Funded	£50k - £100k	Implementation	Not quantified	Number of businesses participating and take up of free elearning tool	Free Business eLearning module to raise awareness of air pollution and benefits of active travel due to launch August 2025. Close working with the BID and engagement with businesses ongoing, strong case studies emerging.	
14	Take Care of your Air Campaign – work with schools	Promoting Travel Alternatives	Other	2019	2025	Colchester City Council	Colchester City Council / Defra Air Quality Grant Funding	Yes	Funded	<£30k	Implementation	Not quantified	Number of schools participating	No idling School toolkit now includes Active Travel and is being promoted through assemblies and workshops with schools including focused work with Eco and School councils plus youth groups such as Beavers and Scouts. Active Travel school leaflet and mapping produced to assist engagement	
15	Bikeability Boost in schools	Promoting Travel Alternatives	Intensive active travel campaign & infrastructure	2021	2025	Colchester City Council	Colchester City Council	Yes	Funded	<£10k	Implementation	Not quantified	Increase in children cycling through Pre and post survey comparison	Bikeability Boost Bikeability Boost an enhanced package of support for children undertaking Bikeability training in schools to help support them to cycle more. Project currently being evaluated and recommendations being made for ongoing delivery of the most successful elements in a financially sustainable way	
16	Pay As You Go access to electric cars, bikes and cargo bikes to provide affordable less polluting transport choice	Alternatives to private vehicle use	Other	2021	2029	Colchester City Council	Defra air quality grant 2020/21 then expansion funded through development & partnerships	Yes	Funded	£50k - £100k	Implementation	Not quantified	Take up of active travel /reduction in car use through surveys and monitoring	Third car club launched in City Centre in 2025, further car club cars being built into new planning obligations of new developments. New Town and City Centre PAYG Bike hubs continue with a further community led hub being set up in Wivenhoe	

Measure No.	Measure	Category	Classification	Estimated Year Measure to be Introduced	Estimated / Actual Completion Year	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Target Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Potential Barriers to Implementation
17	New Cycle Colchester Website and map to signpost to local help and support for anyone wanting to cycle	Alternatives to private vehicle use	Other	2023	2025	Colchester City Council	Colchester City Council with Defra grant 22/23	Yes	Funded	£50k - £100k	Complete	Not quantified	Take up of active travel /reduction in car use Usage of website and map through analytics	Cycle Colchester website launched in 2024. New Colchester Cycling Map completed in July 2025 with print run to be delivered in August 2025 for distribution through numerous outlets in Colchester and via partners and events.	
18	CAREless Pollution - Residents	Promoting Travel Alternatives	Other	2019	2025	Colchester City Council	Colchester City Council / Defra Air Quality Grant Funding	Yes	Funded	<£30k	Implementation	Not quantified	Number of residents using resources in their neighbourhoods	CAREless Pollution toolkit for volunteers to deliver No Idling action in their neighbourhoods,	
19	Community engagement to raise awareness of air pollution and promote and support active travel	Promoting Travel Alternatives	Other	2022	2025	Colchester City Council	Colchester City Council / Defra Air Quality Grant Funding	Yes	Funded	£50k - £100k	Implementation	Not quantified	Number of people spoken to and key themes identified	5 events attended to date in 2025 engaging with residents on active travel and awareness raising of air pollution	
20	Walk with Words - wayfinding City Centre to University/student accommodation and spur to Greenstead	Alternatives to private vehicle use	Other	2020	2025	Colchester City Council	Colchester City Council developers and Police and Crime Commissioner funding	No	Funded	£100k - £500k	Complete	Not quantified	Take up of active travel /reduction in car use	Innovative wayfinding installed with 16 posts including digital interactive content accessed from each post submitted by community and curated by Colchester Institute	
21	Fixing the Link walking route Colchester Station to City Centre	Alternatives to private vehicle use	Other	2022	2025	Colchester City Council	Colchester City Council Essex County Council and Greater Anglia	No	Funded	£100k - £500k	Complete	Not quantified	Take up of active travel /reduction in car use	Phase 2 Roundabout planting and signage to enhance the walking route from train station to city centre	
22	Try before you buy eBikes and eCargo Bike hire	Alternatives to private vehicle use	Other	2022	2025	Colchester City Council	Colchester City Council	Yes	Funded	£10k - 50k	Implementation	Not quantified	Number of hires and purchases after trying	Short-term hire scheme for residents and businesses to try an ebike/cargo bike for up to one month, running well with many enquiries and hires being processed.	
23	City Centre Secure Bike Park	Alternatives to private vehicle use	Other	2022	2026	Colchester City Council	Colchester City Council / Essex County Council	No	Partially Funded	£100k - £500k	Implementation	Not quantified	Take up of active travel /reduction in car use Reduced number of bike thefts in city centre	A solution to deliver the permanent Bike Hub facility is in progress using LUF funding, meanwhile take up as part of the trial continues to rise.	

Measure No.	Measure	Category	Classification	Estimated Year Measure to be Introduced	Estimated / Actual Completion Year	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Target Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Potential Barriers to Implementation
24	Bike Wise campaign	Alternatives to private vehicle use	Other	2023	2025	Colchester City Council	Colchester City Council Essex Police	No	Partially Funded	£<10	Implementation	Not quantified	Take up of active travel/ reduction in car use Reduced number of bike thefts in city centre	To help prevent bike theft, new signs for banks of bike parking will highlight locking best practice and campaign refresh due to take place with police.	
25	Colchester Pedal Power	Alternatives to private vehicle use	Other	2023	2025	Colchester City Council/Essex County Council/Active Wellbeing Society	Active Essex/Town Deal	No	Funded	£100k-£500k	Implementation	Not quantified	Take up of active travel /reduction in car use	Community project to distribute 500 bikes to adults in Greenstead to use for access to work, study, leisure and day to day journeys.	
26	Work with health partners including promotion of existing airTEXT service	Public Information	Other	2024	2030	Colchester City Council	Colchester City Council	No	Funded	< £10k	Planning	N/A	Number of Subscribers	Air Text resources being developed and will be promoted alongside active travel and careless pollution campaign via health partners	
27	Develop & Adopt a Local Air Quality Strategy (AQS)	Policy Guidance and Development Control	Other policy	2023	2026	Colchester City Council Essex Air Essex County Council	Essex County Council	No	Unfunded	£10k-50k	Planning	Not quantified	Adoption of AQS	CCC have had input into the development and consultation on the ECC joint Air Quality Strategy	
28	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	N/A	Ongoing	County Council / District & Borough Councils	N/A	No	Funded	< £10k	Implementation	Not quantified	N/A	Ongoing	

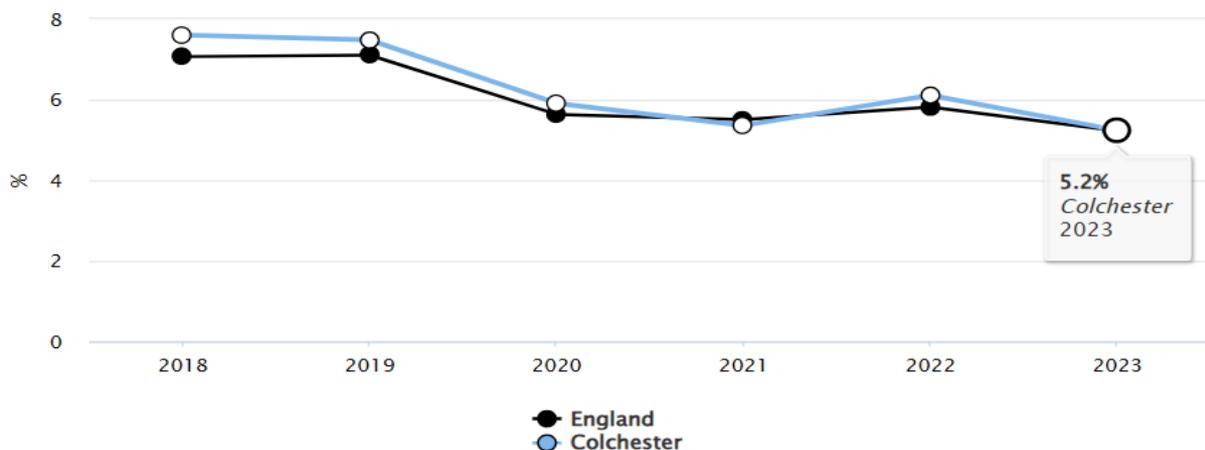
2.3 PM_{2.5} – Local Authority Approach to Reducing Emissions and/or Concentrations

As detailed in Policy Guidance LAQM.PG22 (Chapter 8) and the Air Quality Strategy¹, 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.

Colchester City Council does not monitor PM_{2.5} concentrations however notes the Defra background mapping resource which for PM_{2.5} in 2024 models a maximum annual mean concentration of 9.3µg/m³ down from 11.5µg/m³ in 2023.

The Public Health Outcomes Framework indicator D01 – Fraction of mortality attributable to particulate (PM_{2.5}) air pollution which for 2023 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



Colchester City Council is taking the following measures to address PM_{2.5}:

- 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

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

This section sets out the monitoring undertaken within 2024 by Colchester City 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

Colchester City Council have discontinued use of the automatic monitoring site in Brook Street. The monitoring site was not within the new AQMA and the diffusion tube sites in Brook Street provide suitable evidence of air quality within the AQMA.

3.1.2 Non-Automatic Monitoring Sites

Colchester City Council undertook non-automatic (i.e. passive) monitoring of NO₂ at 37 sites during 2024. Table A.1 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. Details on adjustments are provided in Appendix C.

3.2.1 Nitrogen Dioxide (NO₂)

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.

In 2024, Colchester City Council measured **one** exceedance of the annual mean NO₂ Air Quality Objective. This exceedance was at monitoring location CBC3 in Mersea Road.

No diffusion tube monitoring location exceeded 60µg/m³ suggesting it is unlikely that the hourly NO₂ Air Quality Objective has been breached.

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)
CBC3A, CBC3B, CBC3C	Mersea Road, 21	Roadside	599914	224643	NO ₂	YES AQMA1	0.3	1.9	No	2.5
CBC43	Magdalen Street	Roadside	600356	224763	NO ₂	NO	9.0	0.4	No	2.5
CBC45A, CBC45B, CBC45C	Brook Street, 28/30	Roadside	600560	225181	NO ₂	YES AQMA1	0.0	1.0	No	2.5
CBC48	Queen Street, 35 (Chez Afrique)	Roadside	599908	224942	NO ₂	NO	0.0	1.5	No	2.5
CBC54	Mersea Road, 10	Roadside	599922	224728	NO ₂	YES AQMA1	1.6	1.8	No	2.5
CBC62, CBC62A, CBC62B	Mersea Road, 9	Roadside	599923	224738	NO ₂	YES AQMA1	0.0	2.9	No	2.5
CBC63	Mersea Road, 12	Roadside	599921	224711	NO ₂	YES AQMA1	0.0	1.8	No	2.5
CBC65	Maldon Road, 99	Roadside	598797	224489	NO ₂	NO	8.0	0.4	No	2.5
CBC68	Brook Street 60 (56)	Roadside	600589	225113	NO ₂	NO	0.0	10.4	No	2.5
CBC69, CBC69A, CBC69B	Brook Street, 23	Roadside	600545	225205	NO ₂	YES AQMA1	0.0	1.1	No	2.5
CBC71	Osborne Street, 6	Roadside	599818	224924	NO ₂	YES AQMA1	0.0	2.1	No	2.5
CBC76	Harwich Road, 53	Roadside	601162	225471	NO ₂	NO	2.0	2.0	No	2.5

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)
CBC88, CBC88A, CBC88B	Brook Street 48	Roadside	600571	225151	NO ₂	YES AQMA1	0.0	2.6	No	2.5
CBC101	Ipswich Rd 50	Roadside	600868	225452	NO ₂	NO	2.0	1.3	No	2.5
CBC102	East St 72	Roadside	600752	225313	NO ₂	NO	0.0	1.0	No	2.5
CBC103	Brook St 74	Roadside	600607	225049	NO ₂	NO	6.0	2.0	No	2.5
CBC104	Military Rd 37	Roadside	600193	224653	NO ₂	NO	0.0	4.5	No	2.5
CBC105	East Hill 4A	Roadside	600224	225255	NO ₂	NO	1.0	1.0	No	2.5
CBC106	Mersea Rd 29 (Junc. with Lucas Road)	Roadside	599911	224558	NO ₂	YES AQMA1	1.5	0.1	No	2.5
CBC107	North Hill 49	Roadside	599389	225373	NO ₂	NO	2.3	0.1	No	2.5
CBC109	North Hill, Strada (Middletons)	Roadside	599398	225432	NO ₂	NO	0.0	1.5	No	2.5
CBC110	Queen St Showboat (Slots)	Roadside	599891	225021	NO ₂	NO	0.0	2.0	No	2.5
CBC111	St John's Street, Lemon Tree	Urban Centre	599473	224982	NO ₂	YES AQMA1	0.0	1.5	No	2.5
CBC112	High St George Hotel	Urban Centre	599730	225232	NO ₂	NO	0.0	2.5	No	2.5
CBC115	Harwich Road 18 (24)	Roadside	601083	225387	NO ₂	NO	0.0	7.0	No	2.5
CBC116	Harwich Road 19	Roadside	601115	225355	NO ₂	NO	0.0	12.0	No	2.5
CBC117	High Street 71	Roadside	599984	225238	NO ₂	NO	0.0	2.0	No	2.5
CBC124	East Hill 58	Roadside	600516	225277	NO ₂	NO	0.0	2.0	No	2.5
CBC125	Bergholt Road 6	Roadside	599227	226509	NO ₂	NO	0.0	1.0	No	2.5
CBC127	Brook St. West side Jun with East Hill (Hairdresser)	Roadside	600537	225242	NO ₂	YES AQMA1	0.0	1.0	No	2.5

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)
CBC128	Brook St. East side jun with East Hill	Roadside	600547	225244	NO ₂	YES AQMA1	0.0	1.0	No	2.5
CBC129	Brook Street 33/35	Roadside	600550	225183	NO ₂	YES AQMA1	0.0	1.0	No	2.5
CBC130	Osbourne Street 43 (Taxi)	Roadside	599701	224964	NO ₂	YES AQMA1	0.0	1.0	No	2.5
CBC137	Coggeshall Rd 93B	Roadside	590325	223495	NO ₂	NO	0.0	3.0	No	2.5
CBC21, CBC138, CBC139	Head Street	Roadside	599413	225056	NO ₂	NO	2.0	0.6	No	2.5
CBC144	Mill Rd 237	Roadside	599896	228282	NO ₂	NO	0.0	5.5	No	2.5
CBC145	Halstead Road 53	Roadside	596040	225284	NO ₂	NO	0.0	12.0	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 NO₂ Monitoring Results: Non-Automatic Monitoring (µg/m³)

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
CBC3A, CBC3B, CBC3C	599914	224643	Roadside	90.6	90.6	43.9	46.4	41.3	42.0	44.1
CBC43	600356	224763	Roadside	90.6	90.6	25.4	25.0	22.1	22.7	24.4
CBC45A, CBC45B, CBC45C	600560	225181	Roadside	90.6	90.6	35.3	38.4	35.5	36.5	34.4
CBC48	599908	224942	Roadside	75.0	75.0	30.3	30.9	26.3	29.6	27.0
CBC54	599922	224728	Roadside	90.6	90.6	35.1	37.8	33.0	31.1	34.8
CBC62, CBC62A, CBC62B	599923	224738	Roadside	90.6	90.6	31.8	35.2	30.8	31.8	29.2
CBC63	599921	224711	Roadside	90.6	90.6	37.4	39.7	35.5	36.7	34.2
CBC65	598797	224489	Roadside	90.6	90.6	17.6	18.3	16.0	18.0	16.0
CBC68	600589	225113	Roadside	90.6	90.6	19.1	21.8	17.1	18.8	16.7
CBC69, CBC69A, CBC69B	600545	225205	Roadside	90.6	90.6	38.3	34.5	33.5	37.8	34.0
CBC71	599818	224924	Roadside	83.0	83.0	37.8	40.2	36.2	36.2	38.4
CBC76	601162	225471	Roadside	90.6	90.6	23.8	25.9	21.0	22.3	21.7
CBC88, CBC88A, CBC88B	600571	225151	Roadside	81.1	81.1	22.2	20.7	18.2	19.5	17.7
CBC101	600868	225452	Roadside	90.6	90.6	24.5	28.0	25.3	29.3	26.1
CBC102	600752	225313	Roadside	83.0	83.0	31.3	36.2	29.0	30.3	28.8
CBC103	600607	225049	Roadside	90.6	90.6	20.3	23.6	18.1	20.7	18.3
CBC104	600193	224653	Roadside	90.6	90.6	22.9	21.9	20.0	21.4	20.7
CBC105	600224	225255	Roadside	90.6	90.6	26.0	26.1	23.1	27.9	21.6
CBC106	599911	224558	Roadside	90.6	90.6	34.2	33.4	29.8	31.3	29.3
CBC107	599389	225373	Roadside	90.6	90.6	28.3	24.1	22.6	23.3	22.5

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
CBC109	599398	225432	Roadside	81.1	81.1	29.9	29.6	25.1	23.6	26.3
CBC110	599891	225021	Roadside	90.6	90.6	24.2	26.7	20.9	23.9	22.8
CBC111	599473	224982	Urban Centre	90.6	90.6	37.3	37.3	30.7	32.2	36.5
CBC112	599730	225232	Urban Centre	90.6	90.6	19.2	19.9	22.2	23.9	21.6
CBC115	601083	225387	Roadside	90.6	90.6	20.4	20.1	19.4	20.4	16.3
CBC116	601115	225355	Roadside	90.6	90.6	16.2	14.5	13.1	14.4	11.8
CBC117	599984	225238	Roadside	90.6	90.6	33.5	31.8	30.3	27.8	27.4
CBC124	600516	225277	Roadside	90.6	90.6	28.4	32.1	29.2	31.3	27.4
CBC125	599226.52	226508.71	Roadside	90.6	90.6	26.8	26.6	24.5	26.8	24.8
CBC127	600537.22	225241.99	Roadside	90.6	90.6	35.1	32.9	32.0	28.2	31.2
CBC128	600546.54	225244.33	Roadside	90.6	90.6	24.4	25.7	20.8	23.7	19.4
CBC129	600550	225183	Roadside	90.6	90.6	40.0	41.3	36.0	38.9	37.5
CBC130	599701	224964	Roadside	81.1	81.1	34.2	N/A	30.3	34.7	31.9
CBC137	590325	223495	Roadside	90.6	90.6	28.5	33.3	22.4	21.9	19.2
CBC21, CBC138, CBC139	599413	225056	Roadside	83.0	83.0	32.4	39.1	33.0	34.9	32.9
CBC144	599896	228282	Roadside	90.6	90.6	N/A	N/A	N/A	13.3	11.4
CBC145	596040	225284	Roadside	90.6	90.6	N/A	N/A	N/A	20.5	19.7

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 $\mu\text{g}/\text{m}^3$.

Exceedances of the NO_2 annual mean objective of $40\mu\text{g}/\text{m}^3$ are shown in **bold**.

NO₂ annual means exceeding 60µg/m³, indicating a potential exceedance of the NO₂ 1-hour mean objective are shown in **bold and underlined**.

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.2 – Trends in Annual Mean NO₂ Concentrations – Brook Street

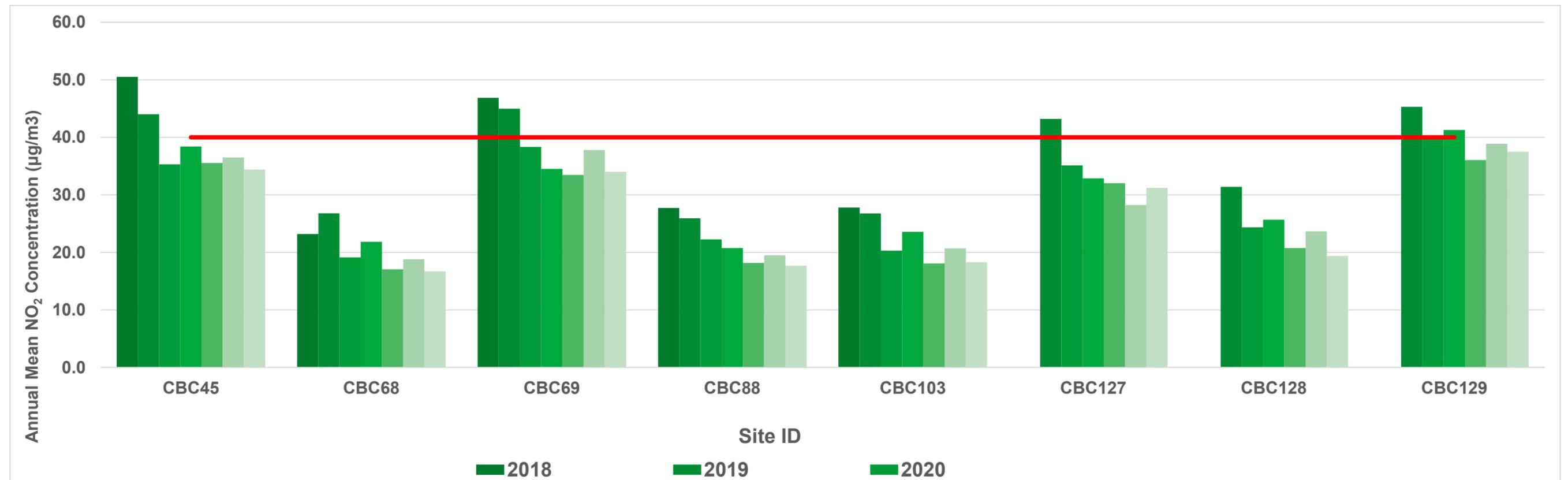
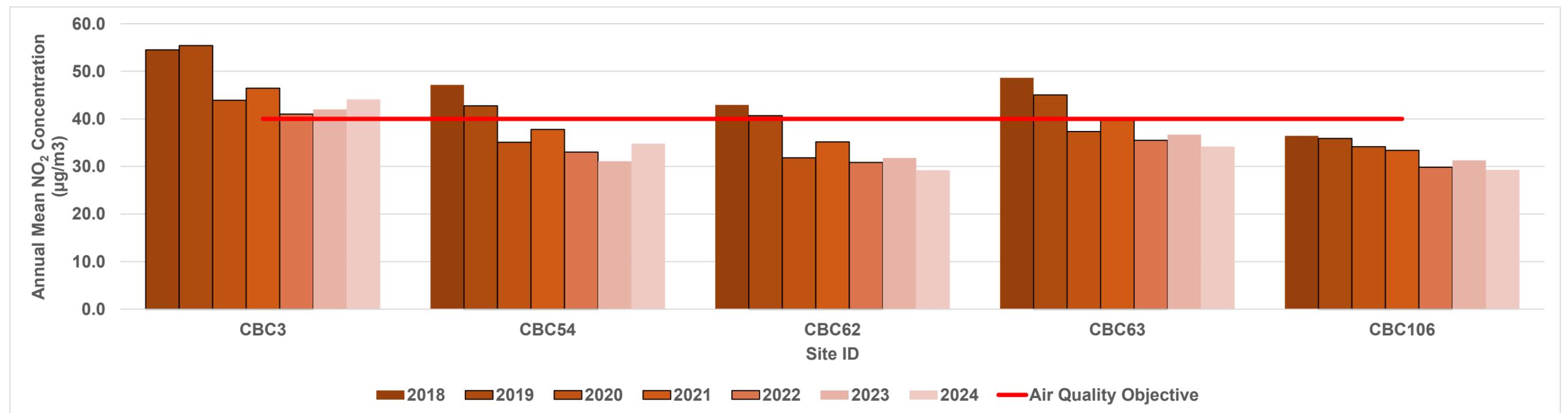


Figure A.3 – Trends in Annual Mean NO₂ Concentrations – Mersea Road



Appendix B: Full Monthly Diffusion Tube Results for 2024

Table B.1 – NO₂ 2024 Diffusion Tube Results (µg/m³)

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)	Comment
CBC3A	599914	224643	50.9	68.6	50.1	51.0	59.7	60.8	62.2	58.0	61.9	64.3	54.3	Lost by Lab	-	-	Triplicate Site with CBC3A, CBC3B and CBC3C - Annual data provided for CBC3C only
CBC3B	599914	224643	52.4	57.6	54.7	46.7	59.4	63.9	57.5	58.1	52.9	40.7	49.4	Lost by Lab	-	-	Triplicate Site with CBC3A, CBC3B and CBC3C - Annual data provided for CBC3C only
CBC3C	599914	224643	45.9	56.6	56.8	52.7	60.5	62.8	62.7	62.6	53.6	59.3	56.2	Lost by Lab	56.5	44.1	Triplicate Site with CBC3A, CBC3B and CBC3C - Annual data provided for CBC3C only
CBC21	599413	225056	Missing	43.1	44.5	32.9	43.4	41.2	41.2	40.7	26.8	48.6	34.7	Lost by Lab	-	-	Triplicate Site with CBC21, CBC138 and CBC139 - Annual data provided for CBC139 only
CBC43	600356	224763	35.4	32.2	25.2	25.2	28.0	27.7	24.0	25.2	48.6	33.5	39.6	Lost by Lab	31.3	24.4	
CBC45A	600560	225181	48.6	42.7	41.6	38.9	51.7	39.8	38.6	37.0	48.2	51.0	31.5	Lost by Lab	-	-	Triplicate Site with CBC45A, CBC45B and CBC45C - Annual data provided for CBC45C only
CBC45B	600560	225181	42.5	46.7	53.0	38.2	54.0	43.3	39.6	36.3	52.9	48.7	47.3	Lost by Lab	-	-	Triplicate Site with CBC45A, CBC45B and CBC45C - Annual data provided for CBC45C only
CBC45C	600560	225181	39.3	44.9	52.3	39.8	52.7	41.4	37.1	39.0	43.6	47.1	46.8	Lost by Lab	44.1	34.4	Triplicate Site with CBC45A, CBC45B and CBC45C - Annual data provided for CBC45C only
CBC48	599908	224942	38.6	37.9	36.5	29.5	35.9	33.2	29.9	32.3	37.7	Missing	Missing	Lost by Lab	34.6	27.0	
CBC54	599922	224728	38.6	47.4	39.6	38.3	49.7	46.3	39.2	42.4	50.8	52.0	45.8	Lost by Lab	44.6	34.8	
CBC62	599923	224738	36.4	40.2	36.4	26.0	41.7	41.4	38.6	38.3	40.2	43.7	12.5	Lost by Lab	-	-	Triplicate Site with CBC62, CBC62A and CBC62B - Annual data provided for CBC62B only
CBC62A	599923	224738	33.2	40.2	42.9	31.4	41.6	37.8	38.2	37.5	28.5	47.1	33.4	Lost by Lab	-	-	Triplicate Site with CBC62, CBC62A and CBC62B - Annual data provided for CBC62B only
CBC62B	599923	224738	37.5	40.4	41.9	31.3	38.4	40.1	39.0	37.8	36.8	47.2	37.0	Lost by Lab	37.4	29.2	Triplicate Site with CBC62, CBC62A and CBC62B - Annual data provided for CBC62B only
CBC63	599921	224711	41.3	43.4	47.4	33.4	47.8	45.2	45.0	41.4	47.3	49.4	40.1	Lost by Lab	43.8	34.2	
CBC65	598797	224489	25.2	24.5	23.0	17.6	19.0	19.1	14.9	14.8	16.8	26.0	25.2	Lost by Lab	20.6	16.0	

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 (0.78)	Comment
CBC68	600589	225113	24.4	26.5	24.7	19.5	20.6	18.0	16.5	15.5	20.3	23.7	26.5	Lost by Lab	21.5	16.7	
CBC69	600545	225205	43.9	47.1	43.1	48.0	40.4	47.4	41.0	39.6	44.3	43.4	37.7	Lost by Lab	-	-	Triplicate Site with CBC69, CBC69A and CBC69B - Annual data provided for CBC69B only
CBC69A	600545	225205	49.6	36.4	48.5	44.2	36.0	43.6	40.1	41.1	40.6	45.4	40.8	Lost by Lab	-	-	Triplicate Site with CBC69, CBC69A and CBC69B - Annual data provided for CBC69B only
CBC69B	600545	225205	50.9	51.4	47.9	46.6	40.4	43.9	39.1	39.5	43.2	48.0	46.2	Lost by Lab	43.6	34.0	Triplicate Site with CBC69, CBC69A and CBC69B - Annual data provided for CBC69B only
CBC71	599818	224924	45.4	43.2	44.8	44.6	52.7	Missing	48.4	48.3	60.1	55.5	48.8	Lost by Lab	49.2	38.4	
CBC76	601162	225471	32.3	27.6	27.3	23.4	24.5	23.2	22.2	37.0	27.6	27.3	34.3	Lost by Lab	27.9	21.7	
CBC88	600571	225151	28.0	27.3	23.8	21.6	21.6	21.5	19.2	20.0	22.4	Missing	17.2	Lost by Lab	-	-	Triplicate Site with CBC88, CBC88A and CBC88B - Annual data provided for CBC88B only
CBC88A	600571	225151	27.5	29.6	23.2	21.3	20.3	20.4	19.1	19.4	21.6	Missing	16.7	Lost by Lab	-	-	Triplicate Site with CBC88, CBC88A and CBC88B - Annual data provided for CBC88B only
CBC88B	600571	225151	29.5	31.3	26.1	19.5	22.8	18.0	17.9	18.7	21.2	Missing	33.1	Lost by Lab	22.7	17.7	Triplicate Site with CBC88, CBC88A and CBC88B - Annual data provided for CBC88B only
CBC101	600868	225452	40.3	33.9	32.4	34.8	31.5	31.0	29.9	29.8	36.6	32.1	35.3	Lost by Lab	33.4	26.1	
CBC102	600752	225313	Missing	36.9	35.2	37.2	38.8	34.1	34.0	39.5	26.4	43.1	44.5	Lost by Lab	37.0	28.8	
CBC103	600607	225049	26.6	28.0	25.4	17.7	24.0	20.9	18.9	19.2	22.5	28.1	26.1	Lost by Lab	23.4	18.3	
CBC104	600193	224653	23.9	30.0	27.6	26.2	26.0	27.1	21.4	25.4	23.0	27.2	34.5	Lost by Lab	26.6	20.7	
CBC105	600224	225255	32.8	31.6	29.6	25.9	25.8	26.4	27.0	27.4	29.5	16.8	32.3	Lost by Lab	27.7	21.6	
CBC106	599911	224558	39.8	34.4	38.5	36.6	34.3	42.5	38.6	38.2	37.8	38.4	34.6	Lost by Lab	37.6	29.3	
CBC107	599389	225373	34.5	36.9	26.4	28.9	26.3	30.3	22.1	25.6	31.2	37.0	18.6	Lost by Lab	28.9	22.5	
CBC109	599398	225432	30.4	Missing	34.9	29.5	35.6	30.6	30.6	31.0	36.2	43.9	35.0	Lost by Lab	33.8	26.3	
CBC110	599891	225021	30.8	35.6	33.3	23.5	28.0	27.4	25.4	27.6	31.1	25.1	33.4	Lost by Lab	29.2	22.8	
CBC111	599473	224982	47.7	47.3	39.6	43.5	44.0	46.9	43.4	41.9	57.8	54.9	47.2	Lost by Lab	46.7	36.5	
CBC112	599730	225232	33.7	31.3	28.7	28.4	27.9	29.3	25.4	25.5	32.9	33.6	7.6	Lost by Lab	27.7	21.6	
CBC115	601083	225387	29.0	30.3	4.6	21.9	18.0	19.3	17.3	18.2	27.4	27.9	15.6	Lost by Lab	20.9	16.3	
CBC116	601115	225355	17.2	17.2	14.3	11.2	12.8	12.7	10.4	10.7	17.2	20.5	22.4	Lost by Lab	15.1	11.8	

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)	Comment
CBC117	599984	225238	35.1	33.7	43.4	28.6	34.3	30.7	34.6	37.2	30.6	47.6	30.0	Lost by Lab	35.1	27.4	
CBC124	600516	225277	38.5	37.6	36.4	26.7	30.0	31.9	30.8	32.8	42.4	38.8	41.1	Lost by Lab	35.2	27.4	
CBC125	599227	226509	33.9	29.6	35.2	24.7	32.3	29.2	29.3	31.8	34.5	39.7	29.3	Lost by Lab	31.8	24.8	
CBC127	600537	225242	40.8	48.9	43.7	35.5	27.5	35.1	36.9	41.6	41.7	46.0	42.0	Lost by Lab	40.0	31.2	
CBC128	600547	225244	30.8	33.6	29.9	24.8	22.4	19.9	16.7	22.3	29.0	25.5	18.9	Lost by Lab	24.9	19.4	
CBC129	600550	225183	53.3	59.2	50.5	48.7	43.6	47.5	42.1	40.0	45.3	46.8	52.2	Lost by Lab	48.1	37.5	
CBC130	599701	224964	41.6	43.8	39.0	38.5	Missing	42.3	38.7	38.4	33.6	44.0	48.6	Lost by Lab	40.9	31.9	
CBC137	590325	223495	23.3	30.4	30.5	22.1	23.2	25.2	22.6	25.5	10.1	32.4	25.3	Lost by Lab	24.6	19.2	
CBC138	599413	225056	Missing	45.3	44.1	33.0	Missing	38.8	41.5	40.5	48.7	57.6	44.8	Lost by Lab	-	-	Triplicate Site with CBC21, CBC138 and CBC139 - Annual data provided for CBC139 only
CBC139	599413	225056	Missing	36.5	45.9	33.5	42.7	40.0	41.8	38.5	51.2	56.9	44.2	Lost by Lab	42.2	32.9	Triplicate Site with CBC21, CBC138 and CBC139 - Annual data provided for CBC139 only
CBC144	599896	228282	11.7	21.3	18.5	12.4	15.8	14.1	12.3	13.0	18.6	21.3	2.2	Lost by Lab	14.7	11.4	
CBC145	596040	225284	20.1	25.2	21.4	23.6	24.1	21.7	17.7	18.8	43.3	28.7	33.0	Lost by Lab	25.2	19.7	

All erroneous data has been removed from the NO₂ 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

Colchester City Council confirm that all 2024 diffusion tube data has been uploaded to the Diffusion Tube Data Entry System

Notes:

Exceedances of the NO₂ annual mean objective of 40µg/m³ are shown in **bold**.

NO₂ annual means exceeding 60µg/m³, indicating a potential exceedance of the NO₂ 1-hour mean objective are shown in **bold and underlined**.

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 Colchester During 2024

Colchester City Council has not identified any significant new sources relating to air quality within the reporting year of 2024.

Additional Air Quality Works Undertaken by Colchester City Council During 2024

Colchester City Council has not completed any additional air quality works within the reporting year of 2024.

QA/QC of Diffusion Tube Monitoring

- Colchester City Council undertook monitoring at 37 sites in 2024.
- Colchester City Council adheres with the Diffusion Tube Monitoring Calendar
- The diffusion tubes were supplied by Socotec Didcot (UKAS Testing Laboratory number 1015) with a preparation method of 50% triethanolamine (TEA) in Acetone.
- The AIR NO₂ proficiency testing scheme found that for 2024, 100% of the results submitted were subsequently determined as satisfactory

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.

No diffusion tube monitoring sites required annualisation.

Diffusion Tube Bias Adjustment Factors

The diffusion tube data presented within this 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/NO₂ continuous analysers.

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

Colchester City Council have applied a national bias adjustment factor of 0.78 to the 2024 monitoring data. A summary of bias adjustment factors used by Colchester City Council over the past five years is presented in Table C.1.

Table C.1 – Bias Adjustment Factor

Monitoring Year	Local or National	If National, Version of National Spreadsheet	Adjustment Factor
2024	National	Socotec Didcot 50% TEA in Acetone	0.78
2023	National	Socotec Didcot 50% TEA in Acetone	0.77
2022	National	Socotec Didcot 50% TEA in Acetone	0.78
2021	National	Socotec Didcot 50% TEA in Acetone	0.77
2020	National	Socotec Didcot 50% TEA in Acetone	0.77

NO₂ Fall-off with Distance from the Road

Wherever possible, monitoring locations are representative of exposure. However, where this is not possible, the NO₂ concentration at the nearest location relevant for exposure has been estimated using the Diffusion Tube Data Processing Tool/NO₂ fall-off with distance calculator available on the LAQM Support website. Where appropriate, non-automatic annual mean NO₂ concentrations corrected for distance are presented in Table B.1.

Table C.2 – Non-Automatic NO₂ 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
CBC3A, CBC3B, CBC3C	1.9	2.2	44.1	10.7	42.9

Appendix D: Maps of Monitoring Locations and AQMAs

Figure D.1 – Map of Diffusion Tube Monitoring Sites: Central Colchester including AQMAs



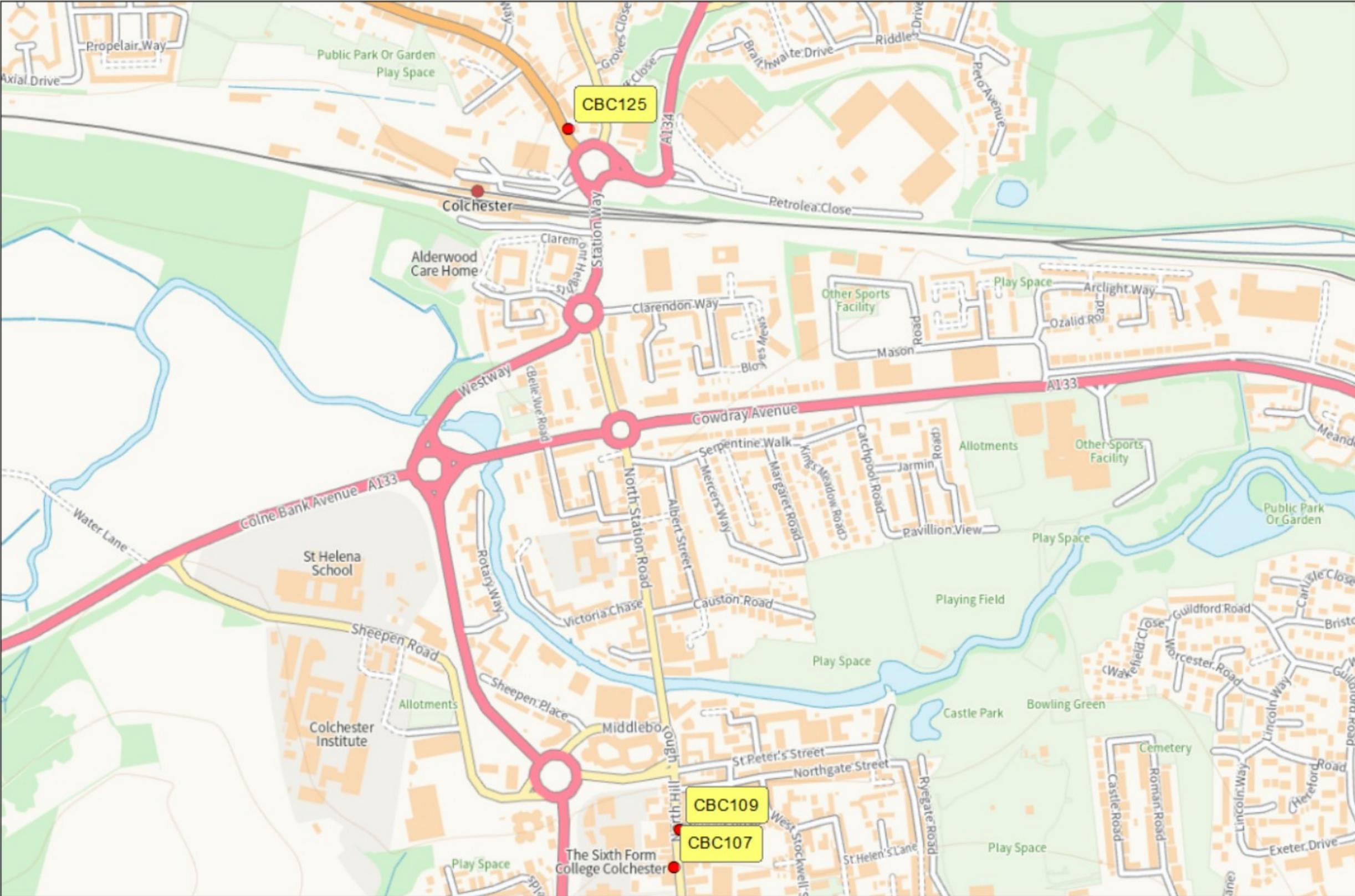
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Figure D.2 – Map of Diffusion Tube Monitoring Sites: Eastern Colchester



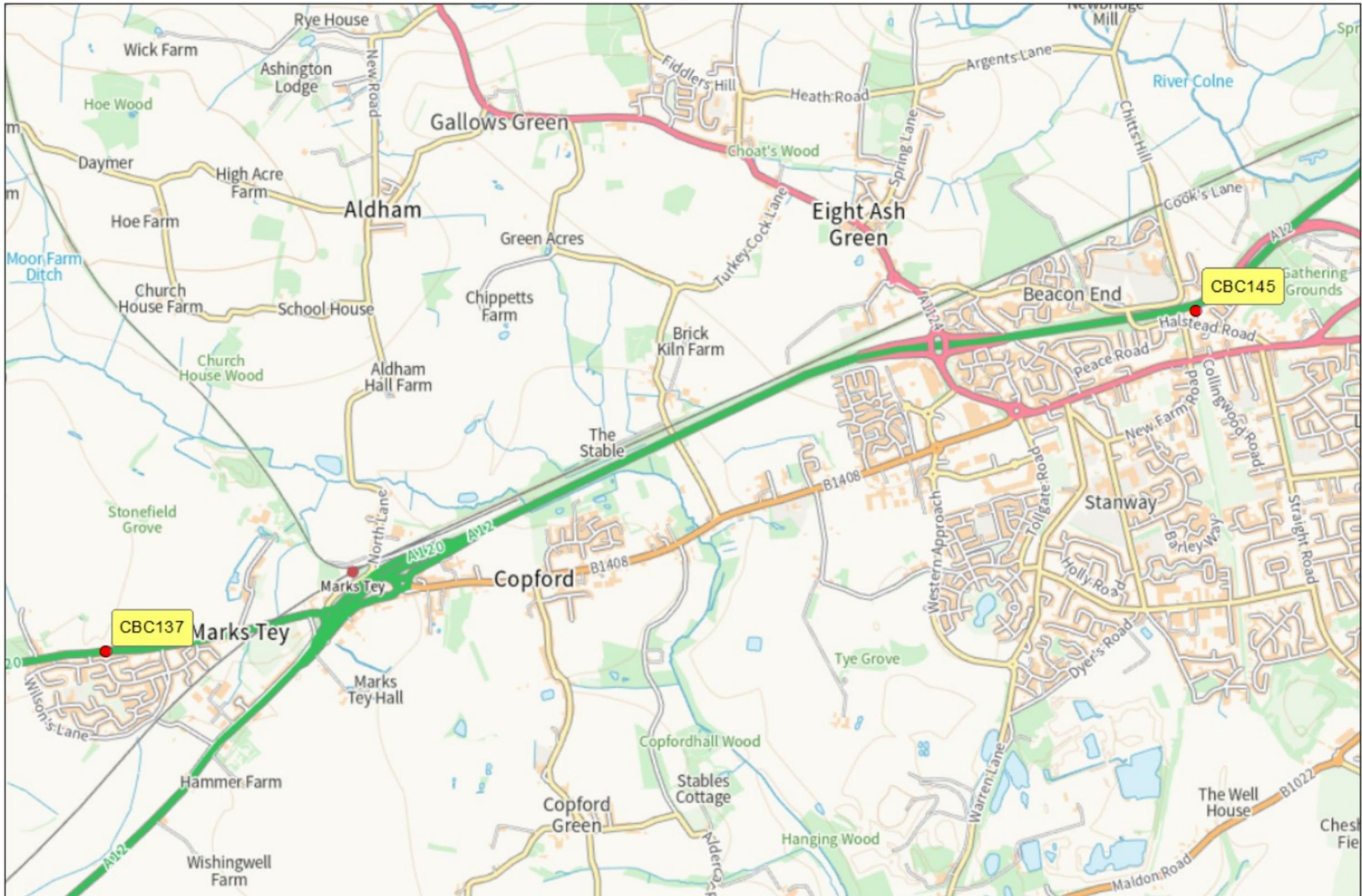
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Figure D.3 – Map of Diffusion Tube Monitoring Sites: Northern Colchester



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Figure D.4 – Map of Diffusion Tube Monitoring Sites: Marks Tey & Stanway



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Appendix E: Summary of Air Quality Objectives in England

Table E.1 – Air Quality Objectives in England²

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/m³).

Appendix F: Colchester City Council 2024 AQMA Order

Air Quality Management Order
Environment Act 1995 Part IV Section 83(1)
Colchester City Council
Air Quality Management Order

Colchester City Council in exercise of the powers conferred upon it by Section 83(1) of the Environment Act 1995, hereby makes the following Order.

This Order may be cited/referred to as the Colchester City Council Air Quality Management Areas:

AQMA Area 1 will be amended to become:

**Brook Street AQMA
Mersea Road AQMA
Osborne Street & St John's Street AQMA**

The areas shown on the attached maps in red are to be designated as air quality management areas (the designated areas).

The map may be viewed at the Council Offices.

These AQMAs are designated in relation to breaches and likely breaches of the Nitrogen Dioxide annual mean objective as specified in the Air Quality Regulations (England) 2000.

And shall come into effect on 20/05/24.

Area 1 – High Street Colchester, Head Street, North Hill, Queen Street, St. Botolph's Street, St. Botolph's Circus, Magdalen Street, Military Road, East Street as set out in the June 2018 Air Quality Management Order is revoked

Area 2 – East Street and the adjoining lower end of Ipswich Road as set out in the June 2018 Air Quality Management Order is revoked

Area 4 – Lucy Lane North, Stanway as set out in the June 2018 Air Quality Management Order is revoked

This Order shall remain in force until it is varied or revoked by a subsequent order.

The Common Seal of Colchester City Council was hereunto affixed in the presence of:


Authorised signatory

Dated 20th May 2024



90/24

Brook Street AQMA



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A. Weir

Mersea Road AQMA



1:2,000 © Crown copyright (and database rights) 2023 OS 100022862

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>
- Colchester City Council 2024 Air Quality Annual Status Report available at; https://cdn.cms42.com/essexair/Colchester/Colchester_2024_ASR.pdf
- Colchester City Council 2025 – 2030 Air Quality Action Plan available at;
- 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 Draft Strategy available at; <https://essexair.org.uk/strategy>
- Essex Air social media feed available at; <https://x.com/EssexAir>
- 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. August 2022. Published by Defra in partnership with the Scottish Government, Welsh Assembly Government and Department of the Environment Northern Ireland available at; <https://laqm.defra.gov.uk/air-quality/featured/uk-regions-exc-london-technical-guidance/>
- 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 available at; <https://laqm.defra.gov.uk/air-quality/featured/england-exc-london-policy-guidance/>
- Local Air Quality Management NO₂ Proficiency Scheme available at; https://laqm.defra.gov.uk/wp-content/uploads/2023/11/LAQM-NO2-Performance-data_Up-to-Oct-2023_V1_Final.pdf
- Public Health Framework available at; <https://fingertips.phe.org.uk/profile/public-health-outcomes-framework>